ITS Logical Architecture –Traceability Matrix

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1. Introduction

The Traceability document consists of brief introductory material and a series of appended Trace Tables. These tables provide complete traceability of ITS User Service Requirements (USR) to elements of the National ITS Architecture. Additional Trace Tables generated using the CASE and database tools being employed by the Architecture Development Team provide traceability between the Logical Architecture elements and the Physical Architecture.

2. Usage

These tables are intended to serve several purposes and are organized accordingly. For example, the User Service Trace Tables are primarily useful for establishing the completeness and effectiveness of the National ITS Architecture at the logical level. Other tables prove stepping stones for tracing functionality through the Logical and Physical artifacts. The following paragraphs describe tables and suggest possible usage.

2.1 Requirements

The User Service Requirements represent the highest level requirements specification for ITS and are defined in Appendix A. The Logical Architecture refines these requirements using structured analysis techniques, to arrive at a detailed, structured CASE supported process model of the ITS National Architecture. This process model is the Logical Architecture.

The Logical Architecture expands and details the USR into a set of logical processes defined in Process Specifications (P-Specs). Appendix B provides a trace from each USR to its supporting P-Spec(s), and Appendix C traces each P-Spec back to the underlying USR. All P-Specs are further traced to their physical architecture assignments (based on mapping documented in Appendix D and E).

Appendices B and C are automatically linked to the Teamwork CASE model of the Logical Architecture and are updated with any change to P-Spec functionality and (or) Physical Subsystem assignment. The automated tracing of requirements from the CASE model is intended to allow continuous updating and reporting of the trace matrix as a design tool throughout the Architecture life cycle.

2.1.1 User Service Requirements

Appendix A reiterates the User Service Requirements as provided by the Department of Transportation. Some additional paragraph numbers have been inserted where appropriate to allow tracing to the lowest level “requirement” statement. The USR are repeated in this document for completeness and ready reference.

2.1.2 User Service Requirements Traced to P-Specs

Appendix B, traces the USR to Process Specification(s) (P-Spec) and allows the reader to quickly identify the architecture functional requirements (P-Specs) that are required to satisfy any specific USR (or partial USR). As ITS moves into the implementation phase this table will also provide guidance as to which subset of P-Specs are required to satisfy any given subset of User Service Requirements. The ability to subset the Architecture functionality along User Service lines will allow users to quickly build formal requirements documents for partial or regional deployments while minimizing inadvertent omissions or superfluous specifications.

This table traces each User Service Requirements (identified by number) to one or more Process Specifications (P-Specs) that satisfy all or part of that requirement. Also shown is the Physical Architecture Subsystem to which this P-Spec has been assigned. Note that the higher level requirements may be superfluous to lower level requirements, but are included for completeness. For example, USR 1.1 and 1.2 may together represent all of the requirements of higher level USR 1. Therefore, in the table below, any P-Spec traced to USR 1.1 would also be traceable to USR 1. Likewise any P-Spec shown to satisfy all or part of USR 1.2 would also be shown to satisfy (all or) part of USR 1 (i.e., the part represented by USR 1.2).

It is a necessary condition for completeness of the National ITS Architecture that all User Service Requirements be traceable. Most of these requirements are traceable in the Logical Architecture to at least one P-Spec. A few (noted by NA for Not Applicable) are actually physical implementation requirements and therefore are not traced directly to a meaningful P-Spec. For completeness, and to explicitly identify these User Service Requirements, they are traced to "P-Spec 9", which has no functional content in the Logical Architecture.

2.1.3 P-Specs Traced to User Service Requirements

Appendix C, traces individual P-Specs to User Service Requirements. This table allows the reader to determine which USRs are being addressed by any given P-Spec (or group of P-Specs). This reference effectively points to the source requirements for each P-Spec. Any proposed functional change to a P-Spec should first be preceded by a careful review of each requirement being addressed by the existing P-Spec. This table will facilitate that reference and minimize adverse side effects from requirements changes through the life of the National ITS Architecture.

This Trace Table traces each Process Specification (P-Spec, identified by number and name) to one or more User Service Requirements (USR) that require that particular process. Also provided is the Physical Architecture Subsystem to which that process is assigned. Note that the higher level requirements are generally supersets of lower level requirements. For example, satisfaction of all the requirements of USR 1.0, will generally require all the P-Specs that are required to satisfy both USR 1.1 or USR 1.2. Therefore, in the table below, any P-Spec described as serving USR 1.1 would also be required for USR 1. Likewise any P-Spec shown as satisfying all or part USR 1.2 would also be shown to satisfy (all or) part of USR 1 (i.e., the part represented by USR 1.2).

2.2 Physical to Logical Architecture

The Logical and Physical Architectures represent two different views of the same National ITS Architecture. Trace tables are provided to help the reader understand the basic connection between these two viewpoints. These tables define the basic linkage between the Logical Architecture entities (P-Specs, Data Flows) and the Physical Architecture entities (Subsystems, Equipment Packages and Architecture Flows). They form the basis for tracing the USR all the way to the Physical Architecture.

2.2.1 P-Spec Assignment to Physical Subsystem (by P-Spec)

Each Process Specification is assigned to a specific Physical Architecture subsystem. Appendix D documents the mapping of Logical Architecture Processes (P-Specs) to the Physical Architecture subsystem entities (e.g., The Roadway Subsystem). This table will be useful in identifying where a specific logical function has been implemented in the Physical Architecture.

2.2.2 P-Spec Assignment to Physical Subsystem (by Subsystem)

Each Physical Subsystem is defined by its Logical Process content. Appendix E tabulates the mapping of the Logical Processes from the Physical Architecture subsystem entities (e.g., The Roadway Subsystem). This table is most useful in examining what functionality is embodied in any specific physical subsystem.

2.2.3 P-Spec Traced to Equipment Package

Appendix F further maps P-Specs to the Equipment Package.

2.2.4 Equipment Package Traced to P-Specs

Appendix G provides the P-Spec content of each Equipment Package.

2.2.5 Subsystem and Equipment Package Functional Summary

Appendix H is intended to provide a concise functional definition of each Subsystem in terms of its Equipment Package P-Spec content. The "Overview" descriptions are taken directly from the Teamwork CASE model of the Logical Architecture.

2.3 Physical Flows and Logical Flows

Once logical processes have been assigned to physical entities, the resulting interconnections and physical data flows become important. The remaining Appendices are presented to allow analysts to fully trace information flow through the Logical Architecture and between the Logical and Physical views of the Architecture.

2.3.1 Logical Data Flows Traced to Support and Sink

Appendix I is a complete tabulation of all logical data flows that appear on data flow diagrams (DFD) as inputs or outputs at the P-Spec level. Note that every Data Dictionary Entry (DDE) is not in this list. If a DDE is an element of a flow, but does not appear as a flow between processes on any DFD, it will not be in this list. Similarly, if a high level flow is always broken down into multiple lower level flows at the P-Spec level, it will not appear in this tabulation. This table is a very convenient way to trace flows through multiple levels of DFD as it provides the ultimate source and destination of every P-Spec input and output flow. This table also provides the Physical Subsystem to which the source or destination P-Spec has been assigned.

The table tabulates the Logical Data Flows between subsystems as a result of the assignment of P-Specs to specific subsystems in the Physical Architecture. The table presents data for all Data Dictionary Entries (DDEs) and therefore flows internal to a single subsystem also appear (e.g., cv_driver_enrollment_request flows from CVAS to CVAS).

2.3.2 Logical Data Flows Traced to Physical Channels

Appendix J lists the logical data flows that cross subsystem boundaries and identifies the interconnected subsystems (e.g., Basic Vehicle to PMS). This table can be used to quickly find the physical interface(s) associated with a given logical flow. Note that flows that do not cross physical subsystem boundaries are not in this list.

2.3.3 Physical Channels Traced to Logical Data Flows

Appendix K lists the same logical data flows but groups them by Physical Interconnection for convenience. This table allows the analyst to find the logical information content associated with a specific subsystem to subsystem interconnection in the Physical Architecture.

2.3.4 Architecture Flows Traced to Logical Flows

Appendix L lists logical data flows the cross subsystem boundaries and identifies the interconnected subsystems (e.g., Basic Vehicle to PMS), the defined Architecture Flow(s) that constitute that interconnection, and all flows defined by the Logical Architecture that can flow across that interface. This table allows the analyst to find the logical information content contained in a specific Physical Architectural Flow.

3. Methodology

The importance of the ability to rigorously trace requirements to architectural features and vice versa cannot be over-emphasized. The ability to manage change through the life of the Architecture can only be provided by a carefully structured and maintainable set of documented requirements. For this reason the National ITS Architecture team has built traceability hooks into the Logical Architecture CASE model from the outset. All P-Specs contain a complete list of the USR elements that they are intended to satisfy. Changing the functional description of a P-Spec includes the responsibility to review that P-Specs' list of USRs. Regeneration of the Trace Tables following any change will quickly highlight oversights or unexpected impacts to other functionality in the Logical Architecture before changes are finalized and propagated into the Physical Architecture and other analysis efforts.

The USRs for every P-Spec are automatically extracted from the structured analysis CASE model and stored in a Traceability database. Here the Trace tables are generated by comparing the USR coverage with the User Service Requirements themselves. Attached tables from both the Logical and Physical Architecture databases allow tracing the USR all the way from the CASE model input to the physical apportionment of functionality (via P-Spec assignment) to subsystems, market packages or equipment packages.

All of the Trace tables are generated automatically. This assures that checking the coverage or impact of a change is not so burdensome as to be side stepped, and it helps assure consistency of the results over the life of the program. Extraction of data from the Teamwork CASE tool is accomplished via a software REXX program, import to the Access database is done with macros and Visual Basic modules, and the critical inputs from the Logical and Physical databases are maintained as "attached" tables.

Appendix A: User Service Requirements

1.0	TRAVEL AND TRAFFIC MANAGEMENT
1.1	PRE-TRIP TRAVEL INFORMATION
1.1.0	ITS shall provide a Pre-Trip Travel Information (PTTI) capability. to assist travelers in making mode choices, travel time estimates, and route decisions prior to trip departure. It consists of four major functions, which are, (1) Available Services Information, (2) Current Situation Information, (3) Trip Planning Service, and (4) User Access. Information is integrated from various transportation modes and presented to the user for decision making.
1.1.1	PTTI shall provide travelers with information on those travel services available for their use.
1.1.1.1	PTTI shall provide users with available services information that is timely.
1.1.1.1.1	PTTI shall provide users the latest available information on transit routes.
1.1.1.1.2	PTTI shall provide users the latest available information on transit schedules.
1.1.1.1.3	PTTI shall provide users with real time schedule adherence information.
1.1.1.1.4	PTTI shall provide users the latest available information on transit transfer options.
1.1.1.1.5	PTTI shall provide users the latest available information on transit fares.
1.1.1.1.6	PTTI shall provide users information on accessing ridematching services.
1.1.2	PTTI shall provide the capability for users to access information on the current condition of transportation systems.
1.1.2.1	PTTI transportation services current situation information shall be provided in real-time.
1.1.2.1.1	Real-time information provided by PTTI shall include the current condition of any incidents.
1.1.2.1.2	Real-time information provided by PTTI shall include the current status of any accidents or incidents.
1.1.2.1.3	Real-time information provided by PTTI shall include the current condition of any road construction.
1.1.2.1.4	Real-time information provided by PTTI shall include any currently recommended alternate routes.
1.1.2.1.5	Real-time information provided by PTTI shall include the current speeds on specific routes.
1.1.2.1.6	Real-time information provided by PTTI shall include current parking conditions in key areas.
1.1.2.1.7	Real-time information provided by PTTI shall include the schedules for any current or soon to start events.
1.1.2.1.8	Real-time information provided by PTTI shall include the current weather situation.
1.1.3	PTTI shall include a trip planning service.
1.1.3.1	PTTI trip planning service shall provide the users with information needed for planning an upcoming trip.
1.1.3.1.1	Based on user specified parameters PTTI shall provide users with a calculated itinerary.
1.1.3.1.2	Based on user specified parameters PTTI shall provide users with transportation mode choices.
1.1.3.1.3	Based on user specified parameters PTTI shall provide users with real-time travel conditions for time of inquiry and estimated conditions for estimated time of travel.
1.1.3.1.4	Based on user specified parameters PTTI shall provide users with one or more alternate itineraries in addition to the primary calculated itinerary.
1.1.3.2	PTTI shall provide the capability for users to specify those transportation parameters that are unique to their individual needs.
1.1.3.2.1	PTTI shall provide the capability for users to specify a desired destination.
1.1.3.2.2	PTTI shall provide the capability for users to specify a planned departure location.
1.1.3.2.3	PTTI shall provide the capability for users to specify their desired departure time.
1.1.3.2.4	PTTI shall provide the capability for users to specify their desired arrival time.
1.1.3.2.5	PTTI shall provide the capability for users to specify their maximum acceptable travel time.
1.1.3.2.6	PTTI shall provide the capability for users to specify their maximum acceptable number of mode changes.
1.1.3.2.7	PTTI shall provide the capability for users to specify a maximum number of transfers.
1.1.3.2.8	PTTI shall provide the capability for users to specify their preferred route(s) or segment of route(s).
1.1.3.2.9	PTTI shall provide the capability for users to specify their preferred transportation mode(s).
1.1.3.2.10	PTTI shall provide the capability for users to specify their preferred weather conditions.
1.1.3.3	In addition to the user specified parameters PTTI shall use additional factors when planning trips.
1.1.3.3.1	PTTI shall consider current travel conditions when calculating a trip itinerary.
1.1.3.3.2	PTTI shall consider predicted travel conditions when calculating a trip itinerary.
1.1.4	PTTI shall provide the capability for user access.
1.1.4.1	PTTI shall provide the capability for users to access the system from multiple distributed locations.

Appendix A: User Service Requirements

1.1.4.1.1	PTTI shall provide the capability for users to access the system from their homes.
1.1.4.1.2	PTTI shall provide the capability for users to access the system from their place of work.
1.1.4.1.3	PTTI shall provide the capability for users to access the system from other major trip generation sites.
1.1.4.1.4	PTTI shall provide the capability for users to access the system from personal portable devices.
1.1.4.2	PTTI shall provide the capability for users to access the system over multiple types of electronic media.
1.1.4.2.1	Access media shall comply with the American Disability Act legislation.
1.2	EN-ROUTE DRIVER INFORMATION
1.2.0	ITS shall include an En-Route Driver Information (DI) function. Driver Information provides vehicle drivers with information, while en-route, which will allow alternative routes to be chosen for their destination. Driver Information consists of two major functions which are (1) Driver Advisory and (2) In-vehicle Signing. The potential decrease in traffic may also provide benefits in highway safety, reduced air pollution, and decreased congestion.
1.2.1	DI shall include the following general requirements.
1.2.1.1	DI shall be implemented in a manner that helps improve highway safety.
1.2.1.2	DI shall be implemented in a manner that helps reduce air pollution.
1.2.1.3	DI shall be implemented in a manner that helps decrease congestion.
1.2.1.4	DI shall be designed in a manner that permits a two-phase implementation.
1.2.1.4.1	The DI two-phase implementation shall include a short term capability to address those features that can be implemented in the present time frame.
1.2.1.4.2	The DI two-phase implementation shall include a long term capability to address those features that can be implemented when the remainder of the ITS system is deployed.
1.2.1.5	DI shall include a driver advisory capability and an in-vehicle signing capability.
1.2.2	Driver advisory shall be implemented in two phases with first a short term capability and later a long term capability.
1.2.2.1	The short term DI driver information capability shall include the ability to provide information to travelers within the limited area of deployment.
1.2.2.1.1	DI shall include the capability to provide travelers with accurate information concerning available travel options and their state of operational availability.
1.2.2.1.2	DI shall provide that information to travelers required for them to avoid areas of congestion.
1.2.2.1.2.1	DI shall provide that information needed for travelers to select those transportation modes that allow them to avoid congestion.
1.2.2.1.3	DI shall provide the capability for users to receive travel information in their vehicles.
1.2.2.1.4	In the short-term DI shall be deployed in those limited areas where the need and associated benefits are more immediate.
1.2.2.2	The long term DI driver information capability shall include the ability to provide information to travelers within all geographic areas of the ITS deployment.
1.2.3	DI shall provide an in-vehicle signing capability.
1.2.3.1	The DI in-vehicle signing function shall include a short term capability to serve the more immediate needs of travelers.
1.2.3.1.1	The short term in-vehicle signing function shall include the capability to provide assistance to individuals with impaired vision.
1.2.3.1.2	The short term in-vehicle signing function shall include the capability to provide assistance to individuals needing local guidance in areas that the driver is unfamiliar with (e.g., airports, resort areas).
1.2.3.1.3	The short term in-vehicle signing function shall include the capability to provide assistance to individuals in areas that frequently have conditions of poor visibility.
1.2.3.1.4	The short term in-vehicle signing function shall be implemented in a manner that augments existing signs.
1.2.3.1.4.1	The short term in-vehicle signing function shall augment control signs (e.g., stop signs).
1.2.3.1.4.2	The short term in-vehicle signing function shall augment warning signs (e.g., slow signs).
1.2.3.1.5	The short term in-vehicle signing function shall provide a user interface that allows travelers to access its capabilities.
1.2.3.2	The DI in-vehicle signing function shall include a long term capability to serve more of the traveler's needs.
1.2.3.2.1	The long term in-vehicle signing function shall be integrated with other ITS system capabilities.
1.2.3.2.2	The long term in-vehicle signing function shall provide the capability to customize warnings.
1.2.3.2.2.1	The customized warnings function shall provide the capability to control the contents of warning messages to the extant environmental conditions.
1.2.3.2.3	The in-vehicle signing function shall provide the capability to utilize data from roadside environmental sensors as inputs to warning messages.
1.2.3.2.4	The in-vehicle signing function shall provide travelers with information on road conditions.
1.2.3.2.5	The in-vehicle signing function shall provide travelers with precautionary reminder messages.

Appendix A: User Service Requirements

1.3	ROUTE GUIDANCE
1.3.0	ITS shall include a Route Guidance (RG) function. Route Guidance will provide travelers with directions to selected destinations. Four functions are provided which are (1) Provide Directions, (2) Static Mode, (3) Real-Time Mode, and (4) User Interface.
1.3.1	RG shall include the capability to Provide Directions to travelers.
1.3.1.1	The Provide Directions function shall provide travelers with directions to their selected destination locations.
1.3.1.2	The Provide Directions function shall issue directions to travelers that is based on information about current conditions of transportation systems.
1.3.1.2.1	Current transportation system conditions upon which directions to travelers is based shall include, but not be limited to, the following:
1.3.1.2.1(a)	Current traffic conditions.
1.3.1.2.1(b)	Status of transit systems.
1.3.1.2.1(c)	Schedules of transit systems.
1.3.1.2.1(d)	Events taking place that influence travel routes.
1.3.1.2.1(d).1	Street closures.
1.3.1.2.1(d).2	Pedestrian events.
1.3.1.2.1(d).3	No pedestrian zones.
1.3.1.3	The Provide Direction function shall issue traveler directions that are simple and easy to understand in the form of arrow displays or voice messages providing turning instructions of which way to turn onto including, but not limited to, the following:
1.3.1.3(a)	Particular streets.
1.3.1.3(b)	Roads.
1.3.1.3(c)	Walkways.
1.3.1.3(d)	Transit facilities.
1.3.2	RG shall include a Static Mode for issuing information to travelers.
1.3.2.1	Static Mode shall provide travelers with information that includes, but is not limited to, the following:
1.3.2.1(a)	Mapping information about roadways.
1.3.2.1(b)	Scheduling information about transit systems.
1.3.2.2	Static Mode infrastructure systems shall provide the capability to have two-way communications between the traveler and the infrastructure.
1.3.2.2.1	The two-way communications shall provide the capability for the infrastructure to receive the traveler's desired destination.
1.3.2.2.2	The two-way communications shall provide the capability to provide directions back to the traveler that are based on the infrastructure's calculated routing.
1.3.2.3	The Real-Time Mode shall provide the capability for autonomous operation of mobile based systems.
1.3.2.3.1	Autonomous Mobile Based systems shall have the capability to operate independent of infrastructure.
1.3.3	RG shall include a Real-Time Mode for issuing information to travelers.
1.3.3.1	The Real-Time Mode shall utilize current travel condition information to provide performance that is enhanced over the Static Mode performance, to include, but not be limited to, the following:
1.3.3.1(a)	Traffic conditions information.
1.3.3.1(b)	Dynamic transit schedule information.
1.3.3.2	The Real-Time Mode shall include the capability to operate in either or both of the following two configurations:
1.3.3.2(a)	Route selection processors located on the mobile unit.
1.3.3.2(b)	Route selection processors installed in the transportation system infrastructure.
1.3.3.2.1	Real-Time Mobile Based systems shall include the capability to receive infrastructure information, when available, and use it in determining routing.
1.3.3.2.2	If current real-time information is included in route determination the system shall be denoted as an Infrastructure-based real-time system.
1.3.3.3	The Real-Time mode shall provide the capability for autonomous operation of mobile-based systems.
1.3.4	RG shall include a User Interface function.
1.3.4.1	The User Interface shall provide the capability for travelers to access the system by utilizing interactive devices that include, but are not limited to, the following:
1.3.4.1(a)	Visual displays.

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1.3.4.1(b)	Keypads.
1.3.4.1(c)	Touch sensitive devices.
1.3.4.1(d)	Computer generated voice.
1.3.4.1(e)	Voice recognition system.
1.3.4.2	Mobile systems shall use the best information available to provide routing instructions.
1.3.4.2.1	Mobile Systems shall provide the capability for individual travelers to customize the routing selected for them.
1.3.4.2.2	Mobile Systems customizing of traveler's routing shall be based on certain conditions specified by the traveler to include, but not be limited to, the following:
1.3.4.2.2(a)	Avoid expressway-type highways.
1.3.4.2.2(b)	Avoid multiple mass transit transfers.
1.3.4.3	Infrastructure-based systems shall also permit individual travelers to customize their routing selection.
1.3.4.3.1	Infrastructure-based systems shall use the traveler's destination information to estimate extra demand on the transportation system and then provide routing to the traveler based on this predicted demand.
1.4	RIDE MATCHING AND RESERVATION
1.4.0	ITS shall include a Ride Matching and Reservation (RMR) function. Ride Matching and Reservation will provide travel users with information on rideshare providers. Three major functions are provided which are (1) Rider Request, (2) Transportation Provider Services, and (3) Information Processing. This will also include a billing service to the providers.
1.4.1	RMR shall include a Rider Request capability.
1.4.1.1	Rider Request shall provide the capability for a traveler to request a ride by placing a single request from a facility to include, but not be limited to, the following:
1.4.1.1(a)	Telephones (including hearing-impaired capability).
1.4.1.1(b)	Kiosks.
1.4.1.2	Rider Request shall provide a traveler the capability to request a specific itinerary by specifying, but not be limited to, the following:
1.4.1.2(a)	Date.
1.4.1.2(b)	Time of pick-up and drop-off.
1.4.1.2(c)	Origin.
1.4.1.2(d)	Destination.
1.4.1.2(e)	Specific restrictions or preferences.
1.4.1.3	Based on the traveler's request and specified itinerary, Rider Request shall provide the traveler with the available ridesharing options.
1.4.1.4	Rider Request shall also include the capability to perform real-time ridematching by instantly matching rider and driver.
1.4.2	RMR shall include an Transportation Provider Service function.
1.4.2.1	Transportation Provider Services shall include the capability for providers to have their billing arranged through a central clearinghouse.
1.4.2.2	Transportation Provider Services shall include electronic safeguards against fraud and abuse.
1.4.2.3	Transportation Provider Services shall automatically generate needed reports and financial documentation.
1.4.2.4	Transportation Provider Services shall include the capability for commercial operators such as vanpools and taxis to be included as options for requesting travelers.
1.4.3	RMR shall include an Information Processing function.
1.4.3.1	Information Processing shall quickly match preferences and demands of requesting travelers with the services available from providers.
1.4.3.2	Information Processing shall provide a clearinghouse capability for rideshare financial transactions.
1.4.3.3	Information Processing shall link together the services available from all travel modes including, but not limited to, the following:
1.4.3.3(a)	Bus.
1.4.3.3(b)	Rail.
1.4.3.3(c)	Vanpools.
1.4.4.3(d)	Express bus.
1.4.4.3(e)	Commercial providers.
1.4.4.3(f)	Specialized service.
1.4.4.3(g)	Carpools.

1.4.3.4	Information Processing shall provide the informational infrastructure needed to connect providers and consumers.
1.4.3.5	Information Processing shall provide the capability to gather that market information needed to assist in the planning of service improvements.
1.4.3.6	Information Processing shall provide the capability to gather that market information needed to assist in maintenance of operations.
1.5	TRAVELER SERVICES INFORMATION
1.5.0	ITS shall include a Traveler Services Information (TSI) function. Traveler Services Information provides travelers with service and facility data for the purpose of assisting prior to embarking on a trip or after the traveler is underway. The functions which are included in this capability are Information Receipt and Information Access. This will provide the traveler with a "yellow pages" type of capability.
1.5.1	TSI shall include an Information Receipt function for the collection of that information provided to travelers.
1.5.1.1	Information Receipt shall provide and maintain a database of local area services available to travelers.
1.5.1.2	Information Receipt provides the capability to acquire up to the minute information relating to traveler services available in the local area.
1.5.1.2.1	Information Receipt shall acquire information on the condition of local traveler services.
1.5.1.2.2	Information Receipt shall acquire information on the status of local traveler services.
1.5.1.2.3	Information Receipt shall acquire information on the availability of local traveler services.
1.5.1.2.4	Information Receipt shall acquire information on the availability of local motorist services.
1.5.1.2.5	Information Receipt shall acquire information on the availability of local tourist services.
1.5.1.3	Information Receipt shall be capable of being integrated with Pre-Trip Planning information.
1.5.1.4	Information Receipt shall provide the capability to support those financial transactions required for travelers to be billed for the purchase of activity tickets and room reservations.
1.5.1.5	Information Receipt shall include the capability to have interactive connectivity between users, sponsors and providers of services.
1.5.2	TSI shall include an Information Access function that allows travelers to access the available information.
1.5.2.1	Information Access shall provide the capability for travelers to request and receive general information about the local area.
1.5.2.2	Information Access shall provide the capability for travelers to request and receive information about specific services in an area to include but, not be limited to, the following:
1.5.2.2(a)	Lodging information.
1.5.2.2(b)	Food information.
1.5.2.2(c)	Parking information.
1.5.2.2(d)	Hours of operation information.
1.5.2.2(e)	Tourist activities information.
1.5.2.2(f)	Daily or special events information.
1.5.2.2(g)	Local hospital information.
1.5.2.2(h)	Nearest gas station information.
1.5.2.3	Information Access shall provide the capability for travelers to request specific actions of area service providers to include, but not be limited to:
1.5.2.3(a)	Lodging reservations.
1.5.2.3(b)	Dining reservations.
1.5.2.4	Information Access shall provide the capability for all travelers to access information regardless of their particular mode of travel.
1.5.2.5	Information Access shall provide the capability for travelers to access the TSI information via any of, but not limited to, the following methods:
1.5.2.5(a)	Highway advisory radio.
1.5.2.5(b)	Dial-up telephone lines.
1.5.2.5(c)	Computers at home.
1.5.2.5(d)	Computers in the office.
1.5.2.5(e)	In-vehicle computers.
1.5.2.5(f)	Public area kiosks.
1.5.2.5(g)	Personal portable devices.
1.5.2.6	Information Access shall provide the capability for travelers to access TSI information from public kiosk locations which include, but are not limited to:

1.5.2.6(a)	Rest areas.
1.5.2.6(b)	Activity centers.
1.5.2.6(c)	Tourist attractions.
1.5.2.6(d)	Service plazas.
1.5.2.6(e)	Airports.
1.6	TRAFFIC CONTROL
1.6.0	ITS shall provide a Traffic Control capability. Traffic Control provides the capability to efficiently manage the movement of traffic on streets and highways. Four functions are provided which are (1) Traffic Flow Optimization, (2) Traffic Surveillance, (3) Control Function, and (4) Provide Information. This will also include control of network signal systems with eventual integration of freeway control.
1.6.1	Traffic Control shall include a Flow Optimize function to provide the capability to optimize traffic flow.
1.6.1.1	The Flow Optimize function shall employ control strategies that seek to maximize traffic-movement efficiency.
1.6.1.1.1	Traffic-movement control shall manage movement of traffic on streets.
1.6.1.1.2	Traffic-movement control shall manage movement of traffic on highways.
1.6.1.1.3	Traffic-movement control shall include the goal of minimizing delay times.
1.6.1.1.4	Traffic-movement control shall include the goal of minimizing energy use.
1.6.1.1.5	Traffic-movement control shall include the goal of minimizing air quality impacts due to traffic.
1.6.1.2	The Flow Optimize function shall include a Wide Area optimization capability, to include several jurisdictions.
1.6.1.2.1	Wide area optimization shall integrate the control of network signal systems with the control of freeways.
1.6.1.2.2	Wide area optimization shall include features that provide preferential treatment for transit vehicles.
1.6.1.2.3	Wide area optimization shall include features that provide preferential treatment for HOV.
1.6.1.3	Flow optimize shall be implemented in a manner that seeks to optimize traffic movement over a large geographic area.
1.6.1.4	Flow optimize shall include a Control function that is responsive to both the current demand as well as the expected demand.
1.6.1.4.1	Control shall include the capability to facilitate the dissipation of traffic congestion.
1.6.1.5	Flow Optimize shall provide the capability to predict travel patterns.
1.6.1.6	The Control Function shall include the use of data acquired from traffic surveillance as feedback to the control strategies.
1.6.1.7	Implementation of the Control Function shall include strategies that account for at least the following:
1.6.1.7(a)	Human factors.
1.6.1.7(b)	Driver/traveler behavior and expectancies.
1.6.2	Traffic Control shall include a Traffic Surveillance function.
1.6.2.1	Traffic Surveillance shall include a Vehicle Detection function with the capability of accurately detecting vehicles in a real-time fashion.
1.6.2.1.1	Vehicle Detection shall include the capability to determine those vehicles that are HOVs.
1.6.2.2	Traffic Surveillance shall include a Data Collect function to provide the capability to collect data that are needed for determining traffic flow and prediction.
1.6.2.2.1	Data Collect shall provide the capability to quickly feedback traffic data to the control processes.
1.6.2.3	Traffic Surveillance shall include an area wide surveillance capability to include several jurisdictions.
1.6.2.3.1	The area wide surveillance shall gather speed and flow information.
1.6.2.3.2	The area wide surveillance shall cover a large number of roadway segments.
1.6.2.4	Traffic Control shall provide the capability to acquire detailed traffic measurements at specific locations.
1.6.2.4.1	Traffic Surveillance shall include a Data Process function to process the traffic data which are acquired.
1.6.2.5	The wide area surveillance shall acquire sufficient data to provide the system with the knowledge of the existing conditions.
1.6.2.5.1	Data Process shall combine and process traffic data from multiple sources and times in order to improve the accuracy of the view of the current traffic condition.
1.6.2.5.2	Data Process shall process traffic data to generate near term predictions of traffic conditions.
1.6.3	Traffic Control shall include a Control Function.
1.6.3.1	The Device Control Function shall include a "real-time" traffic-adaptive control capability.
1.6.3.2	The real-time traffic-adaptive control portion of the Control Function shall be an area wide control to include several jurisdictions.
1.6.3.2.1	The area wide control shall be implemented in an integrated and consistent manner that avoids the issuance of conflicting controls.

1.6.3.2.2	The area wide control shall be implemented in a manner that permits the following types of vehicles to have preference over other vehicles being controlled.
1.6.3.2.2(a)	Transit.
1.6.3.2.2(b)	HOV.
1.6.3.2.2(c)	Emergency Medical Service Vehicles.
1.6.3.3	The Device Control Function shall provide the capability to exercise control over those devices utilized for
1.6.3.3.1	Device Control shall include the capability to control traffic signalization, including rapid modification of signalization parameters to respond to traffic requirements.
1.6.3.3.2	Device Control shall include the capability to control dynamically traffic signing.
1.6.3.3.3	Device Control shall include the capability to control freeway ramp metering.
1.6.3.3.4	Device Control shall include the capability to exercise dynamic control over the infrastructure (such as reversible-lanes, turning restrictions, etc.).
1.6.3.4	Device Control shall communicate control data to the following devices.
1.6.3.4(a)	Traffic signals.
1.6.3.4(b)	Ramp meters.
1.6.3.4(c)	Information signs.
1.6.3.4(d)	HOV lanes.
1.6.3.4(e)	Human operator support.
1.6.3.4.1	Traffic Surveillance shall include a Data Process function to process the traffic data which are acquired.
1.6.3.5	Device Control shall provide the operator with the capability to manually override the system's automatic controls.
1.6.3.6	Device Control shall provide the operator the capability to adaptively change system response in order to provide a coordinated support of other TMCs that are responding to incidents.
1.6.4	The Control Function shall provide traffic control information to other elements of the ITS, including but not limited to the following:
1.6.4(a)	In-vehicle navigation.
1.6.4(b)	Trip planning.
1.6.4(c)	Routing systems.
1.6.4(d)	Fleet management systems.
1.7	INCIDENT MANAGEMENT
1.7.0	ITS shall include an Incident Management (IM) function. Incident Management will identify incidents, formulate response actions, and support initiation and ongoing coordination of those response actions. Six major functions are provided which are (1) Scheduled Planned Incidents, (2) Identify Incidents, (3) Formulate response Actions, (4) Support Coordinated Implementation of Response Actions, (5) Support Initialization of Response to Actions, and (6) Predict Hazardous Conditions.
1.7.1	Incident Management shall provide an incident identification function to identify incidents.
1.7.1.1	The incident identification function shall include the capability to identify predicted incidents.
1.7.1.1.1	The incident identification function shall use information from the following types of sources, where available, to identify predicted incidents:
1.7.1.1.1(a)	Traffic flow sensors.
1.7.1.1.1(b)	Environmental sensors.
1.7.1.1.1(c)	Public safety sources.
1.7.1.1.1(d)	Media sources.
1.7.1.1.1(e)	Weather information sources.
1.7.1.1.1(f)	Transportation providers.
1.7.1.1.1(g)	Sponsors of special events.
1.7.1.1.1(h)	Hazardous condition prediction algorithms.
1.7.1.1.2	The incident identification function shall determine at least the following characteristics of each predicted incident:
1.7.1.1.2(a)	Type.
1.7.1.1.2(b)	Extent.
1.7.1.1.2(c)	Severity.
1.7.1.1.2(d)	Location.
1.7.1.1.2(e)	Expected duration.
1.7.1.1.3	The incident identification function shall determine the expected traffic flow impact of each predicted incident.

1.7.1.2	The incident identification function shall include the capability to identify existing (both planned and unplanned) incidents.
1.7.1.2.1	The incident identification function shall use information from the following types of sources, where available, to identify existing incidents:
1.7.1.2.1(a)	Traffic flow sensors.
1.7.1.2.1(b)	Environmental sensors.
1.7.1.2.1(c)	Public safety sources.
1.7.1.2.1(d)	Media sources.
1.7.1.2.1(e)	Weather information sources.
1.7.1.2.1(f)	Transportation providers.
1.7.1.2.1(g)	Travelers.
1.7.1.2.2	The incident identification function shall determine and continuously monitor at least the following characteristics of each existing incident:
1.7.1.2.2(a)	Type.
1.7.1.2.2(b)	Extent.
1.7.1.2.2(c)	Severity.
1.7.1.2.2(d)	Location.
1.7.1.2.2(e)	Expected duration.
1.7.1.2.3	The incident identification function shall determine and continuously monitor the current and expected traffic flow impact of each existing incident.
1.7.2	Incident Management shall provide a response formulation function to formulate appropriate response actions to each identified incident and revise those actions when necessary.
1.7.2.1	The response formulation function shall propose and facilitate the appropriate scheduling of those predicted incidents that can be scheduled to minimize incident potential, incident impacts, and/or the resources required for incident management.
1.7.2.2	The response formulation function shall propose and facilitate the appropriate dispatch of emergency response vehicles to an incident.
1.7.2.3	The response formulation function shall propose and facilitate the appropriate dispatch of service vehicles to an incident.
1.7.2.4	The response formulation function shall propose and facilitate the appropriate dissemination of incident related information to travelers and potential travelers.
1.7.2.5	The response formulation function shall propose and facilitate the appropriate control of traffic signals and other traffic control to reduce the traffic flow impact of an incident.
1.7.3	Incident Management shall include a response implementation function to provide those services needed to implement a coordinated incident response using all appropriate agencies.
1.7.3.1	The response implementation function shall provide at least the following decision support capabilities needed to implement coordinated incident response actions by all participating institutions:
1.7.3.1(a)	Response implementation shall allow coordinated selection/determination of the procedures needed for resolution of each incident and provide the procedures to those agencies responding to the incident.
1.7.3.1(b)	Response implementation shall provide the status of all resources needed for incident resolution to those agencies responding to the incident.
1.7.3.2	The response implementation function shall provide a link between Incident Management and all other user services necessary to implement incident response actions.
1.7.3.3	The response implementation function shall provide the capability to disseminate information relating to response status to other agencies and user services.
1.7.4	Incident Management shall provide the capability to predict the time and location of hazardous conditions that may cause an incident.
1.8	TRAVEL DEMAND MANAGEMENT
1.8.0	Travel Demand Management will generate and communicate management and control strategies that will support and facilitate the implementation of TDM programs, policies and regulations. It consists of two major functions which are (1) Increase Efficiency of Transportation System and (2) Provide Wide Variety of Mobility Options.
1.8.1	TDM shall include a communications function.
1.8.1.1	The communications function shall include the capability to send the information needed to implement management and control strategies that are in response to policies and regulations.
1.8.1.2	The communications function shall include the capability to send information and rates needed to implement management and control strategies that respond to changing environments, conditions, and policy needs to

	include, but not limited to, the following locations of action:
1.8.1.2(a)	Parking facilities.
1.8.1.2(b)	HOV lanes.
1.8.1.2(c)	Transit centers.
1.8.1.2(d)	Employment sites.
1.8.1.2(e)	Toll facilities.
1.8.1.2(f)	Travel (and traveler) information facilities.
1.8.1.2(g)	Ridesharing facilities.
1.8.1.3	TDM shall provide the capability to receive information and rates needed to implement management and control strategies that respond to changing environments, conditions, and policy needs to include, but not limited to, the following locations of action:
1.8.1.3(a)	Parking facilities.
1.8.1.3(b)	HOV lanes.
1.8.1.3(c)	Transit centers.
1.8.1.3(d)	Employment sites.
1.8.1.3(e)	Toll facilities.
1.8.1.3(f)	Travel (and traveler) information facilities.
1.8.1.3(g)	Ridesharing facilities.
1.8.1.4	The communications function shall provide the capability to send information and data is needed to implement management and control strategies that respond to changing environments, conditions, and policy needs to include, but not limited to, the following:
1.8.1.4(a)	Sensor data.
1.8.1.4(b)	Individual vehicle monitoring.
1.8.1.4(c)	Parking availability.
1.8.1.4(d)	Usage data.
1.8.1.5	The communications function shall provide the capability to receive information and data from transportation operators and/or users that delineates their:
1.8.1.5(a)	Current status.
1.8.1.5(b)	Needs.
1.8.1.5(c)	Level of activity.
1.8.1.6	The communications function shall include the capability for two-way communications with other ITS user services including, but not limited to, the following:
1.8.1.6(a)	Pre-Trip Planning.
1.8.1.6(b)	En-Route Transit Advisory.
1.8.1.6(c)	Driver Information.
1.8.1.6(d)	Ride Matching and Reservation.
1.8.1.6(e)	Electronic Payment.
1.8.1.6(f)	Traffic Control.
1.8.2	TDM shall include a processing function.
1.8.2.1	The processing function shall provide the capability to generate management and control strategies that facilitate the implementation of policies and regulations designed to address the following:
1.8.2.1(a)	Vehicle trip reduction.
1.8.2.1(b)	HOV lanes and ramps.
1.8.2.1(c)	Parking management and control.
1.8.2.1(d)	Ridesharing and transit.
1.8.2.1(e)	Air pollution/emission information and detection.
1.8.2.1(f)	Public awareness of travel alternatives.
1.8.2.2	The processing function shall provide those capabilities needed to enhance the ability to implement and enforce the following:
1.8.2.2(a)	Federal policies.
1.8.2.2(b)	State policies.
1.8.2.2(c)	Local Policies.

1.8.2.3	Strategies developed by the processing function shall include the guidance for the operation of physical systems that:
1.8.2.3(a)	Monitor traffic.
1.8.2.3(b)	Inform travelers.
1.8.2.3(c)	Collect fees.
1.8.2.3(d)	Detect traffic.
1.8.2.4	The processing shall provide the capability generate guidance for the pricing and control for locations of action that include, but are not limited to, the following:
1.8.2.4(a)	Parking facilities.
1.8.2.4(b)	HOV lanes.
1.8.2.4(c)	Transit centers.
1.8.2.4(d)	Employment sites.
1.8.2.4(e)	Toll facilities.
1.8.2.4(f)	Travel information facilities.
1.8.2.4(g)	Ridesharing facilities.
1.8.2.5	The processing shall provide the capability to develop strategies for implementation of policies and regulations that will accommodate the following:
1.8.2.5(a)	Public sector users and service providers.
1.8.2.5(b)	Private sector users and service providers.
1.8.2.5(c)	Issues of legality.
1.8.2.5(d)	Privacy act.
1.8.2.5(e)	Multi-jurisdictional settings.
1.8.2.6	The processing function shall provide the capability to generate management and control strategies that dynamically respond to changing environments, conditions, and policies.
1.8.2.7	The processing function's dynamically generated management and control strategies shall include the control of HOV facilities including, but not limited to, the following:
1.8.2.7(a)	Lanes.
1.8.2.7(b)	Ramps.
1.8.2.7(c)	Parking areas.
1.8.2.8	The processing function's generation of management and control strategies for HOV facilities shall include as factors, but not be limited to, the following:
1.8.2.8(a)	Auto occupancy requirements.
1.8.2.8(b)	Priority for selected vehicle types at ramps.
1.8.2.8(c)	Priority for selected vehicle types at signalized intersections.
1.8.2.9	The processing function's dynamically generated management and control strategies shall include those roadway pricings that respond to the need for congestion control to include, but not be limited to, the following:
1.8.2.9(a)	Road user and toll rates.
1.8.2.9(b)	Transit fares adjusted concomitant with tolls.
1.8.2.9(c)	Time of day usage pricing (i.e. off hour rates).
1.8.2.10	The processing function's dynamically generated management and control strategies shall include the parking management and controls to include, but not be limited to, the following:
1.8.2.10(a)	Price structure.
1.8.2.10(b)	Allocation to selected vehicles.
1.8.2.10(c)	Variable message signs.
1.8.2.11	The processing function's dynamically generated management and control strategies for parking management and controls shall be based on factors that include, but are not limited to, the following:
1.8.2.11(a)	Parking availability.
1.8.2.11(b)	Usage data.
1.8.2.12	The processing function's dynamically generated management and control strategies shall include the capability to respond to the need for control of pollution by generating messages for variable signs that include, but are not limited to, the following:
1.8.2.12(a)	Informing of higher tolls.
1.8.2.12(b)	Informing of higher parking fees.
1.8.2.13	The processing function's dynamically generated management and control strategies for air pollution control shall

	be based on factors that include, but are not limited to, the following:
1.8.2.13(a)	Sensor data.
1.8.2.13(b)	Individual vehicle monitoring.
1.8.2.13(c)	Individual vehicles database files.
1.8.2.14	The processing function's dynamically generated management and control strategies shall include the capability to respond to the need for the travelers to change modes by generating messages for variable signs that include, but are not limited to, the following:
1.8.2.14(a)	Where the mode change requests are being made.
1.8.2.14(b)	How the mode changes are requested to be made.
1.8.2.14(c)	Why the mode changes are requested to be made.
1.8.3	TDM shall include a sensors/control function.
1.8.3.1	The sensors/control function shall provide the capability to gather information needed for the generation of management and control strategies to include, but not be limited to the, following:
1.8.3.1(a)	Parking availability.
1.8.3.1(b)	Usage levels.
1.8.3.1(c)	Vehicle occupancy.
1.8.3.1(d)	Vehicle pollution levels.
1.9	EMISSIONS TESTING AND MITIGATION
1.9.0	ITS shall include an Emission Testing and Mitigation (ETAM) Function. The ETAM function will provide state and local governments with the capability to enhance their air quality control strategies. The ETAM will provide both wide area and roadside emissions monitoring. Information gleaned from ETAM will be used by Traffic Demand Management (TDM) in the Traffic Management Center (TMC) to mitigate pollution and may be provided to enforcement agencies to compel offenders to comply with standards.
1.9.1	ETAM shall include a Wide Area Pollution Monitoring (WAPM) capability.
1.9.1.1	WAPM shall support air quality control strategies by assessing the level of emission of ozone precursors in all sectors of the area.
1.9.1.1.1	WAPM shall be capable of detecting the level of emission of ozone precursors with a high degree of accuracy.
1.9.1.1.2	WAPM shall be capable of determining those sectors, within its monitored area, whose emissions exceed the emission standard.
1.9.1.1.3	WAPM shall be capable of automatic self-calibration.
1.9.1.2	WAPM shall be capable of providing air quality statistical data to the TMC.
1.9.1.2.1	WAPM shall be capable of providing the air quality data on the monitored values of pollution.
1.9.1.2.2	WAPM shall be capable of providing the necessary data on emission standards violators for enforcement of air quality standards.
1.9.2	ETAM shall include roadside pollution assessment (RPA) capabilities.
1.9.2.1	RPA shall be capable of detecting the level of emission of ozone precursors with a high degree of accuracy.
1.9.2.1.1	RPA shall be capable of detecting moving vehicles, within its monitored area, whose emissions violate the emission standard.
1.9.2.1.2	RPA shall be capable of automatic self-calibration.
1.9.2.1.3	RPA shall be capable of reading suitable equipped vehicle's diagnostic data to determine that vehicle's operational
1.9.2.1.4	RPA shall be capable of determining suspected vehicle's registration data either by license plate or via automatic vehicle identification.
1.9.2.1.5	RPA shall be capable of determining which suspected vehicles are not in compliance with emission standards for that vehicle from the vehicle's registration data.
1.9.2.2	RPA shall be capable of providing air quality statistical data to the TMC.
1.9.2.2.1	RPA shall be capable of providing the air quality data on the monitored values of pollution.
1.9.2.2.2	RPA shall be capable of providing the necessary data to alert non-complaint vehicle drivers of their violation via roadside message signs or in-vehicle devices.
1.9.2.2.3	RPA shall be capable of providing the necessary data on violating vehicles for enforcement of air quality standards.
1.10	Highway-Rail Intersection
1.10.0	Highway-Rail Intersection. ITS shall include a Highway-Rail Intersection (HRI) function to control highway and rail traffic in at-grade HRIs. Two sub-services are supported: Standard Speed Rail Subservice which is applicable to light rail transit, commuter rail and heavy rail trains with operational speeds up to 79 miles per hour (MPH); and High Speed Rail Subservice which is applicable to all passenger and freight trains with operational speeds from 80

Appendix A: User Service Requirements

1.10.1	The Highway-Rail Intersection (HRI) shall be applicable to operational, at-grade highway-rail intersections with train operational speeds up to 125 MPH.
1.10.1.1	HRI users shall include light rail transit and rapid rail transit approaching and crossing HRIs.
1.10.1.2	HRI users shall include commuter rail trains approaching and crossing HRIs.
1.10.1.3	HRI users shall include freight and intercity passenger trains approaching and crossing HRIs.
1.10.1.4	HRI users shall include highway vehicles approaching and crossing HRIs.
1.10.1.5	HRI users shall include motor vehicle operators, bicyclists and pedestrians approaching and crossing HRIs.
1.10.1.6	HRI users shall include train crews operating rail traffic while approaching and crossing HRIs.
1.10.1.7	HRI users shall include rail maintenance and inspection vehicles approaching and crossing HRIs.
1.10.2	HRI shall provide interfaces between highway and rail management functions.
1.10.2.1	HRI shall provide information management interfaces between highway and rail to coordinate traffic, demand and schedules.
1.10.2.1.1	HRI shall be capable of acquiring current train schedules from rail operations functions, and shall determine projected HRI closure times and duration.
1.10.2.1.2	HRI shall be capable of interacting with traffic management functions.
1.10.2.1.3	HRI shall provide closure data to traffic management for in-vehicle traveler advisory messages.
1.10.2.2	HRI shall provide the capability for interactive real-time interfaces.
1.10.2.2.1	HRI shall provide the capability to interface with rail operations functions for rail traffic control information.
1.10.2.2.2	HRI shall provide the capability to interface with traffic management functions for highway traffic coordination.
1.10.2.2.3	HRI shall provide the capability interface with trains approaching and crossing the HRI for traffic coordination.
1.10.2.2.4	HRI shall provide the capability interface with highway vehicles approaching and crossing HRIs for traffic control information.
1.10.3	At all HRIs with active railroad warning systems, HRI shall manage the traffic in the intersection.
1.10.3.1	HRI shall be capable of augmenting the intersection with standard highway traffic signal devices.
1.10.3.2	HRI shall include an automated collision avoidance function for highway vehicles approaching HRIs.
1.10.3.3	HRI shall provide an Intelligent Intersection Controller (IIC) function to manage highway and rail traffic in the intersection.
1.10.3.3.1	IIC shall control active highway traffic signal devices at HRIs to manage highway traffic.
1.10.3.3.2	IIC function shall control active railway warning devices, including flashing lights and physical barriers for highway and walkway lanes at HRIs.
1.10.3.3.3	IIC function shall provide an intersection surveillance system to derive the real-time status of traffic in the
1.10.3.3.4	IIC function shall report real-time HRI equipment status.
1.10.3.3.5	IIC function shall report real-time HRI traffic status as advisories or alerts.
1.10.4	HRI shall include a Standard Speed Rail (SSR) Subservice to manage highway and rail traffic at HRIs for rail lines with operational speeds less than 80 MPH.
1.10.4.1	SSR shall include active railroad warning systems at designated HRIs.
1.10.4.2	SSR shall include passive HRIs with non-active warning systems.
1.10.4.2.1	SSR shall augment passive warning signs with additional highway traffic control devices at passive HRIs.
1.10.5	HRI shall provide a High Speed Rail (HSR) Subservice for HRIs on rail lines with operational speeds between 80 and 125 MPH.
1.10.5.1	HSR shall include active roadside message devices to provide highway closure information at HSR HRIs.
1.10.5.2	HSR shall provide special safety features to enhance safety.
1.10.5.2.1	HSR shall close the HRI to highway traffic at a predetermined time (up to three minutes) before train arrival or when directed by train operations.
1.10.5.2.2	HSR shall include a positive barrier function(e.g. four quadrant gates) to close the intersection to highway traffic for rail lines operating at speeds over 110 MPH.
1.10.5.2.3	HSR HRIs shall verify the intersections status as either "OPEN" or "BLOCKED" for rail traffic by an immobile obstacle.
1.10.5.2.4	HSR shall provide HRI status to rail operations functions as either a "PROCEED": or "STOP" indication.
1.10.5.2.5	HSR shall provide HRI status to the train as either a "PROCEED": or "STOP" indication.
1.10.5.2.6	HSR shall provide HRI status to highway vehicles as either a "STOP FOR TRAIN" or "PROCEED" indication.
1.10.6	At HRIs with active railroad warning systems, HRI shall provide the capability for automatic collision notification to rail operations and traffic management.
2.0	PUBLIC TRANSPORTATION MANAGEMENT

Appendix A: User Service Requirements

2.1	PUBLIC TRANSPORTATION MANAGEMENT
2.1.0	ITS shall include a Public Transportation Management (PTM) function.
2.1.1	PTM shall include an Operation of Vehicles and Facilities (OVF) function that provides computer assisted control of the operation of vehicles and their associated facilities.
2.1.1.1	To enable the automation of the vehicle and facilities operations OVF shall provide the capability to gather the needed data to include, but not be limited to, the following:
2.1.1.1(a)	Vehicle passenger loading by bus stop and trip segment.
2.1.1.1(b)	Bus running times between time points.
2.1.1.1(c)	Fare collection by fare category.
2.1.1.1(d)	Drive-line operating condition.
2.1.1.1(e)	Mileage accumulated by individual buses.
2.1.1.1(f)	Real-time vehicle location reports.
2.1.1.2	OVF shall include a Command and Control (CC) capability.
2.1.1.2.1	CC shall provide the capability for real-time Vehicle Command and Control (VCC).
2.1.1.2.1.1	VCC shall provide the capability to compare received information with predetermined operating condition specifications and note any deviations.
2.1.1.2.1.2	VCC shall provide the capability to transmit noted deviations to central control.
2.1.1.2.1.3	VCC shall provide the capability to display any noted deviations.
2.1.1.2.1.4	VCC shall provide the capability to automatically issue corrective Instructions to the driver including, but not limited to, the following
2.1.1.2.1.4(a)	Route corrections.
2.1.1.2.1.4(b)	Changes in stops.
2.1.1.2.2	When CC detects a vehicle(s) has deviated from schedule it shall provide the capability to automatically determine the optimum scenario for returning the vehicle or fleet to schedule.
2.1.1.2.3	CC shall include an integrated traffic control capability that provides traffic signal preemption when required for schedule adjustment to Transit Vehicles at traffic signals (i.e., centralized or distributed).
2.1.1.2.4	CC shall include the capability for its computational capabilities to be located either on-vehicle and/or at remote locations.
2.1.2	PTM shall include a Planning and Scheduling Services (PSS) function to automate the planning and scheduling of public transit operations.
2.1.2.1	The PSS shall include a Planning capability.
2.1.2.1.1	PSS Planning shall be performed off-line from stored data that were collected in real-time.
2.1.2.1.2	PSS Planning shall include processing of the data in a manner that will permit improvements in routes and services.
2.1.2.2	The PSS shall include a Schedule Generation capability.
2.1.2.2.1	The PSS Schedule Generation function shall collect that data needed for schedule generation including, but not limited to, the following:
2.1.2.2.1(a)	Route segment running-time.
2.1.2.2.1(b)	Passenger loading at each stop.
2.1.2.2.1(c)	Revenue information.
2.1.2.2.2	The PSS Schedule Generation function shall use the collected data in the automatic or semiautomatic development of transportation system schedules.
2.1.2.2.3	The PSS Schedule Generation function shall provide the capability to print schedules.
2.1.2.2.4	The PSS Schedule Generation function shall provide the capability to disseminate schedules to, but not be limited to, the following:
2.1.2.2.4(a)	Kiosks.
2.1.2.2.4(b)	Transportation Management Centers.
2.1.2.2.5	The PSS Schedule Generation function shall provide the capability to automatically update the customer service operator system with the most current schedule and schedule adherence information.
2.1.3	PTM shall include a Personnel Management (PM) function to facilitate the management of both driver and maintenance personnel.
2.1.3.1	PM shall include a Maintenance Personnel Management (MPM) function.
2.1.3.1.1	MPM shall automatically track vehicle miles on each bus in real-time.
2.1.3.1.2	MPM shall use bus mileage data to automatically generate preventative maintenance schedules for each specific bus.

2.1.3.1.3	MPM shall automatically ensure that proper service personnel are provided information for bus maintenance activities.
2.1.3.1.4	MPM shall automatically assign service technicians by skill level to work on individual buses.
2.1.3.1.5	MPM shall provide the capability to record and verify that maintenance work was performed.
2.1.3.2	PM shall include a Driver Personnel Management (DPM) function.
2.1.3.2.1	DPM shall automatically generate assignments of individual drivers to route, runs and individual vehicles.
2.1.3.2.2	DPM shall assign drivers to routes and runs in a fair manner while minimizing labor and overtime costs.
2.1.3.2.3	In generating fair driver assignments DPM shall include factors relating to drivers preferences and qualifications to include, but not be limited to, the following:
2.1.3.2.3(a)	Seniority.
2.1.3.2.3(b)	Driver schedule preference.
2.1.3.2.3(c)	Garage assignment.
2.1.3.2.3(d)	Vehicle qualification.
2.1.3.2.4	DPM shall automatically track and validate the number of work hours performed by each individual driver.
2.1.4	PTM shall include a Communications function.
2.1.4.1	PTM Communications shall provide the capability to establish two-way voice communication between in vehicle drivers and the central facility.
2.1.4.2	PTM Communications shall provide the capability for two-way data communications between individual buses and the control facility (e.g., sensor data and bus position).
2.1.4.3	OVF Communications shall provide the capability to send information from individual facilities to a central facility for processing and analysis.
2.1.4.4	As support for responding to the detection of an on-board emergency, the OVF Communications shall provide dispatchers with the capability to inform the following:
2.1.4.4(a)	Police.
2.1.4.4(b)	Fire department.
2.1.4.4(c)	Paramedic.
2.1.4.4(d)	Driver (initiation of silent alarm notification).
2.1.4.5	PTM shall use an open vehicle communication network standard for all on-board electronic equipment.
2.2	EN-ROUTE TRANSIT INFORMATION
2.2.0	ITS shall include an En-Route Transit Information (TI) function. En-Route Transit Information provides travelers with real-time transit and high-occupancy vehicle information allowing travel alternatives to be chosen once the traveler is en-route. It consists of three major functions which are (1) Information Distribution, (2) Information Receipt, and (3) Information Processing. This capability integrates information from different transit modes and presents it to travelers for decision making.
2.2.1	TI shall include an information distribution function that disseminates information to travelers.
2.2.1.1	Information Distribution shall include an information network capability.
2.2.1.1.1	The Information Network shall provide the capability to furnish users with real-time travel related information while they are traveling.
2.2.1.1.2	The Information Network shall provide the capability to disseminate information to travelers that will assist them in making decisions about transfers.
2.2.1.1.3	The Information Network shall provide the capability to disseminate information to travelers that will assist them in making decisions in the modification (includes both intermode and intramode) of their trips.
2.2.1.1.4	The Information Network shall provide all users with information that is from a single source in order to ensure consistency across all users.
2.2.1.2	Information Distribution shall include a User Interface feature.
2.2.1.2.1	User Interface shall provide the capability for users to access travel related information at fixed locations.
2.2.1.2.1.1	Fixed Location user interfaces shall be provided at transit stops.
2.2.1.2.1.1.1	Transit stop user interfaces shall have interactive visual displays.
2.2.1.2.1.1.2	Transit stop user interfaces shall provide audio messages containing the following:
2.2.1.2.1.1.2(a)	Notification of imminent transit arrival.
2.2.1.2.1.1.2(b)	Identification of route of arriving transit vehicles.
2.2.1.2.1.1.3	Transit stop user interfaces shall provide the capability to provide information to individuals who are physically impaired.
2.2.1.2.1.2	Fixed Location user interface shall provide interactive video (e.g., cable TV) interfaces in kiosks at the following:
2.2.1.2.1.2(a)	Travel information centers.

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2.2.1.2.1.2(b)	Transfer points.
2.2.1.2.1.2(c)	Wayside stops.
2.2.1.2.1.3	Fixed Location user interface shall provide the capability to utilize local ATM networks to provide travel information to users.
2.2.1.2.2	User Interface shall provide the capability for users to access travel related information at mobile locations.
2.2.1.2.2.1	Mobile Location user interfaces shall provide the capability for users, either one passenger at a time or to a group environment, to access travel related information while on board transit vehicles.
2.2.1.2.2.2	Mobile user interfaces shall provide the capability for users to access travel related information while in transit vehicles through the use of variable message signs.
2.2.1.2.2.3	Mobile user interfaces shall provide the capability for users to access travel related information via personal portable devices.
2.2.1.2.2.4	Mobile user interfaces shall include the capability to provide audible messages to the on-board users.
2.2.2	TI shall include an Information Receipt function for acquiring that data that are used for generation of the En-Route Transit Information.
2.2.2.1	Information Receipt shall provide the capability to be continuously updated with real-time information from each transit system within the local area of jurisdiction.
2.2.2.2	Information Receipt shall provide the capability to be updated with information that is inclusive of all possible transportation modes within the local area of jurisdiction.
2.2.2.3	Information Receipt shall provide the capability to be updated with information from all providers of transportation services in the local area of jurisdiction to include:
2.2.2.3(a)	Regional Paratransit services.
2.2.2.3(b)	Public providers.
2.2.2.3(c)	Private providers.
2.2.3	TI shall include an Information Processing function for processing that data used for generation of the En-Route Transit Information.
2.2.3.1	Information Processing shall include an information collection feature.
2.2.3.1.1	Information Collection shall acquire transit operations information to include, but not be limited to, the following type:
2.2.3.1.1(a)	Schedule.
2.2.3.1.1(b)	Actual service provided.
2.2.3.1.1(c)	Next available vehicle; based on actual operating conditions.
2.2.3.1.1(d)	Transfer options describing available services and their associate schedules.
2.2.3.1.2	Information Collection shall acquire transit situation conditions to include, but not be limited to, the following type:
2.2.3.1.2(a)	Actual road data.
2.2.3.1.2(b)	Traffic data.
2.2.3.2	Information Processing shall include an information integration feature.
2.2.3.2.1	Information Integration shall collect data, store it and maintain it on-line.
2.2.3.2.2	Information Integration shall collect data from traffic and transit systems including, but not limited to, the
2.2.3.2.2(a)	Transit systems.
2.2.3.2.2(b)	Traffic management services.
2.2.3.2.2(c)	Rideshare programs.
2.3	PERSONALIZED PUBLIC TRANSIT
2.3.0	ITS shall include a Personalized Public Transit (PPT) function.
2.3.1	The PPT shall include a Rider Request function.
2.3.1.1	Rider Request shall provide the capability for an individual rider to request a trip by specifying the trip origin and destination, time and date.
2.3.1.2	Rider Request shall provide the capability for an individual to specify a rider's special equipment or handling requirements.
2.3.1.3	Rider Request shall provide the capability to notify a requester of the fact that a trip assignment has been made including the time at which the vehicle is expected at the point of departure.
2.3.1.4	Rider Request shall include the capability to notify the requester that the transit vehicle's arrival is imminent.
2.3.2	The PPT shall include a Vehicle Assignment function.
2.3.2.1	Vehicle Assignment shall utilize vehicle availability, special requirements and rides requested information to determine vehicle assignments and routing.

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2.3.2.2	For Random Route operations Vehicle Assignment shall assign trip origin and destination.
2.3.2.3	For Flexibly Routed operations Vehicle Assignment shall control how fixed route buses are detoured.
2.3.2.4	For reservation based random-route operations Vehicle Assignment shall provide the capability to plan routes that optimize vehicle schedules while considering passenger's needs.
2.3.2.5	Vehicle Assignment shall provide the capability to select the best match between the rider's needs and the available vehicles.
2.3.2.6	Vehicle Assignment shall provide services to both publicly owned and privately owned, publicly licensed vehicles.
2.3.2.7	In order to service travelers in low-demand time (e.g., night time and weekends) Vehicle Assignment shall provide services 24 hours per day, 7 days per week.
2.3.2.8	Vehicle Assignment shall assign vehicle routes within 4 blocks of rider's trip origin point.
2.3.2.9	Vehicle Assignment shall be a real-time system.
2.3.2.10	Vehicle Assignment shall provide the capability to accommodate immediate trip requests when enough capacity is available for the added rider pickup and delivery.
2.3.3	The PPT shall include a Data Collection function.
2.3.3.1	Data Collection shall include on-board sensors to monitor, but not be limited to, the following:
2.3.3.1(a)	Vehicle location.
2.3.3.1(b)	Passenger loading.
2.3.3.1(c)	Fare collection.
2.3.3.2	Data Collection shall process and store collected data so that it is available for:
2.3.3.2(a)	Real-time schedule adjustments.
2.3.3.2(b)	Off-line analysis and planning.
2.3.3.3	Data Collection shall support the off-line billing for fares paid by agencies.
2.3.4	The PPT shall include an Information Processing function.
2.3.4.1	PPT shall be implemented such that Information Processing may be located either centrally or distributed.
2.3.4.2	Information Processing shall use information to attempt to minimize the amount of time each passenger must ride.
2.3.4.3	Information Processing shall provide the capability to automate the assignment of drivers to vehicles.
2.3.5	The PPT shall include a Communications function.
2.3.5.1	The Communications function shall provide the capability link all PPT service into a single entity.
2.3.5.2	The Communications function shall provide a two-way communications capability between vehicles and a central base for:
2.3.5.2(a)	Voice communications.
2.3.5.2(b)	Data communications.
2.3.5.3	The Communications function shall provide the capability for sensor data (either raw or processed) to be transmitted from vehicles to a central headquarters or dispatch station.
2.3.5.4	The Communications function shall provide the capability for data to be transferred between dispersed points and central base including:
2.3.5.4(a)	Data from vehicles.
2.3.5.4(b)	Data from locations where passengers are located.
2.4	PUBLIC TRAVEL SECURITY
2.4.0	ITS shall include a Public Travel Security (PTS) function to create an environment of safety in public
2.4.1	PTS shall include specific Secure Areas.
2.4.1.1	The Secure Areas shall encompass all physical areas related to public transit travel including the following:
2.4.1.1(a)	Bus stop areas.
2.4.1.1(b)	Park and Ride areas.
2.4.1.1(c)	Riding on transit vehicles.
2.4.1.1(d)	Kiosks.
2.4.1.1(e)	Transit transfer locations.
2.4.1.2	All Secure Areas shall have traveler activated alarms.
2.4.1.3	There shall be included silently activated alarms on board public transit vehicles which are capable of activation by the driver.
2.4.2	PTS shall include a Security Sensors (SS) function.
2.4.2.1	SS shall provide that sensor technology required to alert operators and police of potential incidents.

2.4.2.2	SS shall include both video and audio systems at key locations to monitor activities.
2.4.3	PTS shall include a Personal Sensors Items (PSI) function.
2.4.3.1	PSI for ridematching shall include the capability for participants to be identified.
2.4.3.2	PSI shall provide the capability for riders to use electronic payment to eliminate the need for passengers to carry cash and to reduce cash handling.
2.4.4	PTS shall include a Security Management and Control (SMC) function.
2.4.4.1	SMC shall provide the capability to receive alarm information through electronic communication systems.
2.4.4.2	SMC shall include that monitoring equipment needed to assist in responding to terrorist incidents.
2.4.4.3	SMC shall include the capability for transit operators to direct and control fleet operations in a manner that supports law enforcement and emergency response agencies with flexible and responsive transportation for large numbers of people.
2.4.4.4	SMC shall include the capability to generate coordinated preplanned responses for incidents.
2.4.4.5	SMC shall include the capability to support coordinated multiple agency responses to incidents.
3.0	ELECTRONIC PAYMENT
3.1	ELECTRONIC PAYMENT SERVICES
3.1.0	ITS shall include an Electronic Payment capability. Electronic Payment Services allows travelers to pay for transportation services by electronic means. Four functions are provided which are (1) Electronic Toll Collection, (2) Electronic Fare Collection, (3) Electronic Parking Payment, and (4) Electronic Payment Services Integration.
3.1.1	Electronic Payment shall provide an Electronic Toll Collection (ETC) capability.
3.1.1.1	ETC shall provide the capability for vehicle operators to pay toll without stopping their vehicles.
3.1.1.2	ETC shall provide the capability to implement pricing structures for locally determined needs.
3.1.1.3	ETC shall provide confirmation of the transaction to each customer.
3.1.1.4	ETC shall include the capability to identify those vehicles and/or operators that violate its toll collection process.
3.1.1.5	ETC shall accommodate single billing to commercial carriers.
3.1.1.6	ETC shall provide the capability to automatically access and process each commercial vehicle's required documentation.
3.1.1.7	ETC shall be implemented in a manner that reduces the cost of toll collection.
3.1.1.8	ETC shall be implemented in a manner that seeks to minimize the opportunities for fraud.
3.1.2	Electronic Payment shall include an Electronic Fare Collection (EFC) capability.
3.1.2.1	EFC shall be implemented in a manner that the traveler is able to use a compatible fare medium for all applicable surface transportation services.
3.1.2.2	EFC shall provide the capability to implement variable and flexible fare structures.
3.1.2.3	EFC shall be capable of identifying voided and/or invalid payment media.
3.1.2.4	EFC shall provide the capability for third party payment of transportation services.
3.1.2.5	For those systems requiring special eligibility, EFC shall provide the capability to verify the eligibility of riders.
3.1.2.6	EFC shall be implemented in a manner that permits expansion into other uses for the payment medium such as payment of retail, telephone, etc.
3.1.2.7	EFC shall include the capability to collect that data that are required to determine accurate ridership levels.
3.1.2.8	EFC shall provide the capability for passengers to pay fares without stopping.
3.1.3	Electronic Payment shall include an Electronic Parking Payment (EPP) capability.
3.1.3.1	EPP shall provide the capability to pay for parking without the use of cash.
3.1.3.2	EPP shall include the capability for transit operators to utilize a single medium to charge for both transit related charges and parking charges.
3.1.3.3	EPP shall provide the capability to provide flexible pricing parking fee structures based upon factors including, but not limited to, vehicle classification.
3.1.4	ITS shall include an Electronic Payment Services Integration (EPSI) feature.
3.1.4.1	EPSI shall provide the capability to combine electronic payments made for use of various transportation modes into a single integrated system.
3.1.4.2	EPSI shall provide the capability to integrate fare and toll pricing structures of multiple agencies.
3.1.4.3	EPSI shall collect and provide that usage data needed to develop pricing strategies that favor certain transportation modes or routes.
3.1.4.4	EPSI shall be implemented in a manner that ensures that it may be deployed across multiple agency political boundaries without degrading the services it provides.
3.1.5	ITS shall provide a Roadway Pricing (RP) capability.
3.1.5.1	RP shall provide the capability to implement various road pricing policies.

3.1.5.1.1	Road pricing policies capable of being implemented by RP shall include variable pricing.
3.1.5.2	RP shall provide the capability to implement roadway pricing strategies, developed by other services, that alleviate congestion.
3.1.5.3	RP shall provide the capability to implement roadway pricing, developed by other services, that can be used to influence mode selection.
4.0	COMMERCIAL VEHICLE OPERATIONS
4.1	COMMERCIAL VEHICLE ELECTRONIC CLEARANCE
4.1.0	ITS shall include a Commercial Vehicle Electronic Clearance (CVEC) capability.
4.1.1	CVEC shall include a Fixed Facility consisting of those structures and equipment to include Ports Of Entry, Inspection Stations, Weigh Stations and Toll Booths.
4.1.1.1	Fixed Facility shall provide the capability for states participation in the CVEC program to be voluntary.
4.1.1.2	Fixed Facility shall provide the capability to support the enrollment of vehicles/carriers in the CVEC program.
4.1.1.3	Fixed Facility shall provide the capability to accommodate both interstate and intrastate vehicles/carriers.
4.1.1.4	Fixed Facility shall include that processing needed to issue pull-in for safety inspection signals of the following type:
4.1.1.4(a)	Automatically generated from Pass/Need To Stop tests.
4.1.1.4(b)	Randomly generated.
4.1.1.4(c)	Manually generated.
4.1.1.5	Fixed Facility shall provide the facility operator the capability to manually override the issuance of automatically and randomly generated Pull-In requests.
4.1.1.6	When making the "Pass/Need To Stop" determination the FixedFacility shall perform checks on the following:
4.1.1.6(a)	Vehicle/Carrier Safety Information.
4.1.1.6(b)	Vehicle Credentials.
4.1.1.6(c)	Driver Credentials/Status.
4.1.1.6(d)	Vehicle Weight Information.
4.1.1.6(e)	Tax Payment Account.
4.1.1.7	Fixed Facility shall provide the capability to establish two-way communications with each vehicle approaching the facility.
4.1.1.8	Fixed Facility shall include the capability to access and quickly update information on vehicle problems that are detected.
4.1.2	CVEC shall include a Vehicle System capability
4.1.2.1	Vehicle System shall provide the capability to accommodate both interstate and intrastate carriers.
4.1.2.2	Vehicle System shall provide the capability for each vehicle to establish two-way communications with fixed facilities.
4.2	AUTOMATED ROADSIDE SAFETY INSPECTION
4.2.0	Vehicle System shall provide the capability for each individual vehicle's or carrier's participation in the process to be on a voluntary basis.
4.2.1	ITS shall include an Automated Roadside Safety Inspection (ARSI) capability.
4.2.2	The ARSI capability shall include a Roadside Facility (RF) function that improves the ability to perform safety inspection through the use of automation.
4.2.2.1	RF shall provide a processing capability that automates the roadside inspection tasks.
4.2.2.2	RF shall include the capability to perform brake inspections at the roadside.
4.2.2.3	RF shall include the capability for operators to use hand held devices to rapidly inspect vehicle and driver components that produce the following:
4.2.2.3(a)	Pass/Fail results.
4.2.2.3(b)	Data on actual condition.
4.2.2.3(c)	Data on expected life projections.
4.2.2.4	RF shall collect, store, maintain and provide real-time on-line interactive access to historical safety data at the roadside facility.
4.2.2.5	RF shall provide the capability to continuously update information flags for the following:
4.2.2.5(a)	Office of Motor Carriers (OMC) carrier ratings.
4.2.2.5(b)	Vehicle/driver inspection and maintenance data.
4.2.2.5(c)	Verification of repairs and out-of-service records.
4.2.2.5(d)	Driver status (including licensing and citations).
4.2.2.6	RF shall provide the capability to automatically identify to the enforcement personnel approaching vehicles that

	have been flagged as potentially needing maintenance or put out of service.
4.2.2.7	RF shall provide the capability to receive identification data from each vehicle that is stopped at the inspection station that enables the access and receipt at the roadside of historical safety records to include the following:
4.2.2.7(a)	Carrier.
4.2.2.7(b)	Vehicle.
4.2.2.7(c)	Driver.
4.2.2.7(d)	Cargo.
4.2.3	The ARSI capability shall include a Vehicle System (VS) function.
4.2.3.1	VS shall provide a processing capability that automates the roadside inspection tasks.
4.2.3.2	The VS architecture shall provide the capability to be developed and integrated as a phased implementation.
4.2.3.3	The VS shall include those sensors needed to efficiently check vehicle systems and driver condition.
4.2.3.4	The VS shall include the capability for continuous updates to vehicle safety records or an "electronic decal/record on the vehicle.
4.2.3.5	The VS shall include an on-board safety status monitoring system that is accessible from the roadside.
4.2.3.6	The VS shall provide an initial automated inspection capability that will expedite and supplement the existing visual and manual inspection processes.
4.2.3.7	The VS shall provide a two-way Communications capability that facilitates the roadside inspection tasks.
4.3	ON-BOARD SAFETY MONITORING
4.3.0	ITS shall include an On-Board Safety Monitoring (OBSM) function, that provides monitoring and warnings of safety problems. Of primary importance is to inform the driver, as soon as possible, of any problem that has been detected. Of secondary importance is notifying the carrier of detected safety problems. Last in importance is the notification of appropriate enforcement agencies. Requirements for On-Board Safety Monitoring are given below:
4.3.1	OBSM shall include a Fixed Facility (FF) capability for the analysis and control of safety information.
4.3.1.1	The FF shall provide the capability to analyze data received from each vehicle approaching and determine the identification of:
4.3.1.1(a)	Vehicle.
4.3.1.1(b)	Driver.
4.3.1.2	The FF shall provide the capability to provide warnings of any safety problem that has been identified.
4.3.1.3	The FF shall provide capability to log the passing of each vehicle and the associated results from the decision of whether to request the vehicle to pull in or continue without stopping.
4.3.1.4	The FF shall provide the capability to automatically make a decision as to whether to allow each vehicle to pass or require them to stop for a check.
4.3.1.5	The FF shall provide the capability for enforcement officials to manually override the automatically generated decision for vehicles to pull-in for safety inspection.
4.3.1.6	The FF shall provide the capability to perform pre-trip and post-trip inspections of each vehicle.
4.3.1.7	The FF shall provide the capability to have two-way data exchange between the Roadside facility and each vehicle.
4.3.2	OBSM shall include a Vehicle System (VS) that is a part of each vehicle.
4.3.2.1	The VS shall provide the capability to collect and process that information required to supply those roadside facilities being encountered at mainline speeds with each vehicle's safety status to include the following:
4.3.2.1(a)	Vehicle safety status.
4.3.2.1(b)	Cargo safety status.
4.3.2.1(c)	Driver safety status.
4.3.2.1(d)	Vehicle Identification.
4.3.2.1(e)	Driver Identification.
4.3.2.2	The VS shall provide the capability to alert the vehicle driver whenever there is a critical safety problem or potential emergency.
4.3.2.3	The VS shall provide the capability to have two-way data exchange between each Roadside facility encountered and the vehicle.
4.4	COMMERCIAL VEHICLE ADMINISTRATIVE PROCESSES
4.4.0	VHS shall include a Commercial Vehicle Administrative Process (CVAP) function consisting of 3 subservices to include Electronic Purchase Of Credentials, Automated Mileage and Fuel Reporting and Auditing, and International Border Electronic Clearance.
4.4.1	CVAP shall include an Electronic Purchase Of Credentials (EPC) function with capabilities that include but are not limited to the following:

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4.4.1(a)	Annual Electronic Credentials.
4.4.1(b)	Temporary Electronic Credentials.
4.4.1(c)	Order Forms Computer Input Screens.
4.4.1(d)	Multiple Permits.
4.4.1(e)	Specific Situation Permits.
4.4.1(f)	Electronic Payment.
4.4.1(g)	Automated Processing of Applications.
4.4.2	CVAP shall include an Automated Mileage and Fuel Reporting and Auditing (AMFPA) function that includes but is not limited to the following:
4.4.2(a)	Quarterly Reports Submission.
4.4.2(b)	Electronic Vehicle Log.
4.4.2(c)	Fuel Purchase Data.
4.4.2(d)	Create And Audit Tax Reports.
4.4.3	CVAP shall include an International Border Electronic Clearance (IBEC) function.
4.4.3.1	IBEC provides the capability to Electronically clear for vehicles crossing international borders with those countries adjacent to the United States. IBEC shall provide the capability to clear the following:
4.4.3.1(a)	Driver Clearance.
4.4.3.1(b)	Cargo Clearance.
4.4.3.1(c)	Vehicle.
4.4.3.2	IBEC shall have an Electronic Records function that enables certification of border crossing shipment with the verification capabilities to include but not be limited to the following:
4.4.3.2(a)	Verify driver identity.
4.4.3.2(b)	Verify shipper.
4.4.3.2(c)	Verify Nature of cargo.
4.4.3.2(d)	Verify Carrier safety.
4.4.3.2(e)	Verify credential records.
4.4.3.2(f)	Verify Duties Paid.
4.4.3.2(g)	Verify Vehicle Identity.
4.4.3.2(h)	Verify Vehicle Weight.
4.5	HAZARDOUS MATERIAL INCIDENT RESPONSE
4.5.0	ITS shall include an hazardous Materials (HAZMAT) Incident Response (HIR) service.
4.5.1	HIR shall include a HAZMAT Incident Notification (HIN) function.
4.5.1.1	HIN shall include the capability to provide enforcement and HAZMAT response teams with timely and accurate information on cargo contents when the vehicle is involved in an incident.
4.5.1.2	HIN shall be capable of providing the following Information :
4.5.1.2(a)	Time of incident.
4.5.1.2(b)	Location of the incident.
4.5.1.2(c)	The material(s) involved.
4.5.2	HIR shall provide an Operation Focal Point (OFP) for initiating appropriate responses.
4.5.2.1	OFP shall be capable of being implemented as either a centralized dispatch or several de-centralized dispatch units or vehicles.
4.5.2.2	OFP shall provide the capability for existing dispatch centers to receive the calls, determine response requirements, and route distress calls to predesignated responding agencies.
4.5.2.3	OFP shall provide the capability for operators to coordinate with other agencies and response services to include, but not be limited to, the following:
4.5.2.3(a)	State and/or local transportation officials.
4.5.2.3(b)	Police departments.
4.5.2.3(c)	Highway patrol.
4.5.2.3(e)	Emergency medical services.
4.5.2.3(f)	Environmental protection agencies.
4.5.2.3(g)	HAZMAT teams.
4.5.2.3(h)	Towing and other "courtesy" services.

4.5.3	HIR shall include a Communications (COMM) function.
4.5.3.1	COMM shall provide the capability for distress signals to be sent to a focal point.
4.5.3.2	COMM shall provide the capability for relay of distress information to response units in real-time.
4.5.3.3	COMM shall provide the capability for data to be sent from any location covering all areas of the contiguous United States.
4.5.3.4	COMM shall provide the capability for linkages/interfaces with various existing networks.
4.5.3.5	COMM shall provide the capability for the motorist to travel from region to region without performing manual adjustment of equipment.
4.6	COMMERCIAL FLEET MANAGEMENT
4.6.0	ITS shall include a Commercial Fleet Management (CFM) function.
4.6.1	CFM shall include the capability for users to provide commercial drivers and dispatchers with real-time routing information in response to congestion or incidents.
4.6.2	CFM shall provide the capability for real-time communication between the following:
4.6.2(a)	Vehicle Drivers.
4.6.2(b)	Dispatchers.
4.6.2(c)	Intermodal Transportation Providers.
5.0	EMERGENCY MANAGEMENT
5.1	EMERGENCY NOTIFICATION AND PERSONAL SECURITY
5.1.0	ITS shall include an Emergency Notification And Personal Security (ENPS) function that provides for the faster notification of travelers involved in an incident.
5.1.1	ENPS shall include a Driver and Personal Security (DPS) function.
5.1.1.1	DPS shall include an in-vehicle manually initiated distress signal capability to provide a first-alert that incident has occurred to include the following:
5.1.1.1(a)	Medical services required.
5.1.1.1(b)	Minor property damage only crashes.
5.1.1.1(c)	Breakdowns.
5.1.1.1(d)	Vehicle location.
5.1.1.1(e)	Vehicle identification.
5.1.1.2	DPS shall include the capability to cancel a prior issued manual request for help.
5.1.1.3	DPS shall include the capability to send an acknowledge signal to the motorist to indicate that the signal was received and help is on the way.
5.1.1.4	DPS shall include the capability for in-vehicle sensors to automatically detect vehicle problems, and for certain cases automatically send the appropriate distress signal.
5.1.2	ENPS shall include an Automated Collision Notification (ACN) function.
5.1.2.1	ACN shall provide the capability to automatically identify that a collision has occurred.
5.1.2.1.1	The ACN automatic collision notification function shall provide the capability to instantly transmit information about the occurrence of a collision.
5.1.2.1.2	The ACN crash sensors shall include the capability to provide information about the extent of crash damage.
5.1.2.2	When sending notification of a collision ACN shall send pertinent information about the collision including the following:
5.1.2.2(a)	That vehicle has been in a collision.
5.1.2.2(b)	Accurate vehicle location.
5.1.2.2(c)	Severity of collision and/or injuries.
5.2	EMERGENCY VEHICLE MANAGEMENT
5.2.0	ITS shall include an Emergency Vehicle Management (EVM) Service.
5.2.1	Emergency Vehicle Management Service shall be provided by an Emergency Vehicle Fleet Management System.
5.2.1.1	Emergency Vehicle Fleet Management System shall maintain the availability status of relevant emergency vehicles.
5.2.1.2	Emergency Vehicle Fleet Management System shall determine the emergency response vehicles best suited to respond to an incident.
5.2.1.3	Emergency Vehicle Fleet Management System shall dispatch the appropriate emergency response vehicle (s) to the incident.
5.2.2	Emergency Vehicle Management Service shall be provided by a Route Guidance System.
5.2.2.1	Route Guidance System shall maintain real-time information on traffic conditions, emergency response vehicle

	locations, and emergency response vehicle destinations.
5.2.2.2	Route Guidance System shall advise emergency response vehicles of appropriate routes.
5.2.3	Emergency Vehicle Management Service shall be provided by a Signal Priority System.
5.2.3.1	Signal Priority System shall maintain real-time information on signal timing, emergency vehicle locations and emergency vehicle routing.
5.2.3.2	Signal Priority System shall determine signal prioritize timing sequences for relevant signals.
6.0	ADVANCED VEHICLE SAFETY SYSTEMS
6.1	LONGITUDINAL COLLISION AVOIDANCE
6.1.0	ITS Shall include a Longitudinal Collision Avoidance Service.
6.1.1	Longitudinal Collision Avoidance Service shall include a Rear-End Subservice.
6.1.1.1	Rear-End Subservice shall be provided by a Headway Maintenance System which assists in maintaining a safe relative longitudinal separation between vehicles.
6.1.1.1.1	Headway Maintenance System shall include a Manual Operations Subsystem.
6.1.1.1.1.1	Manual Operations Subsystem shall determine impending situations that are inconsistent with safe headway.
6.1.1.1.1.2	Manual Operations Subsystem shall alert the vehicle's driver of the need for speed control to maintain a safe headway.
6.1.1.1.2	Headway Maintenance System shall include an Autonomous Intelligence Cruise Control (AICC) Subsystem.
6.1.1.1.2.1	Autonomous Intelligence Cruise Control Subsystem shall determine actions necessary to maintain the vehicle at a safe distance behind a lead vehicle.
6.1.1.1.2.2	Autonomous Intelligence Cruise Control Subsystem shall implement necessary vehicle speed control.
6.1.1.1.3	Headway Maintenance System shall include a Cooperative Intelligence Cruise Control (CICC) Subsystem.
6.1.1.1.3.1	Cooperative Intelligence Cruise Control Subsystem shall be capable of operating the vehicle in a follow-lead-vehicle mode or a "platoon" mode.
6.1.1.2	Rear-End Subservice shall be provided by a Driver Action System
6.1.1.2.1	Driver Action System shall inform the driver of the need for immediate collision avoidance action.
6.1.1.3	Rear-End Subservice shall be provided by an Automatic Control System.
6.1.1.3.1	Automatic Control System shall automatically implement needed collision avoidance action.
6.1.2	Longitudinal Collision Avoidance Service shall include a Backing Subservice.
6.1.2.1	Backing Subservice shall be provided by an Advisory System.
6.1.2.1.1	Advisory System shall notify the driver of the presence of potentially hazardous situations.
6.1.2.2	Backing Subservice shall be provided by a Driver Action System
6.1.2.2.1	Driver Action System shall inform the driver of the need for immediate collision avoidance action.
6.1.2.3	Backing Subservice shall be provided by an Automatic Control System.
6.1.2.3.1	Automatic Control System shall automatically implement needed collision avoidance action.
6.1.3	Longitudinal Collision Avoidance Service shall be provided by a Head-On/Passing Subservice.
6.1.3.1	Head-On/Passing Subservice shall be provided by an Advisory System.
6.1.3.1.1	Advisory System shall notify the driver of the presence of potentially hazardous situations.
6.1.3.2	Head-On /Passing Subservice shall include a Driver Action System.
6.1.3.2.1	Driver Action System shall inform the driver of the need for immediate collision avoidance action.
6.1.3.3	Head-On/Passing Subservice shall be provided by an Automatic Control System.
6.1.3.3.1	Automatic Control System shall automatically implement needed collision avoidance action.
6.2	LATERAL COLLISION AVOIDANCE
6.2.0	ITS shall include a Lateral Collision Avoidance Service.
6.2.1	Lateral Collision Avoidance Service shall include a Lane Change/Merge Subservice.
6.2.1.1	Lane Change/Merge Subservice shall be provided by an Advisory System.
6.2.1.1.1	Advisory System shall notify the driver of the presence of potentially hazardous situations.
6.2.1.2	Lane Change/Merge Subservice shall be provided by a Driver Action System.
6.2.1.2.2	Driver Action System shall inform the driver of the need for immediate collision avoidance action.
6.2.1.3	Lane Change/Merge Subservice shall be provided by an Automatic Control System.
6.2.1.3.1	Automatic Control System shall automatically implement needed collision avoidance action.
6.2.2	Lateral Collision Avoidance Service shall include a Single Vehicle Roadway Departure (SVRD) Subservice.
6.2.2.1	Single Vehicle Roadway Departure Subservice shall be provided by an Advisory System.
6.2.2.1.1	Advisory System shall notify the driver of the presence of a potentially hazardous situation.

6.2.2.2	Single Vehicle Roadway Departure Subservice shall be provided by a Driver Action System.
6.2.2.2.1	Driver Action System shall inform the driver of the need for immediate collision avoidance action.
6.2.2.3	Single Vehicle Roadway Departure Subservice shall be provided by an Automatic Control System.
6.2.2.3.1	Automatic Control system shall automatically implement needed collision avoidance action.
6.3	INTERSECTION COLLISION AVOIDANCE
6.3.0	ITS shall include an Intersection Crash Collision Avoidance Service.
6.3.1	Intersection Collision Avoidance Service shall be provided by an Advisory System.
6.3.1.1	Advisory System shall notify the driver of the presence of potentially hazardous situations.
6.3.2	Intersection Collision Avoidance Service shall be provided by a Driver Action System.
6.3.2.1	Driver Action System shall notify the driver of the need for immediate collision avoidance action.
6.3.3	Intersection Collision Avoidance Service shall be provided by an Automatic Control System.
6.3.3.1	Automatic Control system shall automatically implement needed collision avoidance action.
6.4	VISION ENHANCEMENT FOR CRASH AVOIDANCE
6.4.0	ITS shall include a Vision Enhancement for Crash Avoidance Service.
6.4.1	Vision Enhancement for Crash Avoidance Service shall be provided by an Enhanced Vision System, which augments the vehicle operator's capability to see pedestrians and hazardous situations, where driving visibility is low.
6.5	SAFETY READINESS
6.5.0	ITS shall include a Safety Readiness Service.
6.5.1	Safety Readiness Service shall include a Driver Monitor Subservice.
6.5.1.1	Driver Monitor Subservice shall be provided by an Advisory/Control System
6.5.1.1.1	Advisory/Control System shall determine the driver's readiness.
6.5.1.1.2	Advisory/Control System shall notify the driver of need to take corrective action.
6.5.1.1.3	Advisory/Control System shall automatically counteract insufficient driver's readiness to operate the vehicle by safely stopping the vehicle.
6.5.2	Safety Readiness Service shall include a Vehicle Condition Subservice.
6.5.2.1	Vehicle Condition Subservice shall be provided by an Advisory System.
6.5.2.1.1	Advisory System shall determine the condition of critical vehicle components.
6.5.2.1.2	Advisory System shall notify the driver of need to take corrective action.
6.5.3	Safety Readiness Service shall include an Infrastructure Condition Subservice.
6.5.3.1	Infrastructure Condition Subservice shall be provided by an In-Vehicle Infrastructure Advisory System.
6.5.3.1.1	In-Vehicle Infrastructure Advisory System shall determine unsafe roadway conditions.
6.5.3.1.2	In-Vehicle Infrastructure Advisory System shall a notify the driver of the need to take corrective action.
6.6	PRE-CRASH RESTRAINT DEPLOYMENT
6.6.0	ITS shall include the Pre-Crash Restraint Deployment Service.
6.6.1	Pre-Crash Restraint Deployment Service shall be provided by an Automatic Activation System.
6.6.1.1	Automatic Activation System shall detect an impending collision with a moving or a stationary object prior to crash impact.
6.6.1.2	Automatic Activation System shall initiate pre-impact deployment of restraint devices when appropriate to reduce injury severity.
6.7	AUTOMATED VEHICLE OPERATION
6.7.0	ITS shall include a Automated Vehicle Operation Service (AVO).
6.7.1	AVO service shall be provided by an Automated Highway System (AHS); the Target Level System.
6.7.1.1	AHS shall include an Automated Check-In Subsystem (ACIS).
6.7.1.1.1	The ACIS shall include the capability for the driver to initiate a transaction, including indication of destination, with the AHS.
6.7.1.1.2	The ACIS shall be capable of determining the vehicle qualifications for access to AHS.
6.7.1.1.3	The ACIS shall be capable of safely controlling access to AHS.
6.7.1.2	AHS shall include a Vehicle Control Subsystem (VCS).
6.7.1.2.1	VCS shall be capable of determining the condition, location, and motion of each vehicle on the automated lanes.
6.7.1.2.2	VCS shall determine the conditions for safe operation of vehicles on the automated lanes.
6.7.1.2.3	VCS shall automatically control the vehicles on AHS.
6.7.1.3	AHS shall include an Automated Check-Out Subsystem (ACOS).

6.7.1.3.1	ACOS shall determine the readiness of the vehicle operator to resume control of the vehicle.
6.7.1.3.2	ACOS shall be capable of safely controlling egress from AHS.
6.7.2	AVO service shall be provided by a Partially Automated Highway System (PAHS) as a Transitional System.
6.7.2.1	PAHS shall include Vehicle Subsystems which utilize capabilities of collision avoidance systems and other systems to implement safe "platooning" and other transitional levels of performance.
6.7.2.2	PAHS shall include a Highway Subsystem which utilizes capabilities of Advanced Highway Infrastructure systems to assist in providing better control of vehicle routes.
6.7.2.3	PAHS shall include a Driver Subsystem which utilizes capabilities of driver alertness systems and other systems to assist in managing vehicles in situations other than full automatic control.
7.0	Information Management
7.1	Archived Data Function
7.1.0	ITS shall provide an Archived Data Function to control the archiving and distribution of ITS data. The Archived Data User Service provides the Historical Data Archive Repositories and controls the archiving functionality for all ITS data with five major functions: 1) the Operational Data Control function to manage operations data integrity; 2) the Data Import and Verification function to acquire historical data from the Operational Data Control function; 3) the Automatic Data Historical Archive function for permanently archiving the data; 4) the Data Warehouse Distribution function, which integrates the planning, safety, operations, and research communities into ITS and processes data products for these communities; and 5) the ITS Community Interface which provides the ITS common interface to all ITS users for data products specification and retrieval. ADUS helps achieve the ITS information goal of unambiguous interchange and reuse of data and information throughout all functional areas.
7.1.1	The Archived Data Function shall provide a Historical Data Archive (HDA) system for ITS data.
7.1.1.1	HDA shall include repositories of operational datas received from field equipment or data collection devices.
7.1.1.2	HDA shall provide permanent historical data repositories.
7.1.1.3	HDA repositories shall include meta data and meta-attributes repositories.
7.1.1.4	HDA shall provide ITS data system security.
7.1.1.4.1	HDA shall be capable of employing security solutions.
7.1.1.4.2	HDA shall be capable of preventing data loss.
7.1.1.4.3	HDA shall be capable of preventing unauthorized access to ITS data repositories
7.1.1.4.4	HDA shall be capable of providing a secure interface for online support of the ITS user interface.
7.1.1.5	HDA shall be capable of supporting online analytical functions to enable users to analyze data across multiple sources or acquire data for their off-line applications.
7.1.2	The Archived Data Function shall include an Operational Data Control (ODC) function to ensure integrity of operational data as received from field equipment or data collection devices.
7.1.2.1	ODC shall be capable of receiving and storing all ITS operational data, as received from the source.
7.1.2.1.1	ODC shall ensure ITS operational data are in proper format.
7.1.2.1.2	ODC shall maintain the meta data schema for all ITS data entering the system.
7.1.2.1.3	ODC shall be capable of assigning the following meta attributes, when available, to ITS operational data during the archive process.
7.1.2.1.3(a)	The equipment used to collect the data.
7.1.2.1.3(b)	The conditions under which the data were collected.
7.1.2.1.3(c)	The status of the equipment at the time of collection.
7.1.2.1.4	ODC shall be capable of applying user-defined quality control verification on ITS data and annotating results in the appropriate meta files.
7.1.2.1.5	ODC shall be capable of assigning meta-attributes to the data indicating the methods used to perform:
7.1.2.1.5(a)	summarization and aggregation
7.1.2.1.5(b)	transformations (i.e., reconstructing original data or constructing new data elements)
7.1.2.2	ODC shall be capable of collecting user-selected data.
7.1.2.3	ODC shall be capable of archiving in data repositories ITS operational data as received from field equipment or data collection devices.
7.1.2.4	ODC shall be capable of maintaining the integrity of all received operational data.
7.1.2.5	ODC shall be capable of disseminating data replicates to ITS operational users in real-time.
7.1.2.6	ODC shall be capable of performing data fusion on replicated data for operational users in near real-time.
7.1.3	The Archived Data Function shall include a Data Import and Verification (DIV) function to acquire historical data from the Operational Data Control function.

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7.1.3.1	DIV shall be capable of importing selected ITS Operational data from the ITS Operational Repositories.
7.1.3.1.1	DIV shall be capable of importing ITS Freeway Operations data to include:
7.1.3.1.1(a)	Freeway traffic flow surveillance data.
7.1.3.1.1(b)	Ramp meter preemptions.
7.1.3.1.1(c)	Ramp meter operational data.
7.1.3.1.1(d)	Freeway visual and video surveillance data.
7.1.3.1.1(e)	Traffic Management Center generated freeway flow metrics.
7.1.3.1.2	DIV shall be capable of importing ITS Electronic Toll Collection data.
7.1.3.1.3	DIV shall be capable of importing ITS Arterial data to include:
7.1.3.1.3(a)	Traffic signal preemptions.
7.1.3.1.3(b)	Traffic signal operational data.
7.1.3.1.3(c)	Arterial visual and video surveillance data.
7.1.3.1.3(d)	Traffic Management Center generated arterial flow metrics.
7.1.3.1.3(e)	Arterial traffic flow surveillance data.
7.1.3.1.4	DIV shall be capable of importing ITS Transit and Ridesharing data to include:
7.1.3.1.4(a)	Transit usage data.
7.1.3.1.4(b)	Transit route data including schedule deviations.
7.1.3.1.4(c)	Rideshare requests.
7.1.3.1.4(d)	Multimodal Origin/Destination.
7.1.3.1.4(e)	Fares
7.1.3.1.4(f)	Vehicle maintenance
7.1.3.1.4(g)	Personnel management data
7.1.3.1.5	DIV shall be capable of importing ITS Incident Management data to include:
7.1.3.1.5(a)	Incident characteristics.
7.1.3.1.5(b)	Train arrivals at highway rail intersections.
7.1.3.1.5(c)	Emergency vehicle dispatch data.
7.1.3.1.5(d)	Emergency vehicle location data.
7.1.3.1.5(e)	Construction and work zone identification.
7.1.3.1.5(f)	Emergency request data
7.1.3.1.5(g)	Video surveillance data
7.1.3.1.5(h)	Emergency response
7.1.3.1.6	DIV shall be capable of importing ITS Commercial Vehicle Operations data to include:
7.1.3.1.6(a)	Cargo identification data.
7.1.3.1.6(b)	Fleet activity data.
7.1.3.1.6(c)	Hazardous material packaging data.
7.1.3.1.6(d)	Border crossing data.
7.1.3.1.6(e)	Commercial vehicle on-board safety data.
7.1.3.1.6(f)	Truck Origin/Destination and Classification data
7.1.3.1.7	DIV shall be capable of importing ITS Environmental data to include:
7.1.3.1.7(a)	Emission data.
7.1.3.1.7(b)	Weather data.
7.1.3.1.8	DIV shall be capable of importing ITS Vehicle and Traveler data to include:
7.1.3.1.8(a)	Commercial and non-commercial vehicle probe data.
7.1.3.1.8(b)	VMS message set data.
7.1.3.1.8(c)	Vehicle trajectories.
7.1.3.1.8(d)	Route guidance data.
7.1.3.1.8(e)	Parking and roadway pricing change data.
7.1.3.1.8(f)	Origin/destination trip data.
7.1.3.1.8(g)	Service requests
7.1.3.1.8(h)	Information utilization
7.1.3.1.9	DIV shall be capable of importing data on ITS Physical Characteristics of Transportation Infrastructure to include:

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7.1.3.1.9(a)	Roadway network attributes.
7.1.3.1.9(b)	Transit network attributes.
7.1.3.1.9(c)	Equipment maintenance status
7.1.3.1.9(d)	Transportation facilities.
7.1.3.1.9(e)	GIS map of network.
7.1.3.1.9(f)	Infrastructure maintenance data
7.1.3.1.10	DIV shall be capable of importing ITS Parking Management data.
7.1.3.1.11	DIV shall be capable of importing Intermodal Operational data.
7.1.3.2	DIV shall be capable of accepting pre-defined data inputs from transportation or other sources.
7.1.3.3	DIV shall be capable of applying pre-defined quality control verification on the imported ITS data and annotating results in the appropriate meta files.
7.1.3.4	DIV shall be capable of formatting the data to conform to the archive schema.
7.1.3.5	DIV shall be capable of cleansing imported data
7.1.3.5.1	Cleansing shall include the removal of source privacy attributes.
7.1.3.5.2	Cleansing shall be capable of assigning unique system-developed anonymous identifiers to data during archiving.
7.1.3.6	DIV shall be capable of performing pre-defined data mining functions to import data.
7.1.3.7	DIV shall be capable of performing pre-defined data fusion on imported data near real-time.
7.1.3.8	DIV shall be capable of assigning meta attributes to ITS operational data if data modification is required during the historical archive process.
7.1.3.9	DIV shall be capable of notifying source system owners of potential data or equipment errors.
7.1.4	The Archived Data function shall provide the Automatic Data Historical Archive (ADHA) function for permanently archiving the data.
7.1.4.1	ADHA shall provide an archive schema for all ITS data entering the archives.
7.1.4.1.1	The archive schema shall preclude the possibility of identifying or tracking either individual citizens or private firms.
7.1.4.1.2	ADHA shall strip all identifiers of individual citizens or private firms from all data before archiving.
7.1.4.1.3	ADHA shall be capable of assigning unique system-developed anonymous identifiers to data during archiving.
7.1.4.2	ADHA shall manage the ITS historical data archiving processes for all functional areas as follows:
7.1.4.2(a)	Format data to archive schema conformance.
7.1.4.2(b)	Maintain a centralized meta schema to specify how data is archived.
7.1.4.2(c)	Maintain data quality meta attributes.
7.1.4.2(d)	Schedule archiving of data.
7.1.4.3	ADHA shall permanently store historical archives and only provide data replicates to users.
7.1.4.4	ADHA shall be capable of supporting user-specified data archiving procedures as follows:
7.1.4.4(a)	When specified by a user, archive operational data as received in the user's storage files.
7.1.4.4(b)	When specified by a user, archive edited data in the User's storage files.
7.1.4.4(c)	When specified by a user, perform pre-defined data fusion before archiving in User's storage files.
7.1.4.5	ADHA shall be capable of assigning meta attributes to ITS operational data if data modification is required during the historical archive process.
7.1.5	The Archived Data Function shall provide a Data Warehouse Distribution (DWD) function as the ITS data source to support the ITS community user functions.
7.1.5.1	DWD shall be capable of supporting the generation of data products for the following transportation agencies:
7.1.5.1(a)	Planning
7.1.5.1(b)	Operations
7.1.5.1(c)	Safety
7.1.5.1(d)	Research
7.1.5.2	DWD shall include a User Data Products (UDP) function.
7.1.5.2.1	UDP shall provide an online analytical functionality to generate pre-defined data products for ITS users, to
7.1.5.2.1(a)	Reports
7.1.5.2.1(b)	Analyses
7.1.5.2.1(c)	Aggregations or summaries.
7.1.5.2.1(d)	User defined archiving of data concepts.
7.1.5.2.2	UDP shall be capable of recreating ITS operational data formats from the historical archives.

7.1.5.2.3	UDP shall be capable of providing user defined data mining functions on ITS data sources.
7.1.5.2.4	UDP shall be capable of performing user defined data fusion functions on data extracted from ITS Archives.
7.1.5.2.5	UDP shall be capable of supporting the Federal data system with user-defined data products, when the necessary data is available, to include the following systems:
7.1.5.2.5(a)	Highway Performance Monitoring System (HPMS)
7.1.5.2.5(b)	Truck Weight Study/VTRIS
7.1.5.2.5(c)	National Bridge Inventory
7.1.5.2.5(d)	Fatal Accident Reporting System (FARS)
7.1.5.2.5(e)	Highway Safety Information System (HSIS)
7.1.5.2.5(f)	Section 15 Transit Data
7.1.5.2.5(g)	Motor Carrier Management Information System (MCMIS)
7.1.5.2.5(h)	Hazardous Materials Incident Reporting System
7.1.5.2.5(i)	Grade Crossing Inventory System (GCIS)
7.1.5.2.5(j)	Railroad Accident/Incident Reporting System (RAIRS; grade crossing portion)
7.1.5.3	DWD shall have the single point of administration for the archived data system.
7.1.6	The Archived Data Function shall provide users with an ITS Community Interface (ICI) including all ITS users for the specification and retrieval of data products.
7.1.6.1	ICI shall be the common data interface for all ITS users to access the ITS Data Archives.
7.1.6.1.1	ICI shall provide users' systems with the data interface functionality.
7.1.6.2	ICI shall manage user access and security across the interface.
7.1.6.2.1	ICI shall be capable of cleansing data to remove source privacy attributes before archiving data.
7.1.6.2.2	ICI shall be capable of cleansing data to remove source privacy attributes before exporting data to users.
7.1.6.3	ICI shall provide a user-interface functionality to existing data warehouse data schema for users to define their data products.
7.1.6.3.1	The user-interface shall permit users to define access to multiple databases as data sources for their data products.
7.1.6.3.2	The user-interface shall permit users to select online analytical functions to produce their data products.
7.1.6.3.3	The user-interface shall permit the user to view sample data products.
7.1.6.4	ICI shall provide the user interface for ITS Transportation Agencies.
7.1.6.4.1	Transportation agencies shall include the following planning functions:
7.1.6.4.1(a)	Metropolitan Planning Organizations (MPO) and State Transportation Planning
7.1.6.4.1(b)	Transportation System Monitoring
7.1.6.4.1(c)	Air Quality Analysis
7.1.6.4.1(d)	MPO/State Freight and Intermodal Planning
7.1.6.4.1(e)	Land Use Regulation and Growth Management
7.1.6.4.1(f)	Transportation Administration and Policy Analysis.
7.1.6.4.1(g)	Transit Planning
7.1.6.4.2	Transportation agencies shall include the following ITS Operations functions:
7.1.6.4.2(a)	Traffic Management.
7.1.6.4.2(b)	Transit Management.
7.1.6.4.2(c)	Construction and Maintenance.
7.1.6.4.2(d)	The Private Sector.
7.1.6.4.3	Transportation functions shall include the following safety agencies:
7.1.6.4.3(a)	Safety Planning and Administration.
7.1.6.4.3(b)	Commercial Vehicle Operations.
7.1.6.4.3(c)	Emergency Management.
7.1.6.4.4	Transportation agencies shall include research agencies.

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.0	1.1.1.1	Process Traffic Sensor Data	RS
1.0	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.0	1.1.1.3	Process Environmental Sensor Data	RS
1.0	1.1.2.1	Process Traffic Data for Storage	TMS
1.0	1.1.2.2	Process Traffic Data	TMS
1.0	1.1.2.3	Update Data Source Static Data	TMS
1.0	1.1.2.4	Monitor HOV lane use	TMS
1.0	1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.0	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.0	1.1.2.7	Monitor Reversible Lanes	TMS
1.0	1.1.3	Generate Predictive Traffic Model	TMS
1.0	1.1.4.1	Retrieve Traffic Data	TMS
1.0	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.0	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.0	1.1.4.4	Update Traffic Display Map Data	TMS
1.0	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.0	1.1.5	Exchange data with Other Traffic Centers	TMS
1.0	1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.0	1.1.7	Collect Vehicle Smart Probe Data	RS
1.0	1.2.1	Select Strategy	TMS
1.0	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.0	1.2.2.2	Determine Indicator State for Road Management	TMS
1.0	1.2.3	Determine Ramp State	TMS
1.0	1.2.4.1	Output Control Data for Roads	TMS
1.0	1.2.4.2	Output Control Data for Freeways	TMS
1.0	1.2.4.3	Output In-vehicle Signage Data	TMS
1.0	1.2.5.1	Determine Parking Lot State	PMS
1.0	1.2.5.2	Coordinate Other Parking Data	PMS
1.0	1.2.5.3	Provide Parking Lot Operator Interface	PMS
1.0	1.2.5.4	Determine P+R needs for Transit Management	PMS
1.0	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.0	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.0	1.2.6.2	Provide Static Data Store Output Interface	TMS
1.0	1.2.7.1	Process Indicator Output Data for Roads	RS
1.0	1.2.7.2	Monitor Roadside Equipment Operation for Faults	RS
1.0	1.2.7.3	Manage Indicator Preemptions	RS
1.0	1.2.7.4	Process In-vehicle Signage Data	RS
1.0	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.0	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.0	1.2.8.1	Collect Indicator Fault Data	TMS
1.0	1.2.8.2	Maintain Indicator Fault Data Store	TMS
1.0	1.2.8.3	Provide Indicator Fault Interface for C and M	TMS
1.0	1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	TMS
1.0	1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.0	1.3.2.1	Store Possible Incident Data	TMS
1.0	1.3.2.2	Review and Classify Possible Incidents	TMS
1.0	1.3.2.3	Review and Classify Planned Events	TMS
1.0	1.3.2.4	Provide Planned Events Store Interface	TMS
1.0	1.3.2.5	Provide Current Incidents Store Interface	TMS
1.0	1.3.3	Respond to Current Incidents	TMS
1.0	1.3.4.1	Retrieve Incident Data	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.0	1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	TMS
1.0	1.3.4.3	Provide Media Incident Data Interface	TMS
1.0	1.3.4.4	Update Incident Display Map Data	TMS
1.0	1.3.4.5	Manage Resources for Incidents	TMS
1.0	1.3.5	Manage Possible Predetermined Responses Store	TMS
1.0	1.3.6	Manage Predetermined Incident Response Data	TMS
1.0	1.3.7	Analyze Incident Response Log	TMS
1.0	1.4.1	Provide Traffic Operations Personnel Demand Interface	TMS
1.0	1.4.2	Collect Demand Forecast Data	TMS
1.0	1.4.3	Update Demand Display Map Data	TMS
1.0	1.4.4	Implement Demand Management Policy	TMS
1.0	1.4.5	Calculate Forecast Demand	TMS
1.0	1.5.5	Process Vehicle Pollution Data	RS
1.0	1.6.1.1	Detect Roadway Events	RS
1.0	1.6.1.2.1	Control HRI Traffic Signals	RS
1.0	1.6.1.2.2	Control HRI Warnings and Barriers	RS
1.0	1.6.1.2.3	Provide SSR Device Controls	RS
1.0	1.6.1.2.4	Provide HSR Device Controls	RS
1.0	1.6.1.2.5	Manage Device Control	RS
1.0	1.6.1.2.6	Maintain Device State	RS
1.0	1.6.1.3	Perform Equipment Self-Test	RS
1.0	1.6.1.4.1	Generate Alerts and Advisories	RS
1.0	1.6.1.4.2	Provide Closure Parameters	RS
1.0	1.6.1.4.3	Report Alerts and Advisories	RS
1.0	1.6.1.4.4	Report HRI Status on Approach	RS
1.0	1.6.1.5	Detect HRI Hazards	RS
1.0	1.6.1.6.1	Close HRI on Detection	RS
1.0	1.6.1.6.2	Detect Imminent Vehicle/Train Collision	RS
1.0	1.6.1.7.1	Control Vehicle Traffic at Passive HRI	RS
1.0	1.6.1.7.2	Control Vehicle Traffic at Active HRI	RS
1.0	1.6.1.7.3	Close HRI on Command	RS
1.0	1.6.2.1	Exchange Data with Rail Operations	TMS
1.0	1.6.2.2	Manage Alerts and Advisories	TMS
1.0	1.6.2.3	Manage Rail Traffic Control Data	TMS
1.0	1.6.3.1	Interact with Wayside Systems	RS
1.0	1.6.3.2	Advise and Protect Train Crews	RS
1.0	1.6.3.3	Provide ATS Alerts	RS
1.0	1.6.4.1	Manage HRI Closures	TMS
1.0	1.6.4.2	Exchange Data with Traffic Management	TMS
1.0	1.6.5.1	Provide Interactive Interface	RS
1.0	1.6.5.2	Determine HRI Status	RS
1.0	1.6.5.3	Maintain HRI Closure Data	RS
1.0	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.0	4.4.1.8	Report Traveler Emergencies	RTS
1.0	5.4.1	Process TM Detected Violations	TMS
1.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.0	6.1.2	Confirm Traveler's Trip Plan	ISP
1.0	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.0	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.0	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.0	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.0	6.2.2	Prepare and Output In-vehicle Displays	VS
1.0	6.2.3	Provide Transit User Advisory Interface	TRVS
1.0	6.2.4	Collect Yellow Pages Data	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.0	6.2.5	Provide Driver Interface	VS
1.0	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.0	6.3.1	Get Traveler Request	RTS
1.0	6.3.2	Inform Traveler	RTS
1.0	6.3.3	Provide Traveler Kiosk Interface	RTS
1.0	6.4.1	Screen Rider Requests	ISP
1.0	6.4.2	Match Rider and Provider	ISP
1.0	6.4.3	Report Ride Match Results to Requestor	ISP
1.0	6.5.1	Collect and Update Traveler Information	ISP
1.0	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.0	6.5.3	Register Yellow Pages Service Providers	ISP
1.0	6.6.1	Provide Multimodal Route Selection	ISP
1.0	6.6.2.1	Calculate Vehicle Route	ISP
1.0	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.0	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.0	6.6.2.4	Update Vehicle Route Selection Map Data	ISP
1.0	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.0	6.6.4	Select Transit Route	ISP
1.0	6.6.5	Select Other Routes	ISP
1.0	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.0	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.0	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.0	6.7.2.2	Process Vehicle Location Data	VS
1.0	6.7.2.3	Provide Driver Guidance Interface	VS
1.0	6.7.2.4	Update Vehicle Navigable Map Database	VS
1.0	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.0	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.0	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.0	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.0	6.8.1.5	Provide Traveler Emergency Message Interface	PIAS
1.0	6.8.3.1	Get Traveler Personal Request	PIAS
1.0	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.0	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.0	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.0	7.4.1.3	Process Driver Map Update Payments	ISP
1.0	7.4.1.4	Process Traveler Map Update Payments	ISP
1.0	7.4.1.5	Process Transit User Other Services Payments	TRMS
1.0	7.4.2	Collect Price Data for ITS Use	ISP
1.1	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.1	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.0	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.1.0	4.4.1.8	Report Traveler Emergencies	RTS
1.1.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.0	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.0	6.3.1	Get Traveler Request	RTS
1.1.0	6.3.2	Inform Traveler	RTS
1.1.0	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.0	6.5.1	Collect and Update Traveler Information	ISP
1.1.0	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.0	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.0	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.1	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.1.1	6.3.2	Inform Traveler	RTS
1.1.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.1.1	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.1.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.1.1	6.3.2	Inform Traveler	RTS
1.1.1.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.1.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.1.1.1	6.3.2	Inform Traveler	RTS
1.1.1.1.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.1.1.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.1.1.2	6.3.2	Inform Traveler	RTS
1.1.1.1.2	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.1.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.1.1.3	6.3.2	Inform Traveler	RTS
1.1.1.1.3	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.1.1.4	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.1.1.4	6.3.2	Inform Traveler	RTS
1.1.1.1.4	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.1.1.5	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.1.1.5	6.3.2	Inform Traveler	RTS
1.1.1.1.5	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.1.1.6	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.1.1.6	6.3.2	Inform Traveler	RTS
1.1.1.1.6	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.1.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2	6.3.2	Inform Traveler	RTS
1.1.2	6.5.1	Collect and Update Traveler Information	ISP
1.1.2	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2.1	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.1.2.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1	6.3.2	Inform Traveler	RTS
1.1.2.1	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.1	6.3.2	Inform Traveler	RTS
1.1.2.1.1	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2.1.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.2	6.3.2	Inform Traveler	RTS
1.1.2.1.2	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1.2	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.3	6.3.2	Inform Traveler	RTS
1.1.2.1.3	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1.3	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2.1.4	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.4	6.3.2	Inform Traveler	RTS
1.1.2.1.4	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1.4	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2.1.5	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.5	6.3.2	Inform Traveler	RTS
1.1.2.1.5	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1.5	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.1.2.1.6	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.1.2.1.6	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.6	6.3.2	Inform Traveler	RTS
1.1.2.1.6	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1.6	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.2.1.7	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.8	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.2.1.8	6.3.2	Inform Traveler	RTS
1.1.2.1.8	6.5.1	Collect and Update Traveler Information	ISP
1.1.2.1.8	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.3	6.3.1	Get Traveler Request	RTS
1.1.3	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.3	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.3.1	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.3.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.1.1	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.3.1.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.1.4	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.2	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.3.2	6.3.1	Get Traveler Request	RTS
1.1.3.2	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.1	6.3.1	Get Traveler Request	RTS
1.1.3.2.1	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.1	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.1	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.10	6.3.1	Get Traveler Request	RTS
1.1.3.2.10	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.10	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.10	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.2	6.3.1	Get Traveler Request	RTS
1.1.3.2.2	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.2	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.2	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.3	6.3.1	Get Traveler Request	RTS
1.1.3.2.3	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.3	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.3	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.4	6.3.1	Get Traveler Request	RTS
1.1.3.2.4	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.4	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.4	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.5	6.3.1	Get Traveler Request	RTS
1.1.3.2.5	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.5	6.8.3.1	Get Traveler Personal Request	PIAS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.1.3.2.5	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.6	6.3.1	Get Traveler Request	RTS
1.1.3.2.6	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.6	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.6	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.7	6.3.1	Get Traveler Request	RTS
1.1.3.2.7	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.7	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.7	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.8	6.3.1	Get Traveler Request	RTS
1.1.3.2.8	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.8	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.3.2.8	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.8	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.2.9	6.3.1	Get Traveler Request	RTS
1.1.3.2.9	6.3.3	Provide Traveler Kiosk Interface	RTS
1.1.3.2.9	6.8.3.1	Get Traveler Personal Request	PIAS
1.1.3.2.9	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.3.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.3	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.3.3.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.3.3.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.4	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1.4	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.4	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.4	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.4	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.4	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.4.1	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1.4.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.4.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.4.1	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.4.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.4.1.1	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1.4.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.4.1.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.4.1.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.4.1.2	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1.4.1.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.4.1.2	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.4.1.2	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.4.1.3	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1.4.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.1.4.1.3	6.1.2	Confirm Traveler's Trip Plan	ISP
1.1.4.1.3	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.1.4.1.3	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.4.1.4	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1.4.1.4	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.1.4.2	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.1.4.2.1	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.10	1.1.2.2	Process Traffic Data	TMS
1.10	1.2.4.1	Output Control Data for Roads	TMS
1.10	1.2.4.3	Output In-vehicle Signage Data	TMS
1.10	1.2.7.1	Process Indicator Output Data for Roads	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.10	1.6.1.1	Detect Roadway Events	RS
1.10	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10	1.6.1.2.2	Control HRI Warnings and Barriers	RS
1.10	1.6.1.2.3	Provide SSR Device Controls	RS
1.10	1.6.1.2.4	Provide HSR Device Controls	RS
1.10	1.6.1.2.5	Manage Device Control	RS
1.10	1.6.1.2.6	Maintain Device State	RS
1.10	1.6.1.3	Perform Equipment Self-Test	RS
1.10	1.6.1.4.1	Generate Alerts and Advisories	RS
1.10	1.6.1.4.2	Provide Closure Parameters	RS
1.10	1.6.1.4.3	Report Alerts and Advisories	RS
1.10	1.6.1.4.4	Report HRI Status on Approach	RS
1.10	1.6.1.5	Detect HRI Hazards	RS
1.10	1.6.1.6.1	Close HRI on Detection	RS
1.10	1.6.1.6.2	Detect Imminent Vehicle/Train Collision	RS
1.10	1.6.1.7.1	Control Vehicle Traffic at Passive HRI	RS
1.10	1.6.1.7.2	Control Vehicle Traffic at Active HRI	RS
1.10	1.6.1.7.3	Close HRI on Command	RS
1.10	1.6.2.1	Exchange Data with Rail Operations	TMS
1.10	1.6.2.2	Manage Alerts and Advisories	TMS
1.10	1.6.2.3	Manage Rail Traffic Control Data	TMS
1.10	1.6.3.1	Interact with Wayside Systems	RS
1.10	1.6.3.2	Advise and Protect Train Crews	RS
1.10	1.6.3.3	Provide ATS Alerts	RS
1.10	1.6.4.1	Manage HRI Closures	TMS
1.10	1.6.4.2	Exchange Data with Traffic Management	TMS
1.10	1.6.5.1	Provide Interactive Interface	RS
1.10	1.6.5.2	Determine HRI Status	RS
1.10	1.6.5.3	Maintain HRI Closure Data	RS
1.10.0	1.1.2.2	Process Traffic Data	TMS
1.10.0	1.2.4.3	Output In-vehicle Signage Data	TMS
1.10.0	1.6.1.1	Detect Roadway Events	RS
1.10.1	1.2.4.3	Output In-vehicle Signage Data	TMS
1.10.1	1.6.1.1	Detect Roadway Events	RS
1.10.1	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10.1	1.6.1.4.1	Generate Alerts and Advisories	RS
1.10.1	1.6.1.6.1	Close HRI on Detection	RS
1.10.1	1.6.3.1	Interact with Wayside Systems	RS
1.10.1	1.6.3.2	Advise and Protect Train Crews	RS
1.10.1	1.6.3.3	Provide ATS Alerts	RS
1.10.1.1	1.2.4.3	Output In-vehicle Signage Data	TMS
1.10.1.1	1.6.3.1	Interact with Wayside Systems	RS
1.10.1.2	1.6.3.1	Interact with Wayside Systems	RS
1.10.1.2	1.6.3.3	Provide ATS Alerts	RS
1.10.1.3	1.6.3.1	Interact with Wayside Systems	RS
1.10.1.3	1.6.3.3	Provide ATS Alerts	RS
1.10.1.4	1.6.1.6.1	Close HRI on Detection	RS
1.10.1.5	1.6.1.4.1	Generate Alerts and Advisories	RS
1.10.1.6	1.6.3.1	Interact with Wayside Systems	RS
1.10.1.6	1.6.3.2	Advise and Protect Train Crews	RS
1.10.1.7	1.6.1.1	Detect Roadway Events	RS
1.10.1.7	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10.1.7	1.6.3.1	Interact with Wayside Systems	RS
1.10.2	1.6.1.1	Detect Roadway Events	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.10.2	1.6.1.4.2	Provide Closure Parameters	RS
1.10.2	1.6.2.1	Exchange Data with Rail Operations	TMS
1.10.2	1.6.2.2	Manage Alerts and Advisories	TMS
1.10.2	1.6.2.3	Manage Rail Traffic Control Data	TMS
1.10.2	1.6.3.1	Interact with Wayside Systems	RS
1.10.2	1.6.4.1	Manage HRI Closures	TMS
1.10.2	1.6.4.2	Exchange Data with Traffic Management	TMS
1.10.2	1.6.5.1	Provide Interactive Interface	RS
1.10.2	1.6.5.3	Maintain HRI Closure Data	RS
1.10.2.1	1.6.1.1	Detect Roadway Events	RS
1.10.2.1	1.6.2.1	Exchange Data with Rail Operations	TMS
1.10.2.1	1.6.4.1	Manage HRI Closures	TMS
1.10.2.1	1.6.4.2	Exchange Data with Traffic Management	TMS
1.10.2.1	1.6.5.3	Maintain HRI Closure Data	RS
1.10.2.1.1	1.6.1.1	Detect Roadway Events	RS
1.10.2.1.2	1.6.4.2	Exchange Data with Traffic Management	TMS
1.10.2.1.3	1.6.4.1	Manage HRI Closures	TMS
1.10.2.1.3	1.6.5.3	Maintain HRI Closure Data	RS
1.10.2.2	1.6.1.4.2	Provide Closure Parameters	RS
1.10.2.2	1.6.2.2	Manage Alerts and Advisories	TMS
1.10.2.2	1.6.2.3	Manage Rail Traffic Control Data	TMS
1.10.2.2	1.6.3.1	Interact with Wayside Systems	RS
1.10.2.2	1.6.4.2	Exchange Data with Traffic Management	TMS
1.10.2.2	1.6.5.1	Provide Interactive Interface	RS
1.10.2.2.1	1.6.2.2	Manage Alerts and Advisories	TMS
1.10.2.2.1	1.6.5.1	Provide Interactive Interface	RS
1.10.2.2.2	1.6.2.3	Manage Rail Traffic Control Data	TMS
1.10.2.2.2	1.6.5.1	Provide Interactive Interface	RS
1.10.2.2.3	1.6.5.1	Provide Interactive Interface	RS
1.10.2.2.4	1.6.1.4.2	Provide Closure Parameters	RS
1.10.2.2.4	1.6.4.2	Exchange Data with Traffic Management	TMS
1.10.3	1.2.4.1	Output Control Data for Roads	TMS
1.10.3	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.3	1.6.1.1	Detect Roadway Events	RS
1.10.3	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10.3	1.6.1.2.2	Control HRI Warnings and Barriers	RS
1.10.3	1.6.1.3	Perform Equipment Self-Test	RS
1.10.3	1.6.1.4.3	Report Alerts and Advisories	RS
1.10.3	1.6.1.5	Detect HRI Hazards	RS
1.10.3	1.6.1.6.2	Detect Imminent Vehicle/Train Collision	RS
1.10.3	1.6.1.7.2	Control Vehicle Traffic at Active HRI	RS
1.10.3	1.6.3.3	Provide ATS Alerts	RS
1.10.3	1.6.5.2	Determine HRI Status	RS
1.10.3.1	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.3.1	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10.3.1	1.6.1.6.2	Detect Imminent Vehicle/Train Collision	RS
1.10.3.1	1.6.5.2	Determine HRI Status	RS
1.10.3.2	1.2.7.6	Provide Intersection Collision Avoidance Data	RS
1.10.3.2	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10.3.3	1.2.4.1	Output Control Data for Roads	TMS
1.10.3.3	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.3.3	1.6.1.1	Detect Roadway Events	RS
1.10.3.3	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10.3.3	1.6.1.2.2	Control HRI Warnings and Barriers	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.10.3.3	1.6.1.3	Perform Equipment Self-Test	RS
1.10.3.3	1.6.1.4.3	Report Alerts and Advisories	RS
1.10.3.3	1.6.1.5	Detect HRI Hazards	RS
1.10.3.3	1.6.3.3	Provide ATS Alerts	RS
1.10.3.3.1	1.6.1.2.1	Control HRI Traffic Signals	RS
1.10.3.3.2	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.3.3.2	1.6.1.2.2	Control HRI Warnings and Barriers	RS
1.10.3.3.3	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.3.3.3	1.6.1.1	Detect Roadway Events	RS
1.10.3.3.3	1.6.1.5	Detect HRI Hazards	RS
1.10.3.3.4	1.6.1.3	Perform Equipment Self-Test	RS
1.10.3.3.5	1.2.4.1	Output Control Data for Roads	TMS
1.10.3.3.5	1.6.1.4.3	Report Alerts and Advisories	RS
1.10.3.3.5	1.6.3.3	Provide ATS Alerts	RS
1.10.4	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.4	1.6.1.2.3	Provide SSR Device Controls	RS
1.10.4	1.6.1.2.5	Manage Device Control	RS
1.10.4	1.6.1.2.6	Maintain Device State	RS
1.10.4	1.6.1.7.1	Control Vehicle Traffic at Passive HRI	RS
1.10.4	1.6.1.7.3	Close HRI on Command	RS
1.10.4.1	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.4.1	1.6.1.2.3	Provide SSR Device Controls	RS
1.10.4.1	1.6.1.2.5	Manage Device Control	RS
1.10.4.1	1.6.1.2.6	Maintain Device State	RS
1.10.4.1	1.6.1.7.3	Close HRI on Command	RS
1.10.4.2	1.6.1.7.1	Control Vehicle Traffic at Passive HRI	RS
1.10.4.2.1	1.6.1.7.1	Control Vehicle Traffic at Passive HRI	RS
1.10.5	1.2.4.1	Output Control Data for Roads	TMS
1.10.5	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.5	1.6.1.2.4	Provide HSR Device Controls	RS
1.10.5	1.6.1.4.4	Report HRI Status on Approach	RS
1.10.5	1.6.1.6.1	Close HRI on Detection	RS
1.10.5	1.6.1.7.3	Close HRI on Command	RS
1.10.5	1.6.2.2	Manage Alerts and Advisories	TMS
1.10.5	1.6.3.3	Provide ATS Alerts	RS
1.10.5.1	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.5.1	1.6.1.2.4	Provide HSR Device Controls	RS
1.10.5.2	1.2.4.1	Output Control Data for Roads	TMS
1.10.5.2	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.5.2	1.6.1.2.4	Provide HSR Device Controls	RS
1.10.5.2	1.6.1.4.4	Report HRI Status on Approach	RS
1.10.5.2	1.6.1.6.1	Close HRI on Detection	RS
1.10.5.2	1.6.1.7.3	Close HRI on Command	RS
1.10.5.2	1.6.2.2	Manage Alerts and Advisories	TMS
1.10.5.2	1.6.3.3	Provide ATS Alerts	RS
1.10.5.2.1	1.6.1.6.1	Close HRI on Detection	RS
1.10.5.2.1	1.6.1.7.3	Close HRI on Command	RS
1.10.5.2.2	1.2.7.1	Process Indicator Output Data for Roads	RS
1.10.5.2.2	1.6.1.2.4	Provide HSR Device Controls	RS
1.10.5.2.3	1.6.3.3	Provide ATS Alerts	RS
1.10.5.2.4	1.6.2.2	Manage Alerts and Advisories	TMS
1.10.5.2.5	1.6.3.3	Provide ATS Alerts	RS
1.10.5.2.6	1.2.4.1	Output Control Data for Roads	TMS
1.10.5.2.6	1.6.1.4.4	Report HRI Status on Approach	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.10.6	1.6.1.5	Detect HRI Hazards	RS
1.2	1.1.1.3	Process Environmental Sensor Data	RS
1.2	1.1.3	Generate Predictive Traffic Model	TMS
1.2.0	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.2.0	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.2.0	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.2.0	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.2.0	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.0	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.0	6.2.4	Collect Yellow Pages Data	ISP
1.2.0	6.2.5	Provide Driver Interface	VS
1.2.0	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.2.0	6.6.2.1	Calculate Vehicle Route	ISP
1.2.0	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.0	6.7.2.2	Process Vehicle Location Data	VS
1.2.1	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.1	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.1	6.6.2.1	Calculate Vehicle Route	ISP
1.2.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.1	6.7.2.2	Process Vehicle Location Data	VS
1.2.1.1	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.1.1	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.1.1	6.7.2.2	Process Vehicle Location Data	VS
1.2.1.2	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.1.2	6.7.2.2	Process Vehicle Location Data	VS
1.2.1.3	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.1.3	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.1.3	6.7.2.2	Process Vehicle Location Data	VS
1.2.1.4	6.6.2.1	Calculate Vehicle Route	ISP
1.2.1.4	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.1.4.1	6.6.2.1	Calculate Vehicle Route	ISP
1.2.1.4.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.1.5	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.1.5	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.1.5	6.2.5	Provide Driver Interface	VS
1.2.1.5	6.7.2.2	Process Vehicle Location Data	VS
1.2.2	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.2.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.2.2	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.2.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.2.2	6.2.4	Collect Yellow Pages Data	ISP
1.2.2	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.2.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.2.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.2.2.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.2.2.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.2.2.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.2.2.1	6.2.4	Collect Yellow Pages Data	ISP
1.2.2.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.2.2.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.2.1.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.2.2.1.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.2.2.1.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.2.2.1.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.2.2.1.1	6.2.4	Collect Yellow Pages Data	ISP
1.2.2.1.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.2.2.1.2	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.2.2.1.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.2.2.1.2	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.2.2.1.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.2.2.1.2	6.2.4	Collect Yellow Pages Data	ISP
1.2.2.1.2	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.2.2.1.2.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.2.2.1.2.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.2.2.1.2.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.2.2.1.2.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.2.2.1.2.1	6.2.4	Collect Yellow Pages Data	ISP
1.2.2.1.2.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.2.2.1.3	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.2.2.1.3	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.2.2.1.3	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
1.2.2.1.3	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.2.2.1.3	6.2.4	Collect Yellow Pages Data	ISP
1.2.2.1.3	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.2.2.1.4	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.2.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.3	1.1.1.3	Process Environmental Sensor Data	RS
1.2.3	1.1.3	Generate Predictive Traffic Model	TMS
1.2.3	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3	6.2.5	Provide Driver Interface	VS
1.2.3	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.3	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1.1	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1.1	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1.1	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1.2	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1.2	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1.2	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1.3	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1.3	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1.3	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1.4	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1.4	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1.4	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1.4.1	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1.4.1	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1.4.1	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1.4.2	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1.4.2	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1.4.2	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.1.5	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.1.5	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.1.5	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.2	1.1.1.3	Process Environmental Sensor Data	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.2.3.2	1.1.3	Generate Predictive Traffic Model	TMS
1.2.3.2	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.2	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.2	6.2.5	Provide Driver Interface	VS
1.2.3.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.3.2	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.2.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.2.3.2.2	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.2.2	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.2.2	6.2.5	Provide Driver Interface	VS
1.2.3.2.2.1	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.2.2.1	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.2.2.1	6.2.5	Provide Driver Interface	VS
1.2.3.2.2.1	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.2.3	1.1.1.3	Process Environmental Sensor Data	RS
1.2.3.2.3	1.1.3	Generate Predictive Traffic Model	TMS
1.2.3.2.4	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.2.4	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.2.4	6.7.2.2	Process Vehicle Location Data	VS
1.2.3.2.5	6.2.2	Prepare and Output In-vehicle Displays	VS
1.2.3.2.5	6.2.3	Provide Transit User Advisory Interface	TRVS
1.2.3.2.5	6.2.5	Provide Driver Interface	VS
1.2.3.2.5	6.7.2.2	Process Vehicle Location Data	VS
1.3	1.6.1.1	Detect Roadway Events	RS
1.3	6.2.2	Prepare and Output In-vehicle Displays	VS
1.3	6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
1.3	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.3	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.3	7.4.1.3	Process Driver Map Update Payments	ISP
1.3	7.4.1.4	Process Traveler Map Update Payments	ISP
1.3	7.4.1.5	Process Transit User Other Services Payments	TRMS
1.3.0	6.2.5	Provide Driver Interface	VS
1.3.0	6.6.1	Provide Multimodal Route Selection	ISP
1.3.0	6.6.2.1	Calculate Vehicle Route	ISP
1.3.0	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.0	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.3.0	6.6.2.4	Update Vehicle Route Selection Map Data	ISP
1.3.0	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.0	6.6.3	Update Other Routes Selection Map Data	ISP
1.3.0	6.6.4	Select Transit Route	ISP
1.3.0	6.6.5	Select Other Routes	ISP
1.3.0	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.0	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.0	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.0	6.7.2.2	Process Vehicle Location Data	VS
1.3.0	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.0	6.7.2.4	Update Vehicle Navigable Map Database	VS
1.3.0	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.0	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.0	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.0	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.0	7.4.1.3	Process Driver Map Update Payments	ISP
1.3.0	7.4.1.4	Process Traveler Map Update Payments	ISP
1.3.0	7.4.1.5	Process Transit User Other Services Payments	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.3.1	1.6.1.1	Detect Roadway Events	RS
1.3.1	6.6.1	Provide Multimodal Route Selection	ISP
1.3.1	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.1	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.3.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.1	6.6.3	Update Other Routes Selection Map Data	ISP
1.3.1	6.6.4	Select Transit Route	ISP
1.3.1	6.6.5	Select Other Routes	ISP
1.3.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.1	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.1	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.1	6.7.2.2	Process Vehicle Location Data	VS
1.3.1	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.1	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.1	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.1	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.1	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.1.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.1.1	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.1.1	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.1.1	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.1.1	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.1.1	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.1.1	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.1.2	1.6.1.1	Detect Roadway Events	RS
1.3.1.2	6.6.1	Provide Multimodal Route Selection	ISP
1.3.1.2	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1.2	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.1.2	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.3.1.2	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.1.2	6.6.3	Update Other Routes Selection Map Data	ISP
1.3.1.2	6.6.4	Select Transit Route	ISP
1.3.1.2	6.6.5	Select Other Routes	ISP
1.3.1.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.1.2	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.1.2	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.1.2	6.7.2.2	Process Vehicle Location Data	VS
1.3.1.2	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.1.2	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.1.2	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.1.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.1.2	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.1.2.1	1.6.1.1	Detect Roadway Events	RS
1.3.1.2.1	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1.2.1	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.1.2.1	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.3.1.2.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.1.2.1	6.6.3	Update Other Routes Selection Map Data	ISP
1.3.1.2.1	6.6.4	Select Transit Route	ISP
1.3.1.2.1	6.6.5	Select Other Routes	ISP
1.3.1.2.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.1.2.1	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.1.2.1	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.3.1.2.1	6.7.2.2	Process Vehicle Location Data	VS
1.3.1.2.1	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.1.2.1	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.1.2.1	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.1.2.1	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.1.2.1	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.1.2.1(a)	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1.2.1(b)	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1.2.1(b)	6.6.3	Update Other Routes Selection Map Data	ISP
1.3.1.2.1(b)	6.6.4	Select Transit Route	ISP
1.3.1.2.1(c)	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.3.1.2.1(c)	6.6.4	Select Transit Route	ISP
1.3.1.2.1(d)	1.6.1.1	Detect Roadway Events	RS
1.3.1.2.1(d)	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.1.2.1(d).1	1.6.1.1	Detect Roadway Events	RS
1.3.1.2.1(d).2	6.6.5	Select Other Routes	ISP
1.3.1.2.1(d).2	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.1.2.1(d).3	6.6.5	Select Other Routes	ISP
1.3.1.2.1(d).3	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.1.3	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1.3	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.1.3	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.1.3	6.6.4	Select Transit Route	ISP
1.3.1.3	6.6.5	Select Other Routes	ISP
1.3.1.3	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.1.3	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.1.3	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.1.3	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.1.3	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.1.3	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.1.3	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.1.3(a)	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1.3(b)	6.6.2.1	Calculate Vehicle Route	ISP
1.3.1.3(c)	6.6.5	Select Other Routes	ISP
1.3.1.3(d)	6.6.5	Select Other Routes	ISP
1.3.2	6.6.1	Provide Multimodal Route Selection	ISP
1.3.2	6.6.2.1	Calculate Vehicle Route	ISP
1.3.2	6.6.2.4	Update Vehicle Route Selection Map Data	ISP
1.3.2	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.2	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.2	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.2	6.7.2.2	Process Vehicle Location Data	VS
1.3.2	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.2	6.7.2.4	Update Vehicle Navigable Map Database	VS
1.3.2	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.2	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.2	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.2.1	6.6.1	Provide Multimodal Route Selection	ISP
1.3.2.1	6.6.2.4	Update Vehicle Route Selection Map Data	ISP
1.3.2.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.2.1	6.7.2.2	Process Vehicle Location Data	VS
1.3.2.1	6.7.2.3	Provide Driver Guidance Interface	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.3.2.1	6.7.2.4	Update Vehicle Navigable Map Database	VS
1.3.2.1(a)	6.6.2.4	Update Vehicle Route Selection Map Data	ISP
1.3.2.1(b)	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.2.2	6.6.1	Provide Multimodal Route Selection	ISP
1.3.2.2	6.6.2.1	Calculate Vehicle Route	ISP
1.3.2.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.2.2	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.2.2	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.2.2	6.7.2.2	Process Vehicle Location Data	VS
1.3.2.2	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.2.2	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.2.2	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.2.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.2.2	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.2.2.1	6.6.2.1	Calculate Vehicle Route	ISP
1.3.2.2.2	6.6.1	Provide Multimodal Route Selection	ISP
1.3.2.3	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.2.3	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.2.3	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.2.3	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.2.3	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.2.3	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.2.3	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.2.3.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.2.3.1	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.2.3.1	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.2.3.1	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.2.3.1	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.2.3.1	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.2.3.1	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.3	6.2.5	Provide Driver Interface	VS
1.3.3	6.6.1	Provide Multimodal Route Selection	ISP
1.3.3	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.3	6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
1.3.3	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.3	6.6.4	Select Transit Route	ISP
1.3.3	6.6.5	Select Other Routes	ISP
1.3.3	6.7.2.2	Process Vehicle Location Data	VS
1.3.3	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.3	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.3	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.3	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.3	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.3	7.4.1.3	Process Driver Map Update Payments	ISP
1.3.3	7.4.1.4	Process Traveler Map Update Payments	ISP
1.3.3	7.4.1.5	Process Transit User Other Services Payments	TRMS
1.3.3.1	6.2.5	Provide Driver Interface	VS
1.3.3.1	6.6.1	Provide Multimodal Route Selection	ISP
1.3.3.1	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3.1	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.3.1	6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
1.3.3.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.3.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.3.3.1	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.3.1	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.3.1	6.7.2.2	Process Vehicle Location Data	VS
1.3.3.1	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.3.1(a)	6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
1.3.3.1(b)	6.6.1	Provide Multimodal Route Selection	ISP
1.3.3.2	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3.2	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.3.2	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.3.2	6.6.4	Select Transit Route	ISP
1.3.3.2	6.6.5	Select Other Routes	ISP
1.3.3.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.3.2	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.3.2	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.3.2	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.3.2	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.3.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.3.2	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.3.2	7.4.1.3	Process Driver Map Update Payments	ISP
1.3.3.2	7.4.1.4	Process Traveler Map Update Payments	ISP
1.3.3.2	7.4.1.5	Process Transit User Other Services Payments	TRMS
1.3.3.2(a)	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3.2(b)	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3.2.1	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3.2.1	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.3.2.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.3.2.1	6.6.4	Select Transit Route	ISP
1.3.3.2.1	6.6.5	Select Other Routes	ISP
1.3.3.2.1	7.4.1.3	Process Driver Map Update Payments	ISP
1.3.3.2.1	7.4.1.4	Process Traveler Map Update Payments	ISP
1.3.3.2.1	7.4.1.5	Process Transit User Other Services Payments	TRMS
1.3.3.2.2	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3.2.2	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.3.2.2	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.3.2.2	6.6.4	Select Transit Route	ISP
1.3.3.2.2	6.6.5	Select Other Routes	ISP
1.3.3.2.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.3.2.2	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.3.2.2	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.3.2.2	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.3.2.2	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.3.2.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.3.2.2	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.3.3	6.6.2.1	Calculate Vehicle Route	ISP
1.3.3.3	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.3.3	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.3.3	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.3.3	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.3.3	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.3.3	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.3.3	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.3.3	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.3.3	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.4	6.2.2	Prepare and Output In-vehicle Displays	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.3.4	6.6.1	Provide Multimodal Route Selection	ISP
1.3.4	6.6.2.1	Calculate Vehicle Route	ISP
1.3.4	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.4	6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
1.3.4	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.4	6.6.4	Select Transit Route	ISP
1.3.4	6.6.5	Select Other Routes	ISP
1.3.4	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.4	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.4	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.4	6.7.2.2	Process Vehicle Location Data	VS
1.3.4	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.4	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.4	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.4	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.3.4	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.3.4.1	6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
1.3.4.1	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4.1	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4.1	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.3.4.1	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.3.4.1(a)	6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
1.3.4.1(b)	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.3.4.1(b)	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.3.4.1(c)	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.3.4.1(c)	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.3.4.1(d)	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4.1(d)	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4.1(e)	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4.1(e)	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4.2	6.2.2	Prepare and Output In-vehicle Displays	VS
1.3.4.2	6.6.1	Provide Multimodal Route Selection	ISP
1.3.4.2	6.6.2.1	Calculate Vehicle Route	ISP
1.3.4.2	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.4.2	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.4.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.4.2	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.4.2	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.4.2	6.7.2.2	Process Vehicle Location Data	VS
1.3.4.2	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4.2	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4.2	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.4.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.4.2	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.4.2.1	6.6.1	Provide Multimodal Route Selection	ISP
1.3.4.2.1	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.4.2.1	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.4.2.1	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.4.2.1	6.7.2.2	Process Vehicle Location Data	VS
1.3.4.2.1	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4.2.1	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4.2.1	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.3.4.2.1	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.4.2.1	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.4.2.2	6.2.2	Prepare and Output In-vehicle Displays	VS
1.3.4.2.2	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.4.2.2	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.4.2.2	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.4.2.2	6.7.2.2	Process Vehicle Location Data	VS
1.3.4.2.2	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4.2.2	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4.2.2	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.4.2.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.4.2.2	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.4.2.2(a)	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.4.2.2(b)	6.2.2	Prepare and Output In-vehicle Displays	VS
1.3.4.3	6.6.1	Provide Multimodal Route Selection	ISP
1.3.4.3	6.6.2.1	Calculate Vehicle Route	ISP
1.3.4.3	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.4.3	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.4.3	6.6.4	Select Transit Route	ISP
1.3.4.3	6.6.5	Select Other Routes	ISP
1.3.4.3	6.7.2.1.1	Determine In-vehicle Guidance Method	VS
1.3.4.3	6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
1.3.4.3	6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
1.3.4.3	6.7.2.2	Process Vehicle Location Data	VS
1.3.4.3	6.7.2.3	Provide Driver Guidance Interface	VS
1.3.4.3	6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
1.3.4.3	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
1.3.4.3	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.3.4.3	6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
1.3.4.3.1	6.6.2.1	Calculate Vehicle Route	ISP
1.3.4.3.1	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
1.3.4.3.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
1.3.4.3.1	6.6.5	Select Other Routes	ISP
1.4	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.4	7.4.2	Collect Price Data for ITS Use	ISP
1.4.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.0	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.0	6.3.1	Get Traveler Request	RTS
1.4.0	6.3.2	Inform Traveler	RTS
1.4.0	6.3.3	Provide Traveler Kiosk Interface	RTS
1.4.0	6.4.1	Screen Rider Requests	ISP
1.4.0	6.4.2	Match Rider and Provider	ISP
1.4.0	6.6.1	Provide Multimodal Route Selection	ISP
1.4.0	6.6.4	Select Transit Route	ISP
1.4.0	6.8.3.1	Get Traveler Personal Request	PIAS
1.4.0	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.4.0	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.4.0	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.4.0	7.4.2	Collect Price Data for ITS Use	ISP
1.4.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.1	6.3.1	Get Traveler Request	RTS
1.4.1	6.3.2	Inform Traveler	RTS
1.4.1	6.3.3	Provide Traveler Kiosk Interface	RTS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.4.1	6.4.1	Screen Rider Requests	ISP
1.4.1	6.4.2	Match Rider and Provider	ISP
1.4.1	6.4.3	Report Ride Match Results to Requestor	ISP
1.4.1	6.8.3.1	Get Traveler Personal Request	PIAS
1.4.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.4.1	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.4.1.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.1.1	6.3.1	Get Traveler Request	RTS
1.4.1.1	6.3.3	Provide Traveler Kiosk Interface	RTS
1.4.1.1	6.8.3.1	Get Traveler Personal Request	PIAS
1.4.1.1	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.4.1.1(a)	6.3.1	Get Traveler Request	RTS
1.4.1.1(a)	6.3.3	Provide Traveler Kiosk Interface	RTS
1.4.1.1(b)	6.3.1	Get Traveler Request	RTS
1.4.1.1(b)	6.3.3	Provide Traveler Kiosk Interface	RTS
1.4.1.2	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.1.2	6.3.1	Get Traveler Request	RTS
1.4.1.2	6.3.3	Provide Traveler Kiosk Interface	RTS
1.4.1.2	6.4.2	Match Rider and Provider	ISP
1.4.1.2	6.8.3.1	Get Traveler Personal Request	PIAS
1.4.1.2	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.4.1.2(a)	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.1.2(b)	6.3.1	Get Traveler Request	RTS
1.4.1.2(b)	6.8.3.1	Get Traveler Personal Request	PIAS
1.4.1.2(c)	6.3.1	Get Traveler Request	RTS
1.4.1.2(c)	6.8.3.1	Get Traveler Personal Request	PIAS
1.4.1.2(d)	6.3.1	Get Traveler Request	RTS
1.4.1.2(e)	6.3.1	Get Traveler Request	RTS
1.4.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.1.3	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.1.3	6.3.1	Get Traveler Request	RTS
1.4.1.3	6.3.2	Inform Traveler	RTS
1.4.1.3	6.3.3	Provide Traveler Kiosk Interface	RTS
1.4.1.3	6.4.2	Match Rider and Provider	ISP
1.4.1.3	6.4.3	Report Ride Match Results to Requestor	ISP
1.4.1.3	6.8.3.1	Get Traveler Personal Request	PIAS
1.4.1.3	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.4.1.3	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.4.1.4	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.1.4	6.3.3	Provide Traveler Kiosk Interface	RTS
1.4.1.4	6.4.1	Screen Rider Requests	ISP
1.4.1.4	6.4.2	Match Rider and Provider	ISP
1.4.1.4	6.4.3	Report Ride Match Results to Requestor	ISP
1.4.1.4	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.4.2	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.2	6.4.1	Screen Rider Requests	ISP
1.4.2	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.4.2	7.4.2	Collect Price Data for ITS Use	ISP
1.4.2.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.2.1	6.4.1	Screen Rider Requests	ISP
1.4.2.1	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.4.2.2	6.4.1	Screen Rider Requests	ISP
1.4.2.2	9	Satisfy Implementation Requirements	N/A
1.4.2.3	7.4.2	Collect Price Data for ITS Use	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.4.2.4	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.2.4	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.4.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.3	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.3	6.4.2	Match Rider and Provider	ISP
1.4.3	6.6.1	Provide Multimodal Route Selection	ISP
1.4.3	6.6.4	Select Transit Route	ISP
1.4.3	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.4.3	7.4.2	Collect Price Data for ITS Use	ISP
1.4.3.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.3.2	6.1.2	Confirm Traveler's Trip Plan	ISP
1.4.3.2	7.4.1.1	Process Commercial Vehicle Payments	CVAS
1.4.3.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.3.3	6.6.1	Provide Multimodal Route Selection	ISP
1.4.3.3	6.6.4	Select Transit Route	ISP
1.4.3.3(a)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.3.3(b)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.3.3(c)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.3.4	6.4.2	Match Rider and Provider	ISP
1.4.3.5	7.4.2	Collect Price Data for ITS Use	ISP
1.4.3.6	7.4.2	Collect Price Data for ITS Use	ISP
1.4.4.3(d)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.4.3(e)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.4.3(f)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.4.4.3(f)	6.6.1	Provide Multimodal Route Selection	ISP
1.4.4.3(g)	6.6.1	Provide Multimodal Route Selection	ISP
1.5	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.5	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.5	6.2.5	Provide Driver Interface	VS
1.5	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.5	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.5	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.5	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.5.0	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.5.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.0	6.1.2	Confirm Traveler's Trip Plan	ISP
1.5.0	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.0	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.0	6.2.3	Provide Transit User Advisory Interface	TRVS
1.5.0	6.2.4	Collect Yellow Pages Data	ISP
1.5.0	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.0	6.3.1	Get Traveler Request	RTS
1.5.0	6.3.2	Inform Traveler	RTS
1.5.0	6.5.1	Collect and Update Traveler Information	ISP
1.5.0	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.0	6.8.1.5	Provide Traveler Emergency Message Interface	PIAS
1.5.0	6.8.3.1	Get Traveler Personal Request	PIAS
1.5.0	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.5.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.5.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1	6.5.1	Collect and Update Traveler Information	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.5.1	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.1.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.1	6.5.1	Collect and Update Traveler Information	ISP
1.5.1.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.2	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.2	6.5.1	Collect and Update Traveler Information	ISP
1.5.1.2.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.2.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.2.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.2.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.2.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.2.2	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.2.3	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.2.3	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.2.3	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.2.4	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.2.4	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.2.4	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.2.5	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.2.5	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.2.5	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.3	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.3	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.3	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.3	6.5.1	Collect and Update Traveler Information	ISP
1.5.1.3	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.1.4	6.1.2	Confirm Traveler's Trip Plan	ISP
1.5.1.4	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.4	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.4	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.5	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.1.5	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.1.5	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.1.5	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2	1.2.4.1	Output Control Data for Roads	TMS
1.5.2	1.2.4.2	Output Control Data for Freeways	TMS
1.5.2	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.5.2	1.2.7.1	Process Indicator Output Data for Roads	RS
1.5.2	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.5.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.2	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.5.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.2	6.2.3	Provide Transit User Advisory Interface	TRVS
1.5.2	6.2.4	Collect Yellow Pages Data	ISP
1.5.2	6.2.5	Provide Driver Interface	VS
1.5.2	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2	6.3.1	Get Traveler Request	RTS
1.5.2	6.3.2	Inform Traveler	RTS
1.5.2	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5.2	6.3.4	Update Traveler Display Map Data at Kiosk	RTS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.5.2	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.5.2	6.8.1.5	Provide Traveler Emergency Message Interface	PIAS
1.5.2	6.8.3.1	Get Traveler Personal Request	PIAS
1.5.2	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.5.2	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.5.2	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.5.2.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.2.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.2.1	6.2.3	Provide Transit User Advisory Interface	TRVS
1.5.2.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2.1	6.3.2	Inform Traveler	RTS
1.5.2.1	6.8.1.5	Provide Traveler Emergency Message Interface	PIAS
1.5.2.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.5.2.2	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.5.2.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.2.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.2.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.2.2	6.2.3	Provide Transit User Advisory Interface	TRVS
1.5.2.2	6.2.4	Collect Yellow Pages Data	ISP
1.5.2.2	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2.2	6.3.2	Inform Traveler	RTS
1.5.2.2	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.2	6.8.1.5	Provide Traveler Emergency Message Interface	PIAS
1.5.2.2	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
1.5.2.2(a)	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2.2(a)	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.2(b)	6.2.4	Collect Yellow Pages Data	ISP
1.5.2.2(b)	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2.2(b)	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.2(c)	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.5.2.2(d)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.2.2(e)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.2.2(f)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.2.2(g)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.2.2(g)	6.2.4	Collect Yellow Pages Data	ISP
1.5.2.2(h)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.5.2.2(h)	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2.2(h)	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.3	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.2.3	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
1.5.2.3	6.2.3	Provide Transit User Advisory Interface	TRVS
1.5.2.3	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2.3	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.3	6.8.1.5	Provide Traveler Emergency Message Interface	PIAS
1.5.2.3(a)	6.2.6	Provide Yellow Pages Data and Reservations	ISP
1.5.2.3(a)	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.3(b)	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.4	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
1.5.2.4	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
1.5.2.5	1.2.4.1	Output Control Data for Roads	TMS
1.5.2.5	1.2.4.2	Output Control Data for Freeways	TMS
1.5.2.5	1.2.7.1	Process Indicator Output Data for Roads	RS
1.5.2.5	1.2.7.5	Process Indicator Output Data for Freeways	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.5.2.5	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.5.2.5	6.2.5	Provide Driver Interface	VS
1.5.2.5	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5.2.5	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.5.2.5	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.5.2.5	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.5.2.5	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.5.2.5(a)	1.2.4.1	Output Control Data for Roads	TMS
1.5.2.5(a)	1.2.4.2	Output Control Data for Freeways	TMS
1.5.2.5(a)	1.2.7.1	Process Indicator Output Data for Roads	RS
1.5.2.5(a)	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.5.2.5(b)	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.5.2.5(c)	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.5.2.5(c)	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.5.2.5(d)	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.5.2.5(d)	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.5.2.5(d)	6.8.3.3	Provide Traveler Personal Interface	PIAS
1.5.2.5(d)	6.8.3.4	Update Traveler Personal Display Map Data	PIAS
1.5.2.5(e)	6.2.5	Provide Driver Interface	VS
1.5.2.5(f)	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5.2.5(f)	6.3.4	Update Traveler Display Map Data at Kiosk	RTS
1.5.2.5(g)	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
1.5.2.5(g)	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
1.5.2.6	6.3.1	Get Traveler Request	RTS
1.5.2.6	6.3.2	Inform Traveler	RTS
1.5.2.6	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5.2.6(a)	6.3.2	Inform Traveler	RTS
1.5.2.6(b)	6.3.1	Get Traveler Request	RTS
1.5.2.6(b)	6.3.2	Inform Traveler	RTS
1.5.2.6(b)	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5.2.6(c)	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5.2.6(d)	6.3.3	Provide Traveler Kiosk Interface	RTS
1.5.2.6(e)	6.3.2	Inform Traveler	RTS
1.5.2.6(e)	6.3.3	Provide Traveler Kiosk Interface	RTS
1.6	1.1.1.1	Process Traffic Sensor Data	RS
1.6	1.1.2.1	Process Traffic Data for Storage	TMS
1.6	1.1.2.2	Process Traffic Data	TMS
1.6	1.1.2.3	Update Data Source Static Data	TMS
1.6	1.1.2.4	Monitor HOV lane use	TMS
1.6	1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.6	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6	1.1.3	Generate Predictive Traffic Model	TMS
1.6	1.1.4.1	Retrieve Traffic Data	TMS
1.6	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.6	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.6	1.1.4.4	Update Traffic Display Map Data	TMS
1.6	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.6	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6	1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.6	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6	1.2.1	Select Strategy	TMS
1.6	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6	1.2.3	Determine Ramp State	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.6	1.2.4.1	Output Control Data for Roads	TMS
1.6	1.2.4.2	Output Control Data for Freeways	TMS
1.6	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6	1.2.5.1	Determine Parking Lot State	PMS
1.6	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.6	1.2.6.2	Provide Static Data Store Output Interface	TMS
1.6	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6	3.1.3	Process Vehicle On-board Data	VS
1.6	5.3.2	Dispatch Vehicle	EM
1.6	5.3.7	Provide Emergency Vehicle Route	EM
1.6	5.4.1	Process TM Detected Violations	TMS
1.6	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.6	6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	ISP
1.6.0	1.1.2.1	Process Traffic Data for Storage	TMS
1.6.0	1.1.2.2	Process Traffic Data	TMS
1.6.0	1.1.2.3	Update Data Source Static Data	TMS
1.6.0	1.1.3	Generate Predictive Traffic Model	TMS
1.6.0	1.1.4.1	Retrieve Traffic Data	TMS
1.6.0	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.6.0	1.1.4.4	Update Traffic Display Map Data	TMS
1.6.0	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.6.0	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6.0	1.2.1	Select Strategy	TMS
1.6.0	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.0	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.0	1.2.3	Determine Ramp State	TMS
1.6.0	1.2.4.1	Output Control Data for Roads	TMS
1.6.0	1.2.4.2	Output Control Data for Freeways	TMS
1.6.0	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.0	1.2.5.1	Determine Parking Lot State	PMS
1.6.0	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.6.0	1.2.6.2	Provide Static Data Store Output Interface	TMS
1.6.0	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.0	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6.0	5.4.1	Process TM Detected Violations	TMS
1.6.1	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.6.1	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.6.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1	1.2.3	Determine Ramp State	TMS
1.6.1.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.1	1.2.3	Determine Ramp State	TMS
1.6.1.1.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.1.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.1.2	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.1.2	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.1.2	1.2.3	Determine Ramp State	TMS
1.6.1.1.3	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.1.3	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.1.4	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.1.4	1.2.2.2	Determine Indicator State for Road Management	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.6.1.1.5	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.1.5	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.2	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.2	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.2	1.2.3	Determine Ramp State	TMS
1.6.1.2.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.2.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.2.1	1.2.3	Determine Ramp State	TMS
1.6.1.2.1	1.2.4.1	Output Control Data for Roads	TMS
1.6.1.2.1	1.2.4.2	Output Control Data for Freeways	TMS
1.6.1.2.1	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.1.2.2	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.2.2	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.2.3	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.2.3	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.2.3	1.2.3	Determine Ramp State	TMS
1.6.1.3	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.3	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.4	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.4	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.4	1.2.4.1	Output Control Data for Roads	TMS
1.6.1.4	1.2.4.2	Output Control Data for Freeways	TMS
1.6.1.4	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.1.4.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.4.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.5	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.5	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.6	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.6	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.7	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.6.1.7	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.6.1.7	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.7	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.1.7(a)	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.6.1.7(a)	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.6.1.7(b)	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.1.7(b)	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.2	1.1.1.1	Process Traffic Sensor Data	RS
1.6.2	1.1.2.1	Process Traffic Data for Storage	TMS
1.6.2	1.1.2.2	Process Traffic Data	TMS
1.6.2	1.1.2.3	Update Data Source Static Data	TMS
1.6.2	1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.6.2	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6.2	1.1.3	Generate Predictive Traffic Model	TMS
1.6.2	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6.2	1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.6.2	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6.2	1.2.4.1	Output Control Data for Roads	TMS
1.6.2	1.2.4.2	Output Control Data for Freeways	TMS
1.6.2	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.2	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2	5.4.1	Process TM Detected Violations	TMS
1.6.2.1	1.1.1.1	Process Traffic Sensor Data	RS
1.6.2.1.1	1.1.1.1	Process Traffic Sensor Data	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.6.2.2	1.1.1.1	Process Traffic Sensor Data	RS
1.6.2.2	1.1.2.2	Process Traffic Data	TMS
1.6.2.2	1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.6.2.2	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6.2.2	1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.6.2.2	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6.2.2	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2.2.1	1.1.1.1	Process Traffic Sensor Data	RS
1.6.2.2.1	1.1.2.2	Process Traffic Data	TMS
1.6.2.3	1.1.1.1	Process Traffic Sensor Data	RS
1.6.2.3	1.1.2.2	Process Traffic Data	TMS
1.6.2.3	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6.2.3	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6.2.3	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2.3.1	1.1.1.1	Process Traffic Sensor Data	RS
1.6.2.3.1	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6.2.3.1	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6.2.3.1	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2.3.2	1.1.2.2	Process Traffic Data	TMS
1.6.2.3.2	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6.2.3.2	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6.2.3.2	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2.4	1.1.1.1	Process Traffic Sensor Data	RS
1.6.2.4	1.1.2.2	Process Traffic Data	TMS
1.6.2.4	1.1.2.3	Update Data Source Static Data	TMS
1.6.2.4	1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.6.2.4	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6.2.4	1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.6.2.4	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6.2.4	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2.4	5.4.1	Process TM Detected Violations	TMS
1.6.2.4.1	1.1.2.2	Process Traffic Data	TMS
1.6.2.4.1	1.1.2.3	Update Data Source Static Data	TMS
1.6.2.4.1	1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.6.2.4.1	1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.6.2.4.1	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2.4.1	5.4.1	Process TM Detected Violations	TMS
1.6.2.5	1.1.2.1	Process Traffic Data for Storage	TMS
1.6.2.5	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.6.2.5	1.1.3	Generate Predictive Traffic Model	TMS
1.6.2.5	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6.2.5	1.1.7	Collect Vehicle Smart Probe Data	RS
1.6.2.5	1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.6.2.5.1	1.1.2.1	Process Traffic Data for Storage	TMS
1.6.2.5.1	1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.6.2.5.1	1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.6.2.5.2	1.1.3	Generate Predictive Traffic Model	TMS
1.6.2.5.2	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6.3	1.1.2.4	Monitor HOV lane use	TMS
1.6.3	1.1.4.1	Retrieve Traffic Data	TMS
1.6.3	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.6.3	1.1.4.4	Update Traffic Display Map Data	TMS
1.6.3	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.6.3	1.1.5	Exchange data with Other Traffic Centers	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.6.3	1.2.1	Select Strategy	TMS
1.6.3	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3	1.2.4.1	Output Control Data for Roads	TMS
1.6.3	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.3	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6.3	5.3.2	Dispatch Vehicle	EM
1.6.3	5.3.7	Provide Emergency Vehicle Route	EM
1.6.3	5.4.1	Process TM Detected Violations	TMS
1.6.3.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.2	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.2	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.2	5.3.2	Dispatch Vehicle	EM
1.6.3.2	5.3.7	Provide Emergency Vehicle Route	EM
1.6.3.2	5.4.1	Process TM Detected Violations	TMS
1.6.3.2.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.2.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.2.2	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.2.2	5.3.2	Dispatch Vehicle	EM
1.6.3.2.2	5.3.7	Provide Emergency Vehicle Route	EM
1.6.3.2.2	5.4.1	Process TM Detected Violations	TMS
1.6.3.2.2(a)	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.2.2(b)	5.4.1	Process TM Detected Violations	TMS
1.6.3.2.2(c)	5.3.2	Dispatch Vehicle	EM
1.6.3.2.2(c)	5.3.7	Provide Emergency Vehicle Route	EM
1.6.3.3	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.3	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.3	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.3	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3.3	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3.3	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.3.3	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6.3.3.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.3.1	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.3.1	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.3.1	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3.3.1	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3.3.1	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.3.3.2	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.3.2	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.3.2	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.3.2	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3.3.2	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3.3.2	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.3.3.2	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6.3.3.3	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.3.3	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.3.3	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.3.3	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3.3.3	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3.3.3	1.2.7.5	Process Indicator Output Data for Freeways	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.6.3.3.4	1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.6.3.3.4	1.2.2.2	Determine Indicator State for Road Management	TMS
1.6.3.3.4	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.3.4	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3.3.4	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3.3.4	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.3.4	1.1.2.4	Monitor HOV lane use	TMS
1.6.3.4	1.1.4.1	Retrieve Traffic Data	TMS
1.6.3.4	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.6.3.4	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.4	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3.4	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3.4	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.3.4	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6.3.4(a)	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.4(a)	1.2.7.1	Process Indicator Output Data for Roads	RS
1.6.3.4(b)	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6.3.4(c)	1.2.7.5	Process Indicator Output Data for Freeways	RS
1.6.3.4(d)	1.1.2.4	Monitor HOV lane use	TMS
1.6.3.4(e)	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.6.3.4(e)	1.1.4.4	Update Traffic Display Map Data	TMS
1.6.3.4.1	1.1.4.1	Retrieve Traffic Data	TMS
1.6.3.4.1	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.6.3.4.1	1.2.4.1	Output Control Data for Roads	TMS
1.6.3.4.1	1.2.4.2	Output Control Data for Freeways	TMS
1.6.3.4.1	1.2.4.3	Output In-vehicle Signage Data	TMS
1.6.3.5	1.2.1	Select Strategy	TMS
1.6.3.6	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6.3.6	1.2.1	Select Strategy	TMS
1.6.4	1.1.4.1	Retrieve Traffic Data	TMS
1.6.4	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6.4	3.1.3	Process Vehicle On-board Data	VS
1.6.4	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.6.4	6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	ISP
1.6.4(a)	1.1.4.1	Retrieve Traffic Data	TMS
1.6.4(a)	1.1.5	Exchange data with Other Traffic Centers	TMS
1.6.4(a)	3.1.3	Process Vehicle On-board Data	VS
1.6.4(b)	1.1.4.1	Retrieve Traffic Data	TMS
1.6.4(b)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.6.4(b)	6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	ISP
1.6.4(c)	1.1.4.1	Retrieve Traffic Data	TMS
1.6.4(c)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.6.4(c)	6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	ISP
1.6.4(d)	1.1.4.1	Retrieve Traffic Data	TMS
1.7	1.1.1.1	Process Traffic Sensor Data	RS
1.7	1.1.1.3	Process Environmental Sensor Data	RS
1.7	1.1.2.2	Process Traffic Data	TMS
1.7	1.1.2.4	Monitor HOV lane use	TMS
1.7	1.1.2.7	Monitor Reversible Lanes	TMS
1.7	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.7	1.2.5.2	Coordinate Other Parking Data	PMS
1.7	1.2.5.3	Provide Parking Lot Operator Interface	PMS
1.7	1.2.5.4	Determine P+R needs for Transit Management	PMS
1.7	1.2.7.2	Monitor Roadside Equipment Operation for Faults	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.7	1.2.7.4	Process In-vehicle Signage Data	RS
1.7	1.2.8.1	Collect Indicator Fault Data	TMS
1.7	1.2.8.2	Maintain Indicator Fault Data Store	TMS
1.7	1.2.8.3	Provide Indicator Fault Interface for C and M	TMS
1.7	1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	TMS
1.7	1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.7	1.3.1.3	Process Traffic Images	RS
1.7	1.3.2.1	Store Possible Incident Data	TMS
1.7	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7	1.3.2.3	Review and Classify Planned Events	TMS
1.7	1.3.2.4	Provide Planned Events Store Interface	TMS
1.7	1.3.2.5	Provide Current Incidents Store Interface	TMS
1.7	1.3.3	Respond to Current Incidents	TMS
1.7	1.3.4.1	Retrieve Incident Data	TMS
1.7	1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	TMS
1.7	1.3.4.3	Provide Media Incident Data Interface	TMS
1.7	1.3.4.4	Update Incident Display Map Data	TMS
1.7	1.3.4.5	Manage Resources for Incidents	TMS
1.7	1.3.5	Manage Possible Predetermined Responses Store	TMS
1.7	1.3.6	Manage Predetermined Incident Response Data	TMS
1.7	1.3.7	Analyze Incident Response Log	TMS
1.7	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.7	6.5.1	Collect and Update Traveler Information	ISP
1.7.0	1.1.2.4	Monitor HOV lane use	TMS
1.7.0	1.1.2.7	Monitor Reversible Lanes	TMS
1.7.0	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.7.0	1.2.5.2	Coordinate Other Parking Data	PMS
1.7.0	1.2.5.3	Provide Parking Lot Operator Interface	PMS
1.7.0	1.2.5.4	Determine P+R needs for Transit Management	PMS
1.7.0	1.2.7.2	Monitor Roadside Equipment Operation for Faults	RS
1.7.0	1.2.7.4	Process In-vehicle Signage Data	RS
1.7.0	1.2.8.1	Collect Indicator Fault Data	TMS
1.7.0	1.2.8.2	Maintain Indicator Fault Data Store	TMS
1.7.0	1.2.8.3	Provide Indicator Fault Interface for C and M	TMS
1.7.0	1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	TMS
1.7.0	1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.7.0	1.3.2.1	Store Possible Incident Data	TMS
1.7.0	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.0	1.3.2.3	Review and Classify Planned Events	TMS
1.7.0	1.3.2.4	Provide Planned Events Store Interface	TMS
1.7.0	1.3.2.5	Provide Current Incidents Store Interface	TMS
1.7.0	1.3.3	Respond to Current Incidents	TMS
1.7.0	1.3.4.1	Retrieve Incident Data	TMS
1.7.0	1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	TMS
1.7.0	1.3.4.3	Provide Media Incident Data Interface	TMS
1.7.0	1.3.4.4	Update Incident Display Map Data	TMS
1.7.0	1.3.4.5	Manage Resources for Incidents	TMS
1.7.0	1.3.5	Manage Possible Predetermined Responses Store	TMS
1.7.0	1.3.6	Manage Predetermined Incident Response Data	TMS
1.7.0	1.3.7	Analyze Incident Response Log	TMS
1.7.0	4.4.1.8	Report Traveler Emergencies	RTS
1.7.0	6.5.3	Register Yellow Pages Service Providers	ISP
1.7.0	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.7.1	1.1.1.1	Process Traffic Sensor Data	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.7.1	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1	1.1.2.2	Process Traffic Data	TMS
1.7.1	1.1.2.7	Monitor Reversible Lanes	TMS
1.7.1	1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.7.1	1.3.1.3	Process Traffic Images	RS
1.7.1	1.3.2.1	Store Possible Incident Data	TMS
1.7.1	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1	1.3.2.3	Review and Classify Planned Events	TMS
1.7.1	1.3.3	Respond to Current Incidents	TMS
1.7.1	1.3.4.1	Retrieve Incident Data	TMS
1.7.1	1.3.4.3	Provide Media Incident Data Interface	TMS
1.7.1	1.3.4.5	Manage Resources for Incidents	TMS
1.7.1	4.4.1.8	Report Traveler Emergencies	RTS
1.7.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.7.1	6.5.1	Collect and Update Traveler Information	ISP
1.7.1.1	1.1.1.1	Process Traffic Sensor Data	RS
1.7.1.1	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.1	1.1.2.2	Process Traffic Data	TMS
1.7.1.1	1.1.2.7	Monitor Reversible Lanes	TMS
1.7.1.1	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1	1.3.4.3	Provide Media Incident Data Interface	TMS
1.7.1.1	1.3.4.5	Manage Resources for Incidents	TMS
1.7.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.7.1.1	6.5.1	Collect and Update Traveler Information	ISP
1.7.1.1.1	1.1.1.1	Process Traffic Sensor Data	RS
1.7.1.1.1	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.1.1	1.1.2.2	Process Traffic Data	TMS
1.7.1.1.1	1.1.2.7	Monitor Reversible Lanes	TMS
1.7.1.1.1	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1.1	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1	1.3.4.3	Provide Media Incident Data Interface	TMS
1.7.1.1.1	1.3.4.5	Manage Resources for Incidents	TMS
1.7.1.1.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.7.1.1.1	6.5.1	Collect and Update Traveler Information	ISP
1.7.1.1.1(a)	1.1.1.1	Process Traffic Sensor Data	RS
1.7.1.1.1(a)	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.1.1(a)	1.1.2.2	Process Traffic Data	TMS
1.7.1.1.1(a)	1.1.2.7	Monitor Reversible Lanes	TMS
1.7.1.1.1(a)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1(b)	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.1.1(b)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1(c)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1(c)	1.3.4.5	Manage Resources for Incidents	TMS
1.7.1.1.1(d)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1(d)	1.3.4.3	Provide Media Incident Data Interface	TMS
1.7.1.1.1(e)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1(e)	6.5.1	Collect and Update Traveler Information	ISP
1.7.1.1.1(f)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1(f)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.7.1.1.1(g)	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.1.1(g)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.1.1(g)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.7.1.1.1(h)	1.3.2.2	Review and Classify Possible Incidents	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.7.1.1.2	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1.2(a)	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1.2(b)	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1.2(c)	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1.2(d)	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1.2(e)	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.1.3	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.2	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.2	1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.7.1.2	1.3.1.3	Process Traffic Images	RS
1.7.1.2	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.2	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2	1.3.2.3	Review and Classify Planned Events	TMS
1.7.1.2	1.3.3	Respond to Current Incidents	TMS
1.7.1.2	1.3.4.1	Retrieve Incident Data	TMS
1.7.1.2	1.3.4.5	Manage Resources for Incidents	TMS
1.7.1.2	4.4.1.8	Report Traveler Emergencies	RTS
1.7.1.2.1	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.2.1	1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.7.1.2.1	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.2.1	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.1	1.3.4.1	Retrieve Incident Data	TMS
1.7.1.2.1	4.4.1.8	Report Traveler Emergencies	RTS
1.7.1.2.1(a)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.1(b)	1.1.1.3	Process Environmental Sensor Data	RS
1.7.1.2.1(b)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.1(c)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.1(c)	1.3.4.1	Retrieve Incident Data	TMS
1.7.1.2.1(d)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.1(d)	1.3.4.1	Retrieve Incident Data	TMS
1.7.1.2.1(e)	1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.7.1.2.1(e)	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.2.1(e)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.1(f)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.1(f)	1.3.4.1	Retrieve Incident Data	TMS
1.7.1.2.1(g)	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.2.1(g)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.2	1.3.1.3	Process Traffic Images	RS
1.7.1.2.2	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.2.2	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.2	1.3.2.3	Review and Classify Planned Events	TMS
1.7.1.2.2	1.3.4.1	Retrieve Incident Data	TMS
1.7.1.2.2	1.3.4.5	Manage Resources for Incidents	TMS
1.7.1.2.2(a)	1.3.1.3	Process Traffic Images	RS
1.7.1.2.2(a)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.2(a)	1.3.2.3	Review and Classify Planned Events	TMS
1.7.1.2.2(b)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.2(b)	1.3.2.3	Review and Classify Planned Events	TMS
1.7.1.2.2(c)	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.1.2.2(d)	1.3.4.1	Retrieve Incident Data	TMS
1.7.1.2.2(e)	1.3.4.5	Manage Resources for Incidents	TMS
1.7.1.2.3	1.3.2.1	Store Possible Incident Data	TMS
1.7.1.2.3	1.3.3	Respond to Current Incidents	TMS
1.7.2	1.3.2.1	Store Possible Incident Data	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.7.2	1.3.3	Respond to Current Incidents	TMS
1.7.2.1	1.3.2.1	Store Possible Incident Data	TMS
1.7.2.2	1.3.3	Respond to Current Incidents	TMS
1.7.2.3	1.3.3	Respond to Current Incidents	TMS
1.7.2.4	1.3.3	Respond to Current Incidents	TMS
1.7.2.5	1.3.3	Respond to Current Incidents	TMS
1.7.3	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.7.3	1.3.3	Respond to Current Incidents	TMS
1.7.3	1.3.4.5	Manage Resources for Incidents	TMS
1.7.3.1	1.3.3	Respond to Current Incidents	TMS
1.7.3.1	1.3.4.5	Manage Resources for Incidents	TMS
1.7.3.1(a)	1.3.3	Respond to Current Incidents	TMS
1.7.3.1(b)	1.3.4.5	Manage Resources for Incidents	TMS
1.7.3.2	1.3.3	Respond to Current Incidents	TMS
1.7.3.3	1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.7.3.3	1.3.3	Respond to Current Incidents	TMS
1.7.4	1.1.2.4	Monitor HOV lane use	TMS
1.7.4	1.1.2.7	Monitor Reversible Lanes	TMS
1.7.4	1.2.5.2	Coordinate Other Parking Data	PMS
1.7.4	1.2.5.3	Provide Parking Lot Operator Interface	PMS
1.7.4	1.2.5.4	Determine P+R needs for Transit Management	PMS
1.7.4	1.2.7.2	Monitor Roadside Equipment Operation for Faults	RS
1.7.4	1.2.7.4	Process In-vehicle Signage Data	RS
1.7.4	1.2.8.1	Collect Indicator Fault Data	TMS
1.7.4	1.2.8.2	Maintain Indicator Fault Data Store	TMS
1.7.4	1.2.8.3	Provide Indicator Fault Interface for C and M	TMS
1.7.4	1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	TMS
1.7.4	1.3.2.2	Review and Classify Possible Incidents	TMS
1.7.4	1.3.2.3	Review and Classify Planned Events	TMS
1.7.4	1.3.2.4	Provide Planned Events Store Interface	TMS
1.7.4	1.3.2.5	Provide Current Incidents Store Interface	TMS
1.7.4	1.3.3	Respond to Current Incidents	TMS
1.7.4	1.3.4.1	Retrieve Incident Data	TMS
1.7.4	1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	TMS
1.7.4	1.3.4.3	Provide Media Incident Data Interface	TMS
1.7.4	1.3.4.4	Update Incident Display Map Data	TMS
1.7.4	1.3.5	Manage Possible Predetermined Responses Store	TMS
1.7.4	1.3.6	Manage Predetermined Incident Response Data	TMS
1.7.4	1.3.7	Analyze Incident Response Log	TMS
1.7.4	6.5.3	Register Yellow Pages Service Providers	ISP
1.7.4	6.6.2.3	Provide Route Segment Data for Other Areas	ISP
1.8	1.1.1.1	Process Traffic Sensor Data	RS
1.8	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8	1.1.2.1	Process Traffic Data for Storage	TMS
1.8	1.1.2.2	Process Traffic Data	TMS
1.8	1.1.2.4	Monitor HOV lane use	TMS
1.8	1.2.5.1	Determine Parking Lot State	PMS
1.8	1.2.5.4	Determine P+R needs for Transit Management	PMS
1.8	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.8	1.2.7.3	Manage Indicator Preemptions	RS
1.8	1.4.1	Provide Traffic Operations Personnel Demand Interface	TMS
1.8	1.4.2	Collect Demand Forecast Data	TMS
1.8	1.4.3	Update Demand Display Map Data	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.8	1.4.4	Implement Demand Management Policy	TMS
1.8	1.4.5	Calculate Forecast Demand	TMS
1.8	1.5.2	Process Pollution Data	EMMS
1.8	1.5.5	Process Vehicle Pollution Data	RS
1.8	1.5.6	Detect Roadside Pollution Levels	RS
1.8	4.2.3.9	Update Transit Map Data	TRMS
1.8	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8	6.1.2	Confirm Traveler's Trip Plan	ISP
1.8	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
1.8	6.2.5	Provide Driver Interface	VS
1.8	6.3.2	Inform Traveler	RTS
1.8	6.4.1	Screen Rider Requests	ISP
1.8	6.4.2	Match Rider and Provider	ISP
1.8	7.2.1.6	Manage Parking Lot Financial Processing	PMS
1.8.0	1.1.1.1	Process Traffic Sensor Data	RS
1.8.0	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.0	1.2.5.1	Determine Parking Lot State	PMS
1.8.0	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.0	1.2.7.3	Manage Indicator Preemptions	RS
1.8.0	1.4.1	Provide Traffic Operations Personnel Demand Interface	TMS
1.8.0	1.4.2	Collect Demand Forecast Data	TMS
1.8.0	1.4.4	Implement Demand Management Policy	TMS
1.8.0	1.4.5	Calculate Forecast Demand	TMS
1.8.0	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.1	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.1	1.1.2.2	Process Traffic Data	TMS
1.8.1	1.1.2.4	Monitor HOV lane use	TMS
1.8.1	1.2.5.4	Determine P+R needs for Transit Management	PMS
1.8.1	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.1	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.8.1	1.4.1	Provide Traffic Operations Personnel Demand Interface	TMS
1.8.1	1.4.2	Collect Demand Forecast Data	TMS
1.8.1	1.4.3	Update Demand Display Map Data	TMS
1.8.1	1.4.4	Implement Demand Management Policy	TMS
1.8.1	1.4.5	Calculate Forecast Demand	TMS
1.8.1	1.5.2	Process Pollution Data	EMMS
1.8.1	1.5.5	Process Vehicle Pollution Data	RS
1.8.1	1.5.6	Detect Roadside Pollution Levels	RS
1.8.1	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1	6.1.2	Confirm Traveler's Trip Plan	ISP
1.8.1	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
1.8.1	6.2.5	Provide Driver Interface	VS
1.8.1	6.4.1	Screen Rider Requests	ISP
1.8.1	6.4.2	Match Rider and Provider	ISP
1.8.1	7.2.1.6	Manage Parking Lot Financial Processing	PMS
1.8.1.1	1.4.1	Provide Traffic Operations Personnel Demand Interface	TMS
1.8.1.1	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.1	1.4.3	Update Demand Display Map Data	TMS
1.8.1.1	1.4.4	Implement Demand Management Policy	TMS
1.8.1.1	1.4.5	Calculate Forecast Demand	TMS
1.8.1.2	1.1.2.4	Monitor HOV lane use	TMS
1.8.1.2	1.2.5.4	Determine P+R needs for Transit Management	PMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.8.1.2	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.8.1.2	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.2	1.4.4	Implement Demand Management Policy	TMS
1.8.1.2	1.4.5	Calculate Forecast Demand	TMS
1.8.1.2	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.2	6.4.1	Screen Rider Requests	ISP
1.8.1.2	6.4.2	Match Rider and Provider	ISP
1.8.1.2(a)	1.2.5.4	Determine P+R needs for Transit Management	PMS
1.8.1.2(a)	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.8.1.2(b)	1.1.2.4	Monitor HOV lane use	TMS
1.8.1.2(c)	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1.2(d)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.2(d)	6.4.1	Screen Rider Requests	ISP
1.8.1.2(d)	6.4.2	Match Rider and Provider	ISP
1.8.1.2(e)	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.2(e)	1.4.4	Implement Demand Management Policy	TMS
1.8.1.2(e)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.2(f)	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.2(f)	1.4.4	Implement Demand Management Policy	TMS
1.8.1.2(g)	6.4.1	Screen Rider Requests	ISP
1.8.1.2(g)	6.4.2	Match Rider and Provider	ISP
1.8.1.3	1.1.2.4	Monitor HOV lane use	TMS
1.8.1.3	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.3	1.4.4	Implement Demand Management Policy	TMS
1.8.1.3	1.4.5	Calculate Forecast Demand	TMS
1.8.1.3	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.3	6.4.1	Screen Rider Requests	ISP
1.8.1.3	6.4.2	Match Rider and Provider	ISP
1.8.1.3(a)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.3(b)	1.1.2.4	Monitor HOV lane use	TMS
1.8.1.3(c)	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1.3(d)	6.4.1	Screen Rider Requests	ISP
1.8.1.3(d)	6.4.2	Match Rider and Provider	ISP
1.8.1.3(e)	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.3(e)	1.4.4	Implement Demand Management Policy	TMS
1.8.1.3(e)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.3(f)	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.3(f)	1.4.4	Implement Demand Management Policy	TMS
1.8.1.3(f)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.3(g)	6.4.1	Screen Rider Requests	ISP
1.8.1.3(g)	6.4.2	Match Rider and Provider	ISP
1.8.1.4	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.1.4	1.1.2.2	Process Traffic Data	TMS
1.8.1.4	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.1.4	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.4	1.4.4	Implement Demand Management Policy	TMS
1.8.1.4	1.4.5	Calculate Forecast Demand	TMS
1.8.1.4	1.5.2	Process Pollution Data	EMMS
1.8.1.4	1.5.5	Process Vehicle Pollution Data	RS
1.8.1.4	1.5.6	Detect Roadside Pollution Levels	RS
1.8.1.4	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1.4(a)	1.1.1.2	Collect and Process Sensor Fault Data	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.8.1.4(a)	1.1.2.2	Process Traffic Data	TMS
1.8.1.4(b)	1.5.5	Process Vehicle Pollution Data	RS
1.8.1.4(c)	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.1.4(c)	4.2.3.7	Provide Interface for Other TRM Data	TRMS
1.8.1.4(d)	1.5.2	Process Pollution Data	EMMS
1.8.1.4(d)	1.5.6	Detect Roadside Pollution Levels	RS
1.8.1.5	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.1.5	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.5	1.4.4	Implement Demand Management Policy	TMS
1.8.1.5	1.4.5	Calculate Forecast Demand	TMS
1.8.1.5(a)	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.5(a)	1.4.4	Implement Demand Management Policy	TMS
1.8.1.5(b)	1.4.4	Implement Demand Management Policy	TMS
1.8.1.5(b)	1.4.5	Calculate Forecast Demand	TMS
1.8.1.5(c)	1.4.2	Collect Demand Forecast Data	TMS
1.8.1.6	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.1.6	1.4.4	Implement Demand Management Policy	TMS
1.8.1.6	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.6	6.1.2	Confirm Traveler's Trip Plan	ISP
1.8.1.6	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
1.8.1.6	6.2.5	Provide Driver Interface	VS
1.8.1.6	7.2.1.6	Manage Parking Lot Financial Processing	PMS
1.8.1.6(a)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.1.6(a)	6.1.2	Confirm Traveler's Trip Plan	ISP
1.8.1.6(b)	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
1.8.1.6(c)	6.2.5	Provide Driver Interface	VS
1.8.1.6(d)	1.4.4	Implement Demand Management Policy	TMS
1.8.1.6(e)	7.2.1.6	Manage Parking Lot Financial Processing	PMS
1.8.1.6(f)	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.2	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.2	1.1.1.3	Process Environmental Sensor Data	RS
1.8.2	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.2	1.1.2.2	Process Traffic Data	TMS
1.8.2	1.1.2.4	Monitor HOV lane use	TMS
1.8.2	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.8.2	1.2.5.1	Determine Parking Lot State	PMS
1.8.2	1.2.5.2	Coordinate Other Parking Data	PMS
1.8.2	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.2	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.8.2	1.2.7.3	Manage Indicator Preemptions	RS
1.8.2	1.4.2	Collect Demand Forecast Data	TMS
1.8.2	1.4.4	Implement Demand Management Policy	TMS
1.8.2	1.4.5	Calculate Forecast Demand	TMS
1.8.2	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.8.2	1.5.4	Manage Pollution State Data Store	EMMS
1.8.2	1.5.5	Process Vehicle Pollution Data	RS
1.8.2	4.2.3.9	Update Transit Map Data	TRMS
1.8.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.2	6.3.2	Inform Traveler	RTS
1.8.2	6.4.1	Screen Rider Requests	ISP
1.8.2	6.4.2	Match Rider and Provider	ISP
1.8.2	7.1.1.1	Read Tag Data for Tolls	TCS
1.8.2	7.1.1.2	Calculate Vehicle Toll	TCS
1.8.2	7.1.1.3	Manage Bad Toll Payment Data	TAS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.8.2	7.1.1.9	Manage Toll Financial Processing	TAS
1.8.2	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
1.8.2	7.2.1.6	Manage Parking Lot Financial Processing	PMS
1.8.2	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
1.8.2.1	1.1.1.3	Process Environmental Sensor Data	RS
1.8.2.1	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.2.1	1.2.5.1	Determine Parking Lot State	PMS
1.8.2.1	1.2.5.2	Coordinate Other Parking Data	PMS
1.8.2.1	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.1	1.4.4	Implement Demand Management Policy	TMS
1.8.2.1	1.4.5	Calculate Forecast Demand	TMS
1.8.2.1	6.4.1	Screen Rider Requests	ISP
1.8.2.1	6.4.2	Match Rider and Provider	ISP
1.8.2.1	7.1.1.3	Manage Bad Toll Payment Data	TAS
1.8.2.1(a)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.1(b)	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.2.1(c)	1.2.5.1	Determine Parking Lot State	PMS
1.8.2.1(c)	1.2.5.2	Coordinate Other Parking Data	PMS
1.8.2.1(d)	6.4.1	Screen Rider Requests	ISP
1.8.2.1(d)	6.4.2	Match Rider and Provider	ISP
1.8.2.1(e)	1.1.1.3	Process Environmental Sensor Data	RS
1.8.2.1(f)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.1(f)	7.1.1.3	Manage Bad Toll Payment Data	TAS
1.8.2.10	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.2.10	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.8.2.10	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.10	1.4.4	Implement Demand Management Policy	TMS
1.8.2.10	1.4.5	Calculate Forecast Demand	TMS
1.8.2.10	7.1.1.9	Manage Toll Financial Processing	TAS
1.8.2.10	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
1.8.2.10(a)	7.1.1.9	Manage Toll Financial Processing	TAS
1.8.2.10(a)	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
1.8.2.10(b)	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.8.2.10(c)	1.1.2.1	Process Traffic Data for Storage	TMS
1.8.2.11	1.1.2.4	Monitor HOV lane use	TMS
1.8.2.11	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.2.11	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.11	1.4.4	Implement Demand Management Policy	TMS
1.8.2.11	1.4.5	Calculate Forecast Demand	TMS
1.8.2.11(a)	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.2.11(b)	1.1.2.4	Monitor HOV lane use	TMS
1.8.2.12	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.12	1.4.4	Implement Demand Management Policy	TMS
1.8.2.12	1.4.5	Calculate Forecast Demand	TMS
1.8.2.12	7.1.1.9	Manage Toll Financial Processing	TAS
1.8.2.12	7.2.1.6	Manage Parking Lot Financial Processing	PMS
1.8.2.12(a)	7.1.1.9	Manage Toll Financial Processing	TAS
1.8.2.12(b)	7.2.1.6	Manage Parking Lot Financial Processing	PMS
1.8.2.13	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.2.13	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.8.2.13	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.13	1.4.4	Implement Demand Management Policy	TMS
1.8.2.13	1.4.5	Calculate Forecast Demand	TMS
1.8.2.13	1.5.5	Process Vehicle Pollution Data	RS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.8.2.13	7.1.1.1	Read Tag Data for Tolls	TCS
1.8.2.13	7.1.1.2	Calculate Vehicle Toll	TCS
1.8.2.13	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
1.8.2.13(a)	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.8.2.13(b)	1.5.5	Process Vehicle Pollution Data	RS
1.8.2.13(c)	7.1.1.1	Read Tag Data for Tolls	TCS
1.8.2.13(c)	7.1.1.2	Calculate Vehicle Toll	TCS
1.8.2.13(c)	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
1.8.2.14	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.14	1.4.4	Implement Demand Management Policy	TMS
1.8.2.14	1.4.5	Calculate Forecast Demand	TMS
1.8.2.14(a)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.14(b)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.14(c)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.2	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.2	1.4.4	Implement Demand Management Policy	TMS
1.8.2.2	1.4.5	Calculate Forecast Demand	TMS
1.8.2.2	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.8.2.2	1.5.4	Manage Pollution State Data Store	EMMS
1.8.2.2(a)	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.8.2.2(b)	1.5.4	Manage Pollution State Data Store	EMMS
1.8.2.2(c)	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.8.2.3	1.1.2.2	Process Traffic Data	TMS
1.8.2.3	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.3	1.4.4	Implement Demand Management Policy	TMS
1.8.2.3	1.4.5	Calculate Forecast Demand	TMS
1.8.2.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.2.3	6.3.2	Inform Traveler	RTS
1.8.2.3(a)	1.1.2.2	Process Traffic Data	TMS
1.8.2.3(a)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.3(a)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.3(a)	6.3.2	Inform Traveler	RTS
1.8.2.3(b)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.3(c)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.3(c)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.2.3(d)	1.1.2.2	Process Traffic Data	TMS
1.8.2.3(d)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.4	1.1.2.4	Monitor HOV lane use	TMS
1.8.2.4	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.4	1.4.4	Implement Demand Management Policy	TMS
1.8.2.4	1.4.5	Calculate Forecast Demand	TMS
1.8.2.4	4.2.3.9	Update Transit Map Data	TRMS
1.8.2.4	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.2.4	6.4.1	Screen Rider Requests	ISP
1.8.2.4	6.4.2	Match Rider and Provider	ISP
1.8.2.4	7.1.1.9	Manage Toll Financial Processing	TAS
1.8.2.4(a)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.2.4(b)	1.1.2.4	Monitor HOV lane use	TMS
1.8.2.4(c)	4.2.3.9	Update Transit Map Data	TRMS
1.8.2.4(d)	6.4.1	Screen Rider Requests	ISP
1.8.2.4(d)	6.4.2	Match Rider and Provider	ISP
1.8.2.4(e)	7.1.1.9	Manage Toll Financial Processing	TAS
1.8.2.4(f)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.4(f)	1.4.4	Implement Demand Management Policy	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.8.2.4(f)	6.1.1	Provide Trip Planning Information to Traveler	ISP
1.8.2.4(g)	6.4.1	Screen Rider Requests	ISP
1.8.2.4(g)	6.4.2	Match Rider and Provider	ISP
1.8.2.5	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.5	1.4.4	Implement Demand Management Policy	TMS
1.8.2.5	1.4.5	Calculate Forecast Demand	TMS
1.8.2.5(a)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.5(a)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.5(a)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.5(b)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.5(b)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.5(b)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.5(c)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.5(c)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.5(c)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.5(d)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.5(d)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.5(d)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.5(e)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.5(e)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.5(e)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.6	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.6	1.4.4	Implement Demand Management Policy	TMS
1.8.2.6	1.4.5	Calculate Forecast Demand	TMS
1.8.2.7	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.7	1.4.4	Implement Demand Management Policy	TMS
1.8.2.7	1.4.5	Calculate Forecast Demand	TMS
1.8.2.7(a)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.7(a)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.7(a)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.7(b)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.7(b)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.7(b)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.7(c)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.7(c)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.7(c)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.8	1.2.7.3	Manage Indicator Preemptions	RS
1.8.2.8	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.8	1.4.4	Implement Demand Management Policy	TMS
1.8.2.8	1.4.5	Calculate Forecast Demand	TMS
1.8.2.8(a)	1.2.7.3	Manage Indicator Preemptions	RS
1.8.2.8(a)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.8(a)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.8(a)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.8(b)	1.2.7.3	Manage Indicator Preemptions	RS
1.8.2.8(c)	1.2.7.3	Manage Indicator Preemptions	RS
1.8.2.9	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.9	1.4.4	Implement Demand Management Policy	TMS
1.8.2.9	1.4.5	Calculate Forecast Demand	TMS
1.8.2.9(a)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.9(a)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.9(a)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.9(b)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.9(b)	1.4.4	Implement Demand Management Policy	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.8.2.9(b)	1.4.5	Calculate Forecast Demand	TMS
1.8.2.9(c)	1.4.2	Collect Demand Forecast Data	TMS
1.8.2.9(c)	1.4.4	Implement Demand Management Policy	TMS
1.8.2.9(c)	1.4.5	Calculate Forecast Demand	TMS
1.8.3	1.1.1.1	Process Traffic Sensor Data	RS
1.8.3	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.3	1.2.5.1	Determine Parking Lot State	PMS
1.8.3	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.3	1.2.7.3	Manage Indicator Preemptions	RS
1.8.3	1.4.2	Collect Demand Forecast Data	TMS
1.8.3	1.4.4	Implement Demand Management Policy	TMS
1.8.3	1.4.5	Calculate Forecast Demand	TMS
1.8.3	1.5.5	Process Vehicle Pollution Data	RS
1.8.3.1	1.1.1.1	Process Traffic Sensor Data	RS
1.8.3.1	1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.8.3.1	1.2.5.1	Determine Parking Lot State	PMS
1.8.3.1	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.3.1	1.2.7.3	Manage Indicator Preemptions	RS
1.8.3.1	1.5.5	Process Vehicle Pollution Data	RS
1.8.3.1(a)	1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.8.3.1(b)	1.1.1.1	Process Traffic Sensor Data	RS
1.8.3.1(c)	1.2.7.3	Manage Indicator Preemptions	RS
1.8.3.1(d)	1.5.5	Process Vehicle Pollution Data	RS
1.9	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.9	1.5.5	Process Vehicle Pollution Data	RS
1.9.0	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.9.0	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.9.0	1.5.2	Process Pollution Data	EMMS
1.9.0	1.5.3	Update Pollution Display Map Data	EMMS
1.9.0	1.5.4	Manage Pollution State Data Store	EMMS
1.9.0	1.5.5	Process Vehicle Pollution Data	RS
1.9.0	1.5.6	Detect Roadside Pollution Levels	RS
1.9.0	1.5.8	Manage Pollution Reference Data Store	EMMS
1.9.1	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.9.1	1.5.2	Process Pollution Data	EMMS
1.9.1	1.5.3	Update Pollution Display Map Data	EMMS
1.9.1	1.5.4	Manage Pollution State Data Store	EMMS
1.9.1	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1	1.5.8	Manage Pollution Reference Data Store	EMMS
1.9.1.1	1.5.2	Process Pollution Data	EMMS
1.9.1.1	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1.1.1	1.5.2	Process Pollution Data	EMMS
1.9.1.1.1	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1.1.2	1.5.2	Process Pollution Data	EMMS
1.9.1.1.2	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1.1.3	1.5.2	Process Pollution Data	EMMS
1.9.1.1.3	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1.2	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.9.1.2	1.5.2	Process Pollution Data	EMMS
1.9.1.2	1.5.4	Manage Pollution State Data Store	EMMS
1.9.1.2	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1.2	1.5.8	Manage Pollution Reference Data Store	EMMS
1.9.1.2.1	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.9.1.2.1	1.5.2	Process Pollution Data	EMMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
1.9.1.2.1	1.5.3	Update Pollution Display Map Data	EMMS
1.9.1.2.1	1.5.4	Manage Pollution State Data Store	EMMS
1.9.1.2.1	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1.2.1	1.5.8	Manage Pollution Reference Data Store	EMMS
1.9.1.2.2	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.9.1.2.2	1.5.2	Process Pollution Data	EMMS
1.9.1.2.2	1.5.3	Update Pollution Display Map Data	EMMS
1.9.1.2.2	1.5.4	Manage Pollution State Data Store	EMMS
1.9.1.2.2	1.5.6	Detect Roadside Pollution Levels	RS
1.9.1.2.2	1.5.8	Manage Pollution Reference Data Store	EMMS
1.9.2	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.9.2	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.1	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.9.2.1	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.1.1	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.1.2	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.1.3	1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.9.2.1.4	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.1.5	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.2	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.2.1	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.9.2.2.1	1.5.3	Update Pollution Display Map Data	EMMS
1.9.2.2.1	1.5.4	Manage Pollution State Data Store	EMMS
1.9.2.2.1	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.2.1	1.5.8	Manage Pollution Reference Data Store	EMMS
1.9.2.2.2	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.2.3	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.9.2.2.3	1.5.3	Update Pollution Display Map Data	EMMS
1.9.2.2.3	1.5.4	Manage Pollution State Data Store	EMMS
1.9.2.2.3	1.5.5	Process Vehicle Pollution Data	RS
1.9.2.2.3	1.5.8	Manage Pollution Reference Data Store	EMMS
2.0	1.3.1.3	Process Traffic Images	RS
2.0	4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
2.0	4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
2.0	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.0	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.0	4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	TRMS
2.0	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.0	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.0	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.0	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.0	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.0	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.0	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
2.0	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
2.0	4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
2.0	4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	TRMS
2.0	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.0	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.0	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.0	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.0	4.2.2	Provide Transit Plans Store Interface	TRMS
2.0	4.2.3.1	Generate Transit Routes	TRMS
2.0	4.2.3.2	Generate Schedules	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.0	4.2.3.3	Produce Transit Service Data for External Use	TRMS
2.0	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.0	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.0	4.2.3.6	Produce Transit Service Data for Manage Transit Use	TRMS
2.0	4.2.3.9	Update Transit Map Data	TRMS
2.0	4.3.1	Monitor Transit Vehicle Condition	TRMS
2.0	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.0	4.3.3	Generate Technician Work Assignments	TRMS
2.0	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.0	4.3.5	Report Transit Vehicle Information	TRMS
2.0	4.3.6	Update Transit Vehicle Information	TRMS
2.0	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.0	4.4.1.1	Manage Transit Security	TRMS
2.0	4.4.1.2	Manage Transit Emergencies	TRVS
2.0	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.0	4.4.1.4	Provide Transit External Interface for Emergencies	TRMS
2.0	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.0	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.0	4.4.1.7	Monitor Secure Area	RTS
2.0	4.4.1.8	Report Traveler Emergencies	RTS
2.0	4.4.2	Coordinate Multiple Agency Responses to Incidents	TRMS
2.0	4.4.3	Generate Responses for Incidents	TRMS
2.0	4.5.1	Assess Transit Driver Performance	TRMS
2.0	4.5.2	Assess Transit Driver Availability	TRMS
2.0	4.5.3	Access Transit Driver Cost Effectiveness	TRMS
2.0	4.5.4	Assess Transit Driver Eligibility	TRMS
2.0	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.0	4.5.6	Update Transit Driver Information	TRMS
2.0	4.5.7	Report Transit Driver Information	TRMS
2.0	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.0	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.0	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.0	5.1.5	Manage Emergency Service Allocation Store	EM
2.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
2.0	6.1.3	Manage Multimodal Service Provider Interface	ISP
2.0	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.0	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.0	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.0	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.0	6.2.2	Prepare and Output In-vehicle Displays	VS
2.0	6.2.4	Collect Yellow Pages Data	ISP
2.0	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.0	6.3.2	Inform Traveler	RTS
2.0	6.3.3	Provide Traveler Kiosk Interface	RTS
2.0	6.4.4	Confirm Traveler Rideshare Request	ISP
2.0	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
2.0	6.8.3.3	Provide Traveler Personal Interface	PIAS
2.0	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
2.1	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.0	4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
2.1.0	4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
2.1.0	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.1.0	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.0	4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.1.0	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.1.0	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.0	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.0	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.1.0	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.0	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.1.0	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
2.1.0	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
2.1.0	4.2.2	Provide Transit Plans Store Interface	TRMS
2.1.0	4.2.3.1	Generate Transit Routes	TRMS
2.1.0	4.2.3.2	Generate Schedules	TRMS
2.1.0	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.0	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.1.0	4.2.3.9	Update Transit Map Data	TRMS
2.1.0	4.3.1	Monitor Transit Vehicle Condition	TRMS
2.1.0	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.0	4.3.3	Generate Technician Work Assignments	TRMS
2.1.0	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.0	4.3.5	Report Transit Vehicle Information	TRMS
2.1.0	4.3.6	Update Transit Vehicle Information	TRMS
2.1.0	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.0	4.4.1.2	Manage Transit Emergencies	TRVS
2.1.0	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.0	4.4.1.4	Provide Transit External Interface for Emergencies	TRMS
2.1.0	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.0	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.1.0	4.4.1.7	Monitor Secure Area	RTS
2.1.0	4.4.1.8	Report Traveler Emergencies	RTS
2.1.0	4.5.1	Assess Transit Driver Performance	TRMS
2.1.0	4.5.2	Assess Transit Driver Availability	TRMS
2.1.0	4.5.3	Access Transit Driver Cost Effectiveness	TRMS
2.1.0	4.5.4	Assess Transit Driver Eligibility	TRMS
2.1.0	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.0	4.5.6	Update Transit Driver Information	TRMS
2.1.0	4.5.7	Report Transit Driver Information	TRMS
2.1.0	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.1.1	4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
2.1.1	4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
2.1.1	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.1.1	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.1	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.1.1	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.1	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.1	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.1.1	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.1.1	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
2.1.1	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
2.1.1	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.1.1	4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
2.1.1.1	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.1.1	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.1.1.1	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1.1	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.1.1.1(a)	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1.1(b)	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1.1(c)	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
2.1.1.1(d)	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.1.1(e)	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1.1(f)	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.1.2	4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
2.1.1.2	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.1.1.2	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.1.2	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.1.1.2	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.1.2	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.1.1.2	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1.2	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.1.2.1	4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
2.1.1.2.1	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.1.1.2.1	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.1.2.1	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.1.1.2.1	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.1.2.1	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.1.1.2.1	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1.2.1	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.1.2.1.1	4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
2.1.1.2.1.1	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.1.2.1.2	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.1.1.2.1.3	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.1.2.1.3	4.1.5	Provide Transit Vehicle Status Information	TRMS
2.1.1.2.1.4	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.1.1.2.1.4	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.1.2.1.4	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.1.1.2.1.4	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.1.2.1.4(a)	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.1.2.1.4(b)	4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
2.1.1.2.2	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.1.1.2.2	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.1.1.2.2	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.1.2.3	4.1.2.5	Request Transit Vehicle Preemptions	TRVS
2.1.1.2.3	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.1.2.4	4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
2.1.1.2.4	4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
2.1.1.2.4	4.1.4	Manage Transit Vehicle Deviations	TRMS
2.1.1.2.4	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.2	4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	TRMS
2.1.2	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.2	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.2	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.1.2	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
2.1.2	4.2.2	Provide Transit Plans Store Interface	TRMS
2.1.2	4.2.3.1	Generate Transit Routes	TRMS
2.1.2	4.2.3.2	Generate Schedules	TRMS
2.1.2	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.1.2	4.2.3.9	Update Transit Map Data	TRMS
2.1.2	4.3.1	Monitor Transit Vehicle Condition	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.1.2	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.2	4.3.3	Generate Technician Work Assignments	TRMS
2.1.2	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.2	4.3.5	Report Transit Vehicle Information	TRMS
2.1.2	4.3.6	Update Transit Vehicle Information	TRMS
2.1.2	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.2	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.2.1	4.2.2	Provide Transit Plans Store Interface	TRMS
2.1.2.1	4.2.3.1	Generate Transit Routes	TRMS
2.1.2.1	4.2.3.2	Generate Schedules	TRMS
2.1.2.1	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.1	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.1.2.1	4.2.3.9	Update Transit Map Data	TRMS
2.1.2.1	4.3.1	Monitor Transit Vehicle Condition	TRMS
2.1.2.1	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.2.1	4.3.3	Generate Technician Work Assignments	TRMS
2.1.2.1	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.2.1	4.3.5	Report Transit Vehicle Information	TRMS
2.1.2.1	4.3.6	Update Transit Vehicle Information	TRMS
2.1.2.1	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.2.1	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.2.1.1	4.2.2	Provide Transit Plans Store Interface	TRMS
2.1.2.1.1	4.2.3.2	Generate Schedules	TRMS
2.1.2.1.1	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.1.1	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.1.2.1.2	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.1.2	4.2.3.9	Update Transit Map Data	TRMS
2.1.2.1.2	4.3.1	Monitor Transit Vehicle Condition	TRMS
2.1.2.1.2	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.2.1.2	4.3.3	Generate Technician Work Assignments	TRMS
2.1.2.1.2	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.2.1.2	4.3.5	Report Transit Vehicle Information	TRMS
2.1.2.1.2	4.3.6	Update Transit Vehicle Information	TRMS
2.1.2.1.2	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.2.1.2	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.2.2	4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	TRMS
2.1.2.2	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.2.2	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.2.2	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.1.2.2	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
2.1.2.2	4.2.3.2	Generate Schedules	TRMS
2.1.2.2	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.2	4.2.3.9	Update Transit Map Data	TRMS
2.1.2.2.1	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.2.2.1	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.2.2.1	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
2.1.2.2.1	4.2.3.2	Generate Schedules	TRMS
2.1.2.2.1(a)	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.2.2.1(b)	4.1.3	Provide Transit Vehicle Location Data	TRVS
2.1.2.2.1(c)	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.2.2.2	4.2.3.2	Generate Schedules	TRMS
2.1.2.2.2	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.2.2	4.2.3.9	Update Transit Map Data	TRMS
2.1.2.2.3	4.2.3.2	Generate Schedules	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.1.2.2.4	4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	TRMS
2.1.2.2.4	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.1.2.2.4	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.2.4(a)	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.2.4(b)	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
2.1.2.2.5	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
2.1.2.2.5	4.2.3.2	Generate Schedules	TRMS
2.1.3	4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
2.1.3	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.3	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
2.1.3	4.3.1	Monitor Transit Vehicle Condition	TRMS
2.1.3	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.3	4.3.3	Generate Technician Work Assignments	TRMS
2.1.3	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.3	4.3.5	Report Transit Vehicle Information	TRMS
2.1.3	4.3.6	Update Transit Vehicle Information	TRMS
2.1.3	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.3	4.5.1	Assess Transit Driver Performance	TRMS
2.1.3	4.5.2	Assess Transit Driver Availability	TRMS
2.1.3	4.5.3	Access Transit Driver Cost Effectiveness	TRMS
2.1.3	4.5.4	Assess Transit Driver Eligibility	TRMS
2.1.3	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.3	4.5.6	Update Transit Driver Information	TRMS
2.1.3	4.5.7	Report Transit Driver Information	TRMS
2.1.3	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.1.3.1	4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
2.1.3.1	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
2.1.3.1	4.3.1	Monitor Transit Vehicle Condition	TRMS
2.1.3.1	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.3.1	4.3.3	Generate Technician Work Assignments	TRMS
2.1.3.1	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.3.1	4.3.5	Report Transit Vehicle Information	TRMS
2.1.3.1	4.3.6	Update Transit Vehicle Information	TRMS
2.1.3.1	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.3.1.1	4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
2.1.3.1.1	4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
2.1.3.1.2	4.3.1	Monitor Transit Vehicle Condition	TRMS
2.1.3.1.2	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.3.1.2	4.3.3	Generate Technician Work Assignments	TRMS
2.1.3.1.2	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.3.1.2	4.3.5	Report Transit Vehicle Information	TRMS
2.1.3.1.2	4.3.6	Update Transit Vehicle Information	TRMS
2.1.3.1.2	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.3.1.3	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.3.1.3	4.3.3	Generate Technician Work Assignments	TRMS
2.1.3.1.3	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.3.1.4	4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
2.1.3.1.4	4.3.3	Generate Technician Work Assignments	TRMS
2.1.3.1.4	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.3.1.5	4.3.4	Monitor And Verify Maintenance Activity	TRMS
2.1.3.1.5	4.3.5	Report Transit Vehicle Information	TRMS
2.1.3.1.5	4.3.6	Update Transit Vehicle Information	TRMS
2.1.3.1.5	4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
2.1.3.2	4.1.6	Manage Transit Vehicle Operations Data	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.1.3.2	4.5.1	Assess Transit Driver Performance	TRMS
2.1.3.2	4.5.2	Assess Transit Driver Availability	TRMS
2.1.3.2	4.5.3	Access Transit Driver Cost Effectiveness	TRMS
2.1.3.2	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.3.2	4.5.6	Update Transit Driver Information	TRMS
2.1.3.2	4.5.7	Report Transit Driver Information	TRMS
2.1.3.2	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.1.3.2.1	4.5.2	Assess Transit Driver Availability	TRMS
2.1.3.2.1	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.1.3.2.2	4.5.2	Assess Transit Driver Availability	TRMS
2.1.3.2.2	4.5.3	Access Transit Driver Cost Effectiveness	TRMS
2.1.3.2.2	4.5.4	Assess Transit Driver Eligibility	TRMS
2.1.3.2.2	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.3.2.2	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.1.3.2.3	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.3.2.3	4.5.2	Assess Transit Driver Availability	TRMS
2.1.3.2.3	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.3.2.3	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.1.3.2.3(a)	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.3.2.3(b)	4.1.6	Manage Transit Vehicle Operations Data	TRMS
2.1.3.2.3(c)	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.3.2.3(d)	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.1.3.2.4	4.5.1	Assess Transit Driver Performance	TRMS
2.1.3.2.4	4.5.2	Assess Transit Driver Availability	TRMS
2.1.3.2.4	4.5.3	Access Transit Driver Cost Effectiveness	TRMS
2.1.3.2.4	4.5.4	Assess Transit Driver Eligibility	TRMS
2.1.3.2.4	4.5.6	Update Transit Driver Information	TRMS
2.1.3.2.4	4.5.7	Report Transit Driver Information	TRMS
2.1.3.2.4	4.5.8	Provide Transit Driver Information Store Interface	TRMS
2.1.4	4.4.1.2	Manage Transit Emergencies	TRVS
2.1.4	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.4	4.4.1.4	Provide Transit External Interface for Emergencies	TRMS
2.1.4	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.4	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.1.4	4.4.1.7	Monitor Secure Area	RTS
2.1.4	4.4.1.8	Report Traveler Emergencies	RTS
2.1.4.1	4.4.1.2	Manage Transit Emergencies	TRVS
2.1.4.1	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.4.2	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.4.3	4.4.1.4	Provide Transit External Interface for Emergencies	TRMS
2.1.4.3	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.1.4.3	4.4.1.7	Monitor Secure Area	RTS
2.1.4.3	4.4.1.8	Report Traveler Emergencies	RTS
2.1.4.4	4.4.1.2	Manage Transit Emergencies	TRVS
2.1.4.4	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.1.4.4	4.4.1.4	Provide Transit External Interface for Emergencies	TRMS
2.1.4.4	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.4.4	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.1.4.4	4.4.1.7	Monitor Secure Area	RTS
2.1.4.4	4.4.1.8	Report Traveler Emergencies	RTS
2.1.4.4(a)	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.4.4(b)	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.4.4(c)	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.4.4(d)	4.4.1.4	Provide Transit External Interface for Emergencies	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.1.4.4(d)	4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
2.1.4.5	9	Satisfy Implementation Requirements	N/A
2.2	1.3.1.3	Process Traffic Images	RS
2.2	5.1.5	Manage Emergency Service Allocation Store	EM
2.2	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
2.2.0	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.2.0	4.2.2	Provide Transit Plans Store Interface	TRMS
2.2.0	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.2.0	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.0	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.0	6.1.3	Manage Multimodal Service Provider Interface	ISP
2.2.0	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.0	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.0	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.0	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.0	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.0	6.2.4	Collect Yellow Pages Data	ISP
2.2.0	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.1	1.3.1.3	Process Traffic Images	RS
2.2.1	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.2.1	4.2.2	Provide Transit Plans Store Interface	TRMS
2.2.1	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.2.1	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1	5.1.5	Manage Emergency Service Allocation Store	EM
2.2.1	6.1.3	Manage Multimodal Service Provider Interface	ISP
2.2.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.1	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1	6.2.4	Collect Yellow Pages Data	ISP
2.2.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.1	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
2.2.1.1	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.2.1.1	4.2.2	Provide Transit Plans Store Interface	TRMS
2.2.1.1	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.2.1.1	5.1.5	Manage Emergency Service Allocation Store	EM
2.2.1.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.1.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.1.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.1.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.1.1	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1.1	6.2.4	Collect Yellow Pages Data	ISP
2.2.1.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.1.1	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
2.2.1.1.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.1.1.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.1.1.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.1.1.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.1.1.1	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1.1.1	6.2.4	Collect Yellow Pages Data	ISP
2.2.1.1.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.1.1.2	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.2.1.1.3	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.2.1.1.3	6.1.3	Manage Multimodal Service Provider Interface	ISP
2.2.1.1.4	4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
2.2.1.1.4	4.2.2	Provide Transit Plans Store Interface	TRMS
2.2.1.1.4	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.2.1.1.4	5.1.5	Manage Emergency Service Allocation Store	EM
2.2.1.1.4	6.1.3	Manage Multimodal Service Provider Interface	ISP
2.2.1.1.4	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
2.2.1.2	1.3.1.3	Process Traffic Images	RS
2.2.1.2	4.4.1.7	Monitor Secure Area	RTS
2.2.1.2	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.1	1.3.1.3	Process Traffic Images	RS
2.2.1.2.1	4.4.1.7	Monitor Secure Area	RTS
2.2.1.2.1	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.1.1	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.1	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.1.1.1	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.1.1	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.1.1.2	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.1.2	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.1.1.2(a)	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.1.2(b)	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.1.3	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.1.3	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.1.2	4.4.1.7	Monitor Secure Area	RTS
2.2.1.2.1.2	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.2	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.1.2(a)	4.4.1.7	Monitor Secure Area	RTS
2.2.1.2.1.2(b)	4.4.1.7	Monitor Secure Area	RTS
2.2.1.2.1.2(c)	4.4.1.7	Monitor Secure Area	RTS
2.2.1.2.1.3	1.3.1.3	Process Traffic Images	RS
2.2.1.2.1.3	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.1.3	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.2	1.3.1.3	Process Traffic Images	RS
2.2.1.2.2	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.2.1.2.2	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.2	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.2	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
2.2.1.2.2	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1.2.2	6.2.3	Provide Transit User Advisory Interface	TRVS
2.2.1.2.2	6.7.2.2	Process Vehicle Location Data	VS
2.2.1.2.2.1	1.3.1.3	Process Traffic Images	RS
2.2.1.2.2.1	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.2.1.2.2.1	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.2.1	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.2.1	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
2.2.1.2.2.1	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1.2.2.1	6.2.3	Provide Transit User Advisory Interface	TRVS
2.2.1.2.2.1	6.7.2.2	Process Vehicle Location Data	VS
2.2.1.2.2.2	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.2.1.2.2.2	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.2.2	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS

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USR	P-Spec	Name	Subsystem
2.2.1.2.2.2	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
2.2.1.2.2.2	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1.2.2.2	6.2.3	Provide Transit User Advisory Interface	TRVS
2.2.1.2.2.2	6.7.2.2	Process Vehicle Location Data	VS
2.2.1.2.2.3	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.2.1.2.2.3	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.2.3	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.2.3	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
2.2.1.2.2.3	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1.2.2.3	6.2.3	Provide Transit User Advisory Interface	TRVS
2.2.1.2.2.3	6.7.2.2	Process Vehicle Location Data	VS
2.2.1.2.2.4	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.2.1.2.2.4	4.7.1.1	Provide Transit User Roadside Data Interface	RTS
2.2.1.2.2.4	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
2.2.1.2.2.4	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
2.2.1.2.2.4	6.2.2	Prepare and Output In-vehicle Displays	VS
2.2.1.2.2.4	6.2.3	Provide Transit User Advisory Interface	TRVS
2.2.1.2.2.4	6.7.2.2	Process Vehicle Location Data	VS
2.2.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.2	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.2.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.2.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.2.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.2.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.2.3	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.2.3	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.2.3	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.2.3(a)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.2.3(b)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.2.3(c)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.3	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.3	6.2.4	Collect Yellow Pages Data	ISP
2.2.3	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.3.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.3.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.3.1	6.2.4	Collect Yellow Pages Data	ISP
2.2.3.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.3.1.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3.1.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.3.1.1	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.3.1.1	6.2.4	Collect Yellow Pages Data	ISP
2.2.3.1.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
2.2.3.1.1(a)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3.1.1(b)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3.1.1(c)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3.1.1(d)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
2.2.3.1.2	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3.1.2	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP

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USR	P-Spec	Name	Subsystem
2.2.3.1.2	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.3.1.2	6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
2.2.3.1.2(a)	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3.1.2(b)	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3.2	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3.2	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.3.2	6.2.4	Collect Yellow Pages Data	ISP
2.2.3.2.1	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3.2.1	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.3.2.1	6.2.4	Collect Yellow Pages Data	ISP
2.2.3.2.2	6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
2.2.3.2.2	6.2.1.3	Collect Transit Data for Advisory Messages	ISP
2.2.3.2.2	6.2.4	Collect Yellow Pages Data	ISP
2.2.3.2.2(a)	6.2.4	Collect Yellow Pages Data	ISP
2.2.3.2.2(b)	6.2.4	Collect Yellow Pages Data	ISP
2.2.3.2.2(c)	6.2.4	Collect Yellow Pages Data	ISP
2.3	5.1.5	Manage Emergency Service Allocation Store	EM
2.3	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
2.3.0	4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
2.3.0	4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	TRMS
2.3.0	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.0	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.3.0	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.0	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.0	4.2.3.3	Produce Transit Service Data for External Use	TRMS
2.3.0	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.3.0	4.2.3.6	Produce Transit Service Data for Manage Transit Use	TRMS
2.3.0	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
2.3.0	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.3.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
2.3.0	6.3.2	Inform Traveler	RTS
2.3.0	6.3.3	Provide Traveler Kiosk Interface	RTS
2.3.0	6.4.4	Confirm Traveler Rideshare Request	ISP
2.3.0	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
2.3.0	6.8.3.3	Provide Traveler Personal Interface	PIAS
2.3.0	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
2.3.1	4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
2.3.1	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.3.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
2.3.1	6.3.2	Inform Traveler	RTS
2.3.1	6.3.3	Provide Traveler Kiosk Interface	RTS
2.3.1	6.4.4	Confirm Traveler Rideshare Request	ISP
2.3.1	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
2.3.1	6.8.3.3	Provide Traveler Personal Interface	PIAS
2.3.1.1	4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
2.3.1.2	4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
2.3.1.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
2.3.1.3	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.3.1.3	6.3.2	Inform Traveler	RTS
2.3.1.3	6.4.4	Confirm Traveler Rideshare Request	ISP
2.3.1.3	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
2.3.1.4	6.3.2	Inform Traveler	RTS
2.3.1.4	6.4.4	Confirm Traveler Rideshare Request	ISP
2.3.1.4	6.8.3.2	Provide Traveler with Personal Travel Information	PIAS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.3.2	4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
2.3.2	4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	TRMS
2.3.2	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.3.2	4.2.3.3	Produce Transit Service Data for External Use	TRMS
2.3.2	4.2.3.6	Produce Transit Service Data for Manage Transit Use	TRMS
2.3.2.1	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.10	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.2	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.2	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.3.2.2	4.2.3.3	Produce Transit Service Data for External Use	TRMS
2.3.2.2	4.2.3.6	Produce Transit Service Data for Manage Transit Use	TRMS
2.3.2.3	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.3	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.3.2.3	4.2.3.3	Produce Transit Service Data for External Use	TRMS
2.3.2.3	4.2.3.6	Produce Transit Service Data for Manage Transit Use	TRMS
2.3.2.4	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.5	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.6	4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	TRMS
2.3.2.6	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.7	4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
2.3.2.7	4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	TRMS
2.3.2.7	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.8	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.2.9	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.3	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
2.3.3	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.3.3	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
2.3.3.1	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.1	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
2.3.3.1	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.3.3.1	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
2.3.3.1(a)	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.1(b)	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.1(c)	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.1(c)	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
2.3.3.1(c)	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
2.3.3.1(c)	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
2.3.3.2	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.2(a)	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.2(b)	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.3	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
2.3.3.3	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
2.3.4	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.4	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
2.3.4	4.2.3.5	Manage Transit Operational Data Store	TRMS
2.3.4	4.5.2	Assess Transit Driver Availability	TRMS
2.3.4	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.3.4	5.1.5	Manage Emergency Service Allocation Store	EM
2.3.4	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
2.3.4.1	9	Satisfy Implementation Requirements	N/A
2.3.4.2	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
2.3.4.3	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.3.4.3	4.5.2	Assess Transit Driver Availability	TRMS
2.3.4.3	4.5.5	Generate Transit Driver Route Assignments	TRMS
2.3.5	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.1	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.2	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.2(a)	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.2(b)	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.3	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.4	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.4(a)	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.3.5.4(b)	4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
2.4	1.3.1.3	Process Traffic Images	RS
2.4.0	4.4.1.1	Manage Transit Security	TRMS
2.4.0	4.4.1.2	Manage Transit Emergencies	TRVS
2.4.0	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.4.0	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.0	4.4.1.7	Monitor Secure Area	RTS
2.4.0	4.4.2	Coordinate Multiple Agency Responses to Incidents	TRMS
2.4.0	4.4.3	Generate Responses for Incidents	TRMS
2.4.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
2.4.1	4.4.1.1	Manage Transit Security	TRMS
2.4.1	4.4.1.2	Manage Transit Emergencies	TRVS
2.4.1	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.1	4.4.1.7	Monitor Secure Area	RTS
2.4.1	4.4.1.8	Report Traveler Emergencies	RTS
2.4.1.1	4.4.1.1	Manage Transit Security	TRMS
2.4.1.1	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.1.1	4.4.1.7	Monitor Secure Area	RTS
2.4.1.1(a)	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.1.1(a)	4.4.1.7	Monitor Secure Area	RTS
2.4.1.1(b)	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.1.1(b)	4.4.1.7	Monitor Secure Area	RTS
2.4.1.1(c)	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.1.1(c)	4.4.1.7	Monitor Secure Area	RTS
2.4.1.1(d)	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.1.1(d)	4.4.1.7	Monitor Secure Area	RTS
2.4.1.1(e)	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.1.1(e)	4.4.1.7	Monitor Secure Area	RTS
2.4.1.2	4.4.1.1	Manage Transit Security	TRMS
2.4.1.2	4.4.1.2	Manage Transit Emergencies	TRVS
2.4.1.2	4.4.1.7	Monitor Secure Area	RTS
2.4.1.2	4.4.1.8	Report Traveler Emergencies	RTS
2.4.1.3	4.4.1.2	Manage Transit Emergencies	TRVS
2.4.1.3	4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
2.4.2	1.3.1.3	Process Traffic Images	RS
2.4.2	4.4.1.1	Manage Transit Security	TRMS
2.4.2	4.4.1.7	Monitor Secure Area	RTS
2.4.2.1	4.4.1.1	Manage Transit Security	TRMS
2.4.2.1	4.4.1.7	Monitor Secure Area	RTS
2.4.2.2	1.3.1.3	Process Traffic Images	RS
2.4.2.2	4.4.1.1	Manage Transit Security	TRMS
2.4.2.2	4.4.1.7	Monitor Secure Area	RTS
2.4.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
2.4.3.1	6.1.1	Provide Trip Planning Information to Traveler	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
2.4.3.2	6.1.1	Provide Trip Planning Information to Traveler	ISP
2.4.4	4.4.1.1	Manage Transit Security	TRMS
2.4.4	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.4.4	4.4.1.7	Monitor Secure Area	RTS
2.4.4	4.4.2	Coordinate Multiple Agency Responses to Incidents	TRMS
2.4.4	4.4.3	Generate Responses for Incidents	TRMS
2.4.4.1	4.4.1.1	Manage Transit Security	TRMS
2.4.4.1	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.4.4.1	4.4.1.7	Monitor Secure Area	RTS
2.4.4.2	4.4.1.1	Manage Transit Security	TRMS
2.4.4.2	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.4.4.2	4.4.1.7	Monitor Secure Area	RTS
2.4.4.3	4.4.1.3	Provide Transit System Operator Security Interface	TRMS
2.4.4.3	4.4.2	Coordinate Multiple Agency Responses to Incidents	TRMS
2.4.4.4	4.4.3	Generate Responses for Incidents	TRMS
2.4.4.5	4.4.2	Coordinate Multiple Agency Responses to Incidents	TRMS
3.0	1.4.2	Collect Demand Forecast Data	TMS
3.0	1.4.4	Implement Demand Management Policy	TMS
3.0	1.4.5	Calculate Forecast Demand	TMS
3.0	4.6.1	Detect Transit User on Vehicle	TRVS
3.0	4.6.2	Determine Transit User Needs on Vehicle	TRVS
3.0	4.6.3	Determine Transit Fare on Vehicle	TRVS
3.0	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.0	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
3.0	4.6.6	Update Transit Vehicle Fare Data	TRVS
3.0	4.6.7	Provide Transit Vehicle Passenger Data	TRVS
3.0	4.6.8	Manage Transit Vehicle Advanced Payments	TRMS
3.0	4.7.2.1	Detect Transit User at Roadside	RTS
3.0	4.7.2.2	Determine Transit User Needs at Roadside	RTS
3.0	4.7.2.3	Determine Transit Fare at Roadside	RTS
3.0	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.0	4.7.2.5	Provide Transit User Roadside Fare Interface	RTS
3.0	4.7.2.6	Update Roadside Transit Fare Data	RTS
3.0	4.7.2.7	Provide Transit Roadside Passenger Data	RTS
3.0	5.4.2	Process Violations for Tolls	TAS
3.0	5.4.3	Process Parking Lot Violations	PMS
3.0	5.4.4	Process Fare Payment Violations	TRMS
3.0	5.4.5	Process Vehicle Fare Collection Violations	TRMS
3.0	5.4.6	Process CV Violations	CVAS
3.0	5.4.7	Process Roadside Fare Collection Violations	TRMS
3.0	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
3.0	7.1.1.1	Read Tag Data for Tolls	TCS
3.0	7.1.1.10	Determine Advanced Toll Bill	TCS
3.0	7.1.1.2	Calculate Vehicle Toll	TCS
3.0	7.1.1.3	Manage Bad Toll Payment Data	TAS
3.0	7.1.1.4	Check for Advanced Tolls Payment	TCS
3.0	7.1.1.5	Bill Driver for Tolls	TCS
3.0	7.1.1.6	Collect Probe Data From Toll Transactions	TAS
3.0	7.1.1.7	Update Toll Price Data	TAS
3.0	7.1.1.8	Register for Advanced Toll Payment	TAS
3.0	7.1.1.9	Manage Toll Financial Processing	TAS
3.0	7.1.2	Produce Roadside Displays	TCS
3.0	7.1.3	Obtain Toll Violator Image	TCS
3.0	7.1.4	Provide Driver Toll Payment Interface	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.0	7.1.5	Detect Vehicle for Tolls	TCS
3.0	7.1.6	Distribute Advanced Charges and Fares	ISP
3.0	7.1.7	Provide Payment Instrument Interface for Tolls	VS
3.0	7.2.1.1	Read Parking Lot Tag Data	PMS
3.0	7.2.1.10	Determine Advanced Charges	PMS
3.0	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
3.0	7.2.1.3	Collect Bad Charge Payment Data	PMS
3.0	7.2.1.4	Check for Advanced Parking Lot Payment	PMS
3.0	7.2.1.5	Bill Driver for Parking Lot Charges	PMS
3.0	7.2.1.6	Manage Parking Lot Financial Processing	PMS
3.0	7.2.1.7	Update Parking Lot Data	PMS
3.0	7.2.1.8	Register for Advanced Parking Lot Payment	PMS
3.0	7.2.1.9	Manage Parking Lot Reservations	PMS
3.0	7.2.2	Produce Parking Lot Displays	PMS
3.0	7.2.3	Obtain Parking Lot Violator Image	PMS
3.0	7.2.4	Provide Driver Parking Lot Payment Interface	VS
3.0	7.2.5	Detect Vehicle for Parking Lot Payment	PMS
3.0	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.0	7.2.7	Provide Payment Instrument Interface for Parking	VS
3.0	7.3.1.1	Register for Advanced Transit Fare Payment	TRMS
3.0	7.3.1.2	Determine Advanced Transit Fares	TRMS
3.0	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
3.0	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.0	7.3.1.5	Bill Transit User for Transit Fare	TRMS
3.0	7.3.1.6	Collect Bad Transit Fare Payment Data	TRMS
3.0	7.3.1.7	Update Transit Fare Data	TRMS
3.0	7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
3.0	7.3.3	Get Transit User Image for Violation	TRMS
3.0	7.3.4	Provide Remote Terminal Payment Instrument Interface	RTS
3.0	7.3.5	Provide Transit Vehicle Payment Instrument Interface	TRVS
3.0	7.4.1.1	Process Commercial Vehicle Payments	CVAS
3.0	7.4.1.3	Process Driver Map Update Payments	ISP
3.0	7.4.1.5	Process Transit User Other Services Payments	TRMS
3.0	7.4.1.6	Process Traveler Trip and Other Services Payments	ISP
3.0	7.4.1.7	Collect Payment Transaction Records	ISP
3.0	7.4.1.8	Process Traveler Rideshare Payments	ISP
3.0	7.4.2	Collect Price Data for ITS Use	ISP
3.0	7.4.3	Route Traveler Advanced Payments	ISP
3.0	7.5.1	Provide Vehicle Payment Instrument Interface	VS
3.0	7.5.2	Provide Transit User Roadside Payment Instrument Interface	RTS
3.0	7.5.3	Provide Personal Payment Instrument Interface	PIAS
3.0	7.5.4	Provide Commercial Fleet Payment Instrument Interface	FMS
3.0	7.5.5	Provide Traveler Kiosk Payment Instrument Interface	RTS
3.1	1.4.2	Collect Demand Forecast Data	TMS
3.1	1.4.4	Implement Demand Management Policy	TMS
3.1	1.4.5	Calculate Forecast Demand	TMS
3.1	5.4.2	Process Violations for Tolls	TAS
3.1	5.4.3	Process Parking Lot Violations	PMS
3.1	5.4.4	Process Fare Payment Violations	TRMS
3.1	5.4.5	Process Vehicle Fare Collection Violations	TRMS
3.1	5.4.6	Process CV Violations	CVAS
3.1	5.4.7	Process Roadside Fare Collection Violations	TRMS
3.1	7.1.1.1	Read Tag Data for Tolls	TCS
3.1	7.1.1.10	Determine Advanced Toll Bill	TCS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.1	7.1.1.2	Calculate Vehicle Toll	TCS
3.1	7.1.1.3	Manage Bad Toll Payment Data	TAS
3.1	7.1.1.4	Check for Advanced Tolls Payment	TCS
3.1	7.1.1.5	Bill Driver for Tolls	TCS
3.1	7.1.1.6	Collect Probe Data From Toll Transactions	TAS
3.1	7.1.1.7	Update Toll Price Data	TAS
3.1	7.1.1.8	Register for Advanced Toll Payment	TAS
3.1	7.1.1.9	Manage Toll Financial Processing	TAS
3.1	7.1.2	Produce Roadside Displays	TCS
3.1	7.1.3	Obtain Toll Violator Image	TCS
3.1	7.1.4	Provide Driver Toll Payment Interface	VS
3.1	7.1.5	Detect Vehicle for Tolls	TCS
3.1	7.1.6	Distribute Advanced Charges and Fares	ISP
3.1	7.1.7	Provide Payment Instrument Interface for Tolls	VS
3.1	7.2.1.1	Read Parking Lot Tag Data	PMS
3.1	7.2.1.10	Determine Advanced Charges	PMS
3.1	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
3.1	7.2.1.3	Collect Bad Charge Payment Data	PMS
3.1	7.2.1.4	Check for Advanced Parking Lot Payment	PMS
3.1	7.2.1.5	Bill Driver for Parking Lot Charges	PMS
3.1	7.2.1.6	Manage Parking Lot Financial Processing	PMS
3.1	7.2.1.7	Update Parking Lot Data	PMS
3.1	7.2.1.8	Register for Advanced Parking Lot Payment	PMS
3.1	7.2.1.9	Manage Parking Lot Reservations	PMS
3.1	7.2.2	Produce Parking Lot Displays	PMS
3.1	7.2.3	Obtain Parking Lot Violator Image	PMS
3.1	7.2.4	Provide Driver Parking Lot Payment Interface	VS
3.1	7.2.5	Detect Vehicle for Parking Lot Payment	PMS
3.1	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.1	7.2.7	Provide Payment Instrument Interface for Parking	VS
3.1	7.3.1.1	Register for Advanced Transit Fare Payment	TRMS
3.1	7.3.1.2	Determine Advanced Transit Fares	TRMS
3.1	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.1	7.3.1.5	Bill Transit User for Transit Fare	TRMS
3.1	7.3.1.6	Collect Bad Transit Fare Payment Data	TRMS
3.1	7.3.1.7	Update Transit Fare Data	TRMS
3.1	7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
3.1	7.3.3	Get Transit User Image for Violation	TRMS
3.1	7.3.4	Provide Remote Terminal Payment Instrument Interface	RTS
3.1	7.3.5	Provide Transit Vehicle Payment Instrument Interface	TRVS
3.1	7.4.1.1	Process Commercial Vehicle Payments	CVAS
3.1	7.4.1.3	Process Driver Map Update Payments	ISP
3.1	7.4.1.5	Process Transit User Other Services Payments	TRMS
3.1	7.4.1.6	Process Traveler Trip and Other Services Payments	ISP
3.1	7.4.1.7	Collect Payment Transaction Records	ISP
3.1	7.4.1.8	Process Traveler Rideshare Payments	ISP
3.1	7.4.2	Collect Price Data for ITS Use	ISP
3.1	7.4.3	Route Traveler Advanced Payments	ISP
3.1	7.5.1	Provide Vehicle Payment Instrument Interface	VS
3.1	7.5.2	Provide Transit User Roadside Payment Instrument Interface	RTS
3.1	7.5.3	Provide Personal Payment Instrument Interface	PIAS
3.1	7.5.4	Provide Commercial Fleet Payment Instrument Interface	FMS
3.1	7.5.5	Provide Traveler Kiosk Payment Instrument Interface	RTS
3.1.0	4.6.1	Detect Transit User on Vehicle	TRVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.1.0	4.6.2	Determine Transit User Needs on Vehicle	TRVS
3.1.0	4.6.3	Determine Transit Fare on Vehicle	TRVS
3.1.0	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.0	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
3.1.0	4.6.6	Update Transit Vehicle Fare Data	TRVS
3.1.0	4.6.7	Provide Transit Vehicle Passenger Data	TRVS
3.1.0	4.6.8	Manage Transit Vehicle Advanced Payments	TRMS
3.1.0	4.7.2.1	Detect Transit User at Roadside	RTS
3.1.0	4.7.2.2	Determine Transit User Needs at Roadside	RTS
3.1.0	4.7.2.3	Determine Transit Fare at Roadside	RTS
3.1.0	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.0	4.7.2.5	Provide Transit User Roadside Fare Interface	RTS
3.1.0	4.7.2.6	Update Roadside Transit Fare Data	RTS
3.1.0	4.7.2.7	Provide Transit Roadside Passenger Data	RTS
3.1.0	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
3.1.0	7.1.7	Provide Payment Instrument Interface for Tolls	VS
3.1.0	7.2.7	Provide Payment Instrument Interface for Parking	VS
3.1.0	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
3.1.0	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.1.0	7.3.4	Provide Remote Terminal Payment Instrument Interface	RTS
3.1.0	7.3.5	Provide Transit Vehicle Payment Instrument Interface	TRVS
3.1.0	7.4.1.3	Process Driver Map Update Payments	ISP
3.1.0	7.4.1.5	Process Transit User Other Services Payments	TRMS
3.1.0	7.4.1.6	Process Traveler Trip and Other Services Payments	ISP
3.1.0	7.4.1.7	Collect Payment Transaction Records	ISP
3.1.0	7.4.1.8	Process Traveler Rideshare Payments	ISP
3.1.0	7.4.3	Route Traveler Advanced Payments	ISP
3.1.0	7.5.1	Provide Vehicle Payment Instrument Interface	VS
3.1.0	7.5.2	Provide Transit User Roadside Payment Instrument Interface	RTS
3.1.0	7.5.3	Provide Personal Payment Instrument Interface	PIAS
3.1.0	7.5.4	Provide Commercial Fleet Payment Instrument Interface	FMS
3.1.0	7.5.5	Provide Traveler Kiosk Payment Instrument Interface	RTS
3.1.1	4.6.1	Detect Transit User on Vehicle	TRVS
3.1.1	4.7.2.1	Detect Transit User at Roadside	RTS
3.1.1	5.4.2	Process Violations for Tolls	TAS
3.1.1	5.4.3	Process Parking Lot Violations	PMS
3.1.1	5.4.4	Process Fare Payment Violations	TRMS
3.1.1	5.4.5	Process Vehicle Fare Collection Violations	TRMS
3.1.1	5.4.6	Process CV Violations	CVAS
3.1.1	5.4.7	Process Roadside Fare Collection Violations	TRMS
3.1.1	7.1.1.1	Read Tag Data for Tolls	TCS
3.1.1	7.1.1.10	Determine Advanced Toll Bill	TCS
3.1.1	7.1.1.2	Calculate Vehicle Toll	TCS
3.1.1	7.1.1.3	Manage Bad Toll Payment Data	TAS
3.1.1	7.1.1.4	Check for Advanced Tolls Payment	TCS
3.1.1	7.1.1.5	Bill Driver for Tolls	TCS
3.1.1	7.1.1.6	Collect Probe Data From Toll Transactions	TAS
3.1.1	7.1.1.7	Update Toll Price Data	TAS
3.1.1	7.1.1.8	Register for Advanced Toll Payment	TAS
3.1.1	7.1.2	Produce Roadside Displays	TCS
3.1.1	7.1.3	Obtain Toll Violator Image	TCS
3.1.1	7.1.4	Provide Driver Toll Payment Interface	VS
3.1.1	7.1.5	Detect Vehicle for Tolls	TCS
3.1.1	7.2.6	Distribute Advanced Tolls and Fares	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.1.1.1	7.1.1.1	Read Tag Data for Tolls	TCS
3.1.1.1	7.1.1.10	Determine Advanced Toll Bill	TCS
3.1.1.1	7.1.1.2	Calculate Vehicle Toll	TCS
3.1.1.1	7.1.1.5	Bill Driver for Tolls	TCS
3.1.1.1	7.1.1.6	Collect Probe Data From Toll Transactions	TAS
3.1.1.1	7.1.1.8	Register for Advanced Toll Payment	TAS
3.1.1.1	7.1.4	Provide Driver Toll Payment Interface	VS
3.1.1.2	7.1.1.2	Calculate Vehicle Toll	TCS
3.1.1.2	7.1.1.7	Update Toll Price Data	TAS
3.1.1.3	7.1.2	Produce Roadside Displays	TCS
3.1.1.3	7.1.4	Provide Driver Toll Payment Interface	VS
3.1.1.3	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.1.1.4	5.4.2	Process Violations for Tolls	TAS
3.1.1.4	5.4.3	Process Parking Lot Violations	PMS
3.1.1.4	5.4.4	Process Fare Payment Violations	TRMS
3.1.1.4	5.4.5	Process Vehicle Fare Collection Violations	TRMS
3.1.1.4	5.4.6	Process CV Violations	CVAS
3.1.1.4	5.4.7	Process Roadside Fare Collection Violations	TRMS
3.1.1.4	7.1.1.3	Manage Bad Toll Payment Data	TAS
3.1.1.4	7.1.1.6	Collect Probe Data From Toll Transactions	TAS
3.1.1.4	7.1.3	Obtain Toll Violator Image	TCS
3.1.1.4	7.1.5	Detect Vehicle for Tolls	TCS
3.1.1.5	7.1.1.3	Manage Bad Toll Payment Data	TAS
3.1.1.5	7.1.1.4	Check for Advanced Tolls Payment	TCS
3.1.1.6	7.1.1.1	Read Tag Data for Tolls	TCS
3.1.1.6	7.1.1.2	Calculate Vehicle Toll	TCS
3.1.1.6	7.1.1.6	Collect Probe Data From Toll Transactions	TAS
3.1.1.7	7.1.4	Provide Driver Toll Payment Interface	VS
3.1.1.8	7.1.1.5	Bill Driver for Tolls	TCS
3.1.1.8	7.1.5	Detect Vehicle for Tolls	TCS
3.1.2	4.6.1	Detect Transit User on Vehicle	TRVS
3.1.2	4.6.2	Determine Transit User Needs on Vehicle	TRVS
3.1.2	4.6.3	Determine Transit Fare on Vehicle	TRVS
3.1.2	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
3.1.2	4.6.6	Update Transit Vehicle Fare Data	TRVS
3.1.2	4.6.7	Provide Transit Vehicle Passenger Data	TRVS
3.1.2	4.6.8	Manage Transit Vehicle Advanced Payments	TRMS
3.1.2	4.7.2.1	Detect Transit User at Roadside	RTS
3.1.2	4.7.2.2	Determine Transit User Needs at Roadside	RTS
3.1.2	4.7.2.3	Determine Transit Fare at Roadside	RTS
3.1.2	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2	4.7.2.5	Provide Transit User Roadside Fare Interface	RTS
3.1.2	4.7.2.6	Update Roadside Transit Fare Data	RTS
3.1.2	4.7.2.7	Provide Transit Roadside Passenger Data	RTS
3.1.2	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
3.1.2	7.1.6	Distribute Advanced Charges and Fares	ISP
3.1.2	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.1.2	7.3.1.1	Register for Advanced Transit Fare Payment	TRMS
3.1.2	7.3.1.2	Determine Advanced Transit Fares	TRMS
3.1.2	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
3.1.2	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.1.2	7.3.1.5	Bill Transit User for Transit Fare	TRMS
3.1.2	7.3.1.6	Collect Bad Transit Fare Payment Data	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.1.2	7.3.1.7	Update Transit Fare Data	TRMS
3.1.2	7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
3.1.2	7.3.3	Get Transit User Image for Violation	TRMS
3.1.2	7.4.1.8	Process Traveler Rideshare Payments	ISP
3.1.2	7.4.2	Collect Price Data for ITS Use	ISP
3.1.2	7.4.3	Route Traveler Advanced Payments	ISP
3.1.2.1	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2.1	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2.1	7.1.6	Distribute Advanced Charges and Fares	ISP
3.1.2.1	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.1.2.1	7.3.1.1	Register for Advanced Transit Fare Payment	TRMS
3.1.2.1	7.3.1.2	Determine Advanced Transit Fares	TRMS
3.1.2.1	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
3.1.2.1	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.1.2.1	7.3.1.5	Bill Transit User for Transit Fare	TRMS
3.1.2.1	7.3.1.6	Collect Bad Transit Fare Payment Data	TRMS
3.1.2.1	7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
3.1.2.2	4.6.3	Determine Transit Fare on Vehicle	TRVS
3.1.2.2	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2.2	4.6.7	Provide Transit Vehicle Passenger Data	TRVS
3.1.2.2	4.7.2.3	Determine Transit Fare at Roadside	RTS
3.1.2.2	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2.2	4.7.2.7	Provide Transit Roadside Passenger Data	RTS
3.1.2.2	7.3.1.2	Determine Advanced Transit Fares	TRMS
3.1.2.2	7.4.1.8	Process Traveler Rideshare Payments	ISP
3.1.2.3	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2.3	4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
3.1.2.3	4.6.8	Manage Transit Vehicle Advanced Payments	TRMS
3.1.2.3	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2.3	4.7.2.5	Provide Transit User Roadside Fare Interface	RTS
3.1.2.3	6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
3.1.2.3	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
3.1.2.3	7.3.1.5	Bill Transit User for Transit Fare	TRMS
3.1.2.3	7.3.1.6	Collect Bad Transit Fare Payment Data	TRMS
3.1.2.4	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2.4	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2.4	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.1.2.4	7.3.1.1	Register for Advanced Transit Fare Payment	TRMS
3.1.2.4	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.1.2.4	7.4.3	Route Traveler Advanced Payments	ISP
3.1.2.5	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2.5	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2.5	7.3.1.3	Manage Transit Fare Financial Processing	TRMS
3.1.2.5	7.3.1.6	Collect Bad Transit Fare Payment Data	TRMS
3.1.2.5	7.3.3	Get Transit User Image for Violation	TRMS
3.1.2.6	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2.6	4.6.6	Update Transit Vehicle Fare Data	TRVS
3.1.2.6	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2.6	4.7.2.6	Update Roadside Transit Fare Data	RTS
3.1.2.6	7.3.1.7	Update Transit Fare Data	TRMS
3.1.2.6	7.4.3	Route Traveler Advanced Payments	ISP
3.1.2.7	4.6.1	Detect Transit User on Vehicle	TRVS
3.1.2.7	4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
3.1.2.7	4.6.7	Provide Transit Vehicle Passenger Data	TRVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.1.2.7	4.7.2.1	Detect Transit User at Roadside	RTS
3.1.2.7	4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
3.1.2.7	4.7.2.7	Provide Transit Roadside Passenger Data	RTS
3.1.2.7	7.4.2	Collect Price Data for ITS Use	ISP
3.1.2.8	4.6.1	Detect Transit User on Vehicle	TRVS
3.1.2.8	4.7.2.1	Detect Transit User at Roadside	RTS
3.1.2.8	7.3.1.1	Register for Advanced Transit Fare Payment	TRMS
3.1.2.8	7.3.1.2	Determine Advanced Transit Fares	TRMS
3.1.2.8	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.1.2.8	7.3.1.5	Bill Transit User for Transit Fare	TRMS
3.1.3	7.1.6	Distribute Advanced Charges and Fares	ISP
3.1.3	7.1.7	Provide Payment Instrument Interface for Tolls	VS
3.1.3	7.2.1.1	Read Parking Lot Tag Data	PMS
3.1.3	7.2.1.10	Determine Advanced Charges	PMS
3.1.3	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
3.1.3	7.2.1.3	Collect Bad Charge Payment Data	PMS
3.1.3	7.2.1.4	Check for Advanced Parking Lot Payment	PMS
3.1.3	7.2.1.5	Bill Driver for Parking Lot Charges	PMS
3.1.3	7.2.1.6	Manage Parking Lot Financial Processing	PMS
3.1.3	7.2.1.7	Update Parking Lot Data	PMS
3.1.3	7.2.1.8	Register for Advanced Parking Lot Payment	PMS
3.1.3	7.2.2	Produce Parking Lot Displays	PMS
3.1.3	7.2.3	Obtain Parking Lot Violator Image	PMS
3.1.3	7.2.5	Detect Vehicle for Parking Lot Payment	PMS
3.1.3	7.2.7	Provide Payment Instrument Interface for Parking	VS
3.1.3	7.3.4	Provide Remote Terminal Payment Instrument Interface	RTS
3.1.3	7.3.5	Provide Transit Vehicle Payment Instrument Interface	TRVS
3.1.3	7.4.3	Route Traveler Advanced Payments	ISP
3.1.3	7.5.1	Provide Vehicle Payment Instrument Interface	VS
3.1.3	7.5.2	Provide Transit User Roadside Payment Instrument Interface	RTS
3.1.3	7.5.3	Provide Personal Payment Instrument Interface	PIAS
3.1.3	7.5.4	Provide Commercial Fleet Payment Instrument Interface	FMS
3.1.3	7.5.5	Provide Traveler Kiosk Payment Instrument Interface	RTS
3.1.3.1	7.1.6	Distribute Advanced Charges and Fares	ISP
3.1.3.1	7.1.7	Provide Payment Instrument Interface for Tolls	VS
3.1.3.1	7.2.1.1	Read Parking Lot Tag Data	PMS
3.1.3.1	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
3.1.3.1	7.2.1.3	Collect Bad Charge Payment Data	PMS
3.1.3.1	7.2.1.4	Check for Advanced Parking Lot Payment	PMS
3.1.3.1	7.2.1.5	Bill Driver for Parking Lot Charges	PMS
3.1.3.1	7.2.1.6	Manage Parking Lot Financial Processing	PMS
3.1.3.1	7.2.1.7	Update Parking Lot Data	PMS
3.1.3.1	7.2.1.8	Register for Advanced Parking Lot Payment	PMS
3.1.3.1	7.2.2	Produce Parking Lot Displays	PMS
3.1.3.1	7.2.5	Detect Vehicle for Parking Lot Payment	PMS
3.1.3.1	7.2.7	Provide Payment Instrument Interface for Parking	VS
3.1.3.1	7.3.4	Provide Remote Terminal Payment Instrument Interface	RTS
3.1.3.1	7.3.5	Provide Transit Vehicle Payment Instrument Interface	TRVS
3.1.3.1	7.5.1	Provide Vehicle Payment Instrument Interface	VS
3.1.3.1	7.5.2	Provide Transit User Roadside Payment Instrument Interface	RTS
3.1.3.1	7.5.3	Provide Personal Payment Instrument Interface	PIAS
3.1.3.1	7.5.4	Provide Commercial Fleet Payment Instrument Interface	FMS
3.1.3.1	7.5.5	Provide Traveler Kiosk Payment Instrument Interface	RTS
3.1.3.2	4.5.4	Assess Transit Driver Eligibility	TRMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.1.3.2	7.2.1.10	Determine Advanced Charges	PMS
3.1.3.2	7.2.1.4	Check for Advanced Parking Lot Payment	PMS
3.1.3.2	7.2.1.8	Register for Advanced Parking Lot Payment	PMS
3.1.3.2	7.4.3	Route Traveler Advanced Payments	ISP
3.1.3.3	7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
3.1.3.3	7.2.1.7	Update Parking Lot Data	PMS
3.1.3.3	7.2.5	Detect Vehicle for Parking Lot Payment	PMS
3.1.4	4.6.1	Detect Transit User on Vehicle	TRVS
3.1.4	4.6.2	Determine Transit User Needs on Vehicle	TRVS
3.1.4	4.7.2.1	Detect Transit User at Roadside	RTS
3.1.4	4.7.2.2	Determine Transit User Needs at Roadside	RTS
3.1.4	7.1.1.9	Manage Toll Financial Processing	TAS
3.1.4	7.2.1.10	Determine Advanced Charges	PMS
3.1.4	7.2.1.8	Register for Advanced Parking Lot Payment	PMS
3.1.4	7.2.1.9	Manage Parking Lot Reservations	PMS
3.1.4	7.2.4	Provide Driver Parking Lot Payment Interface	VS
3.1.4	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.1.4	7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
3.1.4	7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
3.1.4	7.4.1.1	Process Commercial Vehicle Payments	CVAS
3.1.4	7.4.1.3	Process Driver Map Update Payments	ISP
3.1.4	7.4.1.5	Process Transit User Other Services Payments	TRMS
3.1.4	7.4.1.6	Process Traveler Trip and Other Services Payments	ISP
3.1.4	7.4.1.7	Collect Payment Transaction Records	ISP
3.1.4	7.4.2	Collect Price Data for ITS Use	ISP
3.1.4	7.4.3	Route Traveler Advanced Payments	ISP
3.1.4.1	7.2.1.10	Determine Advanced Charges	PMS
3.1.4.1	7.2.1.8	Register for Advanced Parking Lot Payment	PMS
3.1.4.1	7.2.4	Provide Driver Parking Lot Payment Interface	VS
3.1.4.1	7.2.6	Distribute Advanced Tolls and Fares	ISP
3.1.4.1	7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
3.1.4.1	7.4.1.1	Process Commercial Vehicle Payments	CVAS
3.1.4.1	7.4.1.7	Collect Payment Transaction Records	ISP
3.1.4.1	7.4.3	Route Traveler Advanced Payments	ISP
3.1.4.2	7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
3.1.4.2	7.4.3	Route Traveler Advanced Payments	ISP
3.1.4.3	4.6.1	Detect Transit User on Vehicle	TRVS
3.1.4.3	4.6.2	Determine Transit User Needs on Vehicle	TRVS
3.1.4.3	4.7.2.1	Detect Transit User at Roadside	RTS
3.1.4.3	4.7.2.2	Determine Transit User Needs at Roadside	RTS
3.1.4.3	7.1.1.9	Manage Toll Financial Processing	TAS
3.1.4.3	7.2.1.9	Manage Parking Lot Reservations	PMS
3.1.4.3	7.4.2	Collect Price Data for ITS Use	ISP
3.1.4.4	7.2.4	Provide Driver Parking Lot Payment Interface	VS
3.1.5	1.4.2	Collect Demand Forecast Data	TMS
3.1.5	1.4.4	Implement Demand Management Policy	TMS
3.1.5	1.4.5	Calculate Forecast Demand	TMS
3.1.5	7.4.2	Collect Price Data for ITS Use	ISP
3.1.5.1	1.4.2	Collect Demand Forecast Data	TMS
3.1.5.1	1.4.4	Implement Demand Management Policy	TMS
3.1.5.1	1.4.5	Calculate Forecast Demand	TMS
3.1.5.1	7.4.2	Collect Price Data for ITS Use	ISP
3.1.5.1.1	1.4.2	Collect Demand Forecast Data	TMS
3.1.5.1.1	1.4.4	Implement Demand Management Policy	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
3.1.5.1.1	1.4.5	Calculate Forecast Demand	TMS
3.1.5.1.1	7.4.2	Collect Price Data for ITS Use	ISP
3.1.5.2	1.4.2	Collect Demand Forecast Data	TMS
3.1.5.2	1.4.4	Implement Demand Management Policy	TMS
3.1.5.2	1.4.5	Calculate Forecast Demand	TMS
3.1.5.2	7.4.2	Collect Price Data for ITS Use	ISP
3.1.5.3	1.4.2	Collect Demand Forecast Data	TMS
3.1.5.3	1.4.4	Implement Demand Management Policy	TMS
3.1.5.3	1.4.5	Calculate Forecast Demand	TMS
3.1.5.3	7.4.2	Collect Price Data for ITS Use	ISP
4.0	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
4.0	2.1.2	Provide Commercial Fleet Static Route	FMS
4.0	2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	FMS
4.0	2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
4.0	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
4.0	2.2.1	Manage CV Electronic Credential and Tax Filing Interface	FMS
4.0	2.2.2	Provide Vehicle Static Route	CVS
4.0	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.0	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
4.0	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.0	2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	CVCS
4.0	2.3.2.2	Process Screening Transactions	CVCS
4.0	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.0	2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	CVCS
4.0	2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	CVCS
4.0	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.0	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.0	2.3.4	Detect Commercial Vehicle	CVCS
4.0	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.0	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.0	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.0	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.0	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.0	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.0	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.0	2.5.1	Manage Commercial Vehicle Trips and Clearances	CVAS
4.0	2.5.2	Obtain Electronic Credential and Tax Filing Payment	CVAS
4.0	2.5.3	Update Permits and Duties Store	CVAS
4.0	2.5.4	Communicate with Other Commercial Vehicle Administration System	CVAS
4.0	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.0	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.0	2.5.7	Process Commercial Vehicle Violations	CVAS
4.0	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.0	2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	FMS
4.0	2.6.2	Transmit Commercial Vehicle Tag Data	CVS
4.0	2.6.3	Provide Commercial Driver Tag Data Interface	CVS
4.0	2.6.4	Provide Lock Tag Data Interface	CVS
4.0	2.6.5	Manage Commercial Vehicle Tag Data Store	CVS
4.0	2.7	Manage Cargo	FMS
4.0	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.0	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
4.1	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.1	2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	CVCS
4.1	2.3.2.2	Process Screening Transactions	CVCS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.1	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.1	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1	2.3.4	Detect Commercial Vehicle	CVCS
4.1	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.1	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.1	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.1	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.1	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.1	2.5.3	Update Permits and Duties Store	CVAS
4.1	2.5.4	Communicate with Other Commercial Vehicle Administration System	CVAS
4.1	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.1	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.1	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.1	2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	FMS
4.1	2.6.2	Transmit Commercial Vehicle Tag Data	CVS
4.1	2.6.3	Provide Commercial Driver Tag Data Interface	CVS
4.1	2.6.4	Provide Lock Tag Data Interface	CVS
4.1	2.6.5	Manage Commercial Vehicle Tag Data Store	CVS
4.1	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
4.1.0	2.3.4	Detect Commercial Vehicle	CVCS
4.1.0	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
4.1.1	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.1.1	2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	CVCS
4.1.1	2.3.2.2	Process Screening Transactions	CVCS
4.1.1	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1.1	2.3.4	Detect Commercial Vehicle	CVCS
4.1.1	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.1.1	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.1.1	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.1.1	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.1.1	2.5.3	Update Permits and Duties Store	CVAS
4.1.1	2.5.4	Communicate with Other Commercial Vehicle Administration System	CVAS
4.1.1	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.1.1	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.1.1	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.1.1.1	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1.1.2	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1.1.2	2.5.3	Update Permits and Duties Store	CVAS
4.1.1.3	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1.1.3	2.5.4	Communicate with Other Commercial Vehicle Administration System	CVAS
4.1.1.4	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.1.1.4	2.3.2.2	Process Screening Transactions	CVCS
4.1.1.4	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.1.1.4	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1.1.4	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.1.1.4	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.1.1.4(a)	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.1.1.4(b)	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.1.1.4(c)	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.1.1.5	2.3.2.2	Process Screening Transactions	CVCS
4.1.1.5	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.1.1.6	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1.1.6	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.1.1.6	2.4.4	Provide Commercial Vehicle Driver Interface	CVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.1.1.6(a)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.1.1.6(b)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.1.1.6(c)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.1.1.6(d)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.1.1.6(e)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.1.1.7	2.3.2.2	Process Screening Transactions	CVCS
4.1.1.7	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.1.1.7	2.3.4	Detect Commercial Vehicle	CVCS
4.1.1.8	2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	CVCS
4.1.1.8	2.3.2.2	Process Screening Transactions	CVCS
4.1.1.8	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.1.1.8	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.1.1.8	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.1.1.8	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.1.2	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.1.2	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.1.2	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.1.2	2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	FMS
4.1.2	2.6.2	Transmit Commercial Vehicle Tag Data	CVS
4.1.2	2.6.3	Provide Commercial Driver Tag Data Interface	CVS
4.1.2	2.6.4	Provide Lock Tag Data Interface	CVS
4.1.2	2.6.5	Manage Commercial Vehicle Tag Data Store	CVS
4.1.2	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
4.1.2.1	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.1.2.1	2.6.2	Transmit Commercial Vehicle Tag Data	CVS
4.1.2.1	2.6.5	Manage Commercial Vehicle Tag Data Store	CVS
4.1.2.2	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.1.2.2	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.1.2.2	2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	FMS
4.1.2.2	2.6.2	Transmit Commercial Vehicle Tag Data	CVS
4.1.2.2	2.6.3	Provide Commercial Driver Tag Data Interface	CVS
4.1.2.2	2.6.4	Provide Lock Tag Data Interface	CVS
4.1.2.2	2.6.5	Manage Commercial Vehicle Tag Data Store	CVS
4.1.2.2	7.4.1.2	Process Yellow Pages Services Provider Payments	ISP
4.2	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.2	2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	CVCS
4.2	2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	CVCS
4.2	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.2	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2	2.3.4	Detect Commercial Vehicle	CVCS
4.2	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.2	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.2	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.2	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.2	2.7	Manage Cargo	FMS
4.2.0	2.3.4	Detect Commercial Vehicle	CVCS
4.2.0	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2.0	2.5.7	Process Commercial Vehicle Violations	CVAS
4.2.1	2.3.4	Detect Commercial Vehicle	CVCS
4.2.1	2.5.7	Process Commercial Vehicle Violations	CVAS
4.2.2	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.2.2	2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	CVCS
4.2.2	2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	CVCS
4.2.2	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.2.2	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2.2	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.2.2	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.2.2	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2	2.5.7	Process Commercial Vehicle Violations	CVAS
4.2.2	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.2.2	2.7	Manage Cargo	FMS
4.2.2.1	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.2.2.1	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2.2.1	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.1	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.2.2.1	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2.1	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.2.2.2	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2.2.2	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.3	2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	CVCS
4.2.2.3	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2.2.3	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.3(a)	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.3(b)	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.3(c)	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.4	2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	CVCS
4.2.2.4	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.4	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.2.2.4	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.2.2.4	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2.4	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.2.2.5	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2.5	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.2.2.5(a)	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2.5(b)	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2.5(c)	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2.5(d)	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
4.2.2.6	2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	CVCS
4.2.2.6	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.2.2.6	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2.2.6	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.2.2.7	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.2.2.7	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2.2.7	2.7	Manage Cargo	FMS
4.2.2.7(a)	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.2.2.7(a)	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
4.2.2.7(b)	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.2.2.7(c)	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.2.2.7(d)	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.2.2.7(d)	2.7	Manage Cargo	FMS
4.2.3	2.3.4	Detect Commercial Vehicle	CVCS
4.2.3	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.2.3	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2.3.1	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.2.3.1	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.2.3.1	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
4.2.3.1	2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
4.2.3.2	2.3.4	Detect Commercial Vehicle	CVCS
4.2.3.2	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2.3.2	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.2.3.2	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
4.2.3.2	2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
4.2.3.3	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.2.3.3	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2.3.4	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2.3.4	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.2.3.4	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
4.2.3.4	2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
4.2.3.5	2.3.4	Detect Commercial Vehicle	CVCS
4.2.3.5	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2.3.5	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.2.3.5	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
4.2.3.5	2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
4.2.3.6	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.2.3.7	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.3	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.3	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.3	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.3	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.3	2.3.4	Detect Commercial Vehicle	CVCS
4.3	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.3	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.3	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.3	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.3	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.3	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.3.0	2.3.4	Detect Commercial Vehicle	CVCS
4.3.1	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.3.1	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.3.1	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.3.1	2.3.4	Detect Commercial Vehicle	CVCS
4.3.1	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.3.1	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.3.1	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.3.1	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.3.1	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.3.1.1	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.3.1.1	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.3.1.1(a)	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.3.1.1(b)	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.3.1.2	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.3.1.2	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.3.1.2	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.3.1.3	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.3.1.3	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.3.1.3	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.3.1.4	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.3.1.4	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.3.1.5	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
4.3.1.6	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.3.1.6	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.3.1.7	2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
4.3.1.7	2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
4.3.1.7	2.3.4	Detect Commercial Vehicle	CVCS
4.3.1.7	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
4.3.2	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.3.2	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.3.2	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.3.2	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.3.2.1	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.3.2.1	2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
4.3.2.1	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.3.2.1	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.3.2.1	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
4.3.2.1	2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
4.3.2.1(a)	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.3.2.1(b)	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.3.2.1(c)	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.3.2.1(d)	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.3.2.1(e)	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.3.2.2	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.3.2.2	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
4.3.2.2	2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
4.3.2.3	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
4.4	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
4.4	2.2.1	Manage CV Electronic Credential and Tax Filing Interface	FMS
4.4	2.2.2	Provide Vehicle Static Route	CVS
4.4	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.4	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.4	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4	2.5.7	Process Commercial Vehicle Violations	CVAS
4.4	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.4.0	2.1.2	Provide Commercial Fleet Static Route	FMS
4.4.0	2.5.3	Update Permits and Duties Store	CVAS
4.4.0	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.4.1	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
4.4.1	2.1.2	Provide Commercial Fleet Static Route	FMS
4.4.1	2.2.1	Manage CV Electronic Credential and Tax Filing Interface	FMS
4.4.1	2.2.2	Provide Vehicle Static Route	CVS
4.4.1	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.1	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.1	2.5.3	Update Permits and Duties Store	CVAS
4.4.1	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.4.1(a)	2.5.3	Update Permits and Duties Store	CVAS
4.4.1(a)	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.4.1(b)	2.5.3	Update Permits and Duties Store	CVAS
4.4.1(b)	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.4.1(c)	2.1.2	Provide Commercial Fleet Static Route	FMS
4.4.1(d)	2.1.2	Provide Commercial Fleet Static Route	FMS
4.4.1(e)	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
4.4.1(f)	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.4.1(g)	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
4.4.2	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.2	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
4.4.2	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.4.2	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.2	2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
4.4.2	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.4.2(a)	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.4.2(b)	2.3.6	Provide Commercial Vehicle Reports	CVCS
4.4.2(c)	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.4.2(d)	2.5.8	Process Data Received from Roadside Facilities	CVAS
4.4.3	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3	2.5.3	Update Permits and Duties Store	CVAS
4.4.3	2.5.7	Process Commercial Vehicle Violations	CVAS
4.4.3.1	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3.1	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.1	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.1(a)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.1(a)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.1(b)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.1(b)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.1(c)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.1(c)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3.2	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2	2.4.3	Analyze Commercial Vehicle On-board Data	CVS
4.4.3.2	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
4.4.3.2	2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
4.4.3.2	2.5.3	Update Permits and Duties Store	CVAS
4.4.3.2	2.5.7	Process Commercial Vehicle Violations	CVAS
4.4.3.2(a)	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3.2(a)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(a)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2(b)	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3.2(b)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(b)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2(c)	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3.2(c)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(c)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2(d)	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3.2(d)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(d)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2(e)	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.4.3.2(e)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(e)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2(f)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(f)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2(g)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(g)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.4.3.2(h)	2.3.8	Provide Commercial Vehicle Border Screening	CVCS
4.4.3.2(h)	2.4.4	Provide Commercial Vehicle Driver Interface	CVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.5	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5	5.1.1	Identify Emergencies from Inputs	EM
4.5	5.1.4	Manage Emergency Response	EM
4.5	5.1.6	Process Mayday Messages	EM
4.5	5.3.2	Dispatch Vehicle	EM
4.5	5.3.7	Provide Emergency Vehicle Route	EM
4.5.0	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5.0	5.1.1	Identify Emergencies from Inputs	EM
4.5.0	5.1.4	Manage Emergency Response	EM
4.5.0	5.1.6	Process Mayday Messages	EM
4.5.0	5.3.2	Dispatch Vehicle	EM
4.5.0	5.3.7	Provide Emergency Vehicle Route	EM
4.5.1	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5.1.1	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5.1.2	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5.1.2(a)	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5.1.2(b)	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5.1.2(c)	3.3.1	Provide Cargo Data for Incident Notification	CVS
4.5.2	5.1.4	Manage Emergency Response	EM
4.5.2.1	5.1.4	Manage Emergency Response	EM
4.5.2.2	5.1.4	Manage Emergency Response	EM
4.5.2.3	5.1.4	Manage Emergency Response	EM
4.5.2.3(a)	5.1.4	Manage Emergency Response	EM
4.5.2.3(b)	5.1.4	Manage Emergency Response	EM
4.5.2.3(c)	5.1.4	Manage Emergency Response	EM
4.5.2.3(e)	5.1.4	Manage Emergency Response	EM
4.5.2.3(f)	5.1.4	Manage Emergency Response	EM
4.5.2.3(g)	5.1.4	Manage Emergency Response	EM
4.5.2.3(h)	5.1.4	Manage Emergency Response	EM
4.5.3	5.1.1	Identify Emergencies from Inputs	EM
4.5.3	5.1.4	Manage Emergency Response	EM
4.5.3	5.1.6	Process Mayday Messages	EM
4.5.3	5.3.2	Dispatch Vehicle	EM
4.5.3	5.3.7	Provide Emergency Vehicle Route	EM
4.5.3.1	5.1.1	Identify Emergencies from Inputs	EM
4.5.3.1	5.1.6	Process Mayday Messages	EM
4.5.3.2	5.3.2	Dispatch Vehicle	EM
4.5.3.2	5.3.7	Provide Emergency Vehicle Route	EM
4.5.3.3	5.1.4	Manage Emergency Response	EM
4.5.3.4	5.1.4	Manage Emergency Response	EM
4.5.3.5	9	Satisfy Implementation Requirements	N/A
4.6	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
4.6	2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	FMS
4.6	2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
4.6	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
4.6	2.2.1	Manage CV Electronic Credential and Tax Filing Interface	FMS
4.6	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.6	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
4.6	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.6	2.5.1	Manage Commercial Vehicle Trips and Clearances	CVAS
4.6	2.5.2	Obtain Electronic Credential and Tax Filing Payment	CVAS
4.6	2.5.4	Communicate with Other Commercial Vehicle Administration System	CVAS
4.6.0	2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
4.6.0	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
4.6.0	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
4.6.1	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
4.6.1	2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	FMS
4.6.1	2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
4.6.1	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
4.6.1	2.2.1	Manage CV Electronic Credential and Tax Filing Interface	FMS
4.6.1	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
4.6.1	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
4.6.1	2.4.4	Provide Commercial Vehicle Driver Interface	CVS
4.6.1	2.5.1	Manage Commercial Vehicle Trips and Clearances	CVAS
4.6.1	2.5.2	Obtain Electronic Credential and Tax Filing Payment	CVAS
4.6.1	2.5.4	Communicate with Other Commercial Vehicle Administration System	CVAS
4.6.2	2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	FMS
4.6.2	2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
4.6.2	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
4.6.2	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
4.6.2(a)	2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
4.6.2(a)	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
4.6.2(a)	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
4.6.2(b)	2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
4.6.2(b)	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
4.6.2(b)	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
4.6.2(c)	2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
4.6.2(c)	2.2.4	Provide Commercial Vehicle Driver Communications	CVS
5.0	1.2.2.1	Determine Indicator State for Freeway Management	TMS
5.0	1.2.2.2	Determine Indicator State for Road Management	TMS
5.0	1.2.7.3	Manage Indicator Preemptions	RS
5.0	1.2.7.6	Provide Intersection Collision Avoidance Data	RS
5.0	3.3.1	Provide Cargo Data for Incident Notification	CVS
5.0	3.3.2	Provide Communications Function	VS
5.0	3.3.3	Build Automatic Collision Notification Message	VS
5.0	5.1.1	Identify Emergencies from Inputs	EM
5.0	5.1.2	Determine Coordinated Response Plan	EM
5.0	5.1.3	Communicate Emergency Status	EM
5.0	5.1.4	Manage Emergency Response	EM
5.0	5.1.6	Process Mayday Messages	EM
5.0	5.2	Provide Operator Interface for Emergency Data	EM
5.0	5.3.1	Select Response Mode	EM
5.0	5.3.2	Dispatch Vehicle	EM
5.0	5.3.3	Track Vehicle	EVS
5.0	5.3.4	Assess Response Status	EM
5.0	5.3.5	Provide Emergency Personnel Interface	EVS
5.0	5.3.6	Maintain Vehicle Status	EM
5.0	5.3.7	Provide Emergency Vehicle Route	EM
5.0	5.5	Update Emergency Display Map Data	EM
5.0	6.6.1	Provide Multimodal Route Selection	ISP
5.0	6.7.1.1	Build Driver Personal Security Message	VS
5.0	6.7.1.2	Provide Driver In-vehicle Communications Function	VS
5.0	6.7.2.2	Process Vehicle Location Data	VS
5.0	6.8.2.1	Build Traveler Personal Security Message	PIAS
5.0	6.8.2.2	Provide Traveler Emergency Communications Function	PIAS
5.1	3.3.1	Provide Cargo Data for Incident Notification	CVS
5.1	3.3.2	Provide Communications Function	VS
5.1	3.3.3	Build Automatic Collision Notification Message	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
5.1	5.1.1	Identify Emergencies from Inputs	EM
5.1	5.1.2	Determine Coordinated Response Plan	EM
5.1	5.1.3	Communicate Emergency Status	EM
5.1	5.1.6	Process Mayday Messages	EM
5.1	5.2	Provide Operator Interface for Emergency Data	EM
5.1	5.5	Update Emergency Display Map Data	EM
5.1.0	6.7.1.1	Build Driver Personal Security Message	VS
5.1.0	6.7.1.2	Provide Driver In-vehicle Communications Function	VS
5.1.0	6.7.2.2	Process Vehicle Location Data	VS
5.1.0	6.8.2.1	Build Traveler Personal Security Message	PIAS
5.1.0	6.8.2.2	Provide Traveler Emergency Communications Function	PIAS
5.1.1	3.3.2	Provide Communications Function	VS
5.1.1	3.3.3	Build Automatic Collision Notification Message	VS
5.1.1	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1	6.7.1.2	Provide Driver In-vehicle Communications Function	VS
5.1.1	6.7.2.2	Process Vehicle Location Data	VS
5.1.1	6.8.2.1	Build Traveler Personal Security Message	PIAS
5.1.1	6.8.2.2	Provide Traveler Emergency Communications Function	PIAS
5.1.1.1	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1.1	6.7.2.2	Process Vehicle Location Data	VS
5.1.1.1	6.8.2.1	Build Traveler Personal Security Message	PIAS
5.1.1.1(a)	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1.1(b)	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1.1(c)	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1.1(d)	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1.1(d)	6.7.2.2	Process Vehicle Location Data	VS
5.1.1.1(d)	6.8.2.1	Build Traveler Personal Security Message	PIAS
5.1.1.1(e)	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1.1(e)	6.8.2.1	Build Traveler Personal Security Message	PIAS
5.1.1.2	6.7.1.1	Build Driver Personal Security Message	VS
5.1.1.2	6.7.2.2	Process Vehicle Location Data	VS
5.1.1.2	6.8.2.1	Build Traveler Personal Security Message	PIAS
5.1.1.3	3.3.2	Provide Communications Function	VS
5.1.1.3	6.7.1.2	Provide Driver In-vehicle Communications Function	VS
5.1.1.3	6.8.2.2	Provide Traveler Emergency Communications Function	PIAS
5.1.1.4	3.3.3	Build Automatic Collision Notification Message	VS
5.1.1.4	6.7.2.2	Process Vehicle Location Data	VS
5.1.2	3.3.1	Provide Cargo Data for Incident Notification	CVS
5.1.2	3.3.3	Build Automatic Collision Notification Message	VS
5.1.2	6.7.2.2	Process Vehicle Location Data	VS
5.1.2.1	3.3.1	Provide Cargo Data for Incident Notification	CVS
5.1.2.1	3.3.3	Build Automatic Collision Notification Message	VS
5.1.2.1	6.7.2.2	Process Vehicle Location Data	VS
5.1.2.1.1	3.3.3	Build Automatic Collision Notification Message	VS
5.1.2.1.1	6.7.2.2	Process Vehicle Location Data	VS
5.1.2.1.2	3.3.1	Provide Cargo Data for Incident Notification	CVS
5.1.2.1.2	3.3.3	Build Automatic Collision Notification Message	VS
5.1.2.1.2	6.7.2.2	Process Vehicle Location Data	VS
5.1.2.2	3.3.1	Provide Cargo Data for Incident Notification	CVS
5.1.2.2	3.3.3	Build Automatic Collision Notification Message	VS
5.1.2.2	6.7.2.2	Process Vehicle Location Data	VS
5.1.2.2(a)	3.3.3	Build Automatic Collision Notification Message	VS
5.1.2.2(b)	6.7.2.2	Process Vehicle Location Data	VS
5.1.2.2(c)	3.3.1	Provide Cargo Data for Incident Notification	CVS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
5.2	1.2.2.1	Determine Indicator State for Freeway Management	TMS
5.2	1.2.2.2	Determine Indicator State for Road Management	TMS
5.2	1.2.7.3	Manage Indicator Preemptions	RS
5.2	1.2.7.6	Provide Intersection Collision Avoidance Data	RS
5.2	5.1.1	Identify Emergencies from Inputs	EM
5.2	5.1.2	Determine Coordinated Response Plan	EM
5.2	5.1.3	Communicate Emergency Status	EM
5.2	5.1.4	Manage Emergency Response	EM
5.2	5.1.6	Process Mayday Messages	EM
5.2	5.2	Provide Operator Interface for Emergency Data	EM
5.2	5.3.1	Select Response Mode	EM
5.2	5.3.2	Dispatch Vehicle	EM
5.2	5.3.3	Track Vehicle	EVS
5.2	5.3.4	Assess Response Status	EM
5.2	5.3.5	Provide Emergency Personnel Interface	EVS
5.2	5.3.6	Maintain Vehicle Status	EM
5.2	5.3.7	Provide Emergency Vehicle Route	EM
5.2	5.5	Update Emergency Display Map Data	EM
5.2.0	6.6.1	Provide Multimodal Route Selection	ISP
5.2.1	5.1.4	Manage Emergency Response	EM
5.2.1	5.3.1	Select Response Mode	EM
5.2.1	5.3.2	Dispatch Vehicle	EM
5.2.1	5.3.3	Track Vehicle	EVS
5.2.1	5.3.4	Assess Response Status	EM
5.2.1	5.3.6	Maintain Vehicle Status	EM
5.2.1	5.3.7	Provide Emergency Vehicle Route	EM
5.2.1.1	5.1.4	Manage Emergency Response	EM
5.2.1.1	5.3.3	Track Vehicle	EVS
5.2.1.1	5.3.6	Maintain Vehicle Status	EM
5.2.1.2	5.1.4	Manage Emergency Response	EM
5.2.1.2	5.3.1	Select Response Mode	EM
5.2.1.2	5.3.2	Dispatch Vehicle	EM
5.2.1.2	5.3.7	Provide Emergency Vehicle Route	EM
5.2.1.3	5.1.4	Manage Emergency Response	EM
5.2.1.3	5.3.1	Select Response Mode	EM
5.2.1.3	5.3.2	Dispatch Vehicle	EM
5.2.1.3	5.3.7	Provide Emergency Vehicle Route	EM
5.2.2	5.1.4	Manage Emergency Response	EM
5.2.2	5.3.2	Dispatch Vehicle	EM
5.2.2	5.3.5	Provide Emergency Personnel Interface	EVS
5.2.2	5.3.7	Provide Emergency Vehicle Route	EM
5.2.2	6.6.1	Provide Multimodal Route Selection	ISP
5.2.2.1	5.1.4	Manage Emergency Response	EM
5.2.2.1	6.6.1	Provide Multimodal Route Selection	ISP
5.2.2.2	5.3.5	Provide Emergency Personnel Interface	EVS
5.2.3	1.2.2.1	Determine Indicator State for Freeway Management	TMS
5.2.3	1.2.2.2	Determine Indicator State for Road Management	TMS
5.2.3	1.2.7.3	Manage Indicator Preemptions	RS
5.2.3	1.2.7.6	Provide Intersection Collision Avoidance Data	RS
5.2.3	5.1.4	Manage Emergency Response	EM
5.2.3.1	1.2.2.1	Determine Indicator State for Freeway Management	TMS
5.2.3.1	1.2.2.2	Determine Indicator State for Road Management	TMS
5.2.3.1	5.1.4	Manage Emergency Response	EM
5.2.3.2	1.2.2.1	Determine Indicator State for Freeway Management	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
5.2.3.2	1.2.2.2	Determine Indicator State for Road Management	TMS
6.0	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.0	3.1.2	Carry-out Safety Analysis	VS
6.0	3.1.3	Process Vehicle On-board Data	VS
6.0	3.2.1	Provide Driver Interface	VS
6.0	3.2.2	Provide AHS Control	VS
6.0	3.2.3.1	Provide Command Interface	VS
6.0	3.2.3.2	Manage Platoon Following	VS
6.0	3.2.3.3	Process data for Vehicle Actuators	VS
6.0	3.2.3.4.1	Provide Speed Servo Control	VS
6.0	3.2.3.4.2	Provide Headway Servo Control	VS
6.0	3.2.3.4.3	Provide Lane Servo Control	VS
6.0	3.2.3.4.4	Provide Change Lane Servo Control	VS
6.0	3.2.3.5	Process Vehicle Sensor Data	VS
6.0	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.0	3.2.4	Process Sensor Data for AHS input	VS
6.0	3.2.5	Check Vehicle for AHS eligibility	RS
6.0	3.2.6	Manage AHS Check-in and Check-out	RS
6.0	3.2.7	Manage AHS Operations	TMS
6.0	3.4	Enhance Driver's Vision	VS
6.0	6.7.2.2	Process Vehicle Location Data	VS
6.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1	3.1.3	Process Vehicle On-board Data	VS
6.1	3.2.3.2	Manage Platoon Following	VS
6.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1	3.2.3.4.1	Provide Speed Servo Control	VS
6.1	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.0	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.0	3.1.3	Process Vehicle On-board Data	VS
6.1.0	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.1	3.1.3	Process Vehicle On-board Data	VS
6.1.1	3.2.3.2	Manage Platoon Following	VS
6.1.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1	3.2.3.4.1	Provide Speed Servo Control	VS
6.1.1	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.1.1.1	3.1.3	Process Vehicle On-board Data	VS
6.1.1.1	3.2.3.2	Manage Platoon Following	VS
6.1.1.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.1	3.2.3.4.1	Provide Speed Servo Control	VS
6.1.1.1	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1.1	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.1.1.1.1	3.1.3	Process Vehicle On-board Data	VS
6.1.1.1.1	3.2.3.2	Manage Platoon Following	VS
6.1.1.1.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.1.1	3.2.3.4.1	Provide Speed Servo Control	VS
6.1.1.1.1	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1.1.1	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.1.1.1.1.1	3.1.3	Process Vehicle On-board Data	VS
6.1.1.1.1.2	3.1.3	Process Vehicle On-board Data	VS
6.1.1.1.2	3.1.3	Process Vehicle On-board Data	VS
6.1.1.1.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.1.2	3.2.3.4.1	Provide Speed Servo Control	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
6.1.1.1.2	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1.1.2	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.1.1.1.2.1	3.2.3.2	Manage Platoon Following	VS
6.1.1.1.2.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.1.2.1	3.2.3.4.1	Provide Speed Servo Control	VS
6.1.1.1.2.1	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1.1.2.2	3.2.3.2	Manage Platoon Following	VS
6.1.1.1.2.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.1.2.2	3.2.3.4.1	Provide Speed Servo Control	VS
6.1.1.1.2.2	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1.1.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.1.3	3.2.3.4.1	Provide Speed Servo Control	VS
6.1.1.1.3	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1.1.3.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.1.3.1	3.2.3.4.1	Provide Speed Servo Control	VS
6.1.1.1.3.1	3.2.3.4.2	Provide Headway Servo Control	VS
6.1.1.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.1.2	3.1.3	Process Vehicle On-board Data	VS
6.1.1.2.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.1.2.1	3.1.3	Process Vehicle On-board Data	VS
6.1.1.3	3.1.3	Process Vehicle On-board Data	VS
6.1.1.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.1.3.1	3.1.3	Process Vehicle On-board Data	VS
6.1.1.3.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.2	3.1.2	Carry-out Safety Analysis	VS
6.1.2	3.1.3	Process Vehicle On-board Data	VS
6.1.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.2.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.2.1	3.1.2	Carry-out Safety Analysis	VS
6.1.2.1	3.1.3	Process Vehicle On-board Data	VS
6.1.2.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.2.1.1	3.1.3	Process Vehicle On-board Data	VS
6.1.2.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.2.2.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.2.2.1	3.1.3	Process Vehicle On-board Data	VS
6.1.2.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.2.3.1	3.1.3	Process Vehicle On-board Data	VS
6.1.2.3.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.3	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.3.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.3.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.3.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.3.2.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.3.3	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.3.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.1.3.3.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.1.3.3.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2	3.1.3	Process Vehicle On-board Data	VS
6.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.2.0	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.0	3.1.3	Process Vehicle On-board Data	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
6.2.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.1	3.1.3	Process Vehicle On-board Data	VS
6.2.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.2.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.1.1	3.1.3	Process Vehicle On-board Data	VS
6.2.1.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.1.1.1	3.1.3	Process Vehicle On-board Data	VS
6.2.1.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.1.2	3.1.3	Process Vehicle On-board Data	VS
6.2.1.2.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.1.2.2	3.1.3	Process Vehicle On-board Data	VS
6.2.1.3	3.1.3	Process Vehicle On-board Data	VS
6.2.1.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.2.1.3.1	3.1.3	Process Vehicle On-board Data	VS
6.2.1.3.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.2.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.2	3.1.3	Process Vehicle On-board Data	VS
6.2.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.2.2.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.2.1	3.1.3	Process Vehicle On-board Data	VS
6.2.2.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.2.2.1.1	3.1.3	Process Vehicle On-board Data	VS
6.2.2.2	3.1.3	Process Vehicle On-board Data	VS
6.2.2.2.1	3.1.3	Process Vehicle On-board Data	VS
6.2.2.3	3.1.3	Process Vehicle On-board Data	VS
6.2.2.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.2.2.3.1	3.1.3	Process Vehicle On-board Data	VS
6.2.2.3.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.3	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.3	3.1.3	Process Vehicle On-board Data	VS
6.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.3.0	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.3.0	3.1.3	Process Vehicle On-board Data	VS
6.3.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.3.1	3.1.3	Process Vehicle On-board Data	VS
6.3.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.3.1.1	3.1.3	Process Vehicle On-board Data	VS
6.3.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.3.2	3.1.3	Process Vehicle On-board Data	VS
6.3.2.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.3.2.1	3.1.3	Process Vehicle On-board Data	VS
6.3.3	3.1.3	Process Vehicle On-board Data	VS
6.3.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.3.3.1	3.1.3	Process Vehicle On-board Data	VS
6.3.3.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.4	3.4	Enhance Driver's Vision	VS
6.4.0	3.4	Enhance Driver's Vision	VS
6.4.1	3.4	Enhance Driver's Vision	VS
6.5	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.5	3.1.2	Carry-out Safety Analysis	VS
6.5	3.1.3	Process Vehicle On-board Data	VS
6.5	6.2.5	Provide Driver Interface	VS
6.5.0	6.2.5	Provide Driver Interface	VS
6.5.0	6.7.2.2	Process Vehicle Location Data	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
6.5.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.5.1	3.1.2	Carry-out Safety Analysis	VS
6.5.1	3.1.3	Process Vehicle On-board Data	VS
6.5.1	6.7.2.2	Process Vehicle Location Data	VS
6.5.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.5.1.1	3.1.2	Carry-out Safety Analysis	VS
6.5.1.1	3.1.3	Process Vehicle On-board Data	VS
6.5.1.1	6.7.2.2	Process Vehicle Location Data	VS
6.5.1.1.1	3.1.2	Carry-out Safety Analysis	VS
6.5.1.1.1	3.1.3	Process Vehicle On-board Data	VS
6.5.1.1.1	6.7.2.2	Process Vehicle Location Data	VS
6.5.1.1.2	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.5.1.1.2	3.1.2	Carry-out Safety Analysis	VS
6.5.1.1.2	3.1.3	Process Vehicle On-board Data	VS
6.5.1.1.2	6.7.2.2	Process Vehicle Location Data	VS
6.5.1.1.3	3.1.2	Carry-out Safety Analysis	VS
6.5.1.1.3	3.1.3	Process Vehicle On-board Data	VS
6.5.1.1.3	6.7.2.2	Process Vehicle Location Data	VS
6.5.2	3.1.3	Process Vehicle On-board Data	VS
6.5.2	6.7.2.2	Process Vehicle Location Data	VS
6.5.2.1	3.1.3	Process Vehicle On-board Data	VS
6.5.2.1	6.7.2.2	Process Vehicle Location Data	VS
6.5.2.1.1	3.1.2	Carry-out Safety Analysis	VS
6.5.2.1.1	3.1.3	Process Vehicle On-board Data	VS
6.5.2.1.1	6.7.2.2	Process Vehicle Location Data	VS
6.5.2.1.2	3.1.2	Carry-out Safety Analysis	VS
6.5.2.1.2	3.1.3	Process Vehicle On-board Data	VS
6.5.2.1.2	6.7.2.2	Process Vehicle Location Data	VS
6.5.3	3.1.2	Carry-out Safety Analysis	VS
6.5.3	3.1.3	Process Vehicle On-board Data	VS
6.5.3	6.2.5	Provide Driver Interface	VS
6.5.3	6.7.2.2	Process Vehicle Location Data	VS
6.5.3.1	3.1.2	Carry-out Safety Analysis	VS
6.5.3.1	3.1.3	Process Vehicle On-board Data	VS
6.5.3.1	6.2.5	Provide Driver Interface	VS
6.5.3.1	6.7.2.2	Process Vehicle Location Data	VS
6.5.3.1.1	3.1.2	Carry-out Safety Analysis	VS
6.5.3.1.1	3.1.3	Process Vehicle On-board Data	VS
6.5.3.1.1	6.7.2.2	Process Vehicle Location Data	VS
6.5.3.1.2	3.1.2	Carry-out Safety Analysis	VS
6.5.3.1.2	6.2.5	Provide Driver Interface	VS
6.6	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.6	3.1.3	Process Vehicle On-board Data	VS
6.6	3.2.1	Provide Driver Interface	VS
6.6	3.2.3.3	Process data for Vehicle Actuators	VS
6.6.0	3.2.1	Provide Driver Interface	VS
6.6.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.6.1	3.1.3	Process Vehicle On-board Data	VS
6.6.1	3.2.1	Provide Driver Interface	VS
6.6.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.6.1.1	3.1.1	Produce Collision and Crash Avoidance Data	VS
6.6.1.1	3.1.3	Process Vehicle On-board Data	VS
6.6.1.1	3.2.1	Provide Driver Interface	VS
6.6.1.2	3.1.1	Produce Collision and Crash Avoidance Data	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
6.6.1.2	3.1.3	Process Vehicle On-board Data	VS
6.6.1.2	3.2.1	Provide Driver Interface	VS
6.6.1.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.7	3.1.2	Carry-out Safety Analysis	VS
6.7	3.1.3	Process Vehicle On-board Data	VS
6.7	3.2.2	Provide AHS Control	VS
6.7	3.2.3.1	Provide Command Interface	VS
6.7	3.2.3.2	Manage Platoon Following	VS
6.7	3.2.3.3	Process data for Vehicle Actuators	VS
6.7	3.2.3.4.1	Provide Speed Servo Control	VS
6.7	3.2.3.4.2	Provide Headway Servo Control	VS
6.7	3.2.3.4.3	Provide Lane Servo Control	VS
6.7	3.2.3.4.4	Provide Change Lane Servo Control	VS
6.7	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.7	3.2.3.5	Process Vehicle Sensor Data	VS
6.7	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7	3.2.4	Process Sensor Data for AHS input	VS
6.7	3.2.5	Check Vehicle for AHS eligibility	RS
6.7	3.2.6	Manage AHS Check-in and Check-out	RS
6.7	3.2.7	Manage AHS Operations	TMS
6.7.0	3.1.2	Carry-out Safety Analysis	VS
6.7.0	3.2.5	Check Vehicle for AHS eligibility	RS
6.7.0	3.2.6	Manage AHS Check-in and Check-out	RS
6.7.0	3.2.7	Manage AHS Operations	TMS
6.7.1	3.1.2	Carry-out Safety Analysis	VS
6.7.1	3.2.2	Provide AHS Control	VS
6.7.1	3.2.3.1	Provide Command Interface	VS
6.7.1	3.2.3.2	Manage Platoon Following	VS
6.7.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.7.1	3.2.3.4.1	Provide Speed Servo Control	VS
6.7.1	3.2.3.4.2	Provide Headway Servo Control	VS
6.7.1	3.2.3.4.3	Provide Lane Servo Control	VS
6.7.1	3.2.3.4.4	Provide Change Lane Servo Control	VS
6.7.1	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.7.1	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1	3.2.4	Process Sensor Data for AHS input	VS
6.7.1	3.2.5	Check Vehicle for AHS eligibility	RS
6.7.1	3.2.6	Manage AHS Check-in and Check-out	RS
6.7.1	3.2.7	Manage AHS Operations	TMS
6.7.1.1	3.2.2	Provide AHS Control	VS
6.7.1.1	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1.1	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1.1	3.2.4	Process Sensor Data for AHS input	VS
6.7.1.1	3.2.5	Check Vehicle for AHS eligibility	RS
6.7.1.1	3.2.6	Manage AHS Check-in and Check-out	RS
6.7.1.1	3.2.7	Manage AHS Operations	TMS
6.7.1.1.1	3.2.2	Provide AHS Control	VS
6.7.1.1.1	3.2.6	Manage AHS Check-in and Check-out	RS
6.7.1.1.1	3.2.7	Manage AHS Operations	TMS
6.7.1.1.2	3.2.2	Provide AHS Control	VS
6.7.1.1.2	3.2.5	Check Vehicle for AHS eligibility	RS
6.7.1.1.2	3.2.6	Manage AHS Check-in and Check-out	RS
6.7.1.1.2	3.2.7	Manage AHS Operations	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
6.7.1.1.3	3.2.2	Provide AHS Control	VS
6.7.1.1.3	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1.1.3	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1.1.3	3.2.4	Process Sensor Data for AHS input	VS
6.7.1.1.3	3.2.6	Manage AHS Check-in and Check-out	RS
6.7.1.1.3	3.2.7	Manage AHS Operations	TMS
6.7.1.2	3.2.2	Provide AHS Control	VS
6.7.1.2	3.2.3.1	Provide Command Interface	VS
6.7.1.2	3.2.3.2	Manage Platoon Following	VS
6.7.1.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.7.1.2	3.2.3.4.1	Provide Speed Servo Control	VS
6.7.1.2	3.2.3.4.2	Provide Headway Servo Control	VS
6.7.1.2	3.2.3.4.3	Provide Lane Servo Control	VS
6.7.1.2	3.2.3.4.4	Provide Change Lane Servo Control	VS
6.7.1.2	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.7.1.2	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1.2	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1.2	3.2.4	Process Sensor Data for AHS input	VS
6.7.1.2.1	3.2.2	Provide AHS Control	VS
6.7.1.2.1	3.2.3.1	Provide Command Interface	VS
6.7.1.2.1	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1.2.1	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1.2.1	3.2.4	Process Sensor Data for AHS input	VS
6.7.1.2.2	3.2.3.1	Provide Command Interface	VS
6.7.1.2.2	3.2.3.2	Manage Platoon Following	VS
6.7.1.2.3	3.2.2	Provide AHS Control	VS
6.7.1.2.3	3.2.3.1	Provide Command Interface	VS
6.7.1.2.3	3.2.3.2	Manage Platoon Following	VS
6.7.1.2.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.7.1.2.3	3.2.3.4.1	Provide Speed Servo Control	VS
6.7.1.2.3	3.2.3.4.2	Provide Headway Servo Control	VS
6.7.1.2.3	3.2.3.4.3	Provide Lane Servo Control	VS
6.7.1.2.3	3.2.3.4.4	Provide Change Lane Servo Control	VS
6.7.1.2.3	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.7.1.2.3	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1.2.3	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1.2.3	3.2.4	Process Sensor Data for AHS input	VS
6.7.1.3	3.1.2	Carry-out Safety Analysis	VS
6.7.1.3	3.2.2	Provide AHS Control	VS
6.7.1.3	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1.3	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1.3	3.2.4	Process Sensor Data for AHS input	VS
6.7.1.3.1	3.1.2	Carry-out Safety Analysis	VS
6.7.1.3.2	3.2.2	Provide AHS Control	VS
6.7.1.3.2	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.1.3.2	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.1.3.2	3.2.4	Process Sensor Data for AHS input	VS
6.7.2	3.1.3	Process Vehicle On-board Data	VS
6.7.2	3.2.2	Provide AHS Control	VS
6.7.2	3.2.3.1	Provide Command Interface	VS
6.7.2	3.2.3.2	Manage Platoon Following	VS
6.7.2	3.2.3.3	Process data for Vehicle Actuators	VS
6.7.2	3.2.3.4.1	Provide Speed Servo Control	VS
6.7.2	3.2.3.4.2	Provide Headway Servo Control	VS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
6.7.2	3.2.3.4.3	Provide Lane Servo Control	VS
6.7.2	3.2.3.4.4	Provide Change Lane Servo Control	VS
6.7.2	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.7.2	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.2	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.2	3.2.4	Process Sensor Data for AHS input	VS
6.7.2.1	3.1.3	Process Vehicle On-board Data	VS
6.7.2.1	3.2.2	Provide AHS Control	VS
6.7.2.1	3.2.3.1	Provide Command Interface	VS
6.7.2.1	3.2.3.3	Process data for Vehicle Actuators	VS
6.7.2.1	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.2.1	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.2.1	3.2.4	Process Sensor Data for AHS input	VS
6.7.2.2	3.2.2	Provide AHS Control	VS
6.7.2.3	3.1.3	Process Vehicle On-board Data	VS
6.7.2.3	3.2.3.2	Manage Platoon Following	VS
6.7.2.3	3.2.3.3	Process data for Vehicle Actuators	VS
6.7.2.3	3.2.3.4.1	Provide Speed Servo Control	VS
6.7.2.3	3.2.3.4.2	Provide Headway Servo Control	VS
6.7.2.3	3.2.3.4.3	Provide Lane Servo Control	VS
6.7.2.3	3.2.3.4.4	Provide Change Lane Servo Control	VS
6.7.2.3	3.2.3.4.5	Provide Vehicle Control Data Interface	VS
6.7.2.3	3.2.3.5	Process Vehicle Sensor Data	VS
6.7.2.3	3.2.3.6	Communicate with other Platoon Vehicles	VS
6.7.2.3	3.2.4	Process Sensor Data for AHS input	VS
7.0	1.1.1.4	Manage Data Collection and Monitoring	RS
7.0	1.1.4.4	Update Traffic Display Map Data	TMS
7.0	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
7.0	1.1.4.7	Manage Traffic Archive Data	TMS
7.0	1.1.5	Exchange data with Other Traffic Centers	TMS
7.0	1.2.2.2	Determine Indicator State for Road Management	TMS
7.0	1.2.5.5	Manage Parking Archive Data	PMS
7.0	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
7.0	1.2.6.2	Provide Static Data Store Output Interface	TMS
7.0	1.5.9	Manage Pollution Archive Data	EMMS
7.0	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.0	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
7.0	4.2.4	Manage Transit Archive Data	TRMS
7.0	5.6	Manage Emergency Services Data	EM
7.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.0	6.1.2	Confirm Traveler's Trip Plan	ISP
7.0	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.0	6.1.6	Manage Traveler Info Archive Data	ISP
7.0	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
7.0	6.2.6	Provide Yellow Pages Data and Reservations	ISP
7.0	6.4.1	Screen Rider Requests	ISP
7.0	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
7.0	6.6.1	Provide Multimodal Route Selection	ISP
7.0	6.6.2.1	Calculate Vehicle Route	ISP
7.0	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
7.0	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.0	6.6.5	Select Other Routes	ISP
7.0	7.1.1.11	Manage Toll Archive Data	TAS
7.0	8.1	Get Archive Data	ADMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.0	8.2	Manage Archive	ADMS
7.0	8.3	Manage Archive Data Administrator Interface	ADMS
7.0	8.4	Coordinate Archives	ADMS
7.0	8.5	Process Archived Data User System Requests	ADMS
7.0	8.6	Analyze Archive	ADMS
7.0	8.7	Process On Demand Archive Requests	ADMS
7.0	8.8	Prepare Government Reporting Inputs	ADMS
7.0	8.9	Manage Roadside Data Collection	ADMS
7.1	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1	1.1.4.4	Update Traffic Display Map Data	TMS
7.1	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
7.1	1.1.4.7	Manage Traffic Archive Data	TMS
7.1	1.1.5	Exchange data with Other Traffic Centers	TMS
7.1	1.2.2.2	Determine Indicator State for Road Management	TMS
7.1	1.2.5.5	Manage Parking Archive Data	PMS
7.1	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
7.1	1.2.6.2	Provide Static Data Store Output Interface	TMS
7.1	1.5.9	Manage Pollution Archive Data	EMMS
7.1	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
7.1	4.2.4	Manage Transit Archive Data	TRMS
7.1	5.6	Manage Emergency Services Data	EM
7.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.1	6.1.2	Confirm Traveler's Trip Plan	ISP
7.1	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.1	6.1.6	Manage Traveler Info Archive Data	ISP
7.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
7.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
7.1	6.4.1	Screen Rider Requests	ISP
7.1	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
7.1	6.6.1	Provide Multimodal Route Selection	ISP
7.1	6.6.2.1	Calculate Vehicle Route	ISP
7.1	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
7.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.1	6.6.5	Select Other Routes	ISP
7.1	7.1.1.11	Manage Toll Archive Data	TAS
7.1	8.1	Get Archive Data	ADMS
7.1	8.2	Manage Archive	ADMS
7.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1	8.4	Coordinate Archives	ADMS
7.1	8.5	Process Archived Data User System Requests	ADMS
7.1	8.6	Analyze Archive	ADMS
7.1	8.7	Process On Demand Archive Requests	ADMS
7.1	8.8	Prepare Government Reporting Inputs	ADMS
7.1	8.9	Manage Roadside Data Collection	ADMS
7.1.0	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.0	1.1.4.4	Update Traffic Display Map Data	TMS
7.1.0	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
7.1.0	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.0	1.1.5	Exchange data with Other Traffic Centers	TMS
7.1.0	1.2.2.2	Determine Indicator State for Road Management	TMS
7.1.0	1.2.5.5	Manage Parking Archive Data	PMS
7.1.0	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
7.1.0	1.2.6.2	Provide Static Data Store Output Interface	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.0	1.5.9	Manage Pollution Archive Data	EMMS
7.1.0	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
7.1.0	4.2.4	Manage Transit Archive Data	TRMS
7.1.0	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.1.0	6.1.2	Confirm Traveler's Trip Plan	ISP
7.1.0	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.1.0	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.0	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
7.1.0	6.2.6	Provide Yellow Pages Data and Reservations	ISP
7.1.0	6.4.1	Screen Rider Requests	ISP
7.1.0	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
7.1.0	6.6.1	Provide Multimodal Route Selection	ISP
7.1.0	6.6.2.1	Calculate Vehicle Route	ISP
7.1.0	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
7.1.0	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.1.0	6.6.5	Select Other Routes	ISP
7.1.0	8.1	Get Archive Data	ADMS
7.1.0	8.2	Manage Archive	ADMS
7.1.0	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.0	8.4	Coordinate Archives	ADMS
7.1.0	8.5	Process Archived Data User System Requests	ADMS
7.1.0	8.6	Analyze Archive	ADMS
7.1.0	8.7	Process On Demand Archive Requests	ADMS
7.1.0	8.8	Prepare Government Reporting Inputs	ADMS
7.1.0	8.9	Manage Roadside Data Collection	ADMS
7.1.1	8.1	Get Archive Data	ADMS
7.1.1	8.2	Manage Archive	ADMS
7.1.1.1	8.1	Get Archive Data	ADMS
7.1.1.1	8.2	Manage Archive	ADMS
7.1.1.2	8.2	Manage Archive	ADMS
7.1.1.3	8.1	Get Archive Data	ADMS
7.1.1.3	8.2	Manage Archive	ADMS
7.1.1.4	8.2	Manage Archive	ADMS
7.1.1.4	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.1.4.1	8.2	Manage Archive	ADMS
7.1.1.4.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.1.4.1	8.5	Process Archived Data User System Requests	ADMS
7.1.1.4.1	8.6	Analyze Archive	ADMS
7.1.1.4.2	8.2	Manage Archive	ADMS
7.1.1.4.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.1.4.3	8.2	Manage Archive	ADMS
7.1.1.4.3	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.1.4.3	8.5	Process Archived Data User System Requests	ADMS
7.1.1.4.3	8.6	Analyze Archive	ADMS
7.1.1.4.4	8.2	Manage Archive	ADMS
7.1.1.4.4	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.1.4.4	8.5	Process Archived Data User System Requests	ADMS
7.1.1.4.4	8.6	Analyze Archive	ADMS
7.1.1.5	8.6	Analyze Archive	ADMS
7.1.2	8.1	Get Archive Data	ADMS
7.1.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2	8.5	Process Archived Data User System Requests	ADMS
7.1.2	8.6	Analyze Archive	ADMS
7.1.2	8.7	Process On Demand Archive Requests	ADMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.2	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1	8.1	Get Archive Data	ADMS
7.1.2.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.1	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1.1	8.1	Get Archive Data	ADMS
7.1.2.1.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.1.1	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1.2	8.1	Get Archive Data	ADMS
7.1.2.1.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.1.2	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1.3	8.1	Get Archive Data	ADMS
7.1.2.1.3	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1.3(a)	8.1	Get Archive Data	ADMS
7.1.2.1.3(a)	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1.3(b)	8.1	Get Archive Data	ADMS
7.1.2.1.3(b)	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1.3(c)	8.1	Get Archive Data	ADMS
7.1.2.1.3(c)	8.9	Manage Roadside Data Collection	ADMS
7.1.2.1.4	8.1	Get Archive Data	ADMS
7.1.2.1.4	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.1.5	8.1	Get Archive Data	ADMS
7.1.2.1.5	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.1.5(a)	8.1	Get Archive Data	ADMS
7.1.2.1.5(a)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.1.5(b)	8.1	Get Archive Data	ADMS
7.1.2.1.5(b)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.2	8.1	Get Archive Data	ADMS
7.1.2.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.2	8.7	Process On Demand Archive Requests	ADMS
7.1.2.3	8.1	Get Archive Data	ADMS
7.1.2.3	8.2	Manage Archive	ADMS
7.1.2.4	8.1	Get Archive Data	ADMS
7.1.2.4	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.2.5	8.5	Process Archived Data User System Requests	ADMS
7.1.2.6	8.6	Analyze Archive	ADMS
7.1.3	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
7.1.3	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3	1.1.5	Exchange data with Other Traffic Centers	TMS
7.1.3	1.2.2.2	Determine Indicator State for Road Management	TMS
7.1.3	1.2.5.5	Manage Parking Archive Data	PMS
7.1.3	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
7.1.3	1.2.6.2	Provide Static Data Store Output Interface	TMS
7.1.3	1.5.9	Manage Pollution Archive Data	EMMS
7.1.3	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
7.1.3	4.2.4	Manage Transit Archive Data	TRMS
7.1.3	5.6	Manage Emergency Services Data	EM
7.1.3	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.1.3	6.1.2	Confirm Traveler's Trip Plan	ISP
7.1.3	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.1.3	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
7.1.3	6.2.6	Provide Yellow Pages Data and Reservations	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.3	6.4.1	Screen Rider Requests	ISP
7.1.3	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
7.1.3	6.6.1	Provide Multimodal Route Selection	ISP
7.1.3	6.6.2.1	Calculate Vehicle Route	ISP
7.1.3	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
7.1.3	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.1.3	6.6.5	Select Other Routes	ISP
7.1.3	7.1.1.11	Manage Toll Archive Data	TAS
7.1.3	8.1	Get Archive Data	ADMS
7.1.3	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1	1.1.4.4	Update Traffic Display Map Data	TMS
7.1.3.1	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
7.1.3.1	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1	1.1.5	Exchange data with Other Traffic Centers	TMS
7.1.3.1	1.2.2.2	Determine Indicator State for Road Management	TMS
7.1.3.1	1.2.5.5	Manage Parking Archive Data	PMS
7.1.3.1	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
7.1.3.1	1.2.6.2	Provide Static Data Store Output Interface	TMS
7.1.3.1	1.5.9	Manage Pollution Archive Data	EMMS
7.1.3.1	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
7.1.3.1	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1	5.6	Manage Emergency Services Data	EM
7.1.3.1	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.1.3.1	6.1.2	Confirm Traveler's Trip Plan	ISP
7.1.3.1	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.1.3.1	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
7.1.3.1	6.2.6	Provide Yellow Pages Data and Reservations	ISP
7.1.3.1	6.4.1	Screen Rider Requests	ISP
7.1.3.1	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
7.1.3.1	6.6.1	Provide Multimodal Route Selection	ISP
7.1.3.1	6.6.2.1	Calculate Vehicle Route	ISP
7.1.3.1	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
7.1.3.1	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.1.3.1	6.6.5	Select Other Routes	ISP
7.1.3.1	8.1	Get Archive Data	ADMS
7.1.3.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.1	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.1	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.1	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.1	8.1	Get Archive Data	ADMS
7.1.3.1.1	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.1(a)	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.1(a)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.1(a)	8.1	Get Archive Data	ADMS
7.1.3.1.1(a)	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.1(b)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.1(b)	8.1	Get Archive Data	ADMS
7.1.3.1.1(c)	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.1(c)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.1(c)	8.1	Get Archive Data	ADMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.3.1.1(c)	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.1(d)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.1(d)	8.1	Get Archive Data	ADMS
7.1.3.1.1(e)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.1(e)	8.1	Get Archive Data	ADMS
7.1.3.1.10	1.2.5.5	Manage Parking Archive Data	PMS
7.1.3.1.10	8.1	Get Archive Data	ADMS
7.1.3.1.11	8.1	Get Archive Data	ADMS
7.1.3.1.2	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.2	7.1.1.11	Manage Toll Archive Data	TAS
7.1.3.1.2	8.1	Get Archive Data	ADMS
7.1.3.1.3	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.3	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.3	8.1	Get Archive Data	ADMS
7.1.3.1.3	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.3(a)	8.1	Get Archive Data	ADMS
7.1.3.1.3(b)	8.1	Get Archive Data	ADMS
7.1.3.1.3(c)	8.1	Get Archive Data	ADMS
7.1.3.1.3(d)	8.1	Get Archive Data	ADMS
7.1.3.1.3(e)	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.3(e)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.3(e)	8.1	Get Archive Data	ADMS
7.1.3.1.3(e)	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.4	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.4	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.4	6.4.1	Screen Rider Requests	ISP
7.1.3.1.4	8.1	Get Archive Data	ADMS
7.1.3.1.4(a)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.4(a)	8.1	Get Archive Data	ADMS
7.1.3.1.4(b)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.4(b)	8.1	Get Archive Data	ADMS
7.1.3.1.4(c)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.4(c)	6.4.1	Screen Rider Requests	ISP
7.1.3.1.4(c)	8.1	Get Archive Data	ADMS
7.1.3.1.4(d)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.4(d)	8.1	Get Archive Data	ADMS
7.1.3.1.4(e)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.4(e)	8.1	Get Archive Data	ADMS
7.1.3.1.4(f)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.4(f)	8.1	Get Archive Data	ADMS
7.1.3.1.4(g)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.4(g)	8.1	Get Archive Data	ADMS
7.1.3.1.5	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.5	5.6	Manage Emergency Services Data	EM
7.1.3.1.5	8.1	Get Archive Data	ADMS
7.1.3.1.5(a)	5.6	Manage Emergency Services Data	EM
7.1.3.1.5(a)	8.1	Get Archive Data	ADMS
7.1.3.1.5(b)	5.6	Manage Emergency Services Data	EM
7.1.3.1.5(b)	8.1	Get Archive Data	ADMS
7.1.3.1.5(c)	5.6	Manage Emergency Services Data	EM
7.1.3.1.5(c)	8.1	Get Archive Data	ADMS
7.1.3.1.5(d)	5.6	Manage Emergency Services Data	EM
7.1.3.1.5(d)	8.1	Get Archive Data	ADMS
7.1.3.1.5(e)	1.1.4.7	Manage Traffic Archive Data	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.3.1.5(e)	8.1	Get Archive Data	ADMS
7.1.3.1.5(f)	5.6	Manage Emergency Services Data	EM
7.1.3.1.5(f)	8.1	Get Archive Data	ADMS
7.1.3.1.5(g)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.5(g)	8.1	Get Archive Data	ADMS
7.1.3.1.5(h)	5.6	Manage Emergency Services Data	EM
7.1.3.1.5(h)	8.1	Get Archive Data	ADMS
7.1.3.1.6	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1.6	8.1	Get Archive Data	ADMS
7.1.3.1.6(a)	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1.6(a)	8.1	Get Archive Data	ADMS
7.1.3.1.6(b)	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1.6(b)	8.1	Get Archive Data	ADMS
7.1.3.1.6(c)	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1.6(c)	8.1	Get Archive Data	ADMS
7.1.3.1.6(d)	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1.6(d)	8.1	Get Archive Data	ADMS
7.1.3.1.6(e)	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1.6(e)	8.1	Get Archive Data	ADMS
7.1.3.1.6(f)	2.5.9	Manage Commercial Vehicle Archive Data	CVAS
7.1.3.1.6(f)	8.1	Get Archive Data	ADMS
7.1.3.1.7	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.7	1.5.9	Manage Pollution Archive Data	EMMS
7.1.3.1.7	8.1	Get Archive Data	ADMS
7.1.3.1.7	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.7(a)	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.7(a)	1.5.9	Manage Pollution Archive Data	EMMS
7.1.3.1.7(a)	8.1	Get Archive Data	ADMS
7.1.3.1.7(a)	8.9	Manage Roadside Data Collection	ADMS
7.1.3.1.7(b)	8.1	Get Archive Data	ADMS
7.1.3.1.8	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
7.1.3.1.8	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.8	1.2.5.5	Manage Parking Archive Data	PMS
7.1.3.1.8	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
7.1.3.1.8	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.1.3.1.8	6.1.2	Confirm Traveler's Trip Plan	ISP
7.1.3.1.8	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.1.3.1.8	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
7.1.3.1.8	6.2.6	Provide Yellow Pages Data and Reservations	ISP
7.1.3.1.8	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
7.1.3.1.8	6.6.1	Provide Multimodal Route Selection	ISP
7.1.3.1.8	6.6.2.1	Calculate Vehicle Route	ISP
7.1.3.1.8	6.6.2.2	Provide Vehicle Route Calculation Data	ISP
7.1.3.1.8	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.1.3.1.8	6.6.5	Select Other Routes	ISP
7.1.3.1.8	8.1	Get Archive Data	ADMS
7.1.3.1.8(a)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8(a)	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.1.3.1.8(a)	8.1	Get Archive Data	ADMS
7.1.3.1.8(b)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.8(b)	8.1	Get Archive Data	ADMS
7.1.3.1.8(c)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8(c)	6.6.2.2	Provide Vehicle Route Calculation Data	ISP

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.3.1.8(c)	6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
7.1.3.1.8(c)	6.6.5	Select Other Routes	ISP
7.1.3.1.8(c)	8.1	Get Archive Data	ADMS
7.1.3.1.8(d)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8(d)	6.6.2.1	Calculate Vehicle Route	ISP
7.1.3.1.8(d)	8.1	Get Archive Data	ADMS
7.1.3.1.8(e)	1.2.5.5	Manage Parking Archive Data	PMS
7.1.3.1.8(e)	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.1.3.1.8(e)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8(e)	8.1	Get Archive Data	ADMS
7.1.3.1.8(f)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8(f)	6.6.1	Provide Multimodal Route Selection	ISP
7.1.3.1.8(f)	8.1	Get Archive Data	ADMS
7.1.3.1.8(g)	1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
7.1.3.1.8(g)	4.1.8	Provide Transit Operations Data Distribution Interface	ISP
7.1.3.1.8(g)	6.1.1	Provide Trip Planning Information to Traveler	ISP
7.1.3.1.8(g)	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.1.3.1.8(g)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8(g)	6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
7.1.3.1.8(g)	6.2.6	Provide Yellow Pages Data and Reservations	ISP
7.1.3.1.8(g)	6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
7.1.3.1.8(g)	6.6.1	Provide Multimodal Route Selection	ISP
7.1.3.1.8(g)	6.6.2.1	Calculate Vehicle Route	ISP
7.1.3.1.8(g)	8.1	Get Archive Data	ADMS
7.1.3.1.8(h)	6.1.2	Confirm Traveler's Trip Plan	ISP
7.1.3.1.8(h)	6.1.5	Collect Service Requests and Confirmation for Archive	ISP
7.1.3.1.8(h)	6.1.6	Manage Traveler Info Archive Data	ISP
7.1.3.1.8(h)	6.6.1	Provide Multimodal Route Selection	ISP
7.1.3.1.8(h)	6.6.2.1	Calculate Vehicle Route	ISP
7.1.3.1.8(h)	8.1	Get Archive Data	ADMS
7.1.3.1.9	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.9	1.1.4.4	Update Traffic Display Map Data	TMS
7.1.3.1.9	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.9	1.1.5	Exchange data with Other Traffic Centers	TMS
7.1.3.1.9	1.2.2.2	Determine Indicator State for Road Management	TMS
7.1.3.1.9	1.2.5.5	Manage Parking Archive Data	PMS
7.1.3.1.9	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
7.1.3.1.9	1.2.6.2	Provide Static Data Store Output Interface	TMS
7.1.3.1.9	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.9	8.1	Get Archive Data	ADMS
7.1.3.1.9(a)	1.1.4.7	Manage Traffic Archive Data	TMS
7.1.3.1.9(a)	1.2.2.2	Determine Indicator State for Road Management	TMS
7.1.3.1.9(a)	1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
7.1.3.1.9(a)	1.2.6.2	Provide Static Data Store Output Interface	TMS
7.1.3.1.9(a)	8.1	Get Archive Data	ADMS
7.1.3.1.9(b)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.9(b)	8.1	Get Archive Data	ADMS
7.1.3.1.9(c)	1.1.1.4	Manage Data Collection and Monitoring	RS
7.1.3.1.9(c)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.9(c)	8.1	Get Archive Data	ADMS
7.1.3.1.9(d)	1.1.5	Exchange data with Other Traffic Centers	TMS
7.1.3.1.9(d)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.9(d)	8.1	Get Archive Data	ADMS
7.1.3.1.9(e)	1.1.4.4	Update Traffic Display Map Data	TMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.3.1.9(e)	1.2.5.5	Manage Parking Archive Data	PMS
7.1.3.1.9(e)	4.2.4	Manage Transit Archive Data	TRMS
7.1.3.1.9(e)	8.1	Get Archive Data	ADMS
7.1.3.1.9(f)	8.1	Get Archive Data	ADMS
7.1.3.2	8.1	Get Archive Data	ADMS
7.1.3.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.3	8.1	Get Archive Data	ADMS
7.1.3.3	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.4	8.1	Get Archive Data	ADMS
7.1.3.4	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.5	8.1	Get Archive Data	ADMS
7.1.3.5	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.5.1	8.1	Get Archive Data	ADMS
7.1.3.5.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.5.2	8.1	Get Archive Data	ADMS
7.1.3.5.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.6	8.1	Get Archive Data	ADMS
7.1.3.6	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.7	8.1	Get Archive Data	ADMS
7.1.3.7	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.7	8.5	Process Archived Data User System Requests	ADMS
7.1.3.7	8.6	Analyze Archive	ADMS
7.1.3.8	8.1	Get Archive Data	ADMS
7.1.3.8	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.3.9	8.1	Get Archive Data	ADMS
7.1.4	8.1	Get Archive Data	ADMS
7.1.4	8.2	Manage Archive	ADMS
7.1.4.1	8.1	Get Archive Data	ADMS
7.1.4.1	8.2	Manage Archive	ADMS
7.1.4.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.1.1	8.1	Get Archive Data	ADMS
7.1.4.1.1	8.2	Manage Archive	ADMS
7.1.4.1.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.1.2	8.1	Get Archive Data	ADMS
7.1.4.1.2	8.2	Manage Archive	ADMS
7.1.4.1.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.1.3	8.1	Get Archive Data	ADMS
7.1.4.1.3	8.2	Manage Archive	ADMS
7.1.4.1.3	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.2	8.1	Get Archive Data	ADMS
7.1.4.2	8.2	Manage Archive	ADMS
7.1.4.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.2(a)	8.2	Manage Archive	ADMS
7.1.4.2(a)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.2(b)	8.2	Manage Archive	ADMS
7.1.4.2(b)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.2(c)	8.1	Get Archive Data	ADMS
7.1.4.2(c)	8.2	Manage Archive	ADMS
7.1.4.2(c)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.2(d)	8.2	Manage Archive	ADMS
7.1.4.2(d)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.3	8.2	Manage Archive	ADMS
7.1.4.4	8.1	Get Archive Data	ADMS
7.1.4.4	8.2	Manage Archive	ADMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.4.4	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.4	8.4	Coordinate Archives	ADMS
7.1.4.4	8.5	Process Archived Data User System Requests	ADMS
7.1.4.4	8.6	Analyze Archive	ADMS
7.1.4.4	8.7	Process On Demand Archive Requests	ADMS
7.1.4.4(a)	8.1	Get Archive Data	ADMS
7.1.4.4(a)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.4(a)	8.7	Process On Demand Archive Requests	ADMS
7.1.4.4(b)	8.1	Get Archive Data	ADMS
7.1.4.4(b)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.4(b)	8.7	Process On Demand Archive Requests	ADMS
7.1.4.4(c)	8.1	Get Archive Data	ADMS
7.1.4.4(c)	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.4.4(c)	8.5	Process Archived Data User System Requests	ADMS
7.1.4.4(c)	8.7	Process On Demand Archive Requests	ADMS
7.1.4.5	8.1	Get Archive Data	ADMS
7.1.4.5	8.2	Manage Archive	ADMS
7.1.4.5	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.5	8.2	Manage Archive	ADMS
7.1.5	8.4	Coordinate Archives	ADMS
7.1.5	8.5	Process Archived Data User System Requests	ADMS
7.1.5	8.6	Analyze Archive	ADMS
7.1.5	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.1	8.2	Manage Archive	ADMS
7.1.5.1	8.4	Coordinate Archives	ADMS
7.1.5.1	8.5	Process Archived Data User System Requests	ADMS
7.1.5.1	8.6	Analyze Archive	ADMS
7.1.5.1(a)	8.2	Manage Archive	ADMS
7.1.5.1(a)	8.4	Coordinate Archives	ADMS
7.1.5.1(a)	8.5	Process Archived Data User System Requests	ADMS
7.1.5.1(a)	8.6	Analyze Archive	ADMS
7.1.5.1(b)	8.2	Manage Archive	ADMS
7.1.5.1(b)	8.4	Coordinate Archives	ADMS
7.1.5.1(b)	8.5	Process Archived Data User System Requests	ADMS
7.1.5.1(b)	8.6	Analyze Archive	ADMS
7.1.5.1(c)	8.2	Manage Archive	ADMS
7.1.5.1(c)	8.4	Coordinate Archives	ADMS
7.1.5.1(c)	8.5	Process Archived Data User System Requests	ADMS
7.1.5.1(c)	8.6	Analyze Archive	ADMS
7.1.5.1(d)	8.2	Manage Archive	ADMS
7.1.5.1(d)	8.4	Coordinate Archives	ADMS
7.1.5.1(d)	8.5	Process Archived Data User System Requests	ADMS
7.1.5.1(d)	8.6	Analyze Archive	ADMS
7.1.5.2	8.2	Manage Archive	ADMS
7.1.5.2	8.4	Coordinate Archives	ADMS
7.1.5.2	8.5	Process Archived Data User System Requests	ADMS
7.1.5.2	8.6	Analyze Archive	ADMS
7.1.5.2	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.1	8.6	Analyze Archive	ADMS
7.1.5.2.1(a)	8.6	Analyze Archive	ADMS
7.1.5.2.1(b)	8.6	Analyze Archive	ADMS
7.1.5.2.1(c)	8.6	Analyze Archive	ADMS
7.1.5.2.1(d)	8.6	Analyze Archive	ADMS
7.1.5.2.2	8.5	Process Archived Data User System Requests	ADMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.5.2.3	8.2	Manage Archive	ADMS
7.1.5.2.3	8.4	Coordinate Archives	ADMS
7.1.5.2.3	8.5	Process Archived Data User System Requests	ADMS
7.1.5.2.3	8.6	Analyze Archive	ADMS
7.1.5.2.4	8.2	Manage Archive	ADMS
7.1.5.2.4	8.4	Coordinate Archives	ADMS
7.1.5.2.4	8.5	Process Archived Data User System Requests	ADMS
7.1.5.2.4	8.6	Analyze Archive	ADMS
7.1.5.2.5	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(a)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(b)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(c)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(d)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(e)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(f)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(g)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(h)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(i)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.2.5(j)	8.8	Prepare Government Reporting Inputs	ADMS
7.1.5.3	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6	8.1	Get Archive Data	ADMS
7.1.6	8.2	Manage Archive	ADMS
7.1.6	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6	8.4	Coordinate Archives	ADMS
7.1.6	8.5	Process Archived Data User System Requests	ADMS
7.1.6	8.6	Analyze Archive	ADMS
7.1.6	8.7	Process On Demand Archive Requests	ADMS
7.1.6	8.8	Prepare Government Reporting Inputs	ADMS
7.1.6.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.1	8.5	Process Archived Data User System Requests	ADMS
7.1.6.1	8.6	Analyze Archive	ADMS
7.1.6.1	8.7	Process On Demand Archive Requests	ADMS
7.1.6.1.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.1.1	8.5	Process Archived Data User System Requests	ADMS
7.1.6.1.1	8.6	Analyze Archive	ADMS
7.1.6.1.1	8.7	Process On Demand Archive Requests	ADMS
7.1.6.2	8.1	Get Archive Data	ADMS
7.1.6.2	8.2	Manage Archive	ADMS
7.1.6.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.2	8.4	Coordinate Archives	ADMS
7.1.6.2	8.5	Process Archived Data User System Requests	ADMS
7.1.6.2	8.6	Analyze Archive	ADMS
7.1.6.2	8.7	Process On Demand Archive Requests	ADMS
7.1.6.2	8.8	Prepare Government Reporting Inputs	ADMS
7.1.6.2.1	8.1	Get Archive Data	ADMS
7.1.6.2.1	8.2	Manage Archive	ADMS
7.1.6.2.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.2.2	8.2	Manage Archive	ADMS
7.1.6.2.2	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.2.2	8.4	Coordinate Archives	ADMS
7.1.6.2.2	8.5	Process Archived Data User System Requests	ADMS
7.1.6.2.2	8.6	Analyze Archive	ADMS
7.1.6.2.2	8.7	Process On Demand Archive Requests	ADMS
7.1.6.2.2	8.8	Prepare Government Reporting Inputs	ADMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.6.3	8.2	Manage Archive	ADMS
7.1.6.3	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.3	8.4	Coordinate Archives	ADMS
7.1.6.3	8.5	Process Archived Data User System Requests	ADMS
7.1.6.3	8.6	Analyze Archive	ADMS
7.1.6.3	8.7	Process On Demand Archive Requests	ADMS
7.1.6.3	8.8	Prepare Government Reporting Inputs	ADMS
7.1.6.3.1	8.2	Manage Archive	ADMS
7.1.6.3.1	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.3.1	8.4	Coordinate Archives	ADMS
7.1.6.3.1	8.5	Process Archived Data User System Requests	ADMS
7.1.6.3.1	8.6	Analyze Archive	ADMS
7.1.6.3.1	8.7	Process On Demand Archive Requests	ADMS
7.1.6.3.1	8.8	Prepare Government Reporting Inputs	ADMS
7.1.6.3.2	8.2	Manage Archive	ADMS
7.1.6.3.2	8.6	Analyze Archive	ADMS
7.1.6.3.3	8.2	Manage Archive	ADMS
7.1.6.3.3	8.5	Process Archived Data User System Requests	ADMS
7.1.6.3.3	8.6	Analyze Archive	ADMS
7.1.6.4	8.3	Manage Archive Data Administrator Interface	ADMS
7.1.6.4	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4	8.6	Analyze Archive	ADMS
7.1.6.4	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1	8.6	Analyze Archive	ADMS
7.1.6.4.1	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1(a)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1(a)	8.6	Analyze Archive	ADMS
7.1.6.4.1(a)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1(b)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1(b)	8.6	Analyze Archive	ADMS
7.1.6.4.1(b)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1(c)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1(c)	8.6	Analyze Archive	ADMS
7.1.6.4.1(c)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1(d)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1(d)	8.6	Analyze Archive	ADMS
7.1.6.4.1(d)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1(e)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1(e)	8.6	Analyze Archive	ADMS
7.1.6.4.1(e)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1(f)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1(f)	8.6	Analyze Archive	ADMS
7.1.6.4.1(f)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.1(g)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.1(g)	8.6	Analyze Archive	ADMS
7.1.6.4.1(g)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.2	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.2	8.6	Analyze Archive	ADMS
7.1.6.4.2	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.2(a)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.2(a)	8.6	Analyze Archive	ADMS
7.1.6.4.2(a)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.2(b)	8.5	Process Archived Data User System Requests	ADMS

Appendix B: User Service Requirements Traced to P-Specs

USR	P-Spec	Name	Subsystem
7.1.6.4.2(b)	8.6	Analyze Archive	ADMS
7.1.6.4.2(b)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.2(c)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.2(c)	8.6	Analyze Archive	ADMS
7.1.6.4.2(c)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.2(d)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.2(d)	8.6	Analyze Archive	ADMS
7.1.6.4.2(d)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.3	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.3	8.6	Analyze Archive	ADMS
7.1.6.4.3	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.3(a)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.3(a)	8.6	Analyze Archive	ADMS
7.1.6.4.3(a)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.3(b)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.3(b)	8.6	Analyze Archive	ADMS
7.1.6.4.3(b)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.3(c)	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.3(c)	8.6	Analyze Archive	ADMS
7.1.6.4.3(c)	8.7	Process On Demand Archive Requests	ADMS
7.1.6.4.4	8.5	Process Archived Data User System Requests	ADMS
7.1.6.4.4	8.6	Analyze Archive	ADMS
7.1.6.4.4	8.7	Process On Demand Archive Requests	ADMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.1.1.1	Process Traffic Sensor Data	1.0	RS
1.1.1.1	Process Traffic Sensor Data	1.6	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2.1	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2.1.1	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2.2	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2.2.1	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2.3	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2.3.1	RS
1.1.1.1	Process Traffic Sensor Data	1.6.2.4	RS
1.1.1.1	Process Traffic Sensor Data	1.7	RS
1.1.1.1	Process Traffic Sensor Data	1.7.1	RS
1.1.1.1	Process Traffic Sensor Data	1.7.1.1	RS
1.1.1.1	Process Traffic Sensor Data	1.7.1.1.1	RS
1.1.1.1	Process Traffic Sensor Data	1.7.1.1.1(a)	RS
1.1.1.1	Process Traffic Sensor Data	1.8	RS
1.1.1.1	Process Traffic Sensor Data	1.8.0	RS
1.1.1.1	Process Traffic Sensor Data	1.8.3	RS
1.1.1.1	Process Traffic Sensor Data	1.8.3.1	RS
1.1.1.1	Process Traffic Sensor Data	1.8.3.1(b)	RS
1.1.1.2	Collect and Process Sensor Fault Data	1.0	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.0	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.1	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.1.4	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.1.4(a)	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.1.5	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.2	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.2.13	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.3	TMS
1.1.1.2	Collect and Process Sensor Fault Data	1.8.3.1	TMS
1.1.1.3	Process Environmental Sensor Data	1.0	RS
1.1.1.3	Process Environmental Sensor Data	1.2	RS
1.1.1.3	Process Environmental Sensor Data	1.2.3	RS
1.1.1.3	Process Environmental Sensor Data	1.2.3.2	RS
1.1.1.3	Process Environmental Sensor Data	1.2.3.2.3	RS
1.1.1.3	Process Environmental Sensor Data	1.7	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.1	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.1.1	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.1.1(a)	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.1.1(b)	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.1.1(g)	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.2	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.2.1	RS
1.1.1.3	Process Environmental Sensor Data	1.7.1.2.1(b)	RS
1.1.1.3	Process Environmental Sensor Data	1.8.2	RS
1.1.1.3	Process Environmental Sensor Data	1.8.2.1	RS
1.1.1.3	Process Environmental Sensor Data	1.8.2.1(e)	RS
1.1.1.4	Manage Data Collection and Monitoring	7.0	RS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.1.1.4	Manage Data Collection and Monitoring	7.1	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.0	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.1	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.1(a)	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.1(c)	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.3	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.3(e)	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.7	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.7(a)	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.9	RS
1.1.1.4	Manage Data Collection and Monitoring	7.1.3.1.9(c)	RS
1.1.2.1	Process Traffic Data for Storage	1.0	TMS
1.1.2.1	Process Traffic Data for Storage	1.6	TMS
1.1.2.1	Process Traffic Data for Storage	1.6.0	TMS
1.1.2.1	Process Traffic Data for Storage	1.6.2	TMS
1.1.2.1	Process Traffic Data for Storage	1.6.2.5	TMS
1.1.2.1	Process Traffic Data for Storage	1.6.2.5.1	TMS
1.1.2.1	Process Traffic Data for Storage	1.8	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.1	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.1.6	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.1.6(f)	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.2	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.2.1	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.2.1(b)	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.2.10	TMS
1.1.2.1	Process Traffic Data for Storage	1.8.2.10(c)	TMS
1.1.2.2	Process Traffic Data	1.0	TMS
1.1.2.2	Process Traffic Data	1.10	TMS
1.1.2.2	Process Traffic Data	1.10.0	TMS
1.1.2.2	Process Traffic Data	1.6	TMS
1.1.2.2	Process Traffic Data	1.6.0	TMS
1.1.2.2	Process Traffic Data	1.6.2	TMS
1.1.2.2	Process Traffic Data	1.6.2.2	TMS
1.1.2.2	Process Traffic Data	1.6.2.2.1	TMS
1.1.2.2	Process Traffic Data	1.6.2.3	TMS
1.1.2.2	Process Traffic Data	1.6.2.3.2	TMS
1.1.2.2	Process Traffic Data	1.6.2.4	TMS
1.1.2.2	Process Traffic Data	1.6.2.4.1	TMS
1.1.2.2	Process Traffic Data	1.7	TMS
1.1.2.2	Process Traffic Data	1.7.1	TMS
1.1.2.2	Process Traffic Data	1.7.1.1	TMS
1.1.2.2	Process Traffic Data	1.7.1.1.1	TMS
1.1.2.2	Process Traffic Data	1.7.1.1.1(a)	TMS
1.1.2.2	Process Traffic Data	1.8	TMS
1.1.2.2	Process Traffic Data	1.8.1	TMS
1.1.2.2	Process Traffic Data	1.8.1.4	TMS
1.1.2.2	Process Traffic Data	1.8.1.4(a)	TMS
1.1.2.2	Process Traffic Data	1.8.2	TMS
1.1.2.2	Process Traffic Data	1.8.2.3	TMS
1.1.2.2	Process Traffic Data	1.8.2.3(a)	TMS
1.1.2.2	Process Traffic Data	1.8.2.3(d)	TMS
1.1.2.3	Update Data Source Static Data	1.0	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.1.2.3	Update Data Source Static Data	1.6	TMS
1.1.2.3	Update Data Source Static Data	1.6.0	TMS
1.1.2.3	Update Data Source Static Data	1.6.2	TMS
1.1.2.3	Update Data Source Static Data	1.6.2.4	TMS
1.1.2.3	Update Data Source Static Data	1.6.2.4.1	TMS
1.1.2.4	Monitor HOV lane use	1.0	TMS
1.1.2.4	Monitor HOV lane use	1.6	TMS
1.1.2.4	Monitor HOV lane use	1.6.3	TMS
1.1.2.4	Monitor HOV lane use	1.6.3.4	TMS
1.1.2.4	Monitor HOV lane use	1.6.3.4(d)	TMS
1.1.2.4	Monitor HOV lane use	1.7	TMS
1.1.2.4	Monitor HOV lane use	1.7.0	TMS
1.1.2.4	Monitor HOV lane use	1.7.4	TMS
1.1.2.4	Monitor HOV lane use	1.8	TMS
1.1.2.4	Monitor HOV lane use	1.8.1	TMS
1.1.2.4	Monitor HOV lane use	1.8.1.2	TMS
1.1.2.4	Monitor HOV lane use	1.8.1.2(b)	TMS
1.1.2.4	Monitor HOV lane use	1.8.1.3	TMS
1.1.2.4	Monitor HOV lane use	1.8.1.3(b)	TMS
1.1.2.4	Monitor HOV lane use	1.8.2	TMS
1.1.2.4	Monitor HOV lane use	1.8.2.11	TMS
1.1.2.4	Monitor HOV lane use	1.8.2.11(b)	TMS
1.1.2.4	Monitor HOV lane use	1.8.2.4	TMS
1.1.2.4	Monitor HOV lane use	1.8.2.4(b)	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	1.0	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	1.6	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	1.6.2	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	1.6.2.2	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	1.6.2.4	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	1.6.2.4.1	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	1.6.2.5.1	TMS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.0	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6.2	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6.2.2	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6.2.3	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6.2.3.1	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6.2.3.2	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6.2.4	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.6.2.5	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.8.2	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.8.2.10	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.8.2.10(b)	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.9	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.9.0	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.9.2	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.9.2.1	RS
1.1.2.6	Process Collected Vehicle Smart Probe Data	1.9.2.1.3	RS
1.1.2.7	Monitor Reversible Lanes	1.0	TMS
1.1.2.7	Monitor Reversible Lanes	1.7	TMS
1.1.2.7	Monitor Reversible Lanes	1.7.0	TMS
1.1.2.7	Monitor Reversible Lanes	1.7.1	TMS
1.1.2.7	Monitor Reversible Lanes	1.7.1.1	TMS
1.1.2.7	Monitor Reversible Lanes	1.7.1.1.1	TMS

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P-Spec	Name	USR	Subsystem
1.1.2.7	Monitor Reversible Lanes	1.7.1.1.1(a)	TMS
1.1.2.7	Monitor Reversible Lanes	1.7.4	TMS
1.1.3	Generate Predictive Traffic Model	1.0	TMS
1.1.3	Generate Predictive Traffic Model	1.2	TMS
1.1.3	Generate Predictive Traffic Model	1.2.3	TMS
1.1.3	Generate Predictive Traffic Model	1.2.3.2	TMS
1.1.3	Generate Predictive Traffic Model	1.2.3.2.3	TMS
1.1.3	Generate Predictive Traffic Model	1.6	TMS
1.1.3	Generate Predictive Traffic Model	1.6.0	TMS
1.1.3	Generate Predictive Traffic Model	1.6.2	TMS
1.1.3	Generate Predictive Traffic Model	1.6.2.5	TMS
1.1.3	Generate Predictive Traffic Model	1.6.2.5.2	TMS
1.1.4.1	Retrieve Traffic Data	1.0	TMS
1.1.4.1	Retrieve Traffic Data	1.6	TMS
1.1.4.1	Retrieve Traffic Data	1.6.0	TMS
1.1.4.1	Retrieve Traffic Data	1.6.3	TMS
1.1.4.1	Retrieve Traffic Data	1.6.3.4	TMS
1.1.4.1	Retrieve Traffic Data	1.6.3.4.1	TMS
1.1.4.1	Retrieve Traffic Data	1.6.4	TMS
1.1.4.1	Retrieve Traffic Data	1.6.4(a)	TMS
1.1.4.1	Retrieve Traffic Data	1.6.4(b)	TMS
1.1.4.1	Retrieve Traffic Data	1.6.4(c)	TMS
1.1.4.1	Retrieve Traffic Data	1.6.4(d)	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.0	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.6	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.6.0	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.6.1	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.6.1.7	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.6.1.7(a)	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.6.3	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	1.6.3.4(e)	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.0	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.6	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.6.1	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.6.1.7	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.6.1.7(a)	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.7	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.7.0	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.7.3	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	1.7.3.3	TMS
1.1.4.4	Update Traffic Display Map Data	1.0	TMS
1.1.4.4	Update Traffic Display Map Data	1.6	TMS
1.1.4.4	Update Traffic Display Map Data	1.6.0	TMS
1.1.4.4	Update Traffic Display Map Data	1.6.3	TMS
1.1.4.4	Update Traffic Display Map Data	1.6.3.4(e)	TMS
1.1.4.4	Update Traffic Display Map Data	7.0	TMS
1.1.4.4	Update Traffic Display Map Data	7.1	TMS
1.1.4.4	Update Traffic Display Map Data	7.1.0	TMS
1.1.4.4	Update Traffic Display Map Data	7.1.3.1	TMS
1.1.4.4	Update Traffic Display Map Data	7.1.3.1.9	TMS
1.1.4.4	Update Traffic Display Map Data	7.1.3.1.9(e)	TMS
1.1.4.5	Provide Media System Traffic Data Interface	NA	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.0	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.1	ISP

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P-Spec	Name	USR	Subsystem
1.1.4.6	Provide Traffic Data Retrieval Interface	1.1.4	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.1.4.1	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.1.4.1.1	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.1.4.1.2	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.1.4.1.3	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.1.4.1.4	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.6	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.6.0	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.6.3	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.6.3.4	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	1.6.3.4.1	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	7.0	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	7.1	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	7.1.0	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	7.1.3	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	7.1.3.1	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	7.1.3.1.8	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	7.1.3.1.8(g)	ISP
1.1.4.7	Manage Traffic Archive Data	7.0	TMS
1.1.4.7	Manage Traffic Archive Data	7.1	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.0	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.1	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.1(a)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.1(b)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.1(c)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.1(d)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.1(e)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.2	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.3	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.3(e)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.5	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.5(e)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.5(g)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.8	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.8(b)	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.9	TMS
1.1.4.7	Manage Traffic Archive Data	7.1.3.1.9(a)	TMS
1.1.5	Exchange data with Other Traffic Centers	1.0	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.0	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.2	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.2.5	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.2.5.2	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.3	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.3.6	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.4	TMS
1.1.5	Exchange data with Other Traffic Centers	1.6.4(a)	TMS
1.1.5	Exchange data with Other Traffic Centers	7.0	TMS
1.1.5	Exchange data with Other Traffic Centers	7.1	TMS
1.1.5	Exchange data with Other Traffic Centers	7.1.0	TMS
1.1.5	Exchange data with Other Traffic Centers	7.1.3	TMS
1.1.5	Exchange data with Other Traffic Centers	7.1.3.1	TMS

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P-Spec	Name	USR	Subsystem
1.1.5	Exchange data with Other Traffic Centers	7.1.3.1.9	TMS
1.1.5	Exchange data with Other Traffic Centers	7.1.3.1.9(d)	TMS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	1.0	RS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	1.6	RS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	1.6.2	RS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	1.6.2.2	RS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	1.6.2.4	RS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	1.6.2.4.1	RS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	1.6.2.5.1	RS
1.1.7	Collect Vehicle Smart Probe Data	1.0	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6.2	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6.2.2	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6.2.3	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6.2.3.1	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6.2.3.2	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6.2.4	RS
1.1.7	Collect Vehicle Smart Probe Data	1.6.2.5	RS
1.2.1	Select Strategy	1.0	TMS
1.2.1	Select Strategy	1.6	TMS
1.2.1	Select Strategy	1.6.0	TMS
1.2.1	Select Strategy	1.6.3	TMS
1.2.1	Select Strategy	1.6.3.5	TMS
1.2.1	Select Strategy	1.6.3.6	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.0	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.0	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.1.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.1.2	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.1.3	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.1.4	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.1.5	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.2	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.2.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.2.2	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.2.3	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.3	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.4	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.4.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.5	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.6	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.7	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.1.7(b)	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.2	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.2.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.2.2(a)	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.3	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.3.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.3.2	TMS
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.3.3	TMS

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P-Spec	Name	USR	Subsystem
1.2.2.1	Determine Indicator State for Freeway Management	1.6.3.3.4	TMS
1.2.2.1	Determine Indicator State for Freeway Management	5.0	TMS
1.2.2.1	Determine Indicator State for Freeway Management	5.2	TMS
1.2.2.1	Determine Indicator State for Freeway Management	5.2.3	TMS
1.2.2.1	Determine Indicator State for Freeway Management	5.2.3.1	TMS
1.2.2.1	Determine Indicator State for Freeway Management	5.2.3.2	TMS
1.2.2.2	Determine Indicator State for Road Management	1.0	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.0	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.1.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.1.2	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.1.3	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.1.4	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.1.5	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.2	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.2.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.2.2	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.2.3	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.3	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.4	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.4.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.5	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.6	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.7	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.1.7(b)	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.2	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.2.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.2.2	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.3	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.3.1	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.3.2	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.3.3	TMS
1.2.2.2	Determine Indicator State for Road Management	1.6.3.3.4	TMS
1.2.2.2	Determine Indicator State for Road Management	5.0	TMS
1.2.2.2	Determine Indicator State for Road Management	5.2	TMS
1.2.2.2	Determine Indicator State for Road Management	5.2.3	TMS
1.2.2.2	Determine Indicator State for Road Management	5.2.3.1	TMS
1.2.2.2	Determine Indicator State for Road Management	5.2.3.2	TMS
1.2.2.2	Determine Indicator State for Road Management	7.0	TMS
1.2.2.2	Determine Indicator State for Road Management	7.1	TMS
1.2.2.2	Determine Indicator State for Road Management	7.1.0	TMS
1.2.2.2	Determine Indicator State for Road Management	7.1.3	TMS
1.2.2.2	Determine Indicator State for Road Management	7.1.3.1	TMS
1.2.2.2	Determine Indicator State for Road Management	7.1.3.1.9	TMS
1.2.2.2	Determine Indicator State for Road Management	7.1.3.1.9(a)	TMS
1.2.3	Determine Ramp State	1.0	TMS
1.2.3	Determine Ramp State	1.6	TMS
1.2.3	Determine Ramp State	1.6.0	TMS
1.2.3	Determine Ramp State	1.6.1	TMS
1.2.3	Determine Ramp State	1.6.1.1	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.2.3	Determine Ramp State	1.6.1.1.2	TMS
1.2.3	Determine Ramp State	1.6.1.2	TMS
1.2.3	Determine Ramp State	1.6.1.2.1	TMS
1.2.3	Determine Ramp State	1.6.1.2.3	TMS
1.2.4.1	Output Control Data for Roads	1.0	TMS
1.2.4.1	Output Control Data for Roads	1.10	TMS
1.2.4.1	Output Control Data for Roads	1.10.3	TMS
1.2.4.1	Output Control Data for Roads	1.10.3.3	TMS
1.2.4.1	Output Control Data for Roads	1.10.3.3.5	TMS
1.2.4.1	Output Control Data for Roads	1.10.5	TMS
1.2.4.1	Output Control Data for Roads	1.10.5.2	TMS
1.2.4.1	Output Control Data for Roads	1.10.5.2.6	TMS
1.2.4.1	Output Control Data for Roads	1.5.2	TMS
1.2.4.1	Output Control Data for Roads	1.5.2.5	TMS
1.2.4.1	Output Control Data for Roads	1.5.2.5(a)	TMS
1.2.4.1	Output Control Data for Roads	1.6	TMS
1.2.4.1	Output Control Data for Roads	1.6.0	TMS
1.2.4.1	Output Control Data for Roads	1.6.1.2.1	TMS
1.2.4.1	Output Control Data for Roads	1.6.1.4	TMS
1.2.4.1	Output Control Data for Roads	1.6.2	TMS
1.2.4.1	Output Control Data for Roads	1.6.3	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.3	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.3.1	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.3.2	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.3.3	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.3.4	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.4	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.4(a)	TMS
1.2.4.1	Output Control Data for Roads	1.6.3.4.1	TMS
1.2.4.2	Output Control Data for Freeways	1.0	TMS
1.2.4.2	Output Control Data for Freeways	1.5.2	TMS
1.2.4.2	Output Control Data for Freeways	1.5.2.5	TMS
1.2.4.2	Output Control Data for Freeways	1.5.2.5(a)	TMS
1.2.4.2	Output Control Data for Freeways	1.6	TMS
1.2.4.2	Output Control Data for Freeways	1.6.0	TMS
1.2.4.2	Output Control Data for Freeways	1.6.1.2.1	TMS
1.2.4.2	Output Control Data for Freeways	1.6.1.4	TMS
1.2.4.2	Output Control Data for Freeways	1.6.2	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3.3	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3.3.1	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3.3.2	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3.3.3	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3.3.4	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3.4	TMS
1.2.4.2	Output Control Data for Freeways	1.6.3.4.1	TMS
1.2.4.3	Output In-vehicle Signage Data	1.0	TMS
1.2.4.3	Output In-vehicle Signage Data	1.10	TMS
1.2.4.3	Output In-vehicle Signage Data	1.10.0	TMS
1.2.4.3	Output In-vehicle Signage Data	1.10.1	TMS
1.2.4.3	Output In-vehicle Signage Data	1.10.1.1	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.0	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.1.2.1	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.2.4.3	Output In-vehicle Signage Data	1.6.1.4	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.2	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3.3	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3.3.1	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3.3.2	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3.3.3	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3.3.4	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3.4	TMS
1.2.4.3	Output In-vehicle Signage Data	1.6.3.4.1	TMS
1.2.5.1	Determine Parking Lot State	1.0	PMS
1.2.5.1	Determine Parking Lot State	1.6	PMS
1.2.5.1	Determine Parking Lot State	1.6.0	PMS
1.2.5.1	Determine Parking Lot State	1.8	PMS
1.2.5.1	Determine Parking Lot State	1.8.0	PMS
1.2.5.1	Determine Parking Lot State	1.8.2	PMS
1.2.5.1	Determine Parking Lot State	1.8.2.1	PMS
1.2.5.1	Determine Parking Lot State	1.8.2.1(c)	PMS
1.2.5.1	Determine Parking Lot State	1.8.3	PMS
1.2.5.1	Determine Parking Lot State	1.8.3.1	PMS
1.2.5.2	Coordinate Other Parking Data	1.0	PMS
1.2.5.2	Coordinate Other Parking Data	1.7	PMS
1.2.5.2	Coordinate Other Parking Data	1.7.0	PMS
1.2.5.2	Coordinate Other Parking Data	1.7.4	PMS
1.2.5.2	Coordinate Other Parking Data	1.8.2	PMS
1.2.5.2	Coordinate Other Parking Data	1.8.2.1	PMS
1.2.5.2	Coordinate Other Parking Data	1.8.2.1(c)	PMS
1.2.5.3	Provide Parking Lot Operator Interface	1.0	PMS
1.2.5.3	Provide Parking Lot Operator Interface	1.7	PMS
1.2.5.3	Provide Parking Lot Operator Interface	1.7.0	PMS
1.2.5.3	Provide Parking Lot Operator Interface	1.7.4	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.0	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.7	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.7.0	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.7.4	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.8	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.8.1	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.8.1.2	PMS
1.2.5.4	Determine P+R needs for Transit Management	1.8.1.2(a)	PMS
1.2.5.5	Manage Parking Archive Data	7.0	PMS
1.2.5.5	Manage Parking Archive Data	7.1	PMS
1.2.5.5	Manage Parking Archive Data	7.1.0	PMS
1.2.5.5	Manage Parking Archive Data	7.1.3	PMS
1.2.5.5	Manage Parking Archive Data	7.1.3.1	PMS
1.2.5.5	Manage Parking Archive Data	7.1.3.1.10	PMS
1.2.5.5	Manage Parking Archive Data	7.1.3.1.8	PMS
1.2.5.5	Manage Parking Archive Data	7.1.3.1.8(e)	PMS
1.2.5.5	Manage Parking Archive Data	7.1.3.1.9	PMS
1.2.5.5	Manage Parking Archive Data	7.1.3.1.9(e)	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.0	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.1	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.1.0	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.1.1	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.1.1.1	PMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.2.5.6	Calculate Parking Lot Occupancy	1.1.2	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.1.2.1	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.1.2.1.6	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.5	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.5.0	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.5.2	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.5.2.2	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.5.2.2(c)	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.0	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.1	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.1.4	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.1.4(c)	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.2	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.2.11	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.2.11(a)	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.3	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.3.1	PMS
1.2.5.6	Calculate Parking Lot Occupancy	1.8.3.1(a)	PMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.0	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.6	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.6.0	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.8	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.8.1	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.8.1.2	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.8.1.2(a)	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.8.2	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.8.2.13	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	1.8.2.13(a)	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	7.0	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	7.1	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	7.1.0	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	7.1.3	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	7.1.3.1	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	7.1.3.1.9	TMS
1.2.6.1	Maintain Traffic and Sensor Static Data	7.1.3.1.9(a)	TMS
1.2.6.2	Provide Static Data Store Output Interface	1.0	TMS
1.2.6.2	Provide Static Data Store Output Interface	1.6	TMS
1.2.6.2	Provide Static Data Store Output Interface	1.6.0	TMS
1.2.6.2	Provide Static Data Store Output Interface	7.0	TMS
1.2.6.2	Provide Static Data Store Output Interface	7.1	TMS
1.2.6.2	Provide Static Data Store Output Interface	7.1.0	TMS
1.2.6.2	Provide Static Data Store Output Interface	7.1.3	TMS
1.2.6.2	Provide Static Data Store Output Interface	7.1.3.1	TMS
1.2.6.2	Provide Static Data Store Output Interface	7.1.3.1.9	TMS
1.2.6.2	Provide Static Data Store Output Interface	7.1.3.1.9(a)	TMS
1.2.7.1	Process Indicator Output Data for Roads	1.0	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.3	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.3.1	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.3.3	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.3.3.2	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.3.3.3	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.4	RS

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P-Spec	Name	USR	Subsystem
1.2.7.1	Process Indicator Output Data for Roads	1.10.4.1	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.5	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.5.1	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.5.2	RS
1.2.7.1	Process Indicator Output Data for Roads	1.10.5.2.2	RS
1.2.7.1	Process Indicator Output Data for Roads	1.5.2	RS
1.2.7.1	Process Indicator Output Data for Roads	1.5.2.5	RS
1.2.7.1	Process Indicator Output Data for Roads	1.5.2.5(a)	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.0	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.3	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.3.3	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.3.3.1	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.3.3.2	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.3.3.4	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.3.4	RS
1.2.7.1	Process Indicator Output Data for Roads	1.6.3.4(a)	RS
1.2.7.2	Monitor Roadside Equipment Operation for Faults	1.0	RS
1.2.7.2	Monitor Roadside Equipment Operation for Faults	1.7	RS
1.2.7.2	Monitor Roadside Equipment Operation for Faults	1.7.0	RS
1.2.7.2	Monitor Roadside Equipment Operation for Faults	1.7.4	RS
1.2.7.3	Manage Indicator Preemptions	1.0	RS
1.2.7.3	Manage Indicator Preemptions	1.8	RS
1.2.7.3	Manage Indicator Preemptions	1.8.0	RS
1.2.7.3	Manage Indicator Preemptions	1.8.2	RS
1.2.7.3	Manage Indicator Preemptions	1.8.2.8	RS
1.2.7.3	Manage Indicator Preemptions	1.8.2.8(a)	RS
1.2.7.3	Manage Indicator Preemptions	1.8.2.8(b)	RS
1.2.7.3	Manage Indicator Preemptions	1.8.2.8(c)	RS
1.2.7.3	Manage Indicator Preemptions	1.8.3	RS
1.2.7.3	Manage Indicator Preemptions	1.8.3.1	RS
1.2.7.3	Manage Indicator Preemptions	1.8.3.1(c)	RS
1.2.7.3	Manage Indicator Preemptions	5.0	RS
1.2.7.3	Manage Indicator Preemptions	5.2	RS
1.2.7.3	Manage Indicator Preemptions	5.2.3	RS
1.2.7.4	Process In-vehicle Signage Data	1.0	RS
1.2.7.4	Process In-vehicle Signage Data	1.7	RS
1.2.7.4	Process In-vehicle Signage Data	1.7.0	RS
1.2.7.4	Process In-vehicle Signage Data	1.7.4	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.0	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.5.2	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.5.2.5	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.5.2.5(a)	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.0	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.3	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.3.3	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.3.3.2	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.3.3.3	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.3.4	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.3.4(b)	RS
1.2.7.5	Process Indicator Output Data for Freeways	1.6.3.4(c)	RS
1.2.7.6	Provide Intersection Collision Avoidance Data	1.10.3.2	RS
1.2.7.6	Provide Intersection Collision Avoidance Data	5.0	RS

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P-Spec	Name	USR	Subsystem
1.2.7.6	Provide Intersection Collision Avoidance Data	5.2	RS
1.2.7.6	Provide Intersection Collision Avoidance Data	5.2.3	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.0	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2.2	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2.3	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2.3.1	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2.3.2	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2.4	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2.4.1	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	1.6.2.5	RS
1.2.8.1	Collect Indicator Fault Data	1.0	TMS
1.2.8.1	Collect Indicator Fault Data	1.7	TMS
1.2.8.1	Collect Indicator Fault Data	1.7.0	TMS
1.2.8.1	Collect Indicator Fault Data	1.7.4	TMS
1.2.8.2	Maintain Indicator Fault Data Store	1.0	TMS
1.2.8.2	Maintain Indicator Fault Data Store	1.7	TMS
1.2.8.2	Maintain Indicator Fault Data Store	1.7.0	TMS
1.2.8.2	Maintain Indicator Fault Data Store	1.7.4	TMS
1.2.8.3	Provide Indicator Fault Interface for C and M	1.0	TMS
1.2.8.3	Provide Indicator Fault Interface for C and M	1.7	TMS
1.2.8.3	Provide Indicator Fault Interface for C and M	1.7.0	TMS
1.2.8.3	Provide Indicator Fault Interface for C and M	1.7.4	TMS
1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	1.0	TMS
1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	1.7	TMS
1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	1.7.0	TMS
1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	1.7.4	TMS
1.3.1.1	Analyze Traffic Data for Incidents	1.0	TMS
1.3.1.1	Analyze Traffic Data for Incidents	1.7	TMS
1.3.1.1	Analyze Traffic Data for Incidents	1.7.0	TMS
1.3.1.1	Analyze Traffic Data for Incidents	1.7.1	TMS
1.3.1.1	Analyze Traffic Data for Incidents	1.7.1.2	TMS
1.3.1.1	Analyze Traffic Data for Incidents	1.7.1.2.1	TMS
1.3.1.1	Analyze Traffic Data for Incidents	1.7.1.2.1(e)	TMS
1.3.1.2	Maintain Static Data for Incident Management	NA	TMS
1.3.1.3	Process Traffic Images	1.7	RS
1.3.1.3	Process Traffic Images	1.7.1	RS
1.3.1.3	Process Traffic Images	1.7.1.2	RS
1.3.1.3	Process Traffic Images	1.7.1.2.2	RS
1.3.1.3	Process Traffic Images	1.7.1.2.2(a)	RS
1.3.1.3	Process Traffic Images	2.0	RS
1.3.1.3	Process Traffic Images	2.2	RS
1.3.1.3	Process Traffic Images	2.2.1	RS
1.3.1.3	Process Traffic Images	2.2.1.2	RS
1.3.1.3	Process Traffic Images	2.2.1.2.1	RS
1.3.1.3	Process Traffic Images	2.2.1.2.1.3	RS
1.3.1.3	Process Traffic Images	2.2.1.2.2	RS
1.3.1.3	Process Traffic Images	2.2.1.2.2.1	RS
1.3.1.3	Process Traffic Images	2.4	RS
1.3.1.3	Process Traffic Images	2.4.2	RS
1.3.1.3	Process Traffic Images	2.4.2.2	RS
1.3.2.1	Store Possible Incident Data	1.0	TMS
1.3.2.1	Store Possible Incident Data	1.7	TMS

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P-Spec	Name	USR	Subsystem
1.3.2.1	Store Possible Incident Data	1.7.0	TMS
1.3.2.1	Store Possible Incident Data	1.7.1	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.1	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.2	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.2(a)	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.2(b)	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.2(c)	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.2(d)	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.2(e)	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.1.3	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.2	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.2.1	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.2.1(e)	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.2.1(g)	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.2.2	TMS
1.3.2.1	Store Possible Incident Data	1.7.1.2.3	TMS
1.3.2.1	Store Possible Incident Data	1.7.2	TMS
1.3.2.1	Store Possible Incident Data	1.7.2.1	TMS
1.3.2.2	Review and Classify Possible Incidents	1.0	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.0	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(a)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(b)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(c)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(d)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(e)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(f)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(g)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.1.1(h)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1(a)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1(b)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1(c)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1(d)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1(e)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1(f)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.1(g)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.2	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.2(a)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.2(b)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.1.2.2(c)	TMS
1.3.2.2	Review and Classify Possible Incidents	1.7.4	TMS
1.3.2.3	Review and Classify Planned Events	1.0	TMS
1.3.2.3	Review and Classify Planned Events	1.7	TMS
1.3.2.3	Review and Classify Planned Events	1.7.0	TMS
1.3.2.3	Review and Classify Planned Events	1.7.1	TMS
1.3.2.3	Review and Classify Planned Events	1.7.1.2	TMS
1.3.2.3	Review and Classify Planned Events	1.7.1.2.2	TMS
1.3.2.3	Review and Classify Planned Events	1.7.1.2.2(a)	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.3.2.3	Review and Classify Planned Events	1.7.1.2.2(b)	TMS
1.3.2.3	Review and Classify Planned Events	1.7.4	TMS
1.3.2.4	Provide Planned Events Store Interface	1.0	TMS
1.3.2.4	Provide Planned Events Store Interface	1.7	TMS
1.3.2.4	Provide Planned Events Store Interface	1.7.0	TMS
1.3.2.4	Provide Planned Events Store Interface	1.7.4	TMS
1.3.2.5	Provide Current Incidents Store Interface	1.0	TMS
1.3.2.5	Provide Current Incidents Store Interface	1.7	TMS
1.3.2.5	Provide Current Incidents Store Interface	1.7.0	TMS
1.3.2.5	Provide Current Incidents Store Interface	1.7.4	TMS
1.3.3	Respond to Current Incidents	1.0	TMS
1.3.3	Respond to Current Incidents	1.7	TMS
1.3.3	Respond to Current Incidents	1.7.0	TMS
1.3.3	Respond to Current Incidents	1.7.1	TMS
1.3.3	Respond to Current Incidents	1.7.1.2	TMS
1.3.3	Respond to Current Incidents	1.7.1.2.3	TMS
1.3.3	Respond to Current Incidents	1.7.2	TMS
1.3.3	Respond to Current Incidents	1.7.2.2	TMS
1.3.3	Respond to Current Incidents	1.7.2.3	TMS
1.3.3	Respond to Current Incidents	1.7.2.4	TMS
1.3.3	Respond to Current Incidents	1.7.2.5	TMS
1.3.3	Respond to Current Incidents	1.7.3	TMS
1.3.3	Respond to Current Incidents	1.7.3.1	TMS
1.3.3	Respond to Current Incidents	1.7.3.1(a)	TMS
1.3.3	Respond to Current Incidents	1.7.3.2	TMS
1.3.3	Respond to Current Incidents	1.7.3.3	TMS
1.3.3	Respond to Current Incidents	1.7.4	TMS
1.3.4.1	Retrieve Incident Data	1.0	TMS
1.3.4.1	Retrieve Incident Data	1.7	TMS
1.3.4.1	Retrieve Incident Data	1.7.0	TMS
1.3.4.1	Retrieve Incident Data	1.7.1	TMS
1.3.4.1	Retrieve Incident Data	1.7.1.2	TMS
1.3.4.1	Retrieve Incident Data	1.7.1.2.1	TMS
1.3.4.1	Retrieve Incident Data	1.7.1.2.1(c)	TMS
1.3.4.1	Retrieve Incident Data	1.7.1.2.1(d)	TMS
1.3.4.1	Retrieve Incident Data	1.7.1.2.1(f)	TMS
1.3.4.1	Retrieve Incident Data	1.7.1.2.2	TMS
1.3.4.1	Retrieve Incident Data	1.7.1.2.2(d)	TMS
1.3.4.1	Retrieve Incident Data	1.7.4	TMS
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	1.0	TMS
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	1.7	TMS
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	1.7.0	TMS
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	1.7.4	TMS
1.3.4.3	Provide Media Incident Data Interface	1.0	TMS
1.3.4.3	Provide Media Incident Data Interface	1.7	TMS
1.3.4.3	Provide Media Incident Data Interface	1.7.0	TMS
1.3.4.3	Provide Media Incident Data Interface	1.7.1	TMS
1.3.4.3	Provide Media Incident Data Interface	1.7.1.1	TMS
1.3.4.3	Provide Media Incident Data Interface	1.7.1.1.1	TMS
1.3.4.3	Provide Media Incident Data Interface	1.7.1.1.1(d)	TMS
1.3.4.3	Provide Media Incident Data Interface	1.7.4	TMS
1.3.4.4	Update Incident Display Map Data	1.0	TMS
1.3.4.4	Update Incident Display Map Data	1.7	TMS
1.3.4.4	Update Incident Display Map Data	1.7.0	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.3.4.4	Update Incident Display Map Data	1.7.4	TMS
1.3.4.5	Manage Resources for Incidents	1.0	TMS
1.3.4.5	Manage Resources for Incidents	1.7	TMS
1.3.4.5	Manage Resources for Incidents	1.7.0	TMS
1.3.4.5	Manage Resources for Incidents	1.7.1	TMS
1.3.4.5	Manage Resources for Incidents	1.7.1.1	TMS
1.3.4.5	Manage Resources for Incidents	1.7.1.1.1	TMS
1.3.4.5	Manage Resources for Incidents	1.7.1.1.1(c)	TMS
1.3.4.5	Manage Resources for Incidents	1.7.1.2	TMS
1.3.4.5	Manage Resources for Incidents	1.7.1.2.2	TMS
1.3.4.5	Manage Resources for Incidents	1.7.1.2.2(e)	TMS
1.3.4.5	Manage Resources for Incidents	1.7.3	TMS
1.3.4.5	Manage Resources for Incidents	1.7.3.1	TMS
1.3.4.5	Manage Resources for Incidents	1.7.3.1(b)	TMS
1.3.5	Manage Possible Predetermined Responses Store	1.0	TMS
1.3.5	Manage Possible Predetermined Responses Store	1.7	TMS
1.3.5	Manage Possible Predetermined Responses Store	1.7.0	TMS
1.3.5	Manage Possible Predetermined Responses Store	1.7.4	TMS
1.3.6	Manage Predetermined Incident Response Data	1.0	TMS
1.3.6	Manage Predetermined Incident Response Data	1.7	TMS
1.3.6	Manage Predetermined Incident Response Data	1.7.0	TMS
1.3.6	Manage Predetermined Incident Response Data	1.7.4	TMS
1.3.7	Analyze Incident Response Log	1.0	TMS
1.3.7	Analyze Incident Response Log	1.7	TMS
1.3.7	Analyze Incident Response Log	1.7.0	TMS
1.3.7	Analyze Incident Response Log	1.7.4	TMS
1.4.1	Provide Traffic Operations Personnel Demand Interface	1.0	TMS
1.4.1	Provide Traffic Operations Personnel Demand Interface	1.8	TMS
1.4.1	Provide Traffic Operations Personnel Demand Interface	1.8.0	TMS
1.4.1	Provide Traffic Operations Personnel Demand Interface	1.8.1	TMS
1.4.1	Provide Traffic Operations Personnel Demand Interface	1.8.1.1	TMS
1.4.2	Collect Demand Forecast Data	1.0	TMS
1.4.2	Collect Demand Forecast Data	1.8	TMS
1.4.2	Collect Demand Forecast Data	1.8.0	TMS
1.4.2	Collect Demand Forecast Data	1.8.1	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.1	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.2	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.2(e)	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.2(f)	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.3	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.3(e)	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.3(f)	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.4	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.5	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.5(a)	TMS
1.4.2	Collect Demand Forecast Data	1.8.1.5(c)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.1	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.1(a)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.10	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.11	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.12	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.13	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.14	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.4.2	Collect Demand Forecast Data	1.8.2.2	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.3	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.4	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.4(f)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.5	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.5(a)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.5(b)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.5(c)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.5(d)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.5(e)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.6	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.7	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.7(a)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.7(b)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.7(c)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.8	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.8(a)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.9	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.9(a)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.9(b)	TMS
1.4.2	Collect Demand Forecast Data	1.8.2.9(c)	TMS
1.4.2	Collect Demand Forecast Data	1.8.3	TMS
1.4.2	Collect Demand Forecast Data	3.0	TMS
1.4.2	Collect Demand Forecast Data	3.1	TMS
1.4.2	Collect Demand Forecast Data	3.1.5	TMS
1.4.2	Collect Demand Forecast Data	3.1.5.1	TMS
1.4.2	Collect Demand Forecast Data	3.1.5.1.1	TMS
1.4.2	Collect Demand Forecast Data	3.1.5.2	TMS
1.4.2	Collect Demand Forecast Data	3.1.5.3	TMS
1.4.3	Update Demand Display Map Data	1.0	TMS
1.4.3	Update Demand Display Map Data	1.8	TMS
1.4.3	Update Demand Display Map Data	1.8.1	TMS
1.4.3	Update Demand Display Map Data	1.8.1.1	TMS
1.4.4	Implement Demand Management Policy	1.0	TMS
1.4.4	Implement Demand Management Policy	1.8	TMS
1.4.4	Implement Demand Management Policy	1.8.0	TMS
1.4.4	Implement Demand Management Policy	1.8.1	TMS
1.4.4	Implement Demand Management Policy	1.8.1.1	TMS
1.4.4	Implement Demand Management Policy	1.8.1.2	TMS
1.4.4	Implement Demand Management Policy	1.8.1.2(e)	TMS
1.4.4	Implement Demand Management Policy	1.8.1.2(f)	TMS
1.4.4	Implement Demand Management Policy	1.8.1.3	TMS
1.4.4	Implement Demand Management Policy	1.8.1.3(e)	TMS
1.4.4	Implement Demand Management Policy	1.8.1.3(f)	TMS
1.4.4	Implement Demand Management Policy	1.8.1.4	TMS
1.4.4	Implement Demand Management Policy	1.8.1.5	TMS
1.4.4	Implement Demand Management Policy	1.8.1.5(a)	TMS
1.4.4	Implement Demand Management Policy	1.8.1.5(b)	TMS
1.4.4	Implement Demand Management Policy	1.8.1.6	TMS
1.4.4	Implement Demand Management Policy	1.8.1.6(d)	TMS
1.4.4	Implement Demand Management Policy	1.8.2	TMS
1.4.4	Implement Demand Management Policy	1.8.2.1	TMS
1.4.4	Implement Demand Management Policy	1.8.2.10	TMS
1.4.4	Implement Demand Management Policy	1.8.2.11	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.4.4	Implement Demand Management Policy	1.8.2.12	TMS
1.4.4	Implement Demand Management Policy	1.8.2.13	TMS
1.4.4	Implement Demand Management Policy	1.8.2.14	TMS
1.4.4	Implement Demand Management Policy	1.8.2.14(a)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.14(b)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.14(c)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.2	TMS
1.4.4	Implement Demand Management Policy	1.8.2.3	TMS
1.4.4	Implement Demand Management Policy	1.8.2.3(a)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.3(b)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.3(c)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.3(d)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.4	TMS
1.4.4	Implement Demand Management Policy	1.8.2.4(f)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.5	TMS
1.4.4	Implement Demand Management Policy	1.8.2.5(a)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.5(b)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.5(c)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.5(d)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.5(e)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.6	TMS
1.4.4	Implement Demand Management Policy	1.8.2.7	TMS
1.4.4	Implement Demand Management Policy	1.8.2.7(a)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.7(b)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.7(c)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.8	TMS
1.4.4	Implement Demand Management Policy	1.8.2.8(a)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.9	TMS
1.4.4	Implement Demand Management Policy	1.8.2.9(a)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.9(b)	TMS
1.4.4	Implement Demand Management Policy	1.8.2.9(c)	TMS
1.4.4	Implement Demand Management Policy	1.8.3	TMS
1.4.4	Implement Demand Management Policy	3.0	TMS
1.4.4	Implement Demand Management Policy	3.1	TMS
1.4.4	Implement Demand Management Policy	3.1.5	TMS
1.4.4	Implement Demand Management Policy	3.1.5.1	TMS
1.4.4	Implement Demand Management Policy	3.1.5.1.1	TMS
1.4.4	Implement Demand Management Policy	3.1.5.2	TMS
1.4.4	Implement Demand Management Policy	3.1.5.3	TMS
1.4.5	Calculate Forecast Demand	1.0	TMS
1.4.5	Calculate Forecast Demand	1.8	TMS
1.4.5	Calculate Forecast Demand	1.8.0	TMS
1.4.5	Calculate Forecast Demand	1.8.1	TMS
1.4.5	Calculate Forecast Demand	1.8.1.1	TMS
1.4.5	Calculate Forecast Demand	1.8.1.2	TMS
1.4.5	Calculate Forecast Demand	1.8.1.3	TMS
1.4.5	Calculate Forecast Demand	1.8.1.4	TMS
1.4.5	Calculate Forecast Demand	1.8.1.5	TMS
1.4.5	Calculate Forecast Demand	1.8.1.5(b)	TMS
1.4.5	Calculate Forecast Demand	1.8.2	TMS
1.4.5	Calculate Forecast Demand	1.8.2.1	TMS
1.4.5	Calculate Forecast Demand	1.8.2.1(f)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.10	TMS
1.4.5	Calculate Forecast Demand	1.8.2.11	TMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.4.5	Calculate Forecast Demand	1.8.2.12	TMS
1.4.5	Calculate Forecast Demand	1.8.2.13	TMS
1.4.5	Calculate Forecast Demand	1.8.2.14	TMS
1.4.5	Calculate Forecast Demand	1.8.2.2	TMS
1.4.5	Calculate Forecast Demand	1.8.2.3	TMS
1.4.5	Calculate Forecast Demand	1.8.2.3(a)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.4	TMS
1.4.5	Calculate Forecast Demand	1.8.2.5	TMS
1.4.5	Calculate Forecast Demand	1.8.2.5(a)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.5(b)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.5(c)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.5(d)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.5(e)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.6	TMS
1.4.5	Calculate Forecast Demand	1.8.2.7	TMS
1.4.5	Calculate Forecast Demand	1.8.2.7(a)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.7(b)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.7(c)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.8	TMS
1.4.5	Calculate Forecast Demand	1.8.2.8(a)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.9	TMS
1.4.5	Calculate Forecast Demand	1.8.2.9(a)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.9(b)	TMS
1.4.5	Calculate Forecast Demand	1.8.2.9(c)	TMS
1.4.5	Calculate Forecast Demand	1.8.3	TMS
1.4.5	Calculate Forecast Demand	3.0	TMS
1.4.5	Calculate Forecast Demand	3.1	TMS
1.4.5	Calculate Forecast Demand	3.1.5	TMS
1.4.5	Calculate Forecast Demand	3.1.5.1	TMS
1.4.5	Calculate Forecast Demand	3.1.5.1.1	TMS
1.4.5	Calculate Forecast Demand	3.1.5.2	TMS
1.4.5	Calculate Forecast Demand	3.1.5.3	TMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.8.2	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.8.2.2	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.8.2.2(a)	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.8.2.2(c)	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.9.0	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.9.1	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.9.1.2	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.9.1.2.1	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.9.1.2.2	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.9.2.2.1	EMMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	1.9.2.2.3	EMMS
1.5.2	Process Pollution Data	1.8	EMMS
1.5.2	Process Pollution Data	1.8.1	EMMS
1.5.2	Process Pollution Data	1.8.1.4	EMMS
1.5.2	Process Pollution Data	1.8.1.4(d)	EMMS
1.5.2	Process Pollution Data	1.9.0	EMMS
1.5.2	Process Pollution Data	1.9.1	EMMS
1.5.2	Process Pollution Data	1.9.1.1	EMMS
1.5.2	Process Pollution Data	1.9.1.1.1	EMMS
1.5.2	Process Pollution Data	1.9.1.1.2	EMMS
1.5.2	Process Pollution Data	1.9.1.1.3	EMMS
1.5.2	Process Pollution Data	1.9.1.2	EMMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.5.2	Process Pollution Data	1.9.1.2.1	EMMS
1.5.2	Process Pollution Data	1.9.1.2.2	EMMS
1.5.3	Update Pollution Display Map Data	1.9.0	EMMS
1.5.3	Update Pollution Display Map Data	1.9.1	EMMS
1.5.3	Update Pollution Display Map Data	1.9.1.2.1	EMMS
1.5.3	Update Pollution Display Map Data	1.9.1.2.2	EMMS
1.5.3	Update Pollution Display Map Data	1.9.2.2.1	EMMS
1.5.3	Update Pollution Display Map Data	1.9.2.2.3	EMMS
1.5.4	Manage Pollution State Data Store	1.8.2	EMMS
1.5.4	Manage Pollution State Data Store	1.8.2.2	EMMS
1.5.4	Manage Pollution State Data Store	1.8.2.2(b)	EMMS
1.5.4	Manage Pollution State Data Store	1.9.0	EMMS
1.5.4	Manage Pollution State Data Store	1.9.1	EMMS
1.5.4	Manage Pollution State Data Store	1.9.1.2	EMMS
1.5.4	Manage Pollution State Data Store	1.9.1.2.1	EMMS
1.5.4	Manage Pollution State Data Store	1.9.1.2.2	EMMS
1.5.4	Manage Pollution State Data Store	1.9.2.2.1	EMMS
1.5.4	Manage Pollution State Data Store	1.9.2.2.3	EMMS
1.5.5	Process Vehicle Pollution Data	1.0	RS
1.5.5	Process Vehicle Pollution Data	1.8	RS
1.5.5	Process Vehicle Pollution Data	1.8.1	RS
1.5.5	Process Vehicle Pollution Data	1.8.1.4	RS
1.5.5	Process Vehicle Pollution Data	1.8.1.4(b)	RS
1.5.5	Process Vehicle Pollution Data	1.8.2	RS
1.5.5	Process Vehicle Pollution Data	1.8.2.13	RS
1.5.5	Process Vehicle Pollution Data	1.8.2.13(b)	RS
1.5.5	Process Vehicle Pollution Data	1.8.3	RS
1.5.5	Process Vehicle Pollution Data	1.8.3.1	RS
1.5.5	Process Vehicle Pollution Data	1.8.3.1(d)	RS
1.5.5	Process Vehicle Pollution Data	1.9	RS
1.5.5	Process Vehicle Pollution Data	1.9.0	RS
1.5.5	Process Vehicle Pollution Data	1.9.2	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.1	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.1.1	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.1.2	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.1.4	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.1.5	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.2	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.2.1	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.2.2	RS
1.5.5	Process Vehicle Pollution Data	1.9.2.2.3	RS
1.5.6	Detect Roadside Pollution Levels	1.8	RS
1.5.6	Detect Roadside Pollution Levels	1.8.1	RS
1.5.6	Detect Roadside Pollution Levels	1.8.1.4	RS
1.5.6	Detect Roadside Pollution Levels	1.8.1.4(d)	RS
1.5.6	Detect Roadside Pollution Levels	1.9.0	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1.1	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1.1.1	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1.1.2	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1.1.3	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1.2	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1.2.1	RS
1.5.6	Detect Roadside Pollution Levels	1.9.1.2.2	RS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
1.5.7	Manage Pollution Data Log	NA	EMMS
1.5.8	Manage Pollution Reference Data Store	1.9.0	EMMS
1.5.8	Manage Pollution Reference Data Store	1.9.1	EMMS
1.5.8	Manage Pollution Reference Data Store	1.9.1.2	EMMS
1.5.8	Manage Pollution Reference Data Store	1.9.1.2.1	EMMS
1.5.8	Manage Pollution Reference Data Store	1.9.1.2.2	EMMS
1.5.8	Manage Pollution Reference Data Store	1.9.2.2.1	EMMS
1.5.8	Manage Pollution Reference Data Store	1.9.2.2.3	EMMS
1.5.9	Manage Pollution Archive Data	7.0	EMMS
1.5.9	Manage Pollution Archive Data	7.1	EMMS
1.5.9	Manage Pollution Archive Data	7.1.0	EMMS
1.5.9	Manage Pollution Archive Data	7.1.3	EMMS
1.5.9	Manage Pollution Archive Data	7.1.3.1	EMMS
1.5.9	Manage Pollution Archive Data	7.1.3.1.7	EMMS
1.5.9	Manage Pollution Archive Data	7.1.3.1.7(a)	EMMS
1.6.1.1	Detect Roadway Events	1.0	RS
1.6.1.1	Detect Roadway Events	1.10	RS
1.6.1.1	Detect Roadway Events	1.10.0	RS
1.6.1.1	Detect Roadway Events	1.10.1	RS
1.6.1.1	Detect Roadway Events	1.10.1.7	RS
1.6.1.1	Detect Roadway Events	1.10.2	RS
1.6.1.1	Detect Roadway Events	1.10.2.1	RS
1.6.1.1	Detect Roadway Events	1.10.2.1.1	RS
1.6.1.1	Detect Roadway Events	1.10.3	RS
1.6.1.1	Detect Roadway Events	1.10.3.3	RS
1.6.1.1	Detect Roadway Events	1.10.3.3.3	RS
1.6.1.1	Detect Roadway Events	1.3	RS
1.6.1.1	Detect Roadway Events	1.3.1	RS
1.6.1.1	Detect Roadway Events	1.3.1.2	RS
1.6.1.1	Detect Roadway Events	1.3.1.2.1	RS
1.6.1.1	Detect Roadway Events	1.3.1.2.1(d)	RS
1.6.1.1	Detect Roadway Events	1.3.1.2.1(d).1	RS
1.6.1.2.1	Control HRI Traffic Signals	1.0	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10.1	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10.1.7	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10.3	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10.3.1	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10.3.2	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10.3.3	RS
1.6.1.2.1	Control HRI Traffic Signals	1.10.3.3.1	RS
1.6.1.2.2	Control HRI Warnings and Barriers	1.0	RS
1.6.1.2.2	Control HRI Warnings and Barriers	1.10	RS
1.6.1.2.2	Control HRI Warnings and Barriers	1.10.3	RS
1.6.1.2.2	Control HRI Warnings and Barriers	1.10.3.3	RS
1.6.1.2.2	Control HRI Warnings and Barriers	1.10.3.3.2	RS
1.6.1.2.3	Provide SSR Device Controls	1.0	RS
1.6.1.2.3	Provide SSR Device Controls	1.10	RS
1.6.1.2.3	Provide SSR Device Controls	1.10.4	RS
1.6.1.2.3	Provide SSR Device Controls	1.10.4.1	RS
1.6.1.2.4	Provide HSR Device Controls	1.0	RS
1.6.1.2.4	Provide HSR Device Controls	1.10	RS
1.6.1.2.4	Provide HSR Device Controls	1.10.5	RS
1.6.1.2.4	Provide HSR Device Controls	1.10.5.1	RS

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P-Spec	Name	USR	Subsystem
1.6.1.2.4	Provide HSR Device Controls	1.10.5.2	RS
1.6.1.2.4	Provide HSR Device Controls	1.10.5.2.2	RS
1.6.1.2.5	Manage Device Control	1.0	RS
1.6.1.2.5	Manage Device Control	1.10	RS
1.6.1.2.5	Manage Device Control	1.10.4	RS
1.6.1.2.5	Manage Device Control	1.10.4.1	RS
1.6.1.2.6	Maintain Device State	1.0	RS
1.6.1.2.6	Maintain Device State	1.10	RS
1.6.1.2.6	Maintain Device State	1.10.4	RS
1.6.1.2.6	Maintain Device State	1.10.4.1	RS
1.6.1.3	Perform Equipment Self-Test	1.0	RS
1.6.1.3	Perform Equipment Self-Test	1.10	RS
1.6.1.3	Perform Equipment Self-Test	1.10.3	RS
1.6.1.3	Perform Equipment Self-Test	1.10.3.3	RS
1.6.1.3	Perform Equipment Self-Test	1.10.3.3.4	RS
1.6.1.4.1	Generate Alerts and Advisories	1.0	RS
1.6.1.4.1	Generate Alerts and Advisories	1.10	RS
1.6.1.4.1	Generate Alerts and Advisories	1.10.1	RS
1.6.1.4.1	Generate Alerts and Advisories	1.10.1.5	RS
1.6.1.4.2	Provide Closure Parameters	1.0	RS
1.6.1.4.2	Provide Closure Parameters	1.10	RS
1.6.1.4.2	Provide Closure Parameters	1.10.2	RS
1.6.1.4.2	Provide Closure Parameters	1.10.2.2	RS
1.6.1.4.2	Provide Closure Parameters	1.10.2.2.4	RS
1.6.1.4.3	Report Alerts and Advisories	1.0	RS
1.6.1.4.3	Report Alerts and Advisories	1.10	RS
1.6.1.4.3	Report Alerts and Advisories	1.10.3	RS
1.6.1.4.3	Report Alerts and Advisories	1.10.3.3	RS
1.6.1.4.3	Report Alerts and Advisories	1.10.3.3.5	RS
1.6.1.4.4	Report HRI Status on Approach	1.0	RS
1.6.1.4.4	Report HRI Status on Approach	1.10	RS
1.6.1.4.4	Report HRI Status on Approach	1.10.5	RS
1.6.1.4.4	Report HRI Status on Approach	1.10.5.2	RS
1.6.1.4.4	Report HRI Status on Approach	1.10.5.2.6	RS
1.6.1.5	Detect HRI Hazards	1.0	RS
1.6.1.5	Detect HRI Hazards	1.10	RS
1.6.1.5	Detect HRI Hazards	1.10.3	RS
1.6.1.5	Detect HRI Hazards	1.10.3.3	RS
1.6.1.5	Detect HRI Hazards	1.10.3.3.3	RS
1.6.1.5	Detect HRI Hazards	1.10.6	RS
1.6.1.6.1	Close HRI on Detection	1.0	RS
1.6.1.6.1	Close HRI on Detection	1.10	RS
1.6.1.6.1	Close HRI on Detection	1.10.1	RS
1.6.1.6.1	Close HRI on Detection	1.10.1.4	RS
1.6.1.6.1	Close HRI on Detection	1.10.5	RS
1.6.1.6.1	Close HRI on Detection	1.10.5.2	RS
1.6.1.6.1	Close HRI on Detection	1.10.5.2.1	RS
1.6.1.6.2	Detect Imminent Vehicle/Train Collision	1.0	RS
1.6.1.6.2	Detect Imminent Vehicle/Train Collision	1.10	RS
1.6.1.6.2	Detect Imminent Vehicle/Train Collision	1.10.3	RS
1.6.1.6.2	Detect Imminent Vehicle/Train Collision	1.10.3.1	RS
1.6.1.7.1	Control Vehicle Traffic at Passive HRI	1.0	RS
1.6.1.7.1	Control Vehicle Traffic at Passive HRI	1.10	RS
1.6.1.7.1	Control Vehicle Traffic at Passive HRI	1.10.4	RS

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P-Spec	Name	USR	Subsystem
1.6.1.7.1	Control Vehicle Traffic at Passive HRI	1.10.4.2	RS
1.6.1.7.1	Control Vehicle Traffic at Passive HRI	1.10.4.2.1	RS
1.6.1.7.2	Control Vehicle Traffic at Active HRI	1.0	RS
1.6.1.7.2	Control Vehicle Traffic at Active HRI	1.10	RS
1.6.1.7.2	Control Vehicle Traffic at Active HRI	1.10.3	RS
1.6.1.7.3	Close HRI on Command	1.0	RS
1.6.1.7.3	Close HRI on Command	1.10	RS
1.6.1.7.3	Close HRI on Command	1.10.4	RS
1.6.1.7.3	Close HRI on Command	1.10.4.1	RS
1.6.1.7.3	Close HRI on Command	1.10.5	RS
1.6.1.7.3	Close HRI on Command	1.10.5.2	RS
1.6.1.7.3	Close HRI on Command	1.10.5.2.1	RS
1.6.2.1	Exchange Data with Rail Operations	1.0	TMS
1.6.2.1	Exchange Data with Rail Operations	1.10	TMS
1.6.2.1	Exchange Data with Rail Operations	1.10.2	TMS
1.6.2.1	Exchange Data with Rail Operations	1.10.2.1	TMS
1.6.2.2	Manage Alerts and Advisories	1.0	TMS
1.6.2.2	Manage Alerts and Advisories	1.10	TMS
1.6.2.2	Manage Alerts and Advisories	1.10.2	TMS
1.6.2.2	Manage Alerts and Advisories	1.10.2.2	TMS
1.6.2.2	Manage Alerts and Advisories	1.10.2.2.1	TMS
1.6.2.2	Manage Alerts and Advisories	1.10.5	TMS
1.6.2.2	Manage Alerts and Advisories	1.10.5.2	TMS
1.6.2.2	Manage Alerts and Advisories	1.10.5.2.4	TMS
1.6.2.3	Manage Rail Traffic Control Data	1.0	TMS
1.6.2.3	Manage Rail Traffic Control Data	1.10	TMS
1.6.2.3	Manage Rail Traffic Control Data	1.10.2	TMS
1.6.2.3	Manage Rail Traffic Control Data	1.10.2.2	TMS
1.6.2.3	Manage Rail Traffic Control Data	1.10.2.2.2	TMS
1.6.3.1	Interact with Wayside Systems	1.0	RS
1.6.3.1	Interact with Wayside Systems	1.10	RS
1.6.3.1	Interact with Wayside Systems	1.10.1	RS
1.6.3.1	Interact with Wayside Systems	1.10.1.1	RS
1.6.3.1	Interact with Wayside Systems	1.10.1.2	RS
1.6.3.1	Interact with Wayside Systems	1.10.1.3	RS
1.6.3.1	Interact with Wayside Systems	1.10.1.6	RS
1.6.3.1	Interact with Wayside Systems	1.10.1.7	RS
1.6.3.1	Interact with Wayside Systems	1.10.2	RS
1.6.3.1	Interact with Wayside Systems	1.10.2.2	RS
1.6.3.2	Advise and Protect Train Crews	1.0	RS
1.6.3.2	Advise and Protect Train Crews	1.10	RS
1.6.3.2	Advise and Protect Train Crews	1.10.1	RS
1.6.3.2	Advise and Protect Train Crews	1.10.1.6	RS
1.6.3.3	Provide ATS Alerts	1.0	RS
1.6.3.3	Provide ATS Alerts	1.10	RS
1.6.3.3	Provide ATS Alerts	1.10.1	RS
1.6.3.3	Provide ATS Alerts	1.10.1.2	RS
1.6.3.3	Provide ATS Alerts	1.10.1.3	RS
1.6.3.3	Provide ATS Alerts	1.10.3	RS
1.6.3.3	Provide ATS Alerts	1.10.3.3	RS
1.6.3.3	Provide ATS Alerts	1.10.3.3.5	RS
1.6.3.3	Provide ATS Alerts	1.10.5	RS
1.6.3.3	Provide ATS Alerts	1.10.5.2	RS
1.6.3.3	Provide ATS Alerts	1.10.5.2.3	RS

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P-Spec	Name	USR	Subsystem
1.6.3.3	Provide ATS Alerts	1.10.5.2.5	RS
1.6.4.1	Manage HRI Closures	1.0	TMS
1.6.4.1	Manage HRI Closures	1.10	TMS
1.6.4.1	Manage HRI Closures	1.10.2	TMS
1.6.4.1	Manage HRI Closures	1.10.2.1	TMS
1.6.4.1	Manage HRI Closures	1.10.2.1.3	TMS
1.6.4.2	Exchange Data with Traffic Management	1.0	TMS
1.6.4.2	Exchange Data with Traffic Management	1.10	TMS
1.6.4.2	Exchange Data with Traffic Management	1.10.2	TMS
1.6.4.2	Exchange Data with Traffic Management	1.10.2.1	TMS
1.6.4.2	Exchange Data with Traffic Management	1.10.2.1.2	TMS
1.6.4.2	Exchange Data with Traffic Management	1.10.2.2	TMS
1.6.4.2	Exchange Data with Traffic Management	1.10.2.2.4	TMS
1.6.5.1	Provide Interactive Interface	1.0	RS
1.6.5.1	Provide Interactive Interface	1.10	RS
1.6.5.1	Provide Interactive Interface	1.10.2	RS
1.6.5.1	Provide Interactive Interface	1.10.2.2	RS
1.6.5.1	Provide Interactive Interface	1.10.2.2.1	RS
1.6.5.1	Provide Interactive Interface	1.10.2.2.2	RS
1.6.5.1	Provide Interactive Interface	1.10.2.2.3	RS
1.6.5.2	Determine HRI Status	1.0	RS
1.6.5.2	Determine HRI Status	1.10	RS
1.6.5.2	Determine HRI Status	1.10.3	RS
1.6.5.2	Determine HRI Status	1.10.3.1	RS
1.6.5.3	Maintain HRI Closure Data	1.0	RS
1.6.5.3	Maintain HRI Closure Data	1.10	RS
1.6.5.3	Maintain HRI Closure Data	1.10.2	RS
1.6.5.3	Maintain HRI Closure Data	1.10.2.1	RS
1.6.5.3	Maintain HRI Closure Data	1.10.2.1.3	RS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.0	FMS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.4	FMS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.4.1	FMS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.4.1(e)	FMS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.4.1(f)	FMS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.4.1(g)	FMS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.6	FMS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	4.6.1	FMS
2.1.2	Provide Commercial Fleet Static Route	4.0	FMS
2.1.2	Provide Commercial Fleet Static Route	4.4.0	FMS
2.1.2	Provide Commercial Fleet Static Route	4.4.1	FMS
2.1.2	Provide Commercial Fleet Static Route	4.4.1(c)	FMS
2.1.2	Provide Commercial Fleet Static Route	4.4.1(d)	FMS
2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	4.0	FMS
2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	4.6	FMS
2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	4.6.1	FMS
2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	4.6.2	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	4.0	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	4.6	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	4.6.0	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	4.6.1	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	4.6.2	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	4.6.2(a)	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	4.6.2(b)	FMS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.0	CVS

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P-Spec	Name	USR	Subsystem
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.6	CVS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.6.0	CVS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.6.1	CVS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.6.2	CVS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.6.2(a)	CVS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.6.2(b)	CVS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	4.6.2(c)	CVS
2.1.6	Manage Driver Instruction Store	NA	FMS
2.2.1	Manage CV Electronic Credential and Tax Filing Interface	4.0	FMS
2.2.1	Manage CV Electronic Credential and Tax Filing Interface	4.4	FMS
2.2.1	Manage CV Electronic Credential and Tax Filing Interface	4.4.1	FMS
2.2.1	Manage CV Electronic Credential and Tax Filing Interface	4.6	FMS
2.2.1	Manage CV Electronic Credential and Tax Filing Interface	4.6.1	FMS
2.2.2	Provide Vehicle Static Route	4.0	CVS
2.2.2	Provide Vehicle Static Route	4.4	CVS
2.2.2	Provide Vehicle Static Route	4.4.1	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.0	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.3	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.3.2	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.3.2.1	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.1	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.2	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3.1	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3.2	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3.2(a)	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3.2(b)	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3.2(c)	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3.2(d)	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.4.3.2(e)	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.6	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	4.6.1	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.0	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.6	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.6.0	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.6.1	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.6.2	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.6.2(a)	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.6.2(b)	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	4.6.2(c)	CVS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.0	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.1	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.1.1	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.1.1.4	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.1.2	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.1.2.2	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.3	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.3.1	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.3.1.2	CVCS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	4.3.1.7	CVCS
2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	4.0	CVCS
2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	4.1	CVCS
2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	4.1.1	CVCS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	4.1.1.8	CVCS
2.3.2.2	Process Screening Transactions	4.0	CVCS
2.3.2.2	Process Screening Transactions	4.1	CVCS
2.3.2.2	Process Screening Transactions	4.1.1	CVCS
2.3.2.2	Process Screening Transactions	4.1.1.4	CVCS
2.3.2.2	Process Screening Transactions	4.1.1.5	CVCS
2.3.2.2	Process Screening Transactions	4.1.1.7	CVCS
2.3.2.2	Process Screening Transactions	4.1.1.8	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.0	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.1	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.1.1.4	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.1.1.7	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2.2	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2.2.1	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2.2.7	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2.2.7(a)	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2.2.7(b)	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2.2.7(c)	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.2.2.7(d)	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.3	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.3.1	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.3.1.1	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.3.1.3	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.3.1.4	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.3.1.6	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	4.3.1.7	CVCS
2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	4.0	CVCS
2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	4.2	CVCS
2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	4.2.2	CVCS
2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	4.2.2.3	CVCS
2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	4.0	CVCS
2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	4.2	CVCS
2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	4.2.2	CVCS
2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	4.2.2.4	CVCS
2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	4.2.2.6	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.0	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1.1	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1.1.1	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1.1.2	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1.1.3	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1.1.4	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1.1.6	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.1.1.8	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.2	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.2.2	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.2.2.6	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.3	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.3.1	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.3.1.1	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.3.1.1(a)	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.3.1.1(b)	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.3.1.3	CVCS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.3.1.4	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.4	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	4.4.2	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.0	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2.2	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2.2.1	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2.2.2	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2.2.3	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2.2.6	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2.2.7	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	4.2.2.7(a)	CVCS
2.3.4	Detect Commercial Vehicle	4.0	CVCS
2.3.4	Detect Commercial Vehicle	4.1	CVCS
2.3.4	Detect Commercial Vehicle	4.1.0	CVCS
2.3.4	Detect Commercial Vehicle	4.1.1	CVCS
2.3.4	Detect Commercial Vehicle	4.1.1.7	CVCS
2.3.4	Detect Commercial Vehicle	4.2	CVCS
2.3.4	Detect Commercial Vehicle	4.2.0	CVCS
2.3.4	Detect Commercial Vehicle	4.2.1	CVCS
2.3.4	Detect Commercial Vehicle	4.2.3	CVCS
2.3.4	Detect Commercial Vehicle	4.2.3.2	CVCS
2.3.4	Detect Commercial Vehicle	4.2.3.5	CVCS
2.3.4	Detect Commercial Vehicle	4.3	CVCS
2.3.4	Detect Commercial Vehicle	4.3.0	CVCS
2.3.4	Detect Commercial Vehicle	4.3.1	CVCS
2.3.4	Detect Commercial Vehicle	4.3.1.7	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.0	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.1	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.1.1	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.1.1.4	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.1.1.4(a)	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.1.1.4(b)	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.1.1.4(c)	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.1.1.5	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.1	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.2	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.3	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.3(a)	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.3(b)	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.3(c)	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.4	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.2.2.6	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.3	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.3.1	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	4.3.1.5	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.0	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.2	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.2.2	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.2.2.4	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.3	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.3.1	CVCS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
2.3.6	Provide Commercial Vehicle Reports	4.3.1.3	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.4	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.4.2	CVCS
2.3.6	Provide Commercial Vehicle Reports	4.4.2(b)	CVCS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.0	CVS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.1	CVS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.1.1	CVS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.1.1.4	CVS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.3	CVS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.3.1	CVS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.3.1.2	CVS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	4.3.1.7	CVS
2.3.8	Provide Commercial Vehicle Border Screening	4.0	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.1	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.1.2	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.1.2.2	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.1	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.1(a)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.1(b)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.1(c)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(a)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(b)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(c)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(d)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(e)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(f)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(g)	CVCS
2.3.8	Provide Commercial Vehicle Border Screening	4.4.3.2(h)	CVCS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.0	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.2	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.2.3	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.2.3.3	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.2.3.7	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.3	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.3.1	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.3.1.6	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.3.2	CVS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	4.3.2.3	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.0	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.1	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.1.1	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.1.1.6	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.1.2	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.1.2.1	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.0	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.3	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.3.1	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.3.2	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.3.3	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.3.4	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.3.5	CVS

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P-Spec	Name	USR	Subsystem
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.2.3.6	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.3	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.3.1	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.3.1.2	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.3.2	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	4.3.2.1	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.2.3.1	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.2.3.2	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.2.3.4	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.2.3.5	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.3.2.1	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.3.2.1(a)	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.3.2.1(b)	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.3.2.1(c)	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.3.2.1(d)	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.3.2.1(e)	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.3.2.2	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	4.4.3.2	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.0	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1.1	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1.1.6	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1.1.6(a)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1.1.6(b)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1.1.6(c)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1.1.6(d)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.1.1.6(e)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.3	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.3.2	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.3.2.1	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.1	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.2	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.1	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.1(a)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.1(b)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.1(c)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(a)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(b)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(c)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(d)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(e)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(f)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(g)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.4.3.2(h)	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.6	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	4.6.1	CVS
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	4.2.3.1	CVS
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	4.2.3.2	CVS
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	4.2.3.4	CVS
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	4.2.3.5	CVS
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	4.3.2.1	CVS

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P-Spec	Name	USR	Subsystem
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	4.3.2.2	CVS
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	4.4.3.2	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	4.2.3.1	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	4.2.3.2	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	4.2.3.4	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	4.2.3.5	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	4.3.2.1	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	4.3.2.2	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	4.4.3.2	CVS
2.5.1	Manage Commercial Vehicle Trips and Clearances	4.0	CVAS
2.5.1	Manage Commercial Vehicle Trips and Clearances	4.6	CVAS
2.5.1	Manage Commercial Vehicle Trips and Clearances	4.6.1	CVAS
2.5.2	Obtain Electronic Credential and Tax Filing Payment	4.0	CVAS
2.5.2	Obtain Electronic Credential and Tax Filing Payment	4.6	CVAS
2.5.2	Obtain Electronic Credential and Tax Filing Payment	4.6.1	CVAS
2.5.3	Update Permits and Duties Store	4.0	CVAS
2.5.3	Update Permits and Duties Store	4.1	CVAS
2.5.3	Update Permits and Duties Store	4.1.1	CVAS
2.5.3	Update Permits and Duties Store	4.1.1.2	CVAS
2.5.3	Update Permits and Duties Store	4.4.0	CVAS
2.5.3	Update Permits and Duties Store	4.4.1	CVAS
2.5.3	Update Permits and Duties Store	4.4.1(a)	CVAS
2.5.3	Update Permits and Duties Store	4.4.1(b)	CVAS
2.5.3	Update Permits and Duties Store	4.4.3	CVAS
2.5.3	Update Permits and Duties Store	4.4.3.2	CVAS
2.5.4	Communicate with Other Commercial Vehicle Administration System	4.0	CVAS
2.5.4	Communicate with Other Commercial Vehicle Administration System	4.1	CVAS
2.5.4	Communicate with Other Commercial Vehicle Administration System	4.1.1	CVAS
2.5.4	Communicate with Other Commercial Vehicle Administration System	4.1.1.3	CVAS
2.5.4	Communicate with Other Commercial Vehicle Administration System	4.6	CVAS
2.5.4	Communicate with Other Commercial Vehicle Administration System	4.6.1	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.0	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.1	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.1.1	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.1.1.8	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.2	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.2.2	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.2.2.1	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.2.2.4	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.4.0	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.4.1	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.4.1(a)	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.4.1(b)	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	4.4.2	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.0	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.1	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.1.1	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.1.1.8	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2.1	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2.4	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2.5	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2.5(a)	CVAS

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P-Spec	Name	USR	Subsystem
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2.5(b)	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2.5(c)	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	4.2.2.5(d)	CVAS
2.5.7	Process Commercial Vehicle Violations	4.0	CVAS
2.5.7	Process Commercial Vehicle Violations	4.2.0	CVAS
2.5.7	Process Commercial Vehicle Violations	4.2.1	CVAS
2.5.7	Process Commercial Vehicle Violations	4.2.2	CVAS
2.5.7	Process Commercial Vehicle Violations	4.4	CVAS
2.5.7	Process Commercial Vehicle Violations	4.4.3	CVAS
2.5.7	Process Commercial Vehicle Violations	4.4.3.2	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.0	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.1	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.1.1	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.1.1.8	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.2	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.2.2	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.2.2.1	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.2.2.4	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.2.2.5	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.4	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.4.2	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.4.2(a)	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.4.2(c)	CVAS
2.5.8	Process Data Received from Roadside Facilities	4.4.2(d)	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.0	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1.6	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1.6(a)	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1.6(b)	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1.6(c)	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1.6(d)	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1.6(e)	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	7.1.3.1.6(f)	CVAS
2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	4.0	FMS
2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	4.1	FMS
2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	4.1.2	FMS
2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	4.1.2.2	FMS
2.6.2	Transmit Commercial Vehicle Tag Data	4.0	CVS
2.6.2	Transmit Commercial Vehicle Tag Data	4.1	CVS
2.6.2	Transmit Commercial Vehicle Tag Data	4.1.2	CVS
2.6.2	Transmit Commercial Vehicle Tag Data	4.1.2.1	CVS
2.6.2	Transmit Commercial Vehicle Tag Data	4.1.2.2	CVS
2.6.3	Provide Commercial Driver Tag Data Interface	4.0	CVS
2.6.3	Provide Commercial Driver Tag Data Interface	4.1	CVS
2.6.3	Provide Commercial Driver Tag Data Interface	4.1.2	CVS
2.6.3	Provide Commercial Driver Tag Data Interface	4.1.2.2	CVS
2.6.4	Provide Lock Tag Data Interface	4.0	CVS
2.6.4	Provide Lock Tag Data Interface	4.1	CVS
2.6.4	Provide Lock Tag Data Interface	4.1.2	CVS
2.6.4	Provide Lock Tag Data Interface	4.1.2.2	CVS
2.6.5	Manage Commercial Vehicle Tag Data Store	4.0	CVS
2.6.5	Manage Commercial Vehicle Tag Data Store	4.1	CVS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
2.6.5	Manage Commercial Vehicle Tag Data Store	4.1.2	CVS
2.6.5	Manage Commercial Vehicle Tag Data Store	4.1.2.1	CVS
2.6.5	Manage Commercial Vehicle Tag Data Store	4.1.2.2	CVS
2.7	Manage Cargo	4.0	FMS
2.7	Manage Cargo	4.2	FMS
2.7	Manage Cargo	4.2.2	FMS
2.7	Manage Cargo	4.2.2.7	FMS
2.7	Manage Cargo	4.2.2.7(d)	FMS
3.1.1	Produce Collision and Crash Avoidance Data	6.0	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.0	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.1.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.1.2.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.2.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.2.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.2.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.2.2.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.3	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.3.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.3.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.3.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.3.2.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.3.3	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.1.3.3.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.0	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.1.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.1.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.1.2.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.2.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.2.2.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.3	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.3.0	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.3.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.3.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.3.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.3.2.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.5	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.5.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.5.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.5.1.1.2	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.6	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.6.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.6.1.1	VS
3.1.1	Produce Collision and Crash Avoidance Data	6.6.1.2	VS
3.1.2	Carry-out Safety Analysis	6.0	VS
3.1.2	Carry-out Safety Analysis	6.1.2	VS
3.1.2	Carry-out Safety Analysis	6.1.2.1	VS
3.1.2	Carry-out Safety Analysis	6.5	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
3.1.2	Carry-out Safety Analysis	6.5.1	VS
3.1.2	Carry-out Safety Analysis	6.5.1.1	VS
3.1.2	Carry-out Safety Analysis	6.5.1.1.1	VS
3.1.2	Carry-out Safety Analysis	6.5.1.1.2	VS
3.1.2	Carry-out Safety Analysis	6.5.1.1.3	VS
3.1.2	Carry-out Safety Analysis	6.5.2.1.1	VS
3.1.2	Carry-out Safety Analysis	6.5.2.1.2	VS
3.1.2	Carry-out Safety Analysis	6.5.3	VS
3.1.2	Carry-out Safety Analysis	6.5.3.1	VS
3.1.2	Carry-out Safety Analysis	6.5.3.1.1	VS
3.1.2	Carry-out Safety Analysis	6.5.3.1.2	VS
3.1.2	Carry-out Safety Analysis	6.7	VS
3.1.2	Carry-out Safety Analysis	6.7.0	VS
3.1.2	Carry-out Safety Analysis	6.7.1	VS
3.1.2	Carry-out Safety Analysis	6.7.1.3	VS
3.1.2	Carry-out Safety Analysis	6.7.1.3.1	VS
3.1.3	Process Vehicle On-board Data	1.6	VS
3.1.3	Process Vehicle On-board Data	1.6.4	VS
3.1.3	Process Vehicle On-board Data	1.6.4(a)	VS
3.1.3	Process Vehicle On-board Data	6.0	VS
3.1.3	Process Vehicle On-board Data	6.1	VS
3.1.3	Process Vehicle On-board Data	6.1.0	VS
3.1.3	Process Vehicle On-board Data	6.1.1	VS
3.1.3	Process Vehicle On-board Data	6.1.1.1	VS
3.1.3	Process Vehicle On-board Data	6.1.1.1.1	VS
3.1.3	Process Vehicle On-board Data	6.1.1.1.1.1	VS
3.1.3	Process Vehicle On-board Data	6.1.1.1.1.2	VS
3.1.3	Process Vehicle On-board Data	6.1.1.1.2	VS
3.1.3	Process Vehicle On-board Data	6.1.1.2	VS
3.1.3	Process Vehicle On-board Data	6.1.1.2.1	VS
3.1.3	Process Vehicle On-board Data	6.1.1.3	VS
3.1.3	Process Vehicle On-board Data	6.1.1.3.1	VS
3.1.3	Process Vehicle On-board Data	6.1.2	VS
3.1.3	Process Vehicle On-board Data	6.1.2.1	VS
3.1.3	Process Vehicle On-board Data	6.1.2.1.1	VS
3.1.3	Process Vehicle On-board Data	6.1.2.2.1	VS
3.1.3	Process Vehicle On-board Data	6.1.2.3.1	VS
3.1.3	Process Vehicle On-board Data	6.2	VS
3.1.3	Process Vehicle On-board Data	6.2.0	VS
3.1.3	Process Vehicle On-board Data	6.2.1	VS
3.1.3	Process Vehicle On-board Data	6.2.1.1	VS
3.1.3	Process Vehicle On-board Data	6.2.1.1.1	VS
3.1.3	Process Vehicle On-board Data	6.2.1.2	VS
3.1.3	Process Vehicle On-board Data	6.2.1.2.2	VS
3.1.3	Process Vehicle On-board Data	6.2.1.3	VS
3.1.3	Process Vehicle On-board Data	6.2.1.3.1	VS
3.1.3	Process Vehicle On-board Data	6.2.2	VS
3.1.3	Process Vehicle On-board Data	6.2.2.1	VS
3.1.3	Process Vehicle On-board Data	6.2.2.1.1	VS
3.1.3	Process Vehicle On-board Data	6.2.2.2	VS
3.1.3	Process Vehicle On-board Data	6.2.2.2.1	VS
3.1.3	Process Vehicle On-board Data	6.2.2.3	VS
3.1.3	Process Vehicle On-board Data	6.2.2.3.1	VS
3.1.3	Process Vehicle On-board Data	6.3	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
3.1.3	Process Vehicle On-board Data	6.3.0	VS
3.1.3	Process Vehicle On-board Data	6.3.1	VS
3.1.3	Process Vehicle On-board Data	6.3.1.1	VS
3.1.3	Process Vehicle On-board Data	6.3.2	VS
3.1.3	Process Vehicle On-board Data	6.3.2.1	VS
3.1.3	Process Vehicle On-board Data	6.3.3	VS
3.1.3	Process Vehicle On-board Data	6.3.3.1	VS
3.1.3	Process Vehicle On-board Data	6.5	VS
3.1.3	Process Vehicle On-board Data	6.5.1	VS
3.1.3	Process Vehicle On-board Data	6.5.1.1	VS
3.1.3	Process Vehicle On-board Data	6.5.1.1.1	VS
3.1.3	Process Vehicle On-board Data	6.5.1.1.2	VS
3.1.3	Process Vehicle On-board Data	6.5.1.1.3	VS
3.1.3	Process Vehicle On-board Data	6.5.2	VS
3.1.3	Process Vehicle On-board Data	6.5.2.1	VS
3.1.3	Process Vehicle On-board Data	6.5.2.1.1	VS
3.1.3	Process Vehicle On-board Data	6.5.2.1.2	VS
3.1.3	Process Vehicle On-board Data	6.5.3	VS
3.1.3	Process Vehicle On-board Data	6.5.3.1	VS
3.1.3	Process Vehicle On-board Data	6.5.3.1.1	VS
3.1.3	Process Vehicle On-board Data	6.6	VS
3.1.3	Process Vehicle On-board Data	6.6.1	VS
3.1.3	Process Vehicle On-board Data	6.6.1.1	VS
3.1.3	Process Vehicle On-board Data	6.6.1.2	VS
3.1.3	Process Vehicle On-board Data	6.7	VS
3.1.3	Process Vehicle On-board Data	6.7.2	VS
3.1.3	Process Vehicle On-board Data	6.7.2.1	VS
3.1.3	Process Vehicle On-board Data	6.7.2.3	VS
3.2.1	Provide Driver Interface	6.0	VS
3.2.1	Provide Driver Interface	6.6	VS
3.2.1	Provide Driver Interface	6.6.0	VS
3.2.1	Provide Driver Interface	6.6.1	VS
3.2.1	Provide Driver Interface	6.6.1.1	VS
3.2.1	Provide Driver Interface	6.6.1.2	VS
3.2.2	Provide AHS Control	6.0	VS
3.2.2	Provide AHS Control	6.7	VS
3.2.2	Provide AHS Control	6.7.1	VS
3.2.2	Provide AHS Control	6.7.1.1	VS
3.2.2	Provide AHS Control	6.7.1.1.1	VS
3.2.2	Provide AHS Control	6.7.1.1.2	VS
3.2.2	Provide AHS Control	6.7.1.1.3	VS
3.2.2	Provide AHS Control	6.7.1.2	VS
3.2.2	Provide AHS Control	6.7.1.2.1	VS
3.2.2	Provide AHS Control	6.7.1.2.3	VS
3.2.2	Provide AHS Control	6.7.1.3	VS
3.2.2	Provide AHS Control	6.7.1.3.2	VS
3.2.2	Provide AHS Control	6.7.2	VS
3.2.2	Provide AHS Control	6.7.2.1	VS
3.2.2	Provide AHS Control	6.7.2.2	VS
3.2.3.1	Provide Command Interface	6.0	VS
3.2.3.1	Provide Command Interface	6.7	VS
3.2.3.1	Provide Command Interface	6.7.1	VS
3.2.3.1	Provide Command Interface	6.7.1.2	VS
3.2.3.1	Provide Command Interface	6.7.1.2.1	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
3.2.3.1	Provide Command Interface	6.7.1.2.2	VS
3.2.3.1	Provide Command Interface	6.7.1.2.3	VS
3.2.3.1	Provide Command Interface	6.7.2	VS
3.2.3.1	Provide Command Interface	6.7.2.1	VS
3.2.3.2	Manage Platoon Following	6.0	VS
3.2.3.2	Manage Platoon Following	6.1	VS
3.2.3.2	Manage Platoon Following	6.1.1	VS
3.2.3.2	Manage Platoon Following	6.1.1.1	VS
3.2.3.2	Manage Platoon Following	6.1.1.1.1	VS
3.2.3.2	Manage Platoon Following	6.1.1.1.2.1	VS
3.2.3.2	Manage Platoon Following	6.1.1.1.2.2	VS
3.2.3.2	Manage Platoon Following	6.7	VS
3.2.3.2	Manage Platoon Following	6.7.1	VS
3.2.3.2	Manage Platoon Following	6.7.1.2	VS
3.2.3.2	Manage Platoon Following	6.7.1.2.2	VS
3.2.3.2	Manage Platoon Following	6.7.1.2.3	VS
3.2.3.2	Manage Platoon Following	6.7.2	VS
3.2.3.2	Manage Platoon Following	6.7.2.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.0	VS
3.2.3.3	Process data for Vehicle Actuators	6.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.1.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.1.2	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.1.2.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.1.2.2	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.1.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.1.3.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.1.3.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.2	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.2.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.2.3.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.3.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.1.3.3.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.2	VS
3.2.3.3	Process data for Vehicle Actuators	6.2.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.2.1.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.2.1.3.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.2.2	VS
3.2.3.3	Process data for Vehicle Actuators	6.2.2.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.2.2.3.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.3.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.3.3.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.6	VS
3.2.3.3	Process data for Vehicle Actuators	6.6.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.6.1.2	VS
3.2.3.3	Process data for Vehicle Actuators	6.7	VS
3.2.3.3	Process data for Vehicle Actuators	6.7.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.7.1.2	VS
3.2.3.3	Process data for Vehicle Actuators	6.7.1.2.3	VS
3.2.3.3	Process data for Vehicle Actuators	6.7.2	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
3.2.3.3	Process data for Vehicle Actuators	6.7.2.1	VS
3.2.3.3	Process data for Vehicle Actuators	6.7.2.3	VS
3.2.3.4.1	Provide Speed Servo Control	6.0	VS
3.2.3.4.1	Provide Speed Servo Control	6.1	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1.1	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1.1.1	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1.1.2	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1.1.2.1	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1.1.2.2	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1.1.3	VS
3.2.3.4.1	Provide Speed Servo Control	6.1.1.1.3.1	VS
3.2.3.4.1	Provide Speed Servo Control	6.7	VS
3.2.3.4.1	Provide Speed Servo Control	6.7.1	VS
3.2.3.4.1	Provide Speed Servo Control	6.7.1.2	VS
3.2.3.4.1	Provide Speed Servo Control	6.7.1.2.3	VS
3.2.3.4.1	Provide Speed Servo Control	6.7.2	VS
3.2.3.4.1	Provide Speed Servo Control	6.7.2.3	VS
3.2.3.4.2	Provide Headway Servo Control	6.0	VS
3.2.3.4.2	Provide Headway Servo Control	6.1	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1.1	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1.1.1	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1.1.2	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1.1.2.1	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1.1.2.2	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1.1.3	VS
3.2.3.4.2	Provide Headway Servo Control	6.1.1.1.3.1	VS
3.2.3.4.2	Provide Headway Servo Control	6.7	VS
3.2.3.4.2	Provide Headway Servo Control	6.7.1	VS
3.2.3.4.2	Provide Headway Servo Control	6.7.1.2	VS
3.2.3.4.2	Provide Headway Servo Control	6.7.1.2.3	VS
3.2.3.4.2	Provide Headway Servo Control	6.7.2	VS
3.2.3.4.2	Provide Headway Servo Control	6.7.2.3	VS
3.2.3.4.3	Provide Lane Servo Control	6.0	VS
3.2.3.4.3	Provide Lane Servo Control	6.7	VS
3.2.3.4.3	Provide Lane Servo Control	6.7.1	VS
3.2.3.4.3	Provide Lane Servo Control	6.7.1.2	VS
3.2.3.4.3	Provide Lane Servo Control	6.7.1.2.3	VS
3.2.3.4.3	Provide Lane Servo Control	6.7.2	VS
3.2.3.4.3	Provide Lane Servo Control	6.7.2.3	VS
3.2.3.4.4	Provide Change Lane Servo Control	6.0	VS
3.2.3.4.4	Provide Change Lane Servo Control	6.7	VS
3.2.3.4.4	Provide Change Lane Servo Control	6.7.1	VS
3.2.3.4.4	Provide Change Lane Servo Control	6.7.1.2	VS
3.2.3.4.4	Provide Change Lane Servo Control	6.7.1.2.3	VS
3.2.3.4.4	Provide Change Lane Servo Control	6.7.2	VS
3.2.3.4.4	Provide Change Lane Servo Control	6.7.2.3	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.1.0	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.1.1	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.1.1.1	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.1.1.1.1	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.1.1.1.2	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.7	VS

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P-Spec	Name	USR	Subsystem
3.2.3.4.5	Provide Vehicle Control Data Interface	6.7.1	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.7.1.2	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.7.1.2.3	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.7.2	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	6.7.2.3	VS
3.2.3.5	Process Vehicle Sensor Data	6.0	VS
3.2.3.5	Process Vehicle Sensor Data	6.7	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1.1	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1.1.3	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1.2	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1.2.1	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1.2.3	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1.3	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.1.3.2	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.2	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.2.1	VS
3.2.3.5	Process Vehicle Sensor Data	6.7.2.3	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.0	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1.1	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1.1.3	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1.2	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1.2.1	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1.2.3	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1.3	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.1.3.2	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.2	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.2.1	VS
3.2.3.6	Communicate with other Platoon Vehicles	6.7.2.3	VS
3.2.4	Process Sensor Data for AHS input	6.0	VS
3.2.4	Process Sensor Data for AHS input	6.7	VS
3.2.4	Process Sensor Data for AHS input	6.7.1	VS
3.2.4	Process Sensor Data for AHS input	6.7.1.1	VS
3.2.4	Process Sensor Data for AHS input	6.7.1.1.3	VS
3.2.4	Process Sensor Data for AHS input	6.7.1.2	VS
3.2.4	Process Sensor Data for AHS input	6.7.1.2.1	VS
3.2.4	Process Sensor Data for AHS input	6.7.1.2.3	VS
3.2.4	Process Sensor Data for AHS input	6.7.1.3	VS
3.2.4	Process Sensor Data for AHS input	6.7.1.3.2	VS
3.2.4	Process Sensor Data for AHS input	6.7.2	VS
3.2.4	Process Sensor Data for AHS input	6.7.2.1	VS
3.2.4	Process Sensor Data for AHS input	6.7.2.3	VS
3.2.5	Check Vehicle for AHS eligibility	6.0	RS
3.2.5	Check Vehicle for AHS eligibility	6.7	RS
3.2.5	Check Vehicle for AHS eligibility	6.7.0	RS
3.2.5	Check Vehicle for AHS eligibility	6.7.1	RS
3.2.5	Check Vehicle for AHS eligibility	6.7.1.1	RS
3.2.5	Check Vehicle for AHS eligibility	6.7.1.1.2	RS
3.2.6	Manage AHS Check-in and Check-out	6.0	RS
3.2.6	Manage AHS Check-in and Check-out	6.7	RS
3.2.6	Manage AHS Check-in and Check-out	6.7.0	RS
3.2.6	Manage AHS Check-in and Check-out	6.7.1	RS

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P-Spec	Name	USR	Subsystem
3.2.6	Manage AHS Check-in and Check-out	6.7.1.1	RS
3.2.6	Manage AHS Check-in and Check-out	6.7.1.1.1	RS
3.2.6	Manage AHS Check-in and Check-out	6.7.1.1.2	RS
3.2.6	Manage AHS Check-in and Check-out	6.7.1.1.3	RS
3.2.7	Manage AHS Operations	6.0	TMS
3.2.7	Manage AHS Operations	6.7	TMS
3.2.7	Manage AHS Operations	6.7.0	TMS
3.2.7	Manage AHS Operations	6.7.1	TMS
3.2.7	Manage AHS Operations	6.7.1.1	TMS
3.2.7	Manage AHS Operations	6.7.1.1.1	TMS
3.2.7	Manage AHS Operations	6.7.1.1.2	TMS
3.2.7	Manage AHS Operations	6.7.1.1.3	TMS
3.3.1	Provide Cargo Data for Incident Notification	4.0	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5.0	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5.1	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5.1.1	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5.1.2	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5.1.2(a)	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5.1.2(b)	CVS
3.3.1	Provide Cargo Data for Incident Notification	4.5.1.2(c)	CVS
3.3.1	Provide Cargo Data for Incident Notification	5.0	CVS
3.3.1	Provide Cargo Data for Incident Notification	5.1	CVS
3.3.1	Provide Cargo Data for Incident Notification	5.1.2	CVS
3.3.1	Provide Cargo Data for Incident Notification	5.1.2.1	CVS
3.3.1	Provide Cargo Data for Incident Notification	5.1.2.1.2	CVS
3.3.1	Provide Cargo Data for Incident Notification	5.1.2.2	CVS
3.3.1	Provide Cargo Data for Incident Notification	5.1.2.2(c)	CVS
3.3.2	Provide Communications Function	5.0	VS
3.3.2	Provide Communications Function	5.1	VS
3.3.2	Provide Communications Function	5.1.1	VS
3.3.2	Provide Communications Function	5.1.1.3	VS
3.3.3	Build Automatic Collision Notification Message	5.0	VS
3.3.3	Build Automatic Collision Notification Message	5.1	VS
3.3.3	Build Automatic Collision Notification Message	5.1.1	VS
3.3.3	Build Automatic Collision Notification Message	5.1.1.4	VS
3.3.3	Build Automatic Collision Notification Message	5.1.2	VS
3.3.3	Build Automatic Collision Notification Message	5.1.2.1	VS
3.3.3	Build Automatic Collision Notification Message	5.1.2.1.1	VS
3.3.3	Build Automatic Collision Notification Message	5.1.2.1.2	VS
3.3.3	Build Automatic Collision Notification Message	5.1.2.2	VS
3.3.3	Build Automatic Collision Notification Message	5.1.2.2(a)	VS
3.4	Enhance Driver's Vision	6.0	VS
3.4	Enhance Driver's Vision	6.4	VS
3.4	Enhance Driver's Vision	6.4.0	VS
3.4	Enhance Driver's Vision	6.4.1	VS
4.1.1	Process Transit Vehicle Sensor Trip Data	2.0	TRVS
4.1.1	Process Transit Vehicle Sensor Trip Data	2.1.0	TRVS
4.1.1	Process Transit Vehicle Sensor Trip Data	2.1.1	TRVS
4.1.1	Process Transit Vehicle Sensor Trip Data	2.1.1.1	TRVS
4.1.1	Process Transit Vehicle Sensor Trip Data	2.1.3	TRVS
4.1.1	Process Transit Vehicle Sensor Trip Data	2.1.3.1	TRVS
4.1.1	Process Transit Vehicle Sensor Trip Data	2.1.3.1.1	TRVS
4.1.2.1	Determine Transit Vehicle Deviation and ETA	2.0	TRVS

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P-Spec	Name	USR	Subsystem
4.1.2.1	Determine Transit Vehicle Deviation and ETA	2.1.0	TRVS
4.1.2.1	Determine Transit Vehicle Deviation and ETA	2.1.1	TRVS
4.1.2.1	Determine Transit Vehicle Deviation and ETA	2.1.1.2	TRVS
4.1.2.1	Determine Transit Vehicle Deviation and ETA	2.1.1.2.1	TRVS
4.1.2.1	Determine Transit Vehicle Deviation and ETA	2.1.1.2.1.1	TRVS
4.1.2.1	Determine Transit Vehicle Deviation and ETA	2.1.1.2.4	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.0	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.1.0	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.1.1	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.1.1.2	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.1.1.2.1	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.1.1.2.1.4	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.1.1.2.2	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	2.1.1.2.4	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.0	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.0	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.1	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.1.2	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.1.2.1	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.1.2.1.3	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.1.2.1.4	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.1.2.1.4(a)	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	2.1.1.2.1.4(b)	TRVS
4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	2.0	TRMS
4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	2.1.0	TRMS
4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	2.1.2	TRMS
4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	2.1.2.2	TRMS
4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	2.1.2.2.4	TRMS
4.1.2.5	Request Transit Vehicle Preemptions	2.0	TRVS
4.1.2.5	Request Transit Vehicle Preemptions	2.1.0	TRVS
4.1.2.5	Request Transit Vehicle Preemptions	2.1.1	TRVS
4.1.2.5	Request Transit Vehicle Preemptions	2.1.1.2	TRVS
4.1.2.5	Request Transit Vehicle Preemptions	2.1.1.2.1	TRVS
4.1.2.5	Request Transit Vehicle Preemptions	2.1.1.2.1.4	TRVS
4.1.2.5	Request Transit Vehicle Preemptions	2.1.1.2.2	TRVS
4.1.2.5	Request Transit Vehicle Preemptions	2.1.1.2.3	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.0	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.0	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.1	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.1.1	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.1.1(d)	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.1.1(f)	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.2	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.2.2	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.2.2.1	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.2.2.1(a)	TRVS
4.1.3	Provide Transit Vehicle Location Data	2.1.2.2.1(b)	TRVS
4.1.4	Manage Transit Vehicle Deviations	2.0	TRMS
4.1.4	Manage Transit Vehicle Deviations	2.1.0	TRMS
4.1.4	Manage Transit Vehicle Deviations	2.1.1	TRMS
4.1.4	Manage Transit Vehicle Deviations	2.1.1.2	TRMS
4.1.4	Manage Transit Vehicle Deviations	2.1.1.2.1	TRMS
4.1.4	Manage Transit Vehicle Deviations	2.1.1.2.1.4	TRMS
4.1.4	Manage Transit Vehicle Deviations	2.1.1.2.2	TRMS

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P-Spec	Name	USR	Subsystem
4.1.4	Manage Transit Vehicle Deviations	2.1.1.2.3	TRMS
4.1.4	Manage Transit Vehicle Deviations	2.1.1.2.4	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.0	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.1.0	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.1.1	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.1.1.1	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.1.1.2	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.1.1.2.1	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.1.1.2.1.2	TRMS
4.1.5	Provide Transit Vehicle Status Information	2.1.1.2.1.3	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.0	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.0	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.1	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.1(a)	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.1(b)	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.1(e)	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.2	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.2.1	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.2.1.1	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.1.2.4	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.2	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.2.2	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.2.2.1	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.2.2.1(c)	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.3	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.3.2	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.3.2.3	TRMS
4.1.6	Manage Transit Vehicle Operations Data	2.1.3.2.3(b)	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.0	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.1.0	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.1.1	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.1.2	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.1.2.2	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.1.2.2.4	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.2.0	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.2.1	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.2.1.1	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.2.1.1.2	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.2.1.1.3	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	2.2.1.1.4	TRMS
4.1.8	Provide Transit Operations Data Distribution Interface	2.0	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	2.1.0	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	2.1.1	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	2.1.2	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	2.1.2.2	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	2.1.2.2.1	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	2.1.2.2.5	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	7.0	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	7.1	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	7.1.0	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	7.1.3	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	7.1.3.1	ISP

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P-Spec	Name	USR	Subsystem
4.1.8	Provide Transit Operations Data Distribution Interface	7.1.3.1.8	ISP
4.1.8	Provide Transit Operations Data Distribution Interface	7.1.3.1.8(g)	ISP
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.0	TRVS
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.1.0	TRVS
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.1.1	TRVS
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.1.1.1	TRVS
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.1.1.1(c)	TRVS
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.1.3	TRVS
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.1.3.1	TRVS
4.1.9	Process Transit Vehicle Sensor Maintenance Data	2.1.3.1.1	TRVS
4.2.1.1	Process Demand Responsive Transit Trip Request	2.0	TRMS
4.2.1.1	Process Demand Responsive Transit Trip Request	2.3.0	TRMS
4.2.1.1	Process Demand Responsive Transit Trip Request	2.3.1	TRMS
4.2.1.1	Process Demand Responsive Transit Trip Request	2.3.1.1	TRMS
4.2.1.1	Process Demand Responsive Transit Trip Request	2.3.1.2	TRMS
4.2.1.1	Process Demand Responsive Transit Trip Request	2.3.2	TRMS
4.2.1.1	Process Demand Responsive Transit Trip Request	2.3.2.7	TRMS
4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	2.0	TRMS
4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	2.3.0	TRMS
4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	2.3.2	TRMS
4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	2.3.2.6	TRMS
4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	2.3.2.7	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.0	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.0	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.1	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.10	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.2	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.3	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.4	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.5	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.6	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.7	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.8	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.2.9	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.4	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	2.3.4.2	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.0	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.0	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.1	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.1.3	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.2	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.2.2	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.2.3	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.4	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	2.3.4.3	TRMS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.0	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.0	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.1	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.1(a)	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.1(b)	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.1(c)	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.2	TRVS

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P-Spec	Name	USR	Subsystem
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.2(a)	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.2(b)	TRVS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	2.3.3.3	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.0	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.0	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.1	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.2	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.2(a)	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.2(b)	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.3	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.4	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.4(a)	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	2.3.5.4(b)	TRVS
4.2.2	Provide Transit Plans Store Interface	2.0	TRMS
4.2.2	Provide Transit Plans Store Interface	2.1.0	TRMS
4.2.2	Provide Transit Plans Store Interface	2.1.2	TRMS
4.2.2	Provide Transit Plans Store Interface	2.1.2.1	TRMS
4.2.2	Provide Transit Plans Store Interface	2.1.2.1.1	TRMS
4.2.2	Provide Transit Plans Store Interface	2.2.0	TRMS
4.2.2	Provide Transit Plans Store Interface	2.2.1	TRMS
4.2.2	Provide Transit Plans Store Interface	2.2.1.1	TRMS
4.2.2	Provide Transit Plans Store Interface	2.2.1.1.4	TRMS
4.2.3.1	Generate Transit Routes	2.0	TRMS
4.2.3.1	Generate Transit Routes	2.1.0	TRMS
4.2.3.1	Generate Transit Routes	2.1.2	TRMS
4.2.3.1	Generate Transit Routes	2.1.2.1	TRMS
4.2.3.2	Generate Schedules	2.0	TRMS
4.2.3.2	Generate Schedules	2.1.0	TRMS
4.2.3.2	Generate Schedules	2.1.2	TRMS
4.2.3.2	Generate Schedules	2.1.2.1	TRMS
4.2.3.2	Generate Schedules	2.1.2.1.1	TRMS
4.2.3.2	Generate Schedules	2.1.2.2	TRMS
4.2.3.2	Generate Schedules	2.1.2.2.1	TRMS
4.2.3.2	Generate Schedules	2.1.2.2.2	TRMS
4.2.3.2	Generate Schedules	2.1.2.2.3	TRMS
4.2.3.2	Generate Schedules	2.1.2.2.5	TRMS
4.2.3.3	Produce Transit Service Data for External Use	2.0	TRMS
4.2.3.3	Produce Transit Service Data for External Use	2.3.0	TRMS
4.2.3.3	Produce Transit Service Data for External Use	2.3.2	TRMS
4.2.3.3	Produce Transit Service Data for External Use	2.3.2.2	TRMS
4.2.3.3	Produce Transit Service Data for External Use	2.3.2.3	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.0	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.0	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.1	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.1.1	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.1.2	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.2	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.2.2	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.2.4	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.2.4(a)	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	2.1.2.2.4(b)	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.0	TRMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
4.2.3.5	Manage Transit Operational Data Store	2.1.0	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.1.2	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.1.2.1	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.1.2.1.1	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.2.0	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.2.1	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.2.1.1	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.2.1.1.4	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.3.0	TRMS
4.2.3.5	Manage Transit Operational Data Store	2.3.4	TRMS
4.2.3.6	Produce Transit Service Data for Manage Transit Use	2.0	TRMS
4.2.3.6	Produce Transit Service Data for Manage Transit Use	2.3.0	TRMS
4.2.3.6	Produce Transit Service Data for Manage Transit Use	2.3.2	TRMS
4.2.3.6	Produce Transit Service Data for Manage Transit Use	2.3.2.2	TRMS
4.2.3.6	Produce Transit Service Data for Manage Transit Use	2.3.2.3	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.0	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.0	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.1	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.1.2	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.1.2(c)	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.1.3	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.1.3(c)	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.1.4	TRMS
4.2.3.7	Provide Interface for Other TRM Data	1.8.1.4(c)	TRMS
4.2.3.8	Provide Interface for Transit Service Raw Data	NA	TRMS
4.2.3.9	Update Transit Map Data	1.8	TRMS
4.2.3.9	Update Transit Map Data	1.8.2	TRMS
4.2.3.9	Update Transit Map Data	1.8.2.4	TRMS
4.2.3.9	Update Transit Map Data	1.8.2.4(c)	TRMS
4.2.3.9	Update Transit Map Data	2.0	TRMS
4.2.3.9	Update Transit Map Data	2.1.0	TRMS
4.2.3.9	Update Transit Map Data	2.1.2	TRMS
4.2.3.9	Update Transit Map Data	2.1.2.1	TRMS
4.2.3.9	Update Transit Map Data	2.1.2.1.2	TRMS
4.2.3.9	Update Transit Map Data	2.1.2.2	TRMS
4.2.3.9	Update Transit Map Data	2.1.2.2.2	TRMS
4.2.4	Manage Transit Archive Data	7.0	TRMS
4.2.4	Manage Transit Archive Data	7.1	TRMS
4.2.4	Manage Transit Archive Data	7.1.0	TRMS
4.2.4	Manage Transit Archive Data	7.1.3	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.4	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.4(a)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.4(b)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.4(d)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.4(e)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.4(f)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.4(g)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.9	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.9(b)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.9(c)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.9(d)	TRMS
4.2.4	Manage Transit Archive Data	7.1.3.1.9(e)	TRMS
4.3.1	Monitor Transit Vehicle Condition	2.0	TRMS

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P-Spec	Name	USR	Subsystem
4.3.1	Monitor Transit Vehicle Condition	2.1.0	TRMS
4.3.1	Monitor Transit Vehicle Condition	2.1.2	TRMS
4.3.1	Monitor Transit Vehicle Condition	2.1.2.1	TRMS
4.3.1	Monitor Transit Vehicle Condition	2.1.2.1.2	TRMS
4.3.1	Monitor Transit Vehicle Condition	2.1.3	TRMS
4.3.1	Monitor Transit Vehicle Condition	2.1.3.1	TRMS
4.3.1	Monitor Transit Vehicle Condition	2.1.3.1.2	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.0	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.0	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.2	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.2.1	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.2.1.2	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.3	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.3.1	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.3.1.2	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.3.1.3	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	2.1.3.1.4	TRMS
4.3.3	Generate Technician Work Assignments	2.0	TRMS
4.3.3	Generate Technician Work Assignments	2.1.0	TRMS
4.3.3	Generate Technician Work Assignments	2.1.2	TRMS
4.3.3	Generate Technician Work Assignments	2.1.2.1	TRMS
4.3.3	Generate Technician Work Assignments	2.1.2.1.2	TRMS
4.3.3	Generate Technician Work Assignments	2.1.3	TRMS
4.3.3	Generate Technician Work Assignments	2.1.3.1	TRMS
4.3.3	Generate Technician Work Assignments	2.1.3.1.2	TRMS
4.3.3	Generate Technician Work Assignments	2.1.3.1.3	TRMS
4.3.3	Generate Technician Work Assignments	2.1.3.1.4	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.0	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.0	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.2	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.2.1	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.2.1.2	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.3	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.3.1	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.3.1.2	TRMS
4.3.4	Monitor And Verify Maintenance Activity	2.1.3.1.5	TRMS
4.3.5	Report Transit Vehicle Information	2.0	TRMS
4.3.5	Report Transit Vehicle Information	2.1.0	TRMS
4.3.5	Report Transit Vehicle Information	2.1.2	TRMS
4.3.5	Report Transit Vehicle Information	2.1.2.1	TRMS
4.3.5	Report Transit Vehicle Information	2.1.2.1.2	TRMS
4.3.5	Report Transit Vehicle Information	2.1.3	TRMS
4.3.5	Report Transit Vehicle Information	2.1.3.1	TRMS
4.3.5	Report Transit Vehicle Information	2.1.3.1.2	TRMS
4.3.5	Report Transit Vehicle Information	2.1.3.1.5	TRMS
4.3.6	Update Transit Vehicle Information	2.0	TRMS
4.3.6	Update Transit Vehicle Information	2.1.0	TRMS
4.3.6	Update Transit Vehicle Information	2.1.2	TRMS
4.3.6	Update Transit Vehicle Information	2.1.2.1	TRMS
4.3.6	Update Transit Vehicle Information	2.1.2.1.2	TRMS
4.3.6	Update Transit Vehicle Information	2.1.3	TRMS
4.3.6	Update Transit Vehicle Information	2.1.3.1	TRMS
4.3.6	Update Transit Vehicle Information	2.1.3.1.2	TRMS
4.3.6	Update Transit Vehicle Information	2.1.3.1.5	TRMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
4.3.7	Manage Transit Vehicle Operations Data Store	2.0	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.0	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.2	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.2.1	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.2.1.2	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.3	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.3.1	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.3.1.2	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.3.1.3	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.3.1.4	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	2.1.3.1.5	TRMS
4.4.1.1	Manage Transit Security	2.0	TRMS
4.4.1.1	Manage Transit Security	2.4.0	TRMS
4.4.1.1	Manage Transit Security	2.4.1	TRMS
4.4.1.1	Manage Transit Security	2.4.1.1	TRMS
4.4.1.1	Manage Transit Security	2.4.1.2	TRMS
4.4.1.1	Manage Transit Security	2.4.2	TRMS
4.4.1.1	Manage Transit Security	2.4.2.1	TRMS
4.4.1.1	Manage Transit Security	2.4.2.2	TRMS
4.4.1.1	Manage Transit Security	2.4.4	TRMS
4.4.1.1	Manage Transit Security	2.4.4.1	TRMS
4.4.1.1	Manage Transit Security	2.4.4.2	TRMS
4.4.1.2	Manage Transit Emergencies	2.0	TRVS
4.4.1.2	Manage Transit Emergencies	2.1.0	TRVS
4.4.1.2	Manage Transit Emergencies	2.1.4	TRVS
4.4.1.2	Manage Transit Emergencies	2.1.4.1	TRVS
4.4.1.2	Manage Transit Emergencies	2.1.4.4	TRVS
4.4.1.2	Manage Transit Emergencies	2.4.0	TRVS
4.4.1.2	Manage Transit Emergencies	2.4.1	TRVS
4.4.1.2	Manage Transit Emergencies	2.4.1.2	TRVS
4.4.1.2	Manage Transit Emergencies	2.4.1.3	TRVS
4.4.1.3	Provide Transit System Operator Security Interface	2.0	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.0	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.1	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.1.2	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.1.2.1	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.2	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.2.1	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.2.1.2	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.4	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.4.1	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.1.4.4	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.4.0	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.4.4	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.4.4.1	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.4.4.2	TRMS
4.4.1.3	Provide Transit System Operator Security Interface	2.4.4.3	TRMS
4.4.1.4	Provide Transit External Interface for Emergencies	2.0	TRMS
4.4.1.4	Provide Transit External Interface for Emergencies	2.1.0	TRMS
4.4.1.4	Provide Transit External Interface for Emergencies	2.1.4	TRMS
4.4.1.4	Provide Transit External Interface for Emergencies	2.1.4.3	TRMS
4.4.1.4	Provide Transit External Interface for Emergencies	2.1.4.4	TRMS
4.4.1.4	Provide Transit External Interface for Emergencies	2.1.4.4(d)	TRMS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.0	TRVS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.0	TRVS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.4	TRVS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.4.2	TRVS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.4.4	TRVS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.4.4(a)	TRVS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.4.4(b)	TRVS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.4.4(c)	TRVS
4.4.1.5	Provide Transit Driver Interface for Emergencies	2.1.4.4(d)	TRVS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.0	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.1.0	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.1.4	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.1.4.3	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.1.4.4	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.0	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1.1	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1.1(a)	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1.1(b)	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1.1(c)	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1.1(d)	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1.1(e)	TRMS
4.4.1.6	Collect Transit Vehicle Emergency Information	2.4.1.3	TRMS
4.4.1.7	Monitor Secure Area	2.0	RTS
4.4.1.7	Monitor Secure Area	2.1.0	RTS
4.4.1.7	Monitor Secure Area	2.1.4	RTS
4.4.1.7	Monitor Secure Area	2.1.4.3	RTS
4.4.1.7	Monitor Secure Area	2.1.4.4	RTS
4.4.1.7	Monitor Secure Area	2.2.1.2	RTS
4.4.1.7	Monitor Secure Area	2.2.1.2.1	RTS
4.4.1.7	Monitor Secure Area	2.2.1.2.1.2	RTS
4.4.1.7	Monitor Secure Area	2.2.1.2.1.2(a)	RTS
4.4.1.7	Monitor Secure Area	2.2.1.2.1.2(b)	RTS
4.4.1.7	Monitor Secure Area	2.2.1.2.1.2(c)	RTS
4.4.1.7	Monitor Secure Area	2.4.0	RTS
4.4.1.7	Monitor Secure Area	2.4.1	RTS
4.4.1.7	Monitor Secure Area	2.4.1.1	RTS
4.4.1.7	Monitor Secure Area	2.4.1.1(a)	RTS
4.4.1.7	Monitor Secure Area	2.4.1.1(b)	RTS
4.4.1.7	Monitor Secure Area	2.4.1.1(c)	RTS
4.4.1.7	Monitor Secure Area	2.4.1.1(d)	RTS
4.4.1.7	Monitor Secure Area	2.4.1.1(e)	RTS
4.4.1.7	Monitor Secure Area	2.4.1.2	RTS
4.4.1.7	Monitor Secure Area	2.4.2	RTS
4.4.1.7	Monitor Secure Area	2.4.2.1	RTS
4.4.1.7	Monitor Secure Area	2.4.2.2	RTS
4.4.1.7	Monitor Secure Area	2.4.4	RTS
4.4.1.7	Monitor Secure Area	2.4.4.1	RTS
4.4.1.7	Monitor Secure Area	2.4.4.2	RTS
4.4.1.8	Report Traveler Emergencies	1.0	RTS
4.4.1.8	Report Traveler Emergencies	1.1.0	RTS
4.4.1.8	Report Traveler Emergencies	1.7.0	RTS
4.4.1.8	Report Traveler Emergencies	1.7.1	RTS
4.4.1.8	Report Traveler Emergencies	1.7.1.2	RTS
4.4.1.8	Report Traveler Emergencies	1.7.1.2.1	RTS

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P-Spec	Name	USR	Subsystem
4.4.1.8	Report Traveler Emergencies	2.0	RTS
4.4.1.8	Report Traveler Emergencies	2.1.0	RTS
4.4.1.8	Report Traveler Emergencies	2.1.4	RTS
4.4.1.8	Report Traveler Emergencies	2.1.4.3	RTS
4.4.1.8	Report Traveler Emergencies	2.1.4.4	RTS
4.4.1.8	Report Traveler Emergencies	2.4.1	RTS
4.4.1.8	Report Traveler Emergencies	2.4.1.2	RTS
4.4.2	Coordinate Multiple Agency Responses to Incidents	2.0	TRMS
4.4.2	Coordinate Multiple Agency Responses to Incidents	2.4.0	TRMS
4.4.2	Coordinate Multiple Agency Responses to Incidents	2.4.4	TRMS
4.4.2	Coordinate Multiple Agency Responses to Incidents	2.4.4.3	TRMS
4.4.2	Coordinate Multiple Agency Responses to Incidents	2.4.4.5	TRMS
4.4.3	Generate Responses for Incidents	2.0	TRMS
4.4.3	Generate Responses for Incidents	2.4.0	TRMS
4.4.3	Generate Responses for Incidents	2.4.4	TRMS
4.4.3	Generate Responses for Incidents	2.4.4.4	TRMS
4.5.1	Assess Transit Driver Performance	2.0	TRMS
4.5.1	Assess Transit Driver Performance	2.1.0	TRMS
4.5.1	Assess Transit Driver Performance	2.1.3	TRMS
4.5.1	Assess Transit Driver Performance	2.1.3.2	TRMS
4.5.1	Assess Transit Driver Performance	2.1.3.2.4	TRMS
4.5.2	Assess Transit Driver Availability	2.0	TRMS
4.5.2	Assess Transit Driver Availability	2.1.0	TRMS
4.5.2	Assess Transit Driver Availability	2.1.3	TRMS
4.5.2	Assess Transit Driver Availability	2.1.3.2	TRMS
4.5.2	Assess Transit Driver Availability	2.1.3.2.1	TRMS
4.5.2	Assess Transit Driver Availability	2.1.3.2.2	TRMS
4.5.2	Assess Transit Driver Availability	2.1.3.2.3	TRMS
4.5.2	Assess Transit Driver Availability	2.1.3.2.4	TRMS
4.5.2	Assess Transit Driver Availability	2.3.4	TRMS
4.5.2	Assess Transit Driver Availability	2.3.4.3	TRMS
4.5.3	Access Transit Driver Cost Effectiveness	2.0	TRMS
4.5.3	Access Transit Driver Cost Effectiveness	2.1.0	TRMS
4.5.3	Access Transit Driver Cost Effectiveness	2.1.3	TRMS
4.5.3	Access Transit Driver Cost Effectiveness	2.1.3.2	TRMS
4.5.3	Access Transit Driver Cost Effectiveness	2.1.3.2.2	TRMS
4.5.3	Access Transit Driver Cost Effectiveness	2.1.3.2.4	TRMS
4.5.4	Assess Transit Driver Eligibility	2.0	TRMS
4.5.4	Assess Transit Driver Eligibility	2.1.0	TRMS
4.5.4	Assess Transit Driver Eligibility	2.1.3	TRMS
4.5.4	Assess Transit Driver Eligibility	2.1.3.2.2	TRMS
4.5.4	Assess Transit Driver Eligibility	2.1.3.2.4	TRMS
4.5.4	Assess Transit Driver Eligibility	3.1.3.2	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.0	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.0	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.3	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.3.2	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.3.2.2	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.3.2.3	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.3.2.3(a)	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.3.2.3(c)	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.1.3.2.3(d)	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.3.4	TRMS
4.5.5	Generate Transit Driver Route Assignments	2.3.4.3	TRMS

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P-Spec	Name	USR	Subsystem
4.5.6	Update Transit Driver Information	2.0	TRMS
4.5.6	Update Transit Driver Information	2.1.0	TRMS
4.5.6	Update Transit Driver Information	2.1.3	TRMS
4.5.6	Update Transit Driver Information	2.1.3.2	TRMS
4.5.6	Update Transit Driver Information	2.1.3.2.4	TRMS
4.5.7	Report Transit Driver Information	2.0	TRMS
4.5.7	Report Transit Driver Information	2.1.0	TRMS
4.5.7	Report Transit Driver Information	2.1.3	TRMS
4.5.7	Report Transit Driver Information	2.1.3.2	TRMS
4.5.7	Report Transit Driver Information	2.1.3.2.4	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.0	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.1.0	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.1.3	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.1.3.2	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.1.3.2.1	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.1.3.2.2	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.1.3.2.3	TRMS
4.5.8	Provide Transit Driver Information Store Interface	2.1.3.2.4	TRMS
4.6.1	Detect Transit User on Vehicle	3.0	TRVS
4.6.1	Detect Transit User on Vehicle	3.1.0	TRVS
4.6.1	Detect Transit User on Vehicle	3.1.1	TRVS
4.6.1	Detect Transit User on Vehicle	3.1.2	TRVS
4.6.1	Detect Transit User on Vehicle	3.1.2.7	TRVS
4.6.1	Detect Transit User on Vehicle	3.1.2.8	TRVS
4.6.1	Detect Transit User on Vehicle	3.1.4	TRVS
4.6.1	Detect Transit User on Vehicle	3.1.4.3	TRVS
4.6.2	Determine Transit User Needs on Vehicle	3.0	TRVS
4.6.2	Determine Transit User Needs on Vehicle	3.1.0	TRVS
4.6.2	Determine Transit User Needs on Vehicle	3.1.2	TRVS
4.6.2	Determine Transit User Needs on Vehicle	3.1.4	TRVS
4.6.2	Determine Transit User Needs on Vehicle	3.1.4.3	TRVS
4.6.3	Determine Transit Fare on Vehicle	3.0	TRVS
4.6.3	Determine Transit Fare on Vehicle	3.1.0	TRVS
4.6.3	Determine Transit Fare on Vehicle	3.1.2	TRVS
4.6.3	Determine Transit Fare on Vehicle	3.1.2.2	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	2.3.0	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	2.3.3	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	2.3.3.1	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	2.3.3.1(c)	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.0	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.0	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2.1	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2.2	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2.3	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2.4	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2.5	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2.6	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	3.1.2.7	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.2.1.2.2	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.2.1.2.2.1	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.2.1.2.2.2	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.2.1.2.2.3	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.2.1.2.2.4	TRVS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.3.0	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.3.3	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.3.3.1	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	2.3.3.1(c)	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	3.0	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	3.1.0	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	3.1.2	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	3.1.2.3	TRVS
4.6.6	Update Transit Vehicle Fare Data	3.0	TRVS
4.6.6	Update Transit Vehicle Fare Data	3.1.0	TRVS
4.6.6	Update Transit Vehicle Fare Data	3.1.2	TRVS
4.6.6	Update Transit Vehicle Fare Data	3.1.2.6	TRVS
4.6.7	Provide Transit Vehicle Passenger Data	3.0	TRVS
4.6.7	Provide Transit Vehicle Passenger Data	3.1.0	TRVS
4.6.7	Provide Transit Vehicle Passenger Data	3.1.2	TRVS
4.6.7	Provide Transit Vehicle Passenger Data	3.1.2.2	TRVS
4.6.7	Provide Transit Vehicle Passenger Data	3.1.2.7	TRVS
4.6.8	Manage Transit Vehicle Advanced Payments	3.0	TRMS
4.6.8	Manage Transit Vehicle Advanced Payments	3.1.0	TRMS
4.6.8	Manage Transit Vehicle Advanced Payments	3.1.2	TRMS
4.6.8	Manage Transit Vehicle Advanced Payments	3.1.2.3	TRMS
4.7.1.1	Provide Transit User Roadside Data Interface	2.0	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.0	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.1	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.1.1	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.1.2	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.1.2(a)	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.1.2(b)	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.1.3	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.2	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.1.3	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.2	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.2.1	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.2.2	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.2.3	RTS
4.7.1.1	Provide Transit User Roadside Data Interface	2.2.1.2.2.4	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.0	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.0	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.1	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.1.1	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.1.1.1	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.1.1.2	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.1.1.3	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.1.2	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.1.3	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.2	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.2.1	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.2.2	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.2.3	RTS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	2.2.1.2.2.4	RTS
4.7.2.1	Detect Transit User at Roadside	3.0	RTS
4.7.2.1	Detect Transit User at Roadside	3.1.0	RTS
4.7.2.1	Detect Transit User at Roadside	3.1.1	RTS
4.7.2.1	Detect Transit User at Roadside	3.1.2	RTS
4.7.2.1	Detect Transit User at Roadside	3.1.2.7	RTS
4.7.2.1	Detect Transit User at Roadside	3.1.2.8	RTS
4.7.2.1	Detect Transit User at Roadside	3.1.4	RTS
4.7.2.1	Detect Transit User at Roadside	3.1.4.3	RTS
4.7.2.2	Determine Transit User Needs at Roadside	3.0	RTS
4.7.2.2	Determine Transit User Needs at Roadside	3.1.0	RTS
4.7.2.2	Determine Transit User Needs at Roadside	3.1.2	RTS
4.7.2.2	Determine Transit User Needs at Roadside	3.1.4	RTS
4.7.2.2	Determine Transit User Needs at Roadside	3.1.4.3	RTS
4.7.2.3	Determine Transit Fare at Roadside	3.0	RTS
4.7.2.3	Determine Transit Fare at Roadside	3.1.0	RTS
4.7.2.3	Determine Transit Fare at Roadside	3.1.2	RTS
4.7.2.3	Determine Transit Fare at Roadside	3.1.2.2	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.0	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.0	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2.1	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2.2	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2.3	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2.4	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2.5	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2.6	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	3.1.2.7	RTS
4.7.2.5	Provide Transit User Roadside Fare Interface	3.0	RTS
4.7.2.5	Provide Transit User Roadside Fare Interface	3.1.0	RTS
4.7.2.5	Provide Transit User Roadside Fare Interface	3.1.2	RTS
4.7.2.5	Provide Transit User Roadside Fare Interface	3.1.2.3	RTS
4.7.2.6	Update Roadside Transit Fare Data	3.0	RTS
4.7.2.6	Update Roadside Transit Fare Data	3.1.0	RTS
4.7.2.6	Update Roadside Transit Fare Data	3.1.2	RTS
4.7.2.6	Update Roadside Transit Fare Data	3.1.2.6	RTS
4.7.2.7	Provide Transit Roadside Passenger Data	3.0	RTS
4.7.2.7	Provide Transit Roadside Passenger Data	3.1.0	RTS
4.7.2.7	Provide Transit Roadside Passenger Data	3.1.2	RTS
4.7.2.7	Provide Transit Roadside Passenger Data	3.1.2.2	RTS
4.7.2.7	Provide Transit Roadside Passenger Data	3.1.2.7	RTS
5.1.1	Identify Emergencies from Inputs	4.5	EM
5.1.1	Identify Emergencies from Inputs	4.5.0	EM
5.1.1	Identify Emergencies from Inputs	4.5.3	EM
5.1.1	Identify Emergencies from Inputs	4.5.3.1	EM
5.1.1	Identify Emergencies from Inputs	5.0	EM
5.1.1	Identify Emergencies from Inputs	5.1	EM
5.1.1	Identify Emergencies from Inputs	5.2	EM
5.1.2	Determine Coordinated Response Plan	5.0	EM
5.1.2	Determine Coordinated Response Plan	5.1	EM
5.1.2	Determine Coordinated Response Plan	5.2	EM
5.1.3	Communicate Emergency Status	5.0	EM
5.1.3	Communicate Emergency Status	5.1	EM
5.1.3	Communicate Emergency Status	5.2	EM

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
5.1.4	Manage Emergency Response	4.5	EM
5.1.4	Manage Emergency Response	4.5.0	EM
5.1.4	Manage Emergency Response	4.5.2	EM
5.1.4	Manage Emergency Response	4.5.2.1	EM
5.1.4	Manage Emergency Response	4.5.2.2	EM
5.1.4	Manage Emergency Response	4.5.2.3	EM
5.1.4	Manage Emergency Response	4.5.2.3(a)	EM
5.1.4	Manage Emergency Response	4.5.2.3(b)	EM
5.1.4	Manage Emergency Response	4.5.2.3(c)	EM
5.1.4	Manage Emergency Response	4.5.2.3(e)	EM
5.1.4	Manage Emergency Response	4.5.2.3(f)	EM
5.1.4	Manage Emergency Response	4.5.2.3(g)	EM
5.1.4	Manage Emergency Response	4.5.2.3(h)	EM
5.1.4	Manage Emergency Response	4.5.3	EM
5.1.4	Manage Emergency Response	4.5.3.3	EM
5.1.4	Manage Emergency Response	4.5.3.4	EM
5.1.4	Manage Emergency Response	5.0	EM
5.1.4	Manage Emergency Response	5.2	EM
5.1.4	Manage Emergency Response	5.2.1	EM
5.1.4	Manage Emergency Response	5.2.1.1	EM
5.1.4	Manage Emergency Response	5.2.1.2	EM
5.1.4	Manage Emergency Response	5.2.1.3	EM
5.1.4	Manage Emergency Response	5.2.2	EM
5.1.4	Manage Emergency Response	5.2.2.1	EM
5.1.4	Manage Emergency Response	5.2.3	EM
5.1.4	Manage Emergency Response	5.2.3.1	EM
5.1.5	Manage Emergency Service Allocation Store	2.0	EM
5.1.5	Manage Emergency Service Allocation Store	2.2	EM
5.1.5	Manage Emergency Service Allocation Store	2.2.1	EM
5.1.5	Manage Emergency Service Allocation Store	2.2.1.1	EM
5.1.5	Manage Emergency Service Allocation Store	2.2.1.1.4	EM
5.1.5	Manage Emergency Service Allocation Store	2.3	EM
5.1.5	Manage Emergency Service Allocation Store	2.3.4	EM
5.1.6	Process Mayday Messages	4.5	EM
5.1.6	Process Mayday Messages	4.5.0	EM
5.1.6	Process Mayday Messages	4.5.3	EM
5.1.6	Process Mayday Messages	4.5.3.1	EM
5.1.6	Process Mayday Messages	5.0	EM
5.1.6	Process Mayday Messages	5.1	EM
5.1.6	Process Mayday Messages	5.2	EM
5.2	Provide Operator Interface for Emergency Data	5.0	EM
5.2	Provide Operator Interface for Emergency Data	5.1	EM
5.2	Provide Operator Interface for Emergency Data	5.2	EM
5.3.1	Select Response Mode	5.0	EM
5.3.1	Select Response Mode	5.2	EM
5.3.1	Select Response Mode	5.2.1	EM
5.3.1	Select Response Mode	5.2.1.2	EM
5.3.1	Select Response Mode	5.2.1.3	EM
5.3.2	Dispatch Vehicle	1.6	EM
5.3.2	Dispatch Vehicle	1.6.3	EM
5.3.2	Dispatch Vehicle	1.6.3.2	EM
5.3.2	Dispatch Vehicle	1.6.3.2.2	EM
5.3.2	Dispatch Vehicle	1.6.3.2.2(c)	EM
5.3.2	Dispatch Vehicle	4.5	EM

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
5.3.2	Dispatch Vehicle	4.5.0	EM
5.3.2	Dispatch Vehicle	4.5.3	EM
5.3.2	Dispatch Vehicle	4.5.3.2	EM
5.3.2	Dispatch Vehicle	5.0	EM
5.3.2	Dispatch Vehicle	5.2	EM
5.3.2	Dispatch Vehicle	5.2.1	EM
5.3.2	Dispatch Vehicle	5.2.1.2	EM
5.3.2	Dispatch Vehicle	5.2.1.3	EM
5.3.2	Dispatch Vehicle	5.2.2	EM
5.3.3	Track Vehicle	5.0	EVS
5.3.3	Track Vehicle	5.2	EVS
5.3.3	Track Vehicle	5.2.1	EVS
5.3.3	Track Vehicle	5.2.1.1	EVS
5.3.4	Assess Response Status	5.0	EM
5.3.4	Assess Response Status	5.2	EM
5.3.4	Assess Response Status	5.2.1	EM
5.3.5	Provide Emergency Personnel Interface	5.0	EVS
5.3.5	Provide Emergency Personnel Interface	5.2	EVS
5.3.5	Provide Emergency Personnel Interface	5.2.2	EVS
5.3.5	Provide Emergency Personnel Interface	5.2.2.2	EVS
5.3.6	Maintain Vehicle Status	5.0	EM
5.3.6	Maintain Vehicle Status	5.2	EM
5.3.6	Maintain Vehicle Status	5.2.1	EM
5.3.6	Maintain Vehicle Status	5.2.1.1	EM
5.3.7	Provide Emergency Vehicle Route	1.6	EM
5.3.7	Provide Emergency Vehicle Route	1.6.3	EM
5.3.7	Provide Emergency Vehicle Route	1.6.3.2	EM
5.3.7	Provide Emergency Vehicle Route	1.6.3.2.2	EM
5.3.7	Provide Emergency Vehicle Route	1.6.3.2.2(c)	EM
5.3.7	Provide Emergency Vehicle Route	4.5	EM
5.3.7	Provide Emergency Vehicle Route	4.5.0	EM
5.3.7	Provide Emergency Vehicle Route	4.5.3	EM
5.3.7	Provide Emergency Vehicle Route	4.5.3.2	EM
5.3.7	Provide Emergency Vehicle Route	5.0	EM
5.3.7	Provide Emergency Vehicle Route	5.2	EM
5.3.7	Provide Emergency Vehicle Route	5.2.1	EM
5.3.7	Provide Emergency Vehicle Route	5.2.1.2	EM
5.3.7	Provide Emergency Vehicle Route	5.2.1.3	EM
5.3.7	Provide Emergency Vehicle Route	5.2.2	EM
5.4.1	Process TM Detected Violations	1.0	TMS
5.4.1	Process TM Detected Violations	1.6	TMS
5.4.1	Process TM Detected Violations	1.6.0	TMS
5.4.1	Process TM Detected Violations	1.6.2	TMS
5.4.1	Process TM Detected Violations	1.6.2.4	TMS
5.4.1	Process TM Detected Violations	1.6.2.4.1	TMS
5.4.1	Process TM Detected Violations	1.6.3	TMS
5.4.1	Process TM Detected Violations	1.6.3.2	TMS
5.4.1	Process TM Detected Violations	1.6.3.2.2	TMS
5.4.1	Process TM Detected Violations	1.6.3.2.2(b)	TMS
5.4.2	Process Violations for Tolls	3.0	TAS
5.4.2	Process Violations for Tolls	3.1	TAS
5.4.2	Process Violations for Tolls	3.1.1	TAS
5.4.2	Process Violations for Tolls	3.1.1.4	TAS
5.4.3	Process Parking Lot Violations	3.0	PMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
5.4.3	Process Parking Lot Violations	3.1	PMS
5.4.3	Process Parking Lot Violations	3.1.1	PMS
5.4.3	Process Parking Lot Violations	3.1.1.4	PMS
5.4.4	Process Fare Payment Violations	3.0	TRMS
5.4.4	Process Fare Payment Violations	3.1	TRMS
5.4.4	Process Fare Payment Violations	3.1.1	TRMS
5.4.4	Process Fare Payment Violations	3.1.1.4	TRMS
5.4.5	Process Vehicle Fare Collection Violations	3.0	TRMS
5.4.5	Process Vehicle Fare Collection Violations	3.1	TRMS
5.4.5	Process Vehicle Fare Collection Violations	3.1.1	TRMS
5.4.5	Process Vehicle Fare Collection Violations	3.1.1.4	TRMS
5.4.6	Process CV Violations	3.0	CVAS
5.4.6	Process CV Violations	3.1	CVAS
5.4.6	Process CV Violations	3.1.1	CVAS
5.4.6	Process CV Violations	3.1.1.4	CVAS
5.4.7	Process Roadside Fare Collection Violations	3.0	TRMS
5.4.7	Process Roadside Fare Collection Violations	3.1	TRMS
5.4.7	Process Roadside Fare Collection Violations	3.1.1	TRMS
5.4.7	Process Roadside Fare Collection Violations	3.1.1.4	TRMS
5.5	Update Emergency Display Map Data	5.0	EM
5.5	Update Emergency Display Map Data	5.1	EM
5.5	Update Emergency Display Map Data	5.2	EM
5.6	Manage Emergency Services Data	7.0	EM
5.6	Manage Emergency Services Data	7.1	EM
5.6	Manage Emergency Services Data	7.1.3	EM
5.6	Manage Emergency Services Data	7.1.3.1	EM
5.6	Manage Emergency Services Data	7.1.3.1.5	EM
5.6	Manage Emergency Services Data	7.1.3.1.5(a)	EM
5.6	Manage Emergency Services Data	7.1.3.1.5(b)	EM
5.6	Manage Emergency Services Data	7.1.3.1.5(c)	EM
5.6	Manage Emergency Services Data	7.1.3.1.5(d)	EM
5.6	Manage Emergency Services Data	7.1.3.1.5(f)	EM
5.6	Manage Emergency Services Data	7.1.3.1.5(h)	EM
6.1.1	Provide Trip Planning Information to Traveler	1.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1.1.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1.1.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1.1.4	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1.1.5	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.1.1.6	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.4	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.5	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.6	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.7	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.2.1.8	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.1.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.1.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.1.4	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.3.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.3.3.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.4	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.4.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.4.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.4.1.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.1.4.1.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.1.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.3.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.3.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.3.3(a)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.3.3(b)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.3.3(c)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.4.3(d)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.4.3(e)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.4.4.3(f)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.2.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.2.2(d)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.2.2(e)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.2.2(f)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.2.2(g)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.5.2.2(h)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.6	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.6.4	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.6.4(b)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.6.4(c)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.7	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.7.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.7.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.7.1.1.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.7.1.1.1(f)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.7.1.1.1(g)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.2(d)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.2(e)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.3(a)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.3(e)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.3(f)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.6	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.1.1	Provide Trip Planning Information to Traveler	1.8.1.6(a)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.2.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.2.3(c)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.2.4	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.2.4(a)	ISP
6.1.1	Provide Trip Planning Information to Traveler	1.8.2.4(f)	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.3.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.3.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.3.1.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.4.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.4.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.4.3.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	2.4.3.2	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.1.0	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.1.3	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.1.3.1	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.1.3.1.8	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.1.3.1.8(e)	ISP
6.1.1	Provide Trip Planning Information to Traveler	7.1.3.1.8(g)	ISP
6.1.2	Confirm Traveler's Trip Plan	1.0	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.0	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.3	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.3.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.3.2	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.3.3	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.4	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.4.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.4.1.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.4.1.2	ISP
6.1.2	Confirm Traveler's Trip Plan	1.1.4.1.3	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.0	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.1.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.1.2	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.1.2(a)	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.1.3	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.1.4	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.2	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.2.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.2.4	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.3	ISP
6.1.2	Confirm Traveler's Trip Plan	1.4.3.2	ISP
6.1.2	Confirm Traveler's Trip Plan	1.5.0	ISP
6.1.2	Confirm Traveler's Trip Plan	1.5.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.5.1.4	ISP
6.1.2	Confirm Traveler's Trip Plan	1.8	ISP
6.1.2	Confirm Traveler's Trip Plan	1.8.1	ISP
6.1.2	Confirm Traveler's Trip Plan	1.8.1.6	ISP
6.1.2	Confirm Traveler's Trip Plan	1.8.1.6(a)	ISP
6.1.2	Confirm Traveler's Trip Plan	7.0	ISP

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P-Spec	Name	USR	Subsystem
6.1.2	Confirm Traveler's Trip Plan	7.1	ISP
6.1.2	Confirm Traveler's Trip Plan	7.1.0	ISP
6.1.2	Confirm Traveler's Trip Plan	7.1.3	ISP
6.1.2	Confirm Traveler's Trip Plan	7.1.3.1	ISP
6.1.2	Confirm Traveler's Trip Plan	7.1.3.1.8	ISP
6.1.2	Confirm Traveler's Trip Plan	7.1.3.1.8(h)	ISP
6.1.3	Manage Multimodal Service Provider Interface	2.0	ISP
6.1.3	Manage Multimodal Service Provider Interface	2.2.0	ISP
6.1.3	Manage Multimodal Service Provider Interface	2.2.1	ISP
6.1.3	Manage Multimodal Service Provider Interface	2.2.1.1.3	ISP
6.1.3	Manage Multimodal Service Provider Interface	2.2.1.1.4	ISP
6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	1.6	ISP
6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	1.6.4	ISP
6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	1.6.4(b)	ISP
6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	1.6.4(c)	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.0	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.1	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.1.0	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.1.3	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.1.3.1	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.1.3.1.8	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.1.3.1.8(g)	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	7.1.3.1.8(h)	ISP
6.1.6	Manage Traveler Info Archive Data	7.0	ISP
6.1.6	Manage Traveler Info Archive Data	7.1	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.0	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.4	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.4(c)	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8(a)	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8(c)	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8(d)	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8(e)	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8(f)	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8(g)	ISP
6.1.6	Manage Traveler Info Archive Data	7.1.3.1.8(h)	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.0	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.2.0	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.2.2	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.2.2.1	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.2.2.1.1	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.2.2.1.2	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.2.2.1.2.1	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.2.2.1.3	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.5	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.5.2	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.5.2.5	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.5.2.5(d)	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	1.5.2.5(g)	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.0	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.0	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.1	ISP

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P-Spec	Name	USR	Subsystem
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.1.1	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.1.1.1	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3.1	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3.1.2	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3.1.2(a)	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3.1.2(b)	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3.2	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3.2.1	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	2.2.3.2.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.0	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.2.0	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.2.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.2.2.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.2.2.1.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.2.2.1.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.2.2.1.2.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.2.2.1.3	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.0	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.2.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.2.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.2.3	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.2.4	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.2.5	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.3	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.4	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.1.5	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.2.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.2.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.2.3	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	1.5.2.4	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.0	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.0	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.1.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.1.1.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.2.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.2.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.2.3	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.2.3(a)	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.2.3(b)	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.2.3(c)	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3.1.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3.1.1(a)	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3.1.1(b)	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3.1.1(c)	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3.1.1(d)	ISP

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P-Spec	Name	USR	Subsystem
6.2.1.2	Provide Traffic and Transit Advisory Messages	2.2.3.1.2	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	7.0	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	7.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	7.1.0	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	7.1.3	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	7.1.3.1	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	7.1.3.1.8	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	7.1.3.1.8(g)	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.0	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.2.0	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.2.2	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.2.2.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.2.2.1.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.2.2.1.2	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.2.2.1.2.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	1.2.2.1.3	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.0	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.0	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.1.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.1.1.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.3	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.3.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.3.1.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.3.1.2	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.3.2	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.3.2.1	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	2.2.3.2.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.0	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.2.0	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.2.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.2.2.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.2.2.1.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.2.2.1.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.2.2.1.2.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.2.2.1.3	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.0	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.2.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.2.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.2.3	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.2.4	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.2.5	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.3	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.4	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.1.5	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.2.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.2.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	1.5.2.3	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.0	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.0	ISP

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P-Spec	Name	USR	Subsystem
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.1.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.1.1.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.2.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.2.2	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.2.3	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.3	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.3.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.3.1.1	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	2.2.3.1.2	ISP
6.2.1.5	Provide ISP Operator Broadcast Parameters Interface	NA	ISP
6.2.1.6	Provide Transit Advisory Data On Vehicle	1.8	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	1.8.1	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	1.8.1.6	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	1.8.1.6(b)	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	2.2.1.2.2	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	2.2.1.2.2.1	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	2.2.1.2.2.2	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	2.2.1.2.2.3	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	2.2.1.2.2.4	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	3.0	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	3.1.0	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	3.1.2	TRVS
6.2.1.6	Provide Transit Advisory Data On Vehicle	3.1.2.3	TRVS
6.2.2	Prepare and Output In-vehicle Displays	1.0	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.0	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.1	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.1.1	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.1.3	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.1.5	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1.1	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1.2	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1.3	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1.4	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1.4.1	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1.4.2	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.1.5	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.2	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.2.2	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.2.2.1	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.2.4	VS
6.2.2	Prepare and Output In-vehicle Displays	1.2.3.2.5	VS
6.2.2	Prepare and Output In-vehicle Displays	1.3	VS
6.2.2	Prepare and Output In-vehicle Displays	1.3.4	VS
6.2.2	Prepare and Output In-vehicle Displays	1.3.4.2	VS
6.2.2	Prepare and Output In-vehicle Displays	1.3.4.2.2	VS
6.2.2	Prepare and Output In-vehicle Displays	1.3.4.2.2(b)	VS
6.2.2	Prepare and Output In-vehicle Displays	2.0	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.0	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.1	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.1.1	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.2.2	Prepare and Output In-vehicle Displays	2.2.1.1.1	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.1.2.2	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.1.2.2.1	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.1.2.2.2	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.1.2.2.3	VS
6.2.2	Prepare and Output In-vehicle Displays	2.2.1.2.2.4	VS
6.2.3	Provide Transit User Advisory Interface	1.0	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.0	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.1	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.1.1	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.1.2	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.1.3	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.1.5	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1.1	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1.2	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1.3	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1.4	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1.4.1	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1.4.2	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.1.5	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.2	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.2.2	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.2.2.1	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.2.4	TRVS
6.2.3	Provide Transit User Advisory Interface	1.2.3.2.5	TRVS
6.2.3	Provide Transit User Advisory Interface	1.5.0	TRVS
6.2.3	Provide Transit User Advisory Interface	1.5.2	TRVS
6.2.3	Provide Transit User Advisory Interface	1.5.2.1	TRVS
6.2.3	Provide Transit User Advisory Interface	1.5.2.2	TRVS
6.2.3	Provide Transit User Advisory Interface	1.5.2.3	TRVS
6.2.3	Provide Transit User Advisory Interface	2.2.1.2.2	TRVS
6.2.3	Provide Transit User Advisory Interface	2.2.1.2.2.1	TRVS
6.2.3	Provide Transit User Advisory Interface	2.2.1.2.2.2	TRVS
6.2.3	Provide Transit User Advisory Interface	2.2.1.2.2.3	TRVS
6.2.3	Provide Transit User Advisory Interface	2.2.1.2.2.4	TRVS
6.2.4	Collect Yellow Pages Data	1.0	ISP
6.2.4	Collect Yellow Pages Data	1.2.0	ISP
6.2.4	Collect Yellow Pages Data	1.2.2	ISP
6.2.4	Collect Yellow Pages Data	1.2.2.1	ISP
6.2.4	Collect Yellow Pages Data	1.2.2.1.1	ISP
6.2.4	Collect Yellow Pages Data	1.2.2.1.2	ISP
6.2.4	Collect Yellow Pages Data	1.2.2.1.2.1	ISP
6.2.4	Collect Yellow Pages Data	1.2.2.1.3	ISP
6.2.4	Collect Yellow Pages Data	1.5.0	ISP
6.2.4	Collect Yellow Pages Data	1.5.2	ISP
6.2.4	Collect Yellow Pages Data	1.5.2.2	ISP
6.2.4	Collect Yellow Pages Data	1.5.2.2(b)	ISP
6.2.4	Collect Yellow Pages Data	1.5.2.2(g)	ISP
6.2.4	Collect Yellow Pages Data	2.0	ISP
6.2.4	Collect Yellow Pages Data	2.2.0	ISP
6.2.4	Collect Yellow Pages Data	2.2.1	ISP
6.2.4	Collect Yellow Pages Data	2.2.1.1	ISP

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P-Spec	Name	USR	Subsystem
6.2.4	Collect Yellow Pages Data	2.2.1.1.1	ISP
6.2.4	Collect Yellow Pages Data	2.2.3	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.1	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.1.1	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.2	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.2.1	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.2.2	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.2.2(a)	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.2.2(b)	ISP
6.2.4	Collect Yellow Pages Data	2.2.3.2.2(c)	ISP
6.2.5	Provide Driver Interface	1.0	VS
6.2.5	Provide Driver Interface	1.2.0	VS
6.2.5	Provide Driver Interface	1.2.1.5	VS
6.2.5	Provide Driver Interface	1.2.3	VS
6.2.5	Provide Driver Interface	1.2.3.2	VS
6.2.5	Provide Driver Interface	1.2.3.2.2	VS
6.2.5	Provide Driver Interface	1.2.3.2.2.1	VS
6.2.5	Provide Driver Interface	1.2.3.2.5	VS
6.2.5	Provide Driver Interface	1.3.0	VS
6.2.5	Provide Driver Interface	1.3.3	VS
6.2.5	Provide Driver Interface	1.3.3.1	VS
6.2.5	Provide Driver Interface	1.5	VS
6.2.5	Provide Driver Interface	1.5.2	VS
6.2.5	Provide Driver Interface	1.5.2.5	VS
6.2.5	Provide Driver Interface	1.5.2.5(e)	VS
6.2.5	Provide Driver Interface	1.8	VS
6.2.5	Provide Driver Interface	1.8.1	VS
6.2.5	Provide Driver Interface	1.8.1.6	VS
6.2.5	Provide Driver Interface	1.8.1.6(c)	VS
6.2.5	Provide Driver Interface	6.5	VS
6.2.5	Provide Driver Interface	6.5.0	VS
6.2.5	Provide Driver Interface	6.5.3	VS
6.2.5	Provide Driver Interface	6.5.3.1	VS
6.2.5	Provide Driver Interface	6.5.3.1.2	VS
6.2.6	Provide Yellow Pages Data and Reservations	1.0	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.2.0	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.2.2	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.2.2.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.2.2.1.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.2.2.1.2	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.2.2.1.2.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.2.2.1.3	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.0	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.2	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.2.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.2.2	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.2.3	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.2.4	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.2.5	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.3	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.4	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.1.5	ISP

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P-Spec	Name	USR	Subsystem
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2.2	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2.2(a)	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2.2(b)	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2.2(h)	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2.3	ISP
6.2.6	Provide Yellow Pages Data and Reservations	1.5.2.3(a)	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.0	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.0	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.1.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.1.1.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.2	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.2.3	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.3	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.3.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	2.2.3.1.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	7.0	ISP
6.2.6	Provide Yellow Pages Data and Reservations	7.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	7.1.0	ISP
6.2.6	Provide Yellow Pages Data and Reservations	7.1.3	ISP
6.2.6	Provide Yellow Pages Data and Reservations	7.1.3.1	ISP
6.2.6	Provide Yellow Pages Data and Reservations	7.1.3.1.8	ISP
6.2.6	Provide Yellow Pages Data and Reservations	7.1.3.1.8(g)	ISP
6.3.1	Get Traveler Request	1.0	RTS
6.3.1	Get Traveler Request	1.1.0	RTS
6.3.1	Get Traveler Request	1.1.3	RTS
6.3.1	Get Traveler Request	1.1.3.2	RTS
6.3.1	Get Traveler Request	1.1.3.2.1	RTS
6.3.1	Get Traveler Request	1.1.3.2.10	RTS
6.3.1	Get Traveler Request	1.1.3.2.2	RTS
6.3.1	Get Traveler Request	1.1.3.2.3	RTS
6.3.1	Get Traveler Request	1.1.3.2.4	RTS
6.3.1	Get Traveler Request	1.1.3.2.5	RTS
6.3.1	Get Traveler Request	1.1.3.2.6	RTS
6.3.1	Get Traveler Request	1.1.3.2.7	RTS
6.3.1	Get Traveler Request	1.1.3.2.8	RTS
6.3.1	Get Traveler Request	1.1.3.2.9	RTS
6.3.1	Get Traveler Request	1.4.0	RTS
6.3.1	Get Traveler Request	1.4.1	RTS
6.3.1	Get Traveler Request	1.4.1.1	RTS
6.3.1	Get Traveler Request	1.4.1.1(a)	RTS
6.3.1	Get Traveler Request	1.4.1.1(b)	RTS
6.3.1	Get Traveler Request	1.4.1.2	RTS
6.3.1	Get Traveler Request	1.4.1.2(b)	RTS
6.3.1	Get Traveler Request	1.4.1.2(c)	RTS
6.3.1	Get Traveler Request	1.4.1.2(d)	RTS
6.3.1	Get Traveler Request	1.4.1.2(e)	RTS
6.3.1	Get Traveler Request	1.4.1.3	RTS
6.3.1	Get Traveler Request	1.5.0	RTS
6.3.1	Get Traveler Request	1.5.2	RTS
6.3.1	Get Traveler Request	1.5.2.6	RTS
6.3.1	Get Traveler Request	1.5.2.6(b)	RTS

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P-Spec	Name	USR	Subsystem
6.3.2	Inform Traveler	1.0	RTS
6.3.2	Inform Traveler	1.1.0	RTS
6.3.2	Inform Traveler	1.1.1	RTS
6.3.2	Inform Traveler	1.1.1.1	RTS
6.3.2	Inform Traveler	1.1.1.1.1	RTS
6.3.2	Inform Traveler	1.1.1.1.2	RTS
6.3.2	Inform Traveler	1.1.1.1.3	RTS
6.3.2	Inform Traveler	1.1.1.1.4	RTS
6.3.2	Inform Traveler	1.1.1.1.5	RTS
6.3.2	Inform Traveler	1.1.1.1.6	RTS
6.3.2	Inform Traveler	1.1.2	RTS
6.3.2	Inform Traveler	1.1.2.1	RTS
6.3.2	Inform Traveler	1.1.2.1.1	RTS
6.3.2	Inform Traveler	1.1.2.1.2	RTS
6.3.2	Inform Traveler	1.1.2.1.3	RTS
6.3.2	Inform Traveler	1.1.2.1.4	RTS
6.3.2	Inform Traveler	1.1.2.1.5	RTS
6.3.2	Inform Traveler	1.1.2.1.6	RTS
6.3.2	Inform Traveler	1.1.2.1.8	RTS
6.3.2	Inform Traveler	1.4.0	RTS
6.3.2	Inform Traveler	1.4.1	RTS
6.3.2	Inform Traveler	1.4.1.3	RTS
6.3.2	Inform Traveler	1.5.0	RTS
6.3.2	Inform Traveler	1.5.2	RTS
6.3.2	Inform Traveler	1.5.2.1	RTS
6.3.2	Inform Traveler	1.5.2.2	RTS
6.3.2	Inform Traveler	1.5.2.6	RTS
6.3.2	Inform Traveler	1.5.2.6(a)	RTS
6.3.2	Inform Traveler	1.5.2.6(b)	RTS
6.3.2	Inform Traveler	1.5.2.6(e)	RTS
6.3.2	Inform Traveler	1.8	RTS
6.3.2	Inform Traveler	1.8.2	RTS
6.3.2	Inform Traveler	1.8.2.3	RTS
6.3.2	Inform Traveler	1.8.2.3(a)	RTS
6.3.2	Inform Traveler	2.0	RTS
6.3.2	Inform Traveler	2.3.0	RTS
6.3.2	Inform Traveler	2.3.1	RTS
6.3.2	Inform Traveler	2.3.1.3	RTS
6.3.2	Inform Traveler	2.3.1.4	RTS
6.3.3	Provide Traveler Kiosk Interface	1.0	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.0	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.1	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.10	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.2	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.3	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.4	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.5	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.6	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.7	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.8	RTS
6.3.3	Provide Traveler Kiosk Interface	1.1.3.2.9	RTS
6.3.3	Provide Traveler Kiosk Interface	1.4.0	RTS

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P-Spec	Name	USR	Subsystem
6.3.3	Provide Traveler Kiosk Interface	1.4.1	RTS
6.3.3	Provide Traveler Kiosk Interface	1.4.1.1	RTS
6.3.3	Provide Traveler Kiosk Interface	1.4.1.1(a)	RTS
6.3.3	Provide Traveler Kiosk Interface	1.4.1.1(b)	RTS
6.3.3	Provide Traveler Kiosk Interface	1.4.1.2	RTS
6.3.3	Provide Traveler Kiosk Interface	1.4.1.3	RTS
6.3.3	Provide Traveler Kiosk Interface	1.4.1.4	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2.5	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2.5(f)	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2.6	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2.6(b)	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2.6(c)	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2.6(d)	RTS
6.3.3	Provide Traveler Kiosk Interface	1.5.2.6(e)	RTS
6.3.3	Provide Traveler Kiosk Interface	2.0	RTS
6.3.3	Provide Traveler Kiosk Interface	2.3.0	RTS
6.3.3	Provide Traveler Kiosk Interface	2.3.1	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1.3	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1.3.1	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1.3.1.1	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1.3.2.8	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1.4	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1.4.1	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.1.4.1.3	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.5	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.5.2	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.5.2.5	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	1.5.2.5(f)	RTS
6.4.1	Screen Rider Requests	1.0	ISP
6.4.1	Screen Rider Requests	1.4.0	ISP
6.4.1	Screen Rider Requests	1.4.1	ISP
6.4.1	Screen Rider Requests	1.4.1.4	ISP
6.4.1	Screen Rider Requests	1.4.2	ISP
6.4.1	Screen Rider Requests	1.4.2.1	ISP
6.4.1	Screen Rider Requests	1.4.2.2	ISP
6.4.1	Screen Rider Requests	1.8	ISP
6.4.1	Screen Rider Requests	1.8.1	ISP
6.4.1	Screen Rider Requests	1.8.1.2	ISP
6.4.1	Screen Rider Requests	1.8.1.2(d)	ISP
6.4.1	Screen Rider Requests	1.8.1.2(g)	ISP
6.4.1	Screen Rider Requests	1.8.1.3	ISP
6.4.1	Screen Rider Requests	1.8.1.3(d)	ISP
6.4.1	Screen Rider Requests	1.8.1.3(g)	ISP
6.4.1	Screen Rider Requests	1.8.2	ISP
6.4.1	Screen Rider Requests	1.8.2.1	ISP
6.4.1	Screen Rider Requests	1.8.2.1(d)	ISP
6.4.1	Screen Rider Requests	1.8.2.4	ISP
6.4.1	Screen Rider Requests	1.8.2.4(d)	ISP
6.4.1	Screen Rider Requests	1.8.2.4(g)	ISP
6.4.1	Screen Rider Requests	7.0	ISP
6.4.1	Screen Rider Requests	7.1	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.4.1	Screen Rider Requests	7.1.0	ISP
6.4.1	Screen Rider Requests	7.1.3	ISP
6.4.1	Screen Rider Requests	7.1.3.1	ISP
6.4.1	Screen Rider Requests	7.1.3.1.4	ISP
6.4.1	Screen Rider Requests	7.1.3.1.4(c)	ISP
6.4.2	Match Rider and Provider	1.0	ISP
6.4.2	Match Rider and Provider	1.4.0	ISP
6.4.2	Match Rider and Provider	1.4.1	ISP
6.4.2	Match Rider and Provider	1.4.1.2	ISP
6.4.2	Match Rider and Provider	1.4.1.3	ISP
6.4.2	Match Rider and Provider	1.4.1.4	ISP
6.4.2	Match Rider and Provider	1.4.3	ISP
6.4.2	Match Rider and Provider	1.4.3.4	ISP
6.4.2	Match Rider and Provider	1.8	ISP
6.4.2	Match Rider and Provider	1.8.1	ISP
6.4.2	Match Rider and Provider	1.8.1.2	ISP
6.4.2	Match Rider and Provider	1.8.1.2(d)	ISP
6.4.2	Match Rider and Provider	1.8.1.2(g)	ISP
6.4.2	Match Rider and Provider	1.8.1.3	ISP
6.4.2	Match Rider and Provider	1.8.1.3(d)	ISP
6.4.2	Match Rider and Provider	1.8.1.3(g)	ISP
6.4.2	Match Rider and Provider	1.8.2	ISP
6.4.2	Match Rider and Provider	1.8.2.1	ISP
6.4.2	Match Rider and Provider	1.8.2.1(d)	ISP
6.4.2	Match Rider and Provider	1.8.2.4	ISP
6.4.2	Match Rider and Provider	1.8.2.4(d)	ISP
6.4.2	Match Rider and Provider	1.8.2.4(g)	ISP
6.4.3	Report Ride Match Results to Requestor	1.0	ISP
6.4.3	Report Ride Match Results to Requestor	1.4.1	ISP
6.4.3	Report Ride Match Results to Requestor	1.4.1.3	ISP
6.4.3	Report Ride Match Results to Requestor	1.4.1.4	ISP
6.4.4	Confirm Traveler Rideshare Request	2.0	ISP
6.4.4	Confirm Traveler Rideshare Request	2.3.0	ISP
6.4.4	Confirm Traveler Rideshare Request	2.3.1	ISP
6.4.4	Confirm Traveler Rideshare Request	2.3.1.3	ISP
6.4.4	Confirm Traveler Rideshare Request	2.3.1.4	ISP
6.5.1	Collect and Update Traveler Information	1.0	ISP
6.5.1	Collect and Update Traveler Information	1.1.0	ISP
6.5.1	Collect and Update Traveler Information	1.1.2	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1.1	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1.2	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1.3	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1.4	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1.5	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1.6	ISP
6.5.1	Collect and Update Traveler Information	1.1.2.1.8	ISP
6.5.1	Collect and Update Traveler Information	1.5.0	ISP
6.5.1	Collect and Update Traveler Information	1.5.1	ISP
6.5.1	Collect and Update Traveler Information	1.5.1.1	ISP
6.5.1	Collect and Update Traveler Information	1.5.1.2	ISP
6.5.1	Collect and Update Traveler Information	1.5.1.3	ISP
6.5.1	Collect and Update Traveler Information	1.7	ISP
6.5.1	Collect and Update Traveler Information	1.7.1	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.5.1	Collect and Update Traveler Information	1.7.1.1	ISP
6.5.1	Collect and Update Traveler Information	1.7.1.1.1	ISP
6.5.1	Collect and Update Traveler Information	1.7.1.1.1(e)	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.0	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.0	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.1	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.1.3	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.1.5	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.2	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.2(a)	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.2(b)	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.2(h)	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.3	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.3(a)	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.3(b)	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	1.5.2.4	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	7.0	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	7.1	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	7.1.0	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	7.1.3	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	7.1.3.1	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	7.1.3.1.8	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	7.1.3.1.8(g)	ISP
6.5.3	Register Yellow Pages Service Providers	1.0	ISP
6.5.3	Register Yellow Pages Service Providers	1.7.0	ISP
6.5.3	Register Yellow Pages Service Providers	1.7.4	ISP
6.6.1	Provide Multimodal Route Selection	1.0	ISP
6.6.1	Provide Multimodal Route Selection	1.3.0	ISP
6.6.1	Provide Multimodal Route Selection	1.3.1	ISP
6.6.1	Provide Multimodal Route Selection	1.3.1.2	ISP
6.6.1	Provide Multimodal Route Selection	1.3.2	ISP
6.6.1	Provide Multimodal Route Selection	1.3.2.1	ISP
6.6.1	Provide Multimodal Route Selection	1.3.2.2	ISP
6.6.1	Provide Multimodal Route Selection	1.3.2.2.2	ISP
6.6.1	Provide Multimodal Route Selection	1.3.3	ISP
6.6.1	Provide Multimodal Route Selection	1.3.3.1	ISP
6.6.1	Provide Multimodal Route Selection	1.3.3.1(b)	ISP
6.6.1	Provide Multimodal Route Selection	1.3.4	ISP
6.6.1	Provide Multimodal Route Selection	1.3.4.2	ISP
6.6.1	Provide Multimodal Route Selection	1.3.4.2.1	ISP
6.6.1	Provide Multimodal Route Selection	1.3.4.3	ISP
6.6.1	Provide Multimodal Route Selection	1.4.0	ISP
6.6.1	Provide Multimodal Route Selection	1.4.3	ISP
6.6.1	Provide Multimodal Route Selection	1.4.3.3	ISP
6.6.1	Provide Multimodal Route Selection	1.4.4.3(f)	ISP
6.6.1	Provide Multimodal Route Selection	1.4.4.3(g)	ISP
6.6.1	Provide Multimodal Route Selection	5.0	ISP
6.6.1	Provide Multimodal Route Selection	5.2.0	ISP
6.6.1	Provide Multimodal Route Selection	5.2.2	ISP
6.6.1	Provide Multimodal Route Selection	5.2.2.1	ISP
6.6.1	Provide Multimodal Route Selection	7.0	ISP
6.6.1	Provide Multimodal Route Selection	7.1	ISP
6.6.1	Provide Multimodal Route Selection	7.1.0	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.6.1	Provide Multimodal Route Selection	7.1.3	ISP
6.6.1	Provide Multimodal Route Selection	7.1.3.1	ISP
6.6.1	Provide Multimodal Route Selection	7.1.3.1.8	ISP
6.6.1	Provide Multimodal Route Selection	7.1.3.1.8(f)	ISP
6.6.1	Provide Multimodal Route Selection	7.1.3.1.8(g)	ISP
6.6.1	Provide Multimodal Route Selection	7.1.3.1.8(h)	ISP
6.6.2.1	Calculate Vehicle Route	1.0	ISP
6.6.2.1	Calculate Vehicle Route	1.2.0	ISP
6.6.2.1	Calculate Vehicle Route	1.2.1	ISP
6.6.2.1	Calculate Vehicle Route	1.2.1.4	ISP
6.6.2.1	Calculate Vehicle Route	1.2.1.4.1	ISP
6.6.2.1	Calculate Vehicle Route	1.3.0	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1.2	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1.2.1	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1.2.1(a)	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1.2.1(b)	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1.3	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1.3(a)	ISP
6.6.2.1	Calculate Vehicle Route	1.3.1.3(b)	ISP
6.6.2.1	Calculate Vehicle Route	1.3.2	ISP
6.6.2.1	Calculate Vehicle Route	1.3.2.2	ISP
6.6.2.1	Calculate Vehicle Route	1.3.2.2.1	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3.1	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3.2	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3.2(a)	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3.2(b)	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3.2.1	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3.2.2	ISP
6.6.2.1	Calculate Vehicle Route	1.3.3.3	ISP
6.6.2.1	Calculate Vehicle Route	1.3.4	ISP
6.6.2.1	Calculate Vehicle Route	1.3.4.2	ISP
6.6.2.1	Calculate Vehicle Route	1.3.4.3	ISP
6.6.2.1	Calculate Vehicle Route	1.3.4.3.1	ISP
6.6.2.1	Calculate Vehicle Route	7.0	ISP
6.6.2.1	Calculate Vehicle Route	7.1	ISP
6.6.2.1	Calculate Vehicle Route	7.1.0	ISP
6.6.2.1	Calculate Vehicle Route	7.1.3	ISP
6.6.2.1	Calculate Vehicle Route	7.1.3.1	ISP
6.6.2.1	Calculate Vehicle Route	7.1.3.1.8	ISP
6.6.2.1	Calculate Vehicle Route	7.1.3.1.8(d)	ISP
6.6.2.1	Calculate Vehicle Route	7.1.3.1.8(g)	ISP
6.6.2.1	Calculate Vehicle Route	7.1.3.1.8(h)	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.0	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.0	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.1	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.1.2	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.1.2.1	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.1.3	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.3	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.3.1	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.3.2	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.3.2.1	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.3.2.2	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.3.3	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.4	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.4.2	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.4.3	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	1.3.4.3.1	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	7.0	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	7.1	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	7.1.0	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	7.1.3	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	7.1.3.1	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	7.1.3.1.8	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	7.1.3.1.8(c)	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.0	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.3.0	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.3.1	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.3.1.2	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.3.1.2.1	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.3.1.2.1(c)	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.7.0	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	1.7.4	ISP
6.6.2.4	Update Vehicle Route Selection Map Data	1.0	ISP
6.6.2.4	Update Vehicle Route Selection Map Data	1.3.0	ISP
6.6.2.4	Update Vehicle Route Selection Map Data	1.3.2	ISP
6.6.2.4	Update Vehicle Route Selection Map Data	1.3.2.1	ISP
6.6.2.4	Update Vehicle Route Selection Map Data	1.3.2.1(a)	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	1.3	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	1.3.3	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	1.3.3.1	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	1.3.3.1(a)	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	1.3.4	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	1.3.4.1	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	1.3.4.1(a)	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.0	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.0	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.1	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.1.2	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.1.2.1	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.1.3	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.2	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.2.1	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.2.1(b)	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.3	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.3.1	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.3.2	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.3.2.1	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.3.2.2	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.3.3	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.4	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.4.2	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.4.3	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	1.3.4.3.1	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.0	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.1	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.1.0	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.1.3	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.1.3.1	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.1.3.1.8	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.1.3.1.8(a)	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	7.1.3.1.8(c)	ISP
6.6.3	Update Other Routes Selection Map Data	1.3.0	ISP
6.6.3	Update Other Routes Selection Map Data	1.3.1	ISP
6.6.3	Update Other Routes Selection Map Data	1.3.1.2	ISP
6.6.3	Update Other Routes Selection Map Data	1.3.1.2.1	ISP
6.6.3	Update Other Routes Selection Map Data	1.3.1.2.1(b)	ISP
6.6.4	Select Transit Route	1.0	ISP
6.6.4	Select Transit Route	1.3.0	ISP
6.6.4	Select Transit Route	1.3.1	ISP
6.6.4	Select Transit Route	1.3.1.2	ISP
6.6.4	Select Transit Route	1.3.1.2.1	ISP
6.6.4	Select Transit Route	1.3.1.2.1(b)	ISP
6.6.4	Select Transit Route	1.3.1.2.1(c)	ISP
6.6.4	Select Transit Route	1.3.1.3	ISP
6.6.4	Select Transit Route	1.3.3	ISP
6.6.4	Select Transit Route	1.3.3.2	ISP
6.6.4	Select Transit Route	1.3.3.2.1	ISP
6.6.4	Select Transit Route	1.3.3.2.2	ISP
6.6.4	Select Transit Route	1.3.4	ISP
6.6.4	Select Transit Route	1.3.4.3	ISP
6.6.4	Select Transit Route	1.4.0	ISP
6.6.4	Select Transit Route	1.4.3	ISP
6.6.4	Select Transit Route	1.4.3.3	ISP
6.6.5	Select Other Routes	1.0	ISP
6.6.5	Select Other Routes	1.3.0	ISP
6.6.5	Select Other Routes	1.3.1	ISP
6.6.5	Select Other Routes	1.3.1.2	ISP
6.6.5	Select Other Routes	1.3.1.2.1	ISP
6.6.5	Select Other Routes	1.3.1.2.1(d).2	ISP
6.6.5	Select Other Routes	1.3.1.2.1(d).3	ISP
6.6.5	Select Other Routes	1.3.1.3	ISP
6.6.5	Select Other Routes	1.3.1.3(c)	ISP
6.6.5	Select Other Routes	1.3.1.3(d)	ISP
6.6.5	Select Other Routes	1.3.3	ISP
6.6.5	Select Other Routes	1.3.3.2	ISP
6.6.5	Select Other Routes	1.3.3.2.1	ISP
6.6.5	Select Other Routes	1.3.3.2.2	ISP
6.6.5	Select Other Routes	1.3.4	ISP
6.6.5	Select Other Routes	1.3.4.3	ISP
6.6.5	Select Other Routes	1.3.4.3.1	ISP
6.6.5	Select Other Routes	7.0	ISP
6.6.5	Select Other Routes	7.1	ISP
6.6.5	Select Other Routes	7.1.0	ISP
6.6.5	Select Other Routes	7.1.3	ISP
6.6.5	Select Other Routes	7.1.3.1	ISP
6.6.5	Select Other Routes	7.1.3.1.8	ISP
6.6.5	Select Other Routes	7.1.3.1.8(c)	ISP
6.7.1.1	Build Driver Personal Security Message	5.0	VS
6.7.1.1	Build Driver Personal Security Message	5.1.0	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.7.1.1	Build Driver Personal Security Message	5.1.1	VS
6.7.1.1	Build Driver Personal Security Message	5.1.1.1	VS
6.7.1.1	Build Driver Personal Security Message	5.1.1.1(a)	VS
6.7.1.1	Build Driver Personal Security Message	5.1.1.1(b)	VS
6.7.1.1	Build Driver Personal Security Message	5.1.1.1(c)	VS
6.7.1.1	Build Driver Personal Security Message	5.1.1.1(d)	VS
6.7.1.1	Build Driver Personal Security Message	5.1.1.1(e)	VS
6.7.1.1	Build Driver Personal Security Message	5.1.1.2	VS
6.7.1.2	Provide Driver In-vehicle Communications Function	5.0	VS
6.7.1.2	Provide Driver In-vehicle Communications Function	5.1.0	VS
6.7.1.2	Provide Driver In-vehicle Communications Function	5.1.1	VS
6.7.1.2	Provide Driver In-vehicle Communications Function	5.1.1.3	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.0	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.0	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.1.4	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.1.4.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.2.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.2.1.4	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.2.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.3	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.3.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.2.3.2.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.0	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.1.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.1.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.1.2.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.1.3	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.2.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.2.3	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.2.3.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.3.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.3.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.3.2.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.3.3	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.4	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.4.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.4.2.1	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.4.2.2	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	1.3.4.3	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.0	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.0	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.1	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.1.1	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.1.2	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.1.2.1	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.1.3	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.2	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.2.2	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.2.3	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.2.3.1	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.3.1	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.3.2	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.3.2.2	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.3.3	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.4	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.4.2	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.4.2.1	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.4.2.2	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	1.3.4.3	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.0	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.0	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.1	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.1.1	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.1.2	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.1.2.1	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.1.3	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.2	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.2.2	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.2.3	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.2.3.1	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.3.1	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.3.2	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.3.2.2	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.3.3	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.4	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.4.2	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.4.2.1	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.4.2.2	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.4.2.2(a)	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	1.3.4.3	VS
6.7.2.2	Process Vehicle Location Data	1.0	VS
6.7.2.2	Process Vehicle Location Data	1.2.0	VS
6.7.2.2	Process Vehicle Location Data	1.2.1	VS
6.7.2.2	Process Vehicle Location Data	1.2.1.1	VS
6.7.2.2	Process Vehicle Location Data	1.2.1.2	VS
6.7.2.2	Process Vehicle Location Data	1.2.1.3	VS
6.7.2.2	Process Vehicle Location Data	1.2.1.5	VS
6.7.2.2	Process Vehicle Location Data	1.2.3	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1.1	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1.2	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1.3	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1.4	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1.4.1	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1.4.2	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.1.5	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.2	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.2.2.1	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.2.4	VS
6.7.2.2	Process Vehicle Location Data	1.2.3.2.5	VS
6.7.2.2	Process Vehicle Location Data	1.3.0	VS
6.7.2.2	Process Vehicle Location Data	1.3.1	VS
6.7.2.2	Process Vehicle Location Data	1.3.1.2	VS
6.7.2.2	Process Vehicle Location Data	1.3.1.2.1	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.7.2.2	Process Vehicle Location Data	1.3.2	VS
6.7.2.2	Process Vehicle Location Data	1.3.2.1	VS
6.7.2.2	Process Vehicle Location Data	1.3.2.2	VS
6.7.2.2	Process Vehicle Location Data	1.3.3	VS
6.7.2.2	Process Vehicle Location Data	1.3.3.1	VS
6.7.2.2	Process Vehicle Location Data	1.3.4	VS
6.7.2.2	Process Vehicle Location Data	1.3.4.2	VS
6.7.2.2	Process Vehicle Location Data	1.3.4.2.1	VS
6.7.2.2	Process Vehicle Location Data	1.3.4.2.2	VS
6.7.2.2	Process Vehicle Location Data	1.3.4.3	VS
6.7.2.2	Process Vehicle Location Data	2.2.1.2.2	VS
6.7.2.2	Process Vehicle Location Data	2.2.1.2.2.1	VS
6.7.2.2	Process Vehicle Location Data	2.2.1.2.2.2	VS
6.7.2.2	Process Vehicle Location Data	2.2.1.2.2.3	VS
6.7.2.2	Process Vehicle Location Data	2.2.1.2.2.4	VS
6.7.2.2	Process Vehicle Location Data	5.0	VS
6.7.2.2	Process Vehicle Location Data	5.1.0	VS
6.7.2.2	Process Vehicle Location Data	5.1.1	VS
6.7.2.2	Process Vehicle Location Data	5.1.1.1	VS
6.7.2.2	Process Vehicle Location Data	5.1.1.1(d)	VS
6.7.2.2	Process Vehicle Location Data	5.1.1.2	VS
6.7.2.2	Process Vehicle Location Data	5.1.1.4	VS
6.7.2.2	Process Vehicle Location Data	5.1.2	VS
6.7.2.2	Process Vehicle Location Data	5.1.2.1	VS
6.7.2.2	Process Vehicle Location Data	5.1.2.1.1	VS
6.7.2.2	Process Vehicle Location Data	5.1.2.1.2	VS
6.7.2.2	Process Vehicle Location Data	5.1.2.2	VS
6.7.2.2	Process Vehicle Location Data	5.1.2.2(b)	VS
6.7.2.2	Process Vehicle Location Data	6.0	VS
6.7.2.2	Process Vehicle Location Data	6.5.0	VS
6.7.2.2	Process Vehicle Location Data	6.5.1	VS
6.7.2.2	Process Vehicle Location Data	6.5.1.1	VS
6.7.2.2	Process Vehicle Location Data	6.5.1.1.1	VS
6.7.2.2	Process Vehicle Location Data	6.5.1.1.2	VS
6.7.2.2	Process Vehicle Location Data	6.5.1.1.3	VS
6.7.2.2	Process Vehicle Location Data	6.5.2	VS
6.7.2.2	Process Vehicle Location Data	6.5.2.1	VS
6.7.2.2	Process Vehicle Location Data	6.5.2.1.1	VS
6.7.2.2	Process Vehicle Location Data	6.5.2.1.2	VS
6.7.2.2	Process Vehicle Location Data	6.5.3	VS
6.7.2.2	Process Vehicle Location Data	6.5.3.1	VS
6.7.2.2	Process Vehicle Location Data	6.5.3.1.1	VS
6.7.2.3	Provide Driver Guidance Interface	1.0	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.0	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.1	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.1.2	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.1.2.1	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.1.2.1(d)	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.1.2.1(d).2	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.1.2.1(d).3	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.2	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.2.1	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.2.2	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.3	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.7.2.3	Provide Driver Guidance Interface	1.3.3.1	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4.1	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4.1(d)	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4.1(e)	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4.2	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4.2.1	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4.2.2	VS
6.7.2.3	Provide Driver Guidance Interface	1.3.4.3	VS
6.7.2.4	Update Vehicle Navigable Map Database	1.0	VS
6.7.2.4	Update Vehicle Navigable Map Database	1.3.0	VS
6.7.2.4	Update Vehicle Navigable Map Database	1.3.2	VS
6.7.2.4	Update Vehicle Navigable Map Database	1.3.2.1	VS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.0	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.0	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.1	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.1.1	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.1.2	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.1.2.1	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.1.3	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.2	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.2.2	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.2.3	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.2.3.1	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.3	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.3.2	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.3.2.2	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.3.3	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4.1	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4.1(d)	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4.1(e)	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4.2	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4.2.1	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4.2.2	PIAS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	1.3.4.3	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.0	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.0	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.1	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.1.1	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.1.2	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.1.2.1	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.1.3	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.2	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.2.2	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.2.3	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.2.3.1	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.3	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.3.2	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.3.2.2	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.3.3	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.4	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.4.2	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.4.2.1	PIAS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.4.2.2	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	1.3.4.3	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.0	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.0	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.1	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.1.1	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.1.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.1.2.1	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.1.3	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.2.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.2.3	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.2.3.1	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.3	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.3.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.3.2.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.3.3	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.4	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.4.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.4.2.1	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.4.2.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.3.4.3	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.5	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.5.2	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.5.2.5	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.5.2.5(d)	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	1.5.2.5(g)	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.0	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.0	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.1	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.1.1	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.1.2	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.1.2.1	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.1.3	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.2	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.2.2	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.2.3	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.2.3.1	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.3	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.3.2	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.3.2.2	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.3.3	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.4	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.4.2	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.4.2.1	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.4.2.2	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	1.3.4.3	PIAS
6.8.1.3	Process Personal Portable Device Location Data	NA	PIAS
6.8.1.4	Update Traveler Navigable Map Database	NA	PIAS
6.8.1.5	Provide Traveler Emergency Message Interface	1.0	PIAS
6.8.1.5	Provide Traveler Emergency Message Interface	1.5.0	PIAS
6.8.1.5	Provide Traveler Emergency Message Interface	1.5.2	PIAS
6.8.1.5	Provide Traveler Emergency Message Interface	1.5.2.1	PIAS
6.8.1.5	Provide Traveler Emergency Message Interface	1.5.2.2	PIAS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.8.1.5	Provide Traveler Emergency Message Interface	1.5.2.3	PIAS
6.8.2.1	Build Traveler Personal Security Message	5.0	PIAS
6.8.2.1	Build Traveler Personal Security Message	5.1.0	PIAS
6.8.2.1	Build Traveler Personal Security Message	5.1.1	PIAS
6.8.2.1	Build Traveler Personal Security Message	5.1.1.1	PIAS
6.8.2.1	Build Traveler Personal Security Message	5.1.1.1(d)	PIAS
6.8.2.1	Build Traveler Personal Security Message	5.1.1.1(e)	PIAS
6.8.2.1	Build Traveler Personal Security Message	5.1.1.2	PIAS
6.8.2.2	Provide Traveler Emergency Communications Function	5.0	PIAS
6.8.2.2	Provide Traveler Emergency Communications Function	5.1.0	PIAS
6.8.2.2	Provide Traveler Emergency Communications Function	5.1.1	PIAS
6.8.2.2	Provide Traveler Emergency Communications Function	5.1.1.3	PIAS
6.8.3.1	Get Traveler Personal Request	1.0	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.0	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.1	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.10	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.2	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.3	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.4	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.5	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.6	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.7	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.8	PIAS
6.8.3.1	Get Traveler Personal Request	1.1.3.2.9	PIAS
6.8.3.1	Get Traveler Personal Request	1.4.0	PIAS
6.8.3.1	Get Traveler Personal Request	1.4.1	PIAS
6.8.3.1	Get Traveler Personal Request	1.4.1.1	PIAS
6.8.3.1	Get Traveler Personal Request	1.4.1.2	PIAS
6.8.3.1	Get Traveler Personal Request	1.4.1.2(b)	PIAS
6.8.3.1	Get Traveler Personal Request	1.4.1.2(c)	PIAS
6.8.3.1	Get Traveler Personal Request	1.4.1.3	PIAS
6.8.3.1	Get Traveler Personal Request	1.5.0	PIAS
6.8.3.1	Get Traveler Personal Request	1.5.2	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.0	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.0	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1.1.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1.1.2	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1.1.3	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1.1.4	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1.1.5	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.1.1.6	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1.2	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1.3	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1.4	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1.5	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1.6	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.2.1.8	PIAS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.4	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.4.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.4.1.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.4.1.2	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.4.1.3	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.1.4.1.4	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.4.0	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.4.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.4.1.3	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.5.0	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.5.2	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.5.2.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	1.5.2.2	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	2.0	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	2.3.0	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	2.3.1	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	2.3.1.3	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	2.3.1.4	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.0	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.0	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.1	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.10	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.2	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.3	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.4	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.5	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.6	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.7	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.8	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.3.2.9	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.4	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.4.2	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.1.4.2.1	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.3	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.3.4	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.3.4.1	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.3.4.1(b)	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.3.4.1(c)	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.4.0	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.4.1	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.4.1.1	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.4.1.2	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.4.1.3	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.4.1.4	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.5	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.5.2	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.5.2.5	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.5.2.5(b)	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.5.2.5(c)	PIAS
6.8.3.3	Provide Traveler Personal Interface	1.5.2.5(d)	PIAS
6.8.3.3	Provide Traveler Personal Interface	2.0	PIAS
6.8.3.3	Provide Traveler Personal Interface	2.3.0	PIAS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
6.8.3.3	Provide Traveler Personal Interface	2.3.1	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.3	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.3.4	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.3.4.1	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.3.4.1(b)	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.3.4.1(c)	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.5	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.5.2	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.5.2.5	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.5.2.5(c)	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	1.5.2.5(d)	PIAS
7.1.1.1	Read Tag Data for Tolls	1.8.2	TCS
7.1.1.1	Read Tag Data for Tolls	1.8.2.13	TCS
7.1.1.1	Read Tag Data for Tolls	1.8.2.13(c)	TCS
7.1.1.1	Read Tag Data for Tolls	3.0	TCS
7.1.1.1	Read Tag Data for Tolls	3.1	TCS
7.1.1.1	Read Tag Data for Tolls	3.1.1	TCS
7.1.1.1	Read Tag Data for Tolls	3.1.1.1	TCS
7.1.1.1	Read Tag Data for Tolls	3.1.1.6	TCS
7.1.1.10	Determine Advanced Toll Bill	3.0	TCS
7.1.1.10	Determine Advanced Toll Bill	3.1	TCS
7.1.1.10	Determine Advanced Toll Bill	3.1.1	TCS
7.1.1.10	Determine Advanced Toll Bill	3.1.1.1	TCS
7.1.1.11	Manage Toll Archive Data	7.0	TAS
7.1.1.11	Manage Toll Archive Data	7.1	TAS
7.1.1.11	Manage Toll Archive Data	7.1.3	TAS
7.1.1.11	Manage Toll Archive Data	7.1.3.1.2	TAS
7.1.1.2	Calculate Vehicle Toll	1.8.2	TCS
7.1.1.2	Calculate Vehicle Toll	1.8.2.13	TCS
7.1.1.2	Calculate Vehicle Toll	1.8.2.13(c)	TCS
7.1.1.2	Calculate Vehicle Toll	3.0	TCS
7.1.1.2	Calculate Vehicle Toll	3.1	TCS
7.1.1.2	Calculate Vehicle Toll	3.1.1	TCS
7.1.1.2	Calculate Vehicle Toll	3.1.1.1	TCS
7.1.1.2	Calculate Vehicle Toll	3.1.1.2	TCS
7.1.1.2	Calculate Vehicle Toll	3.1.1.6	TCS
7.1.1.3	Manage Bad Toll Payment Data	1.8.2	TAS
7.1.1.3	Manage Bad Toll Payment Data	1.8.2.1	TAS
7.1.1.3	Manage Bad Toll Payment Data	1.8.2.1(f)	TAS
7.1.1.3	Manage Bad Toll Payment Data	3.0	TAS
7.1.1.3	Manage Bad Toll Payment Data	3.1	TAS
7.1.1.3	Manage Bad Toll Payment Data	3.1.1	TAS
7.1.1.3	Manage Bad Toll Payment Data	3.1.1.4	TAS
7.1.1.3	Manage Bad Toll Payment Data	3.1.1.5	TAS
7.1.1.4	Check for Advanced Tolls Payment	3.0	TCS
7.1.1.4	Check for Advanced Tolls Payment	3.1	TCS
7.1.1.4	Check for Advanced Tolls Payment	3.1.1	TCS
7.1.1.4	Check for Advanced Tolls Payment	3.1.1.5	TCS
7.1.1.5	Bill Driver for Tolls	3.0	TCS
7.1.1.5	Bill Driver for Tolls	3.1	TCS
7.1.1.5	Bill Driver for Tolls	3.1.1	TCS
7.1.1.5	Bill Driver for Tolls	3.1.1.1	TCS
7.1.1.5	Bill Driver for Tolls	3.1.1.8	TCS
7.1.1.6	Collect Probe Data From Toll Transactions	3.0	TAS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
7.1.1.6	Collect Probe Data From Toll Transactions	3.1	TAS
7.1.1.6	Collect Probe Data From Toll Transactions	3.1.1	TAS
7.1.1.6	Collect Probe Data From Toll Transactions	3.1.1.1	TAS
7.1.1.6	Collect Probe Data From Toll Transactions	3.1.1.4	TAS
7.1.1.6	Collect Probe Data From Toll Transactions	3.1.1.6	TAS
7.1.1.7	Update Toll Price Data	3.0	TAS
7.1.1.7	Update Toll Price Data	3.1	TAS
7.1.1.7	Update Toll Price Data	3.1.1	TAS
7.1.1.7	Update Toll Price Data	3.1.1.2	TAS
7.1.1.8	Register for Advanced Toll Payment	3.0	TAS
7.1.1.8	Register for Advanced Toll Payment	3.1	TAS
7.1.1.8	Register for Advanced Toll Payment	3.1.1	TAS
7.1.1.8	Register for Advanced Toll Payment	3.1.1.1	TAS
7.1.1.9	Manage Toll Financial Processing	1.8.2	TAS
7.1.1.9	Manage Toll Financial Processing	1.8.2.10	TAS
7.1.1.9	Manage Toll Financial Processing	1.8.2.10(a)	TAS
7.1.1.9	Manage Toll Financial Processing	1.8.2.12	TAS
7.1.1.9	Manage Toll Financial Processing	1.8.2.12(a)	TAS
7.1.1.9	Manage Toll Financial Processing	1.8.2.4	TAS
7.1.1.9	Manage Toll Financial Processing	1.8.2.4(e)	TAS
7.1.1.9	Manage Toll Financial Processing	3.0	TAS
7.1.1.9	Manage Toll Financial Processing	3.1	TAS
7.1.1.9	Manage Toll Financial Processing	3.1.4	TAS
7.1.1.9	Manage Toll Financial Processing	3.1.4.3	TAS
7.1.2	Produce Roadside Displays	3.0	TCS
7.1.2	Produce Roadside Displays	3.1	TCS
7.1.2	Produce Roadside Displays	3.1.1	TCS
7.1.2	Produce Roadside Displays	3.1.1.3	TCS
7.1.3	Obtain Toll Violator Image	3.0	TCS
7.1.3	Obtain Toll Violator Image	3.1	TCS
7.1.3	Obtain Toll Violator Image	3.1.1	TCS
7.1.3	Obtain Toll Violator Image	3.1.1.4	TCS
7.1.4	Provide Driver Toll Payment Interface	3.0	VS
7.1.4	Provide Driver Toll Payment Interface	3.1	VS
7.1.4	Provide Driver Toll Payment Interface	3.1.1	VS
7.1.4	Provide Driver Toll Payment Interface	3.1.1.1	VS
7.1.4	Provide Driver Toll Payment Interface	3.1.1.3	VS
7.1.4	Provide Driver Toll Payment Interface	3.1.1.7	VS
7.1.5	Detect Vehicle for Tolls	3.0	TCS
7.1.5	Detect Vehicle for Tolls	3.1	TCS
7.1.5	Detect Vehicle for Tolls	3.1.1	TCS
7.1.5	Detect Vehicle for Tolls	3.1.1.4	TCS
7.1.5	Detect Vehicle for Tolls	3.1.1.8	TCS
7.1.6	Distribute Advanced Charges and Fares	3.0	ISP
7.1.6	Distribute Advanced Charges and Fares	3.1	ISP
7.1.6	Distribute Advanced Charges and Fares	3.1.2	ISP
7.1.6	Distribute Advanced Charges and Fares	3.1.2.1	ISP
7.1.6	Distribute Advanced Charges and Fares	3.1.3	ISP
7.1.6	Distribute Advanced Charges and Fares	3.1.3.1	ISP
7.1.7	Provide Payment Instrument Interface for Tolls	3.0	VS
7.1.7	Provide Payment Instrument Interface for Tolls	3.1	VS
7.1.7	Provide Payment Instrument Interface for Tolls	3.1.0	VS
7.1.7	Provide Payment Instrument Interface for Tolls	3.1.3	VS
7.1.7	Provide Payment Instrument Interface for Tolls	3.1.3.1	VS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
7.2.1.1	Read Parking Lot Tag Data	3.0	PMS
7.2.1.1	Read Parking Lot Tag Data	3.1	PMS
7.2.1.1	Read Parking Lot Tag Data	3.1.3	PMS
7.2.1.1	Read Parking Lot Tag Data	3.1.3.1	PMS
7.2.1.10	Determine Advanced Charges	3.0	PMS
7.2.1.10	Determine Advanced Charges	3.1	PMS
7.2.1.10	Determine Advanced Charges	3.1.3	PMS
7.2.1.10	Determine Advanced Charges	3.1.3.2	PMS
7.2.1.10	Determine Advanced Charges	3.1.4	PMS
7.2.1.10	Determine Advanced Charges	3.1.4.1	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	1.8.2	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	1.8.2.13	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	1.8.2.13(c)	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	3.0	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	3.1	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	3.1.3	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	3.1.3.1	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	3.1.3.3	PMS
7.2.1.3	Collect Bad Charge Payment Data	3.0	PMS
7.2.1.3	Collect Bad Charge Payment Data	3.1	PMS
7.2.1.3	Collect Bad Charge Payment Data	3.1.3	PMS
7.2.1.3	Collect Bad Charge Payment Data	3.1.3.1	PMS
7.2.1.4	Check for Advanced Parking Lot Payment	3.0	PMS
7.2.1.4	Check for Advanced Parking Lot Payment	3.1	PMS
7.2.1.4	Check for Advanced Parking Lot Payment	3.1.3	PMS
7.2.1.4	Check for Advanced Parking Lot Payment	3.1.3.1	PMS
7.2.1.4	Check for Advanced Parking Lot Payment	3.1.3.2	PMS
7.2.1.5	Bill Driver for Parking Lot Charges	3.0	PMS
7.2.1.5	Bill Driver for Parking Lot Charges	3.1	PMS
7.2.1.5	Bill Driver for Parking Lot Charges	3.1.3	PMS
7.2.1.5	Bill Driver for Parking Lot Charges	3.1.3.1	PMS
7.2.1.6	Manage Parking Lot Financial Processing	1.8	PMS
7.2.1.6	Manage Parking Lot Financial Processing	1.8.1	PMS
7.2.1.6	Manage Parking Lot Financial Processing	1.8.1.6	PMS
7.2.1.6	Manage Parking Lot Financial Processing	1.8.1.6(e)	PMS
7.2.1.6	Manage Parking Lot Financial Processing	1.8.2	PMS
7.2.1.6	Manage Parking Lot Financial Processing	1.8.2.12	PMS
7.2.1.6	Manage Parking Lot Financial Processing	1.8.2.12(b)	PMS
7.2.1.6	Manage Parking Lot Financial Processing	3.0	PMS
7.2.1.6	Manage Parking Lot Financial Processing	3.1	PMS
7.2.1.6	Manage Parking Lot Financial Processing	3.1.3	PMS
7.2.1.6	Manage Parking Lot Financial Processing	3.1.3.1	PMS
7.2.1.7	Update Parking Lot Data	3.0	PMS
7.2.1.7	Update Parking Lot Data	3.1	PMS
7.2.1.7	Update Parking Lot Data	3.1.3	PMS
7.2.1.7	Update Parking Lot Data	3.1.3.1	PMS
7.2.1.7	Update Parking Lot Data	3.1.3.3	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	3.0	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	3.1	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	3.1.3	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	3.1.3.1	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	3.1.3.2	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	3.1.4	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	3.1.4.1	PMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
7.2.1.9	Manage Parking Lot Reservations	3.0	PMS
7.2.1.9	Manage Parking Lot Reservations	3.1	PMS
7.2.1.9	Manage Parking Lot Reservations	3.1.4	PMS
7.2.1.9	Manage Parking Lot Reservations	3.1.4.3	PMS
7.2.2	Produce Parking Lot Displays	3.0	PMS
7.2.2	Produce Parking Lot Displays	3.1	PMS
7.2.2	Produce Parking Lot Displays	3.1.3	PMS
7.2.2	Produce Parking Lot Displays	3.1.3.1	PMS
7.2.3	Obtain Parking Lot Violator Image	3.0	PMS
7.2.3	Obtain Parking Lot Violator Image	3.1	PMS
7.2.3	Obtain Parking Lot Violator Image	3.1.3	PMS
7.2.4	Provide Driver Parking Lot Payment Interface	3.0	VS
7.2.4	Provide Driver Parking Lot Payment Interface	3.1	VS
7.2.4	Provide Driver Parking Lot Payment Interface	3.1.4	VS
7.2.4	Provide Driver Parking Lot Payment Interface	3.1.4.1	VS
7.2.4	Provide Driver Parking Lot Payment Interface	3.1.4.4	VS
7.2.5	Detect Vehicle for Parking Lot Payment	3.0	PMS
7.2.5	Detect Vehicle for Parking Lot Payment	3.1	PMS
7.2.5	Detect Vehicle for Parking Lot Payment	3.1.3	PMS
7.2.5	Detect Vehicle for Parking Lot Payment	3.1.3.1	PMS
7.2.5	Detect Vehicle for Parking Lot Payment	3.1.3.3	PMS
7.2.6	Distribute Advanced Tolls and Fares	3.0	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1.1	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1.1.3	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1.2	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1.2.1	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1.2.4	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1.4	ISP
7.2.6	Distribute Advanced Tolls and Fares	3.1.4.1	ISP
7.2.7	Provide Payment Instrument Interface for Parking	3.0	VS
7.2.7	Provide Payment Instrument Interface for Parking	3.1	VS
7.2.7	Provide Payment Instrument Interface for Parking	3.1.0	VS
7.2.7	Provide Payment Instrument Interface for Parking	3.1.3	VS
7.2.7	Provide Payment Instrument Interface for Parking	3.1.3.1	VS
7.3.1.1	Register for Advanced Transit Fare Payment	3.0	TRMS
7.3.1.1	Register for Advanced Transit Fare Payment	3.1	TRMS
7.3.1.1	Register for Advanced Transit Fare Payment	3.1.2	TRMS
7.3.1.1	Register for Advanced Transit Fare Payment	3.1.2.1	TRMS
7.3.1.1	Register for Advanced Transit Fare Payment	3.1.2.4	TRMS
7.3.1.1	Register for Advanced Transit Fare Payment	3.1.2.8	TRMS
7.3.1.2	Determine Advanced Transit Fares	3.0	TRMS
7.3.1.2	Determine Advanced Transit Fares	3.1	TRMS
7.3.1.2	Determine Advanced Transit Fares	3.1.2	TRMS
7.3.1.2	Determine Advanced Transit Fares	3.1.2.1	TRMS
7.3.1.2	Determine Advanced Transit Fares	3.1.2.2	TRMS
7.3.1.2	Determine Advanced Transit Fares	3.1.2.8	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	1.8.2	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	1.8.2.10	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	1.8.2.10(a)	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	2.3.0	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	2.3.3	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	2.3.3.1	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	2.3.3.1(c)	TRMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
7.3.1.3	Manage Transit Fare Financial Processing	2.3.3.3	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	3.0	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	3.1.0	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	3.1.2	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	3.1.2.1	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	3.1.2.3	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	3.1.2.5	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.0	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.1	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.1.0	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.1.2	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.1.2.1	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.1.2.4	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.1.2.8	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	3.1.4	TRMS
7.3.1.5	Bill Transit User for Transit Fare	3.0	TRMS
7.3.1.5	Bill Transit User for Transit Fare	3.1	TRMS
7.3.1.5	Bill Transit User for Transit Fare	3.1.2	TRMS
7.3.1.5	Bill Transit User for Transit Fare	3.1.2.1	TRMS
7.3.1.5	Bill Transit User for Transit Fare	3.1.2.3	TRMS
7.3.1.5	Bill Transit User for Transit Fare	3.1.2.8	TRMS
7.3.1.6	Collect Bad Transit Fare Payment Data	3.0	TRMS
7.3.1.6	Collect Bad Transit Fare Payment Data	3.1	TRMS
7.3.1.6	Collect Bad Transit Fare Payment Data	3.1.2	TRMS
7.3.1.6	Collect Bad Transit Fare Payment Data	3.1.2.1	TRMS
7.3.1.6	Collect Bad Transit Fare Payment Data	3.1.2.3	TRMS
7.3.1.6	Collect Bad Transit Fare Payment Data	3.1.2.5	TRMS
7.3.1.7	Update Transit Fare Data	3.0	TRMS
7.3.1.7	Update Transit Fare Data	3.1	TRMS
7.3.1.7	Update Transit Fare Data	3.1.2	TRMS
7.3.1.7	Update Transit Fare Data	3.1.2.6	TRMS
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	3.0	ISP
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	3.1	ISP
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	3.1.2	ISP
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	3.1.2.1	ISP
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	3.1.4	ISP
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	3.1.4.1	ISP
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	3.1.4.2	ISP
7.3.3	Get Transit User Image for Violation	3.0	TRMS
7.3.3	Get Transit User Image for Violation	3.1	TRMS
7.3.3	Get Transit User Image for Violation	3.1.2	TRMS
7.3.3	Get Transit User Image for Violation	3.1.2.5	TRMS
7.3.4	Provide Remote Terminal Payment Instrument Interface	3.0	RTS
7.3.4	Provide Remote Terminal Payment Instrument Interface	3.1	RTS
7.3.4	Provide Remote Terminal Payment Instrument Interface	3.1.0	RTS
7.3.4	Provide Remote Terminal Payment Instrument Interface	3.1.3	RTS
7.3.4	Provide Remote Terminal Payment Instrument Interface	3.1.3.1	RTS
7.3.5	Provide Transit Vehicle Payment Instrument Interface	3.0	TRVS
7.3.5	Provide Transit Vehicle Payment Instrument Interface	3.1	TRVS
7.3.5	Provide Transit Vehicle Payment Instrument Interface	3.1.0	TRVS
7.3.5	Provide Transit Vehicle Payment Instrument Interface	3.1.3	TRVS
7.3.5	Provide Transit Vehicle Payment Instrument Interface	3.1.3.1	TRVS
7.4.1.1	Process Commercial Vehicle Payments	1.0	CVAS
7.4.1.1	Process Commercial Vehicle Payments	1.4	CVAS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
7.4.1.1	Process Commercial Vehicle Payments	1.4.0	CVAS
7.4.1.1	Process Commercial Vehicle Payments	1.4.2	CVAS
7.4.1.1	Process Commercial Vehicle Payments	1.4.2.1	CVAS
7.4.1.1	Process Commercial Vehicle Payments	1.4.2.4	CVAS
7.4.1.1	Process Commercial Vehicle Payments	1.4.3	CVAS
7.4.1.1	Process Commercial Vehicle Payments	1.4.3.2	CVAS
7.4.1.1	Process Commercial Vehicle Payments	3.0	CVAS
7.4.1.1	Process Commercial Vehicle Payments	3.1	CVAS
7.4.1.1	Process Commercial Vehicle Payments	3.1.4	CVAS
7.4.1.1	Process Commercial Vehicle Payments	3.1.4.1	CVAS
7.4.1.2	Process Yellow Pages Services Provider Payments	2.0	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	2.2	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	2.2.1	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	2.2.1.1	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	2.2.1.1.4	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	2.3	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	2.3.4	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	4.0	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	4.1	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	4.1.0	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	4.1.2	ISP
7.4.1.2	Process Yellow Pages Services Provider Payments	4.1.2.2	ISP
7.4.1.3	Process Driver Map Update Payments	1.0	ISP
7.4.1.3	Process Driver Map Update Payments	1.3	ISP
7.4.1.3	Process Driver Map Update Payments	1.3.0	ISP
7.4.1.3	Process Driver Map Update Payments	1.3.3	ISP
7.4.1.3	Process Driver Map Update Payments	1.3.3.2	ISP
7.4.1.3	Process Driver Map Update Payments	1.3.3.2.1	ISP
7.4.1.3	Process Driver Map Update Payments	3.0	ISP
7.4.1.3	Process Driver Map Update Payments	3.1	ISP
7.4.1.3	Process Driver Map Update Payments	3.1.0	ISP
7.4.1.3	Process Driver Map Update Payments	3.1.4	ISP
7.4.1.4	Process Traveler Map Update Payments	1.0	ISP
7.4.1.4	Process Traveler Map Update Payments	1.3	ISP
7.4.1.4	Process Traveler Map Update Payments	1.3.0	ISP
7.4.1.4	Process Traveler Map Update Payments	1.3.3	ISP
7.4.1.4	Process Traveler Map Update Payments	1.3.3.2	ISP
7.4.1.4	Process Traveler Map Update Payments	1.3.3.2.1	ISP
7.4.1.5	Process Transit User Other Services Payments	1.0	TRMS
7.4.1.5	Process Transit User Other Services Payments	1.3	TRMS
7.4.1.5	Process Transit User Other Services Payments	1.3.0	TRMS
7.4.1.5	Process Transit User Other Services Payments	1.3.3	TRMS
7.4.1.5	Process Transit User Other Services Payments	1.3.3.2	TRMS
7.4.1.5	Process Transit User Other Services Payments	1.3.3.2.1	TRMS
7.4.1.5	Process Transit User Other Services Payments	3.0	TRMS
7.4.1.5	Process Transit User Other Services Payments	3.1	TRMS
7.4.1.5	Process Transit User Other Services Payments	3.1.0	TRMS
7.4.1.5	Process Transit User Other Services Payments	3.1.4	TRMS
7.4.1.6	Process Traveler Trip and Other Services Payments	3.0	ISP
7.4.1.6	Process Traveler Trip and Other Services Payments	3.1	ISP
7.4.1.6	Process Traveler Trip and Other Services Payments	3.1.0	ISP
7.4.1.6	Process Traveler Trip and Other Services Payments	3.1.4	ISP
7.4.1.7	Collect Payment Transaction Records	3.0	ISP
7.4.1.7	Collect Payment Transaction Records	3.1	ISP

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
7.4.1.7	Collect Payment Transaction Records	3.1.0	ISP
7.4.1.7	Collect Payment Transaction Records	3.1.4	ISP
7.4.1.7	Collect Payment Transaction Records	3.1.4.1	ISP
7.4.1.8	Process Traveler Rideshare Payments	3.0	ISP
7.4.1.8	Process Traveler Rideshare Payments	3.1	ISP
7.4.1.8	Process Traveler Rideshare Payments	3.1.0	ISP
7.4.1.8	Process Traveler Rideshare Payments	3.1.2	ISP
7.4.1.8	Process Traveler Rideshare Payments	3.1.2.2	ISP
7.4.2	Collect Price Data for ITS Use	1.0	ISP
7.4.2	Collect Price Data for ITS Use	1.4	ISP
7.4.2	Collect Price Data for ITS Use	1.4.0	ISP
7.4.2	Collect Price Data for ITS Use	1.4.2	ISP
7.4.2	Collect Price Data for ITS Use	1.4.2.3	ISP
7.4.2	Collect Price Data for ITS Use	1.4.3	ISP
7.4.2	Collect Price Data for ITS Use	1.4.3.5	ISP
7.4.2	Collect Price Data for ITS Use	1.4.3.6	ISP
7.4.2	Collect Price Data for ITS Use	3.0	ISP
7.4.2	Collect Price Data for ITS Use	3.1	ISP
7.4.2	Collect Price Data for ITS Use	3.1.2	ISP
7.4.2	Collect Price Data for ITS Use	3.1.2.7	ISP
7.4.2	Collect Price Data for ITS Use	3.1.4	ISP
7.4.2	Collect Price Data for ITS Use	3.1.4.3	ISP
7.4.2	Collect Price Data for ITS Use	3.1.5	ISP
7.4.2	Collect Price Data for ITS Use	3.1.5.1	ISP
7.4.2	Collect Price Data for ITS Use	3.1.5.1.1	ISP
7.4.2	Collect Price Data for ITS Use	3.1.5.2	ISP
7.4.2	Collect Price Data for ITS Use	3.1.5.3	ISP
7.4.3	Route Traveler Advanced Payments	3.0	ISP
7.4.3	Route Traveler Advanced Payments	3.1	ISP
7.4.3	Route Traveler Advanced Payments	3.1.0	ISP
7.4.3	Route Traveler Advanced Payments	3.1.2	ISP
7.4.3	Route Traveler Advanced Payments	3.1.2.4	ISP
7.4.3	Route Traveler Advanced Payments	3.1.2.6	ISP
7.4.3	Route Traveler Advanced Payments	3.1.3	ISP
7.4.3	Route Traveler Advanced Payments	3.1.3.2	ISP
7.4.3	Route Traveler Advanced Payments	3.1.4	ISP
7.4.3	Route Traveler Advanced Payments	3.1.4.1	ISP
7.4.3	Route Traveler Advanced Payments	3.1.4.2	ISP
7.5.1	Provide Vehicle Payment Instrument Interface	3.0	VS
7.5.1	Provide Vehicle Payment Instrument Interface	3.1	VS
7.5.1	Provide Vehicle Payment Instrument Interface	3.1.0	VS
7.5.1	Provide Vehicle Payment Instrument Interface	3.1.3	VS
7.5.1	Provide Vehicle Payment Instrument Interface	3.1.3.1	VS
7.5.2	Provide Transit User Roadside Payment Instrument Interface	3.0	RTS
7.5.2	Provide Transit User Roadside Payment Instrument Interface	3.1	RTS
7.5.2	Provide Transit User Roadside Payment Instrument Interface	3.1.0	RTS
7.5.2	Provide Transit User Roadside Payment Instrument Interface	3.1.3	RTS
7.5.2	Provide Transit User Roadside Payment Instrument Interface	3.1.3.1	RTS
7.5.3	Provide Personal Payment Instrument Interface	3.0	PIAS
7.5.3	Provide Personal Payment Instrument Interface	3.1	PIAS
7.5.3	Provide Personal Payment Instrument Interface	3.1.0	PIAS
7.5.3	Provide Personal Payment Instrument Interface	3.1.3	PIAS
7.5.3	Provide Personal Payment Instrument Interface	3.1.3.1	PIAS
7.5.4	Provide Commercial Fleet Payment Instrument Interface	3.0	FMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
7.5.4	Provide Commercial Fleet Payment Instrument Interface	3.1	FMS
7.5.4	Provide Commercial Fleet Payment Instrument Interface	3.1.0	FMS
7.5.4	Provide Commercial Fleet Payment Instrument Interface	3.1.3	FMS
7.5.4	Provide Commercial Fleet Payment Instrument Interface	3.1.3.1	FMS
7.5.5	Provide Traveler Kiosk Payment Instrument Interface	3.0	RTS
7.5.5	Provide Traveler Kiosk Payment Instrument Interface	3.1	RTS
7.5.5	Provide Traveler Kiosk Payment Instrument Interface	3.1.0	RTS
7.5.5	Provide Traveler Kiosk Payment Instrument Interface	3.1.3	RTS
7.5.5	Provide Traveler Kiosk Payment Instrument Interface	3.1.3.1	RTS
8.1	Get Archive Data	7.0	ADMS
8.1	Get Archive Data	7.1	ADMS
8.1	Get Archive Data	7.1.0	ADMS
8.1	Get Archive Data	7.1.1	ADMS
8.1	Get Archive Data	7.1.1.1	ADMS
8.1	Get Archive Data	7.1.1.3	ADMS
8.1	Get Archive Data	7.1.2	ADMS
8.1	Get Archive Data	7.1.2.1	ADMS
8.1	Get Archive Data	7.1.2.1.1	ADMS
8.1	Get Archive Data	7.1.2.1.2	ADMS
8.1	Get Archive Data	7.1.2.1.3	ADMS
8.1	Get Archive Data	7.1.2.1.3(a)	ADMS
8.1	Get Archive Data	7.1.2.1.3(b)	ADMS
8.1	Get Archive Data	7.1.2.1.3(c)	ADMS
8.1	Get Archive Data	7.1.2.1.4	ADMS
8.1	Get Archive Data	7.1.2.1.5	ADMS
8.1	Get Archive Data	7.1.2.1.5(a)	ADMS
8.1	Get Archive Data	7.1.2.1.5(b)	ADMS
8.1	Get Archive Data	7.1.2.2	ADMS
8.1	Get Archive Data	7.1.2.3	ADMS
8.1	Get Archive Data	7.1.2.4	ADMS
8.1	Get Archive Data	7.1.3	ADMS
8.1	Get Archive Data	7.1.3.1	ADMS
8.1	Get Archive Data	7.1.3.1.1	ADMS
8.1	Get Archive Data	7.1.3.1.1(a)	ADMS
8.1	Get Archive Data	7.1.3.1.1(b)	ADMS
8.1	Get Archive Data	7.1.3.1.1(c)	ADMS
8.1	Get Archive Data	7.1.3.1.1(d)	ADMS
8.1	Get Archive Data	7.1.3.1.1(e)	ADMS
8.1	Get Archive Data	7.1.3.1.10	ADMS
8.1	Get Archive Data	7.1.3.1.11	ADMS
8.1	Get Archive Data	7.1.3.1.2	ADMS
8.1	Get Archive Data	7.1.3.1.3	ADMS
8.1	Get Archive Data	7.1.3.1.3(a)	ADMS
8.1	Get Archive Data	7.1.3.1.3(b)	ADMS
8.1	Get Archive Data	7.1.3.1.3(c)	ADMS
8.1	Get Archive Data	7.1.3.1.3(d)	ADMS
8.1	Get Archive Data	7.1.3.1.3(e)	ADMS
8.1	Get Archive Data	7.1.3.1.4	ADMS
8.1	Get Archive Data	7.1.3.1.4(a)	ADMS
8.1	Get Archive Data	7.1.3.1.4(b)	ADMS
8.1	Get Archive Data	7.1.3.1.4(c)	ADMS
8.1	Get Archive Data	7.1.3.1.4(d)	ADMS
8.1	Get Archive Data	7.1.3.1.4(e)	ADMS
8.1	Get Archive Data	7.1.3.1.4(f)	ADMS

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P-Spec	Name	USR	Subsystem
8.1	Get Archive Data	7.1.3.1.4(g)	ADMS
8.1	Get Archive Data	7.1.3.1.5	ADMS
8.1	Get Archive Data	7.1.3.1.5(a)	ADMS
8.1	Get Archive Data	7.1.3.1.5(b)	ADMS
8.1	Get Archive Data	7.1.3.1.5(c)	ADMS
8.1	Get Archive Data	7.1.3.1.5(d)	ADMS
8.1	Get Archive Data	7.1.3.1.5(e)	ADMS
8.1	Get Archive Data	7.1.3.1.5(f)	ADMS
8.1	Get Archive Data	7.1.3.1.5(g)	ADMS
8.1	Get Archive Data	7.1.3.1.5(h)	ADMS
8.1	Get Archive Data	7.1.3.1.6	ADMS
8.1	Get Archive Data	7.1.3.1.6(a)	ADMS
8.1	Get Archive Data	7.1.3.1.6(b)	ADMS
8.1	Get Archive Data	7.1.3.1.6(c)	ADMS
8.1	Get Archive Data	7.1.3.1.6(d)	ADMS
8.1	Get Archive Data	7.1.3.1.6(e)	ADMS
8.1	Get Archive Data	7.1.3.1.6(f)	ADMS
8.1	Get Archive Data	7.1.3.1.7	ADMS
8.1	Get Archive Data	7.1.3.1.7(a)	ADMS
8.1	Get Archive Data	7.1.3.1.7(b)	ADMS
8.1	Get Archive Data	7.1.3.1.8	ADMS
8.1	Get Archive Data	7.1.3.1.8(a)	ADMS
8.1	Get Archive Data	7.1.3.1.8(b)	ADMS
8.1	Get Archive Data	7.1.3.1.8(c)	ADMS
8.1	Get Archive Data	7.1.3.1.8(d)	ADMS
8.1	Get Archive Data	7.1.3.1.8(e)	ADMS
8.1	Get Archive Data	7.1.3.1.8(f)	ADMS
8.1	Get Archive Data	7.1.3.1.8(g)	ADMS
8.1	Get Archive Data	7.1.3.1.8(h)	ADMS
8.1	Get Archive Data	7.1.3.1.9	ADMS
8.1	Get Archive Data	7.1.3.1.9(a)	ADMS
8.1	Get Archive Data	7.1.3.1.9(b)	ADMS
8.1	Get Archive Data	7.1.3.1.9(c)	ADMS
8.1	Get Archive Data	7.1.3.1.9(d)	ADMS
8.1	Get Archive Data	7.1.3.1.9(e)	ADMS
8.1	Get Archive Data	7.1.3.1.9(f)	ADMS
8.1	Get Archive Data	7.1.3.2	ADMS
8.1	Get Archive Data	7.1.3.3	ADMS
8.1	Get Archive Data	7.1.3.4	ADMS
8.1	Get Archive Data	7.1.3.5	ADMS
8.1	Get Archive Data	7.1.3.5.1	ADMS
8.1	Get Archive Data	7.1.3.5.2	ADMS
8.1	Get Archive Data	7.1.3.6	ADMS
8.1	Get Archive Data	7.1.3.7	ADMS
8.1	Get Archive Data	7.1.3.8	ADMS
8.1	Get Archive Data	7.1.3.9	ADMS
8.1	Get Archive Data	7.1.4	ADMS
8.1	Get Archive Data	7.1.4.1	ADMS
8.1	Get Archive Data	7.1.4.1.1	ADMS
8.1	Get Archive Data	7.1.4.1.2	ADMS
8.1	Get Archive Data	7.1.4.1.3	ADMS
8.1	Get Archive Data	7.1.4.2	ADMS
8.1	Get Archive Data	7.1.4.2(c)	ADMS
8.1	Get Archive Data	7.1.4.4	ADMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
8.1	Get Archive Data	7.1.4.4(a)	ADMS
8.1	Get Archive Data	7.1.4.4(b)	ADMS
8.1	Get Archive Data	7.1.4.4(c)	ADMS
8.1	Get Archive Data	7.1.4.5	ADMS
8.1	Get Archive Data	7.1.6	ADMS
8.1	Get Archive Data	7.1.6.2	ADMS
8.1	Get Archive Data	7.1.6.2.1	ADMS
8.2	Manage Archive	7.0	ADMS
8.2	Manage Archive	7.1	ADMS
8.2	Manage Archive	7.1.0	ADMS
8.2	Manage Archive	7.1.1	ADMS
8.2	Manage Archive	7.1.1.1	ADMS
8.2	Manage Archive	7.1.1.2	ADMS
8.2	Manage Archive	7.1.1.3	ADMS
8.2	Manage Archive	7.1.1.4	ADMS
8.2	Manage Archive	7.1.1.4.1	ADMS
8.2	Manage Archive	7.1.1.4.2	ADMS
8.2	Manage Archive	7.1.1.4.3	ADMS
8.2	Manage Archive	7.1.1.4.4	ADMS
8.2	Manage Archive	7.1.2.3	ADMS
8.2	Manage Archive	7.1.4	ADMS
8.2	Manage Archive	7.1.4.1	ADMS
8.2	Manage Archive	7.1.4.1.1	ADMS
8.2	Manage Archive	7.1.4.1.2	ADMS
8.2	Manage Archive	7.1.4.1.3	ADMS
8.2	Manage Archive	7.1.4.2	ADMS
8.2	Manage Archive	7.1.4.2(a)	ADMS
8.2	Manage Archive	7.1.4.2(b)	ADMS
8.2	Manage Archive	7.1.4.2(c)	ADMS
8.2	Manage Archive	7.1.4.2(d)	ADMS
8.2	Manage Archive	7.1.4.3	ADMS
8.2	Manage Archive	7.1.4.4	ADMS
8.2	Manage Archive	7.1.4.5	ADMS
8.2	Manage Archive	7.1.5	ADMS
8.2	Manage Archive	7.1.5.1	ADMS
8.2	Manage Archive	7.1.5.1(a)	ADMS
8.2	Manage Archive	7.1.5.1(b)	ADMS
8.2	Manage Archive	7.1.5.1(c)	ADMS
8.2	Manage Archive	7.1.5.1(d)	ADMS
8.2	Manage Archive	7.1.5.2	ADMS
8.2	Manage Archive	7.1.5.2.3	ADMS
8.2	Manage Archive	7.1.5.2.4	ADMS
8.2	Manage Archive	7.1.6	ADMS
8.2	Manage Archive	7.1.6.2	ADMS
8.2	Manage Archive	7.1.6.2.1	ADMS
8.2	Manage Archive	7.1.6.2.2	ADMS
8.2	Manage Archive	7.1.6.3	ADMS
8.2	Manage Archive	7.1.6.3.1	ADMS
8.2	Manage Archive	7.1.6.3.2	ADMS
8.2	Manage Archive	7.1.6.3.3	ADMS
8.3	Manage Archive Data Administrator Interface	7.0	ADMS
8.3	Manage Archive Data Administrator Interface	7.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.0	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.1.4	ADMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
8.3	Manage Archive Data Administrator Interface	7.1.1.4.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.1.4.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.1.4.3	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.1.4.4	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.1.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.1.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.1.4	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.1.5	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.1.5(a)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.1.5(b)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.2.4	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.3	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.4	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.5	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.5.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.5.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.6	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.7	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.3.8	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.1.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.1.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.1.3	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.2(a)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.2(b)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.2(c)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.2(d)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.4	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.4(a)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.4(b)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.4(c)	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.4.5	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.5.3	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.1.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.2.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.2.2	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.3	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.3.1	ADMS
8.3	Manage Archive Data Administrator Interface	7.1.6.4	ADMS
8.4	Coordinate Archives	7.0	ADMS
8.4	Coordinate Archives	7.1	ADMS
8.4	Coordinate Archives	7.1.0	ADMS
8.4	Coordinate Archives	7.1.4.4	ADMS
8.4	Coordinate Archives	7.1.5	ADMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
8.4	Coordinate Archives	7.1.5.1	ADMS
8.4	Coordinate Archives	7.1.5.1(a)	ADMS
8.4	Coordinate Archives	7.1.5.1(b)	ADMS
8.4	Coordinate Archives	7.1.5.1(c)	ADMS
8.4	Coordinate Archives	7.1.5.1(d)	ADMS
8.4	Coordinate Archives	7.1.5.2	ADMS
8.4	Coordinate Archives	7.1.5.2.3	ADMS
8.4	Coordinate Archives	7.1.5.2.4	ADMS
8.4	Coordinate Archives	7.1.6	ADMS
8.4	Coordinate Archives	7.1.6.2	ADMS
8.4	Coordinate Archives	7.1.6.2.2	ADMS
8.4	Coordinate Archives	7.1.6.3	ADMS
8.4	Coordinate Archives	7.1.6.3.1	ADMS
8.5	Process Archived Data User System Requests	7.0	ADMS
8.5	Process Archived Data User System Requests	7.1	ADMS
8.5	Process Archived Data User System Requests	7.1.0	ADMS
8.5	Process Archived Data User System Requests	7.1.1.4.1	ADMS
8.5	Process Archived Data User System Requests	7.1.1.4.3	ADMS
8.5	Process Archived Data User System Requests	7.1.1.4.4	ADMS
8.5	Process Archived Data User System Requests	7.1.2	ADMS
8.5	Process Archived Data User System Requests	7.1.2.5	ADMS
8.5	Process Archived Data User System Requests	7.1.3.7	ADMS
8.5	Process Archived Data User System Requests	7.1.4.4	ADMS
8.5	Process Archived Data User System Requests	7.1.4.4(c)	ADMS
8.5	Process Archived Data User System Requests	7.1.5	ADMS
8.5	Process Archived Data User System Requests	7.1.5.1	ADMS
8.5	Process Archived Data User System Requests	7.1.5.1(a)	ADMS
8.5	Process Archived Data User System Requests	7.1.5.1(b)	ADMS
8.5	Process Archived Data User System Requests	7.1.5.1(c)	ADMS
8.5	Process Archived Data User System Requests	7.1.5.1(d)	ADMS
8.5	Process Archived Data User System Requests	7.1.5.2	ADMS
8.5	Process Archived Data User System Requests	7.1.5.2.2	ADMS
8.5	Process Archived Data User System Requests	7.1.5.2.3	ADMS
8.5	Process Archived Data User System Requests	7.1.5.2.4	ADMS
8.5	Process Archived Data User System Requests	7.1.6	ADMS
8.5	Process Archived Data User System Requests	7.1.6.1	ADMS
8.5	Process Archived Data User System Requests	7.1.6.1.1	ADMS
8.5	Process Archived Data User System Requests	7.1.6.2	ADMS
8.5	Process Archived Data User System Requests	7.1.6.2.2	ADMS
8.5	Process Archived Data User System Requests	7.1.6.3	ADMS
8.5	Process Archived Data User System Requests	7.1.6.3.1	ADMS
8.5	Process Archived Data User System Requests	7.1.6.3.3	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1(a)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1(b)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1(c)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1(d)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1(e)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1(f)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.1(g)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.2	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.2(a)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.2(b)	ADMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
8.5	Process Archived Data User System Requests	7.1.6.4.2(c)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.2(d)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.3	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.3(a)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.3(b)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.3(c)	ADMS
8.5	Process Archived Data User System Requests	7.1.6.4.4	ADMS
8.6	Analyze Archive	7.0	ADMS
8.6	Analyze Archive	7.1	ADMS
8.6	Analyze Archive	7.1.0	ADMS
8.6	Analyze Archive	7.1.1.4.1	ADMS
8.6	Analyze Archive	7.1.1.4.3	ADMS
8.6	Analyze Archive	7.1.1.4.4	ADMS
8.6	Analyze Archive	7.1.1.5	ADMS
8.6	Analyze Archive	7.1.2	ADMS
8.6	Analyze Archive	7.1.2.6	ADMS
8.6	Analyze Archive	7.1.3.7	ADMS
8.6	Analyze Archive	7.1.4.4	ADMS
8.6	Analyze Archive	7.1.5	ADMS
8.6	Analyze Archive	7.1.5.1	ADMS
8.6	Analyze Archive	7.1.5.1(a)	ADMS
8.6	Analyze Archive	7.1.5.1(b)	ADMS
8.6	Analyze Archive	7.1.5.1(c)	ADMS
8.6	Analyze Archive	7.1.5.1(d)	ADMS
8.6	Analyze Archive	7.1.5.2	ADMS
8.6	Analyze Archive	7.1.5.2.1	ADMS
8.6	Analyze Archive	7.1.5.2.1(a)	ADMS
8.6	Analyze Archive	7.1.5.2.1(b)	ADMS
8.6	Analyze Archive	7.1.5.2.1(c)	ADMS
8.6	Analyze Archive	7.1.5.2.1(d)	ADMS
8.6	Analyze Archive	7.1.5.2.3	ADMS
8.6	Analyze Archive	7.1.5.2.4	ADMS
8.6	Analyze Archive	7.1.6	ADMS
8.6	Analyze Archive	7.1.6.1	ADMS
8.6	Analyze Archive	7.1.6.1.1	ADMS
8.6	Analyze Archive	7.1.6.2	ADMS
8.6	Analyze Archive	7.1.6.2.2	ADMS
8.6	Analyze Archive	7.1.6.3	ADMS
8.6	Analyze Archive	7.1.6.3.1	ADMS
8.6	Analyze Archive	7.1.6.3.2	ADMS
8.6	Analyze Archive	7.1.6.3.3	ADMS
8.6	Analyze Archive	7.1.6.4	ADMS
8.6	Analyze Archive	7.1.6.4.1	ADMS
8.6	Analyze Archive	7.1.6.4.1(a)	ADMS
8.6	Analyze Archive	7.1.6.4.1(b)	ADMS
8.6	Analyze Archive	7.1.6.4.1(c)	ADMS
8.6	Analyze Archive	7.1.6.4.1(d)	ADMS
8.6	Analyze Archive	7.1.6.4.1(e)	ADMS
8.6	Analyze Archive	7.1.6.4.1(f)	ADMS
8.6	Analyze Archive	7.1.6.4.1(g)	ADMS
8.6	Analyze Archive	7.1.6.4.2	ADMS
8.6	Analyze Archive	7.1.6.4.2(a)	ADMS
8.6	Analyze Archive	7.1.6.4.2(b)	ADMS
8.6	Analyze Archive	7.1.6.4.2(c)	ADMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
8.6	Analyze Archive	7.1.6.4.2(d)	ADMS
8.6	Analyze Archive	7.1.6.4.3	ADMS
8.6	Analyze Archive	7.1.6.4.3(a)	ADMS
8.6	Analyze Archive	7.1.6.4.3(b)	ADMS
8.6	Analyze Archive	7.1.6.4.3(c)	ADMS
8.6	Analyze Archive	7.1.6.4.4	ADMS
8.7	Process On Demand Archive Requests	7.0	ADMS
8.7	Process On Demand Archive Requests	7.1	ADMS
8.7	Process On Demand Archive Requests	7.1.0	ADMS
8.7	Process On Demand Archive Requests	7.1.2	ADMS
8.7	Process On Demand Archive Requests	7.1.2.2	ADMS
8.7	Process On Demand Archive Requests	7.1.4.4	ADMS
8.7	Process On Demand Archive Requests	7.1.4.4(a)	ADMS
8.7	Process On Demand Archive Requests	7.1.4.4(b)	ADMS
8.7	Process On Demand Archive Requests	7.1.4.4(c)	ADMS
8.7	Process On Demand Archive Requests	7.1.6	ADMS
8.7	Process On Demand Archive Requests	7.1.6.1	ADMS
8.7	Process On Demand Archive Requests	7.1.6.1.1	ADMS
8.7	Process On Demand Archive Requests	7.1.6.2	ADMS
8.7	Process On Demand Archive Requests	7.1.6.2.2	ADMS
8.7	Process On Demand Archive Requests	7.1.6.3	ADMS
8.7	Process On Demand Archive Requests	7.1.6.3.1	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1(a)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1(b)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1(c)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1(d)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1(e)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1(f)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.1(g)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.2	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.2(a)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.2(b)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.2(c)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.2(d)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.3	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.3(a)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.3(b)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.3(c)	ADMS
8.7	Process On Demand Archive Requests	7.1.6.4.4	ADMS
8.8	Prepare Government Reporting Inputs	7.0	ADMS
8.8	Prepare Government Reporting Inputs	7.1	ADMS
8.8	Prepare Government Reporting Inputs	7.1.0	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(a)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(b)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(c)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(d)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(e)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(f)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(g)	ADMS

Appendix C: P-Specs Traced to User Service Requirements

P-Spec	Name	USR	Subsystem
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(h)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(i)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.5.2.5(j)	ADMS
8.8	Prepare Government Reporting Inputs	7.1.6	ADMS
8.8	Prepare Government Reporting Inputs	7.1.6.2	ADMS
8.8	Prepare Government Reporting Inputs	7.1.6.2.2	ADMS
8.8	Prepare Government Reporting Inputs	7.1.6.3	ADMS
8.8	Prepare Government Reporting Inputs	7.1.6.3.1	ADMS
8.9	Manage Roadside Data Collection	7.0	ADMS
8.9	Manage Roadside Data Collection	7.1	ADMS
8.9	Manage Roadside Data Collection	7.1.0	ADMS
8.9	Manage Roadside Data Collection	7.1.2	ADMS
8.9	Manage Roadside Data Collection	7.1.2.1	ADMS
8.9	Manage Roadside Data Collection	7.1.2.1.1	ADMS
8.9	Manage Roadside Data Collection	7.1.2.1.2	ADMS
8.9	Manage Roadside Data Collection	7.1.2.1.3	ADMS
8.9	Manage Roadside Data Collection	7.1.2.1.3(a)	ADMS
8.9	Manage Roadside Data Collection	7.1.2.1.3(b)	ADMS
8.9	Manage Roadside Data Collection	7.1.2.1.3(c)	ADMS
8.9	Manage Roadside Data Collection	7.1.3	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1.1	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1.1(a)	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1.1(c)	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1.3	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1.3(e)	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1.7	ADMS
8.9	Manage Roadside Data Collection	7.1.3.1.7(a)	ADMS
9	Satisfy Implementation Requirements	1.4.2.2	N/A
9	Satisfy Implementation Requirements	2.1.4.5	N/A
9	Satisfy Implementation Requirements	2.3.4.1	N/A
9	Satisfy Implementation Requirements	4.5.3.5	N/A

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
1.1.1.1	Process Traffic Sensor Data	RS
1.1.1.2	Collect and Process Sensor Fault Data	TMS
1.1.1.3	Process Environmental Sensor Data	RS
1.1.1.4	Manage Data Collection and Monitoring	RS
1.1.2.1	Process Traffic Data for Storage	TMS
1.1.2.2	Process Traffic Data	TMS
1.1.2.3	Update Data Source Static Data	TMS
1.1.2.4	Monitor HOV lane use	TMS
1.1.2.5	Process Tag/AVL Data for Link Time Data	TMS
1.1.2.6	Process Collected Vehicle Smart Probe Data	RS
1.1.2.7	Monitor Reversible Lanes	TMS
1.1.3	Generate Predictive Traffic Model	TMS
1.1.4.1	Retrieve Traffic Data	TMS
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface	TMS
1.1.4.3	Provide Direct Media Traffic Data Interface	TMS
1.1.4.4	Update Traffic Display Map Data	TMS
1.1.4.5	Provide Media System Traffic Data Interface	ISP
1.1.4.6	Provide Traffic Data Retrieval Interface	ISP
1.1.4.7	Manage Traffic Archive Data	TMS
1.1.5	Exchange data with Other Traffic Centers	TMS
1.1.6	Collect Vehicle Tag Data for Link Time Calculations	RS
1.1.7	Collect Vehicle Smart Probe Data	RS
1.2.1	Select Strategy	TMS
1.2.2.1	Determine Indicator State for Freeway Management	TMS
1.2.2.2	Determine Indicator State for Road Management	TMS
1.2.3	Determine Ramp State	TMS
1.2.4.1	Output Control Data for Roads	TMS
1.2.4.2	Output Control Data for Freeways	TMS
1.2.4.3	Output In-vehicle Signage Data	TMS
1.2.5.1	Determine Parking Lot State	PMS
1.2.5.2	Coordinate Other Parking Data	PMS
1.2.5.3	Provide Parking Lot Operator Interface	PMS
1.2.5.4	Determine P+R needs for Transit Management	PMS
1.2.5.5	Manage Parking Archive Data	PMS
1.2.5.6	Calculate Parking Lot Occupancy	PMS
1.2.6.1	Maintain Traffic and Sensor Static Data	TMS
1.2.6.2	Provide Static Data Store Output Interface	TMS
1.2.7.1	Process Indicator Output Data for Roads	RS
1.2.7.2	Monitor Roadside Equipment Operation for Faults	RS
1.2.7.3	Manage Indicator Preemptions	RS
1.2.7.4	Process In-vehicle Signage Data	RS
1.2.7.5	Process Indicator Output Data for Freeways	RS
1.2.7.6	Provide Intersection Collision Avoidance Data	RS
1.2.7.7	Process Vehicle Smart Probe Data for Output	RS
1.2.8.1	Collect Indicator Fault Data	TMS
1.2.8.2	Maintain Indicator Fault Data Store	TMS
1.2.8.3	Provide Indicator Fault Interface for C and M	TMS
1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface	TMS
1.3.1.1	Analyze Traffic Data for Incidents	TMS
1.3.1.2	Maintain Static Data for Incident Management	TMS
1.3.1.3	Process Traffic Images	RS

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
1.3.2.1	Store Possible Incident Data	TMS
1.3.2.2	Review and Classify Possible Incidents	TMS
1.3.2.3	Review and Classify Planned Events	TMS
1.3.2.4	Provide Planned Events Store Interface	TMS
1.3.2.5	Provide Current Incidents Store Interface	TMS
1.3.3	Respond to Current Incidents	TMS
1.3.4.1	Retrieve Incident Data	TMS
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface	TMS
1.3.4.3	Provide Media Incident Data Interface	TMS
1.3.4.4	Update Incident Display Map Data	TMS
1.3.4.5	Manage Resources for Incidents	TMS
1.3.5	Manage Possible Predetermined Responses Store	TMS
1.3.6	Manage Predetermined Incident Response Data	TMS
1.3.7	Analyze Incident Response Log	TMS
1.4.1	Provide Traffic Operations Personnel Demand Interface	TMS
1.4.2	Collect Demand Forecast Data	TMS
1.4.3	Update Demand Display Map Data	TMS
1.4.4	Implement Demand Management Policy	TMS
1.4.5	Calculate Forecast Demand	TMS
1.5.1	Provide Traffic Operations Personnel Pollution Data Interface	EMMS
1.5.2	Process Pollution Data	EMMS
1.5.3	Update Pollution Display Map Data	EMMS
1.5.4	Manage Pollution State Data Store	EMMS
1.5.5	Process Vehicle Pollution Data	RS
1.5.6	Detect Roadside Pollution Levels	RS
1.5.7	Manage Pollution Data Log	EMMS
1.5.8	Manage Pollution Reference Data Store	EMMS
1.5.9	Manage Pollution Archive Data	EMMS
1.6.1.1	Detect Roadway Events	RS
1.6.1.2.1	Control HRI Traffic Signals	RS
1.6.1.2.2	Control HRI Warnings and Barriers	RS
1.6.1.2.3	Provide SSR Device Controls	RS
1.6.1.2.4	Provide HSR Device Controls	RS
1.6.1.2.5	Manage Device Control	RS
1.6.1.2.6	Maintain Device State	RS
1.6.1.3	Perform Equipment Self-Test	RS
1.6.1.4.1	Generate Alerts and Advisories	RS
1.6.1.4.2	Provide Closure Parameters	RS
1.6.1.4.3	Report Alerts and Advisories	RS
1.6.1.4.4	Report HRI Status on Approach	RS
1.6.1.5	Detect HRI Hazards	RS
1.6.1.6.1	Close HRI on Detection	RS
1.6.1.6.2	Detect Imminent Vehicle/Train Collision	RS
1.6.1.7.1	Control Vehicle Traffic at Passive HRI	RS
1.6.1.7.2	Control Vehicle Traffic at Active HRI	RS
1.6.1.7.3	Close HRI on Command	RS
1.6.2.1	Exchange Data with Rail Operations	TMS
1.6.2.2	Manage Alerts and Advisories	TMS
1.6.2.3	Manage Rail Traffic Control Data	TMS
1.6.3.1	Interact with Wayside Systems	RS
1.6.3.2	Advise and Protect Train Crews	RS
1.6.3.3	Provide ATS Alerts	RS
1.6.4.1	Manage HRI Closures	TMS
1.6.4.2	Exchange Data with Traffic Management	TMS

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
1.6.5.1	Provide Interactive Interface	RS
1.6.5.2	Determine HRI Status	RS
1.6.5.3	Maintain HRI Closure Data	RS
2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing	FMS
2.1.2	Provide Commercial Fleet Static Route	FMS
2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface	FMS
2.1.4	Provide Fleet Manager Commercial Vehicle Communications	FMS
2.1.5	Provide Commercial Vehicle Driver Routing Interface	CVS
2.1.6	Manage Driver Instruction Store	FMS
2.2.1	Manage CV Electronic Credential and Tax Filing Interface	FMS
2.2.2	Provide Vehicle Static Route	CVS
2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface	CVS
2.2.4	Provide Commercial Vehicle Driver Communications	CVS
2.3.1	Produce Commercial Vehicle Driver Message at Roadside	CVCS
2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database	CVCS
2.3.2.2	Process Screening Transactions	CVCS
2.3.3.1	Provide Commercial Vehicle Checkstation Communications	CVCS
2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface	CVCS
2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase	CVCS
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening	CVCS
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection	CVCS
2.3.4	Detect Commercial Vehicle	CVCS
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface	CVCS
2.3.6	Provide Commercial Vehicle Reports	CVCS
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle	CVS
2.3.8	Provide Commercial Vehicle Border Screening	CVCS
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside	CVS
2.4.2	Collect On-board Commercial Vehicle Sensor Data	CVS
2.4.3	Analyze Commercial Vehicle On-board Data	CVS
2.4.4	Provide Commercial Vehicle Driver Interface	CVS
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager	CVS
2.4.6	Provide Commercial Vehicle On-board Data Store Interface	CVS
2.5.1	Manage Commercial Vehicle Trips and Clearances	CVAS
2.5.2	Obtain Electronic Credential and Tax Filing Payment	CVAS
2.5.3	Update Permits and Duties Store	CVAS
2.5.4	Communicate with Other Commercial Vehicle Administration System	CVAS
2.5.5	Manage Commercial Vehicle Credentials and Enrollment	CVAS
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities	CVAS
2.5.7	Process Commercial Vehicle Violations	CVAS
2.5.8	Process Data Received from Roadside Facilities	CVAS
2.5.9	Manage Commercial Vehicle Archive Data	CVAS
2.6.1	Provide Commercial Vehicle Manager Tag Data Interface	FMS
2.6.2	Transmit Commercial Vehicle Tag Data	CVS
2.6.3	Provide Commercial Driver Tag Data Interface	CVS
2.6.4	Provide Lock Tag Data Interface	CVS
2.6.5	Manage Commercial Vehicle Tag Data Store	CVS
2.7	Manage Cargo	FMS
3.1.1	Produce Collision and Crash Avoidance Data	VS
3.1.2	Carry-out Safety Analysis	VS
3.1.3	Process Vehicle On-board Data	VS
3.2.1	Provide Driver Interface	VS
3.2.2	Provide AHS Control	VS
3.2.3.1	Provide Command Interface	VS
3.2.3.2	Manage Platoon Following	VS

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
3.2.3.3	Process data for Vehicle Actuators	VS
3.2.3.4.1	Provide Speed Servo Control	VS
3.2.3.4.2	Provide Headway Servo Control	VS
3.2.3.4.3	Provide Lane Servo Control	VS
3.2.3.4.4	Provide Change Lane Servo Control	VS
3.2.3.4.5	Provide Vehicle Control Data Interface	VS
3.2.3.5	Process Vehicle Sensor Data	VS
3.2.3.6	Communicate with other Platoon Vehicles	VS
3.2.4	Process Sensor Data for AHS input	VS
3.2.5	Check Vehicle for AHS eligibility	RS
3.2.6	Manage AHS Check-in and Check-out	RS
3.2.7	Manage AHS Operations	TMS
3.3.1	Provide Cargo Data for Incident Notification	CVS
3.3.2	Provide Communications Function	VS
3.3.3	Build Automatic Collision Notification Message	VS
3.4	Enhance Driver's Vision	VS
4.1.1	Process Transit Vehicle Sensor Trip Data	TRVS
4.1.2.1	Determine Transit Vehicle Deviation and ETA	TRVS
4.1.2.2	Determine Transit Vehicle Corrective Instructions	TRVS
4.1.2.3	Provide Transit Vehicle Driver Interface	TRVS
4.1.2.4	Provide Transit Vehicle Correction Data Output Interface	TRMS
4.1.2.5	Request Transit Vehicle Preemptions	TRVS
4.1.3	Provide Transit Vehicle Location Data	TRVS
4.1.4	Manage Transit Vehicle Deviations	TRMS
4.1.5	Provide Transit Vehicle Status Information	TRMS
4.1.6	Manage Transit Vehicle Operations Data	TRMS
4.1.7	Provide Transit Vehicle Deviation Data Output Interface	TRMS
4.1.8	Provide Transit Operations Data Distribution Interface	ISP
4.1.9	Process Transit Vehicle Sensor Maintenance Data	TRVS
4.2.1.1	Process Demand Responsive Transit Trip Request	TRMS
4.2.1.2	Compute Demand Responsive Transit Vehicle Availability	TRMS
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes	TRMS
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route	TRMS
4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data	TRVS
4.2.1.6	Provide Demand Responsive Transit Driver Interface	TRVS
4.2.2	Provide Transit Plans Store Interface	TRMS
4.2.3.1	Generate Transit Routes	TRMS
4.2.3.2	Generate Schedules	TRMS
4.2.3.3	Produce Transit Service Data for External Use	TRMS
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation	TRMS
4.2.3.5	Manage Transit Operational Data Store	TRMS
4.2.3.6	Produce Transit Service Data for Manage Transit Use	TRMS
4.2.3.7	Provide Interface for Other TRM Data	TRMS
4.2.3.8	Provide Interface for Transit Service Raw Data	TRMS
4.2.3.9	Update Transit Map Data	TRMS
4.2.4	Manage Transit Archive Data	TRMS
4.3.1	Monitor Transit Vehicle Condition	TRMS
4.3.2	Generate Transit Vehicle Maintenance Schedules	TRMS
4.3.3	Generate Technician Work Assignments	TRMS
4.3.4	Monitor And Verify Maintenance Activity	TRMS
4.3.5	Report Transit Vehicle Information	TRMS
4.3.6	Update Transit Vehicle Information	TRMS
4.3.7	Manage Transit Vehicle Operations Data Store	TRMS
4.4.1.1	Manage Transit Security	TRMS

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
4.4.1.2	Manage Transit Emergencies	TRVS
4.4.1.3	Provide Transit System Operator Security Interface	TRMS
4.4.1.4	Provide Transit External Interface for Emergencies	TRMS
4.4.1.5	Provide Transit Driver Interface for Emergencies	TRVS
4.4.1.6	Collect Transit Vehicle Emergency Information	TRMS
4.4.1.7	Monitor Secure Area	RTS
4.4.1.8	Report Traveler Emergencies	RTS
4.4.2	Coordinate Multiple Agency Responses to Incidents	TRMS
4.4.3	Generate Responses for Incidents	TRMS
4.5.1	Assess Transit Driver Performance	TRMS
4.5.2	Assess Transit Driver Availability	TRMS
4.5.3	Access Transit Driver Cost Effectiveness	TRMS
4.5.4	Assess Transit Driver Eligibility	TRMS
4.5.5	Generate Transit Driver Route Assignments	TRMS
4.5.6	Update Transit Driver Information	TRMS
4.5.7	Report Transit Driver Information	TRMS
4.5.8	Provide Transit Driver Information Store Interface	TRMS
4.6.1	Detect Transit User on Vehicle	TRVS
4.6.2	Determine Transit User Needs on Vehicle	TRVS
4.6.3	Determine Transit Fare on Vehicle	TRVS
4.6.4	Manage Transit Fare Billing on Vehicle	TRVS
4.6.5	Provide Transit User Fare Payment Interface on Vehicle	TRVS
4.6.6	Update Transit Vehicle Fare Data	TRVS
4.6.7	Provide Transit Vehicle Passenger Data	TRVS
4.6.8	Manage Transit Vehicle Advanced Payments	TRMS
4.7.1.1	Provide Transit User Roadside Data Interface	RTS
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface	RTS
4.7.2.1	Detect Transit User at Roadside	RTS
4.7.2.2	Determine Transit User Needs at Roadside	RTS
4.7.2.3	Determine Transit Fare at Roadside	RTS
4.7.2.4	Manage Transit Fare Billing at Roadside	RTS
4.7.2.5	Provide Transit User Roadside Fare Interface	RTS
4.7.2.6	Update Roadside Transit Fare Data	RTS
4.7.2.7	Provide Transit Roadside Passenger Data	RTS
5.1.1	Identify Emergencies from Inputs	EM
5.1.2	Determine Coordinated Response Plan	EM
5.1.3	Communicate Emergency Status	EM
5.1.4	Manage Emergency Response	EM
5.1.5	Manage Emergency Service Allocation Store	EM
5.1.6	Process Mayday Messages	EM
5.2	Provide Operator Interface for Emergency Data	EM
5.3.1	Select Response Mode	EM
5.3.2	Dispatch Vehicle	EM
5.3.3	Track Vehicle	EVS
5.3.4	Assess Response Status	EM
5.3.5	Provide Emergency Personnel Interface	EVS
5.3.6	Maintain Vehicle Status	EM
5.3.7	Provide Emergency Vehicle Route	EM
5.4.1	Process TM Detected Violations	TMS
5.4.2	Process Violations for Tolls	TAS
5.4.3	Process Parking Lot Violations	PMS
5.4.4	Process Fare Payment Violations	TRMS
5.4.5	Process Vehicle Fare Collection Violations	TRMS
5.4.6	Process CV Violations	CVAS

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
5.4.7	Process Roadside Fare Collection Violations	TRMS
5.5	Update Emergency Display Map Data	EM
5.6	Manage Emergency Services Data	EM
6.1.1	Provide Trip Planning Information to Traveler	ISP
6.1.2	Confirm Traveler's Trip Plan	ISP
6.1.3	Manage Multimodal Service Provider Interface	ISP
6.1.4	Provide ISP Operator Interface for Trip Planning Parameters	ISP
6.1.5	Collect Service Requests and Confirmation for Archive	ISP
6.1.6	Manage Traveler Info Archive Data	ISP
6.2.1.1	Collect Traffic Data for Advisory Messages	ISP
6.2.1.2	Provide Traffic and Transit Advisory Messages	ISP
6.2.1.3	Collect Transit Data for Advisory Messages	ISP
6.2.1.4	Provide Traffic and Transit Broadcast Messages	ISP
6.2.1.5	Provide ISP Operator Broadcast Parameters Interface	ISP
6.2.1.6	Provide Transit Advisory Data On Vehicle	TRVS
6.2.2	Prepare and Output In-vehicle Displays	VS
6.2.3	Provide Transit User Advisory Interface	TRVS
6.2.4	Collect Yellow Pages Data	ISP
6.2.5	Provide Driver Interface	VS
6.2.6	Provide Yellow Pages Data and Reservations	ISP
6.3.1	Get Traveler Request	RTS
6.3.2	Inform Traveler	RTS
6.3.3	Provide Traveler Kiosk Interface	RTS
6.3.4	Update Traveler Display Map Data at Kiosk	RTS
6.4.1	Screen Rider Requests	ISP
6.4.2	Match Rider and Provider	ISP
6.4.3	Report Ride Match Results to Requestor	ISP
6.4.4	Confirm Traveler Rideshare Request	ISP
6.5.1	Collect and Update Traveler Information	ISP
6.5.2	Provide Traveler Yellow Pages Information and Reservations	ISP
6.5.3	Register Yellow Pages Service Providers	ISP
6.6.1	Provide Multimodal Route Selection	ISP
6.6.2.1	Calculate Vehicle Route	ISP
6.6.2.2	Provide Vehicle Route Calculation Data	ISP
6.6.2.3	Provide Route Segment Data for Other Areas	ISP
6.6.2.4	Update Vehicle Route Selection Map Data	ISP
6.6.2.5	Provide ISP Operator Route Parameters Interface	ISP
6.6.2.6	Calculate Vehicle Probe Data for Guidance	ISP
6.6.3	Update Other Routes Selection Map Data	ISP
6.6.4	Select Transit Route	ISP
6.6.5	Select Other Routes	ISP
6.7.1.1	Build Driver Personal Security Message	VS
6.7.1.2	Provide Driver In-vehicle Communications Function	VS
6.7.2.1.1	Determine In-vehicle Guidance Method	VS
6.7.2.1.2	Provide Dynamic In-vehicle Guidance	VS
6.7.2.1.3	Provide Autonomous In-vehicle Guidance	VS
6.7.2.2	Process Vehicle Location Data	VS
6.7.2.3	Provide Driver Guidance Interface	VS
6.7.2.4	Update Vehicle Navigable Map Database	VS
6.8.1.1.1	Determine Personal Portable Device Guidance Method	PIAS
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance	PIAS
6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance	PIAS
6.8.1.2	Provide Personal Portable Device Guidance Interface	PIAS
6.8.1.3	Process Personal Portable Device Location Data	PIAS

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
6.8.1.4	Update Traveler Navigable Map Database	PIAS
6.8.1.5	Provide Traveler Emergency Message Interface	PIAS
6.8.2.1	Build Traveler Personal Security Message	PIAS
6.8.2.2	Provide Traveler Emergency Communications Function	PIAS
6.8.3.1	Get Traveler Personal Request	PIAS
6.8.3.2	Provide Traveler with Personal Travel Information	PIAS
6.8.3.3	Provide Traveler Personal Interface	PIAS
6.8.3.4	Update Traveler Personal Display Map Data	PIAS
7.1.1.1	Read Tag Data for Tolls	TCS
7.1.1.10	Determine Advanced Toll Bill	TCS
7.1.1.11	Manage Toll Archive Data	TAS
7.1.1.2	Calculate Vehicle Toll	TCS
7.1.1.3	Manage Bad Toll Payment Data	TAS
7.1.1.4	Check for Advanced Tolls Payment	TCS
7.1.1.5	Bill Driver for Tolls	TCS
7.1.1.6	Collect Probe Data From Toll Transactions	TAS
7.1.1.7	Update Toll Price Data	TAS
7.1.1.8	Register for Advanced Toll Payment	TAS
7.1.1.9	Manage Toll Financial Processing	TAS
7.1.2	Produce Roadside Displays	TCS
7.1.3	Obtain Toll Violator Image	TCS
7.1.4	Provide Driver Toll Payment Interface	VS
7.1.5	Detect Vehicle for Tolls	TCS
7.1.6	Distribute Advanced Charges and Fares	ISP
7.1.7	Provide Payment Instrument Interface for Tolls	VS
7.2.1.1	Read Parking Lot Tag Data	PMS
7.2.1.10	Determine Advanced Charges	PMS
7.2.1.2	Calculate Vehicle Parking Lot Charges	PMS
7.2.1.3	Collect Bad Charge Payment Data	PMS
7.2.1.4	Check for Advanced Parking Lot Payment	PMS
7.2.1.5	Bill Driver for Parking Lot Charges	PMS
7.2.1.6	Manage Parking Lot Financial Processing	PMS
7.2.1.7	Update Parking Lot Data	PMS
7.2.1.8	Register for Advanced Parking Lot Payment	PMS
7.2.1.9	Manage Parking Lot Reservations	PMS
7.2.2	Produce Parking Lot Displays	PMS
7.2.3	Obtain Parking Lot Violator Image	PMS
7.2.4	Provide Driver Parking Lot Payment Interface	VS
7.2.5	Detect Vehicle for Parking Lot Payment	PMS
7.2.6	Distribute Advanced Tolls and Fares	ISP
7.2.7	Provide Payment Instrument Interface for Parking	VS
7.3.1.1	Register for Advanced Transit Fare Payment	TRMS
7.3.1.2	Determine Advanced Transit Fares	TRMS
7.3.1.3	Manage Transit Fare Financial Processing	TRMS
7.3.1.4	Check for Advanced Transit Fare Payment	TRMS
7.3.1.5	Bill Transit User for Transit Fare	TRMS
7.3.1.6	Collect Bad Transit Fare Payment Data	TRMS
7.3.1.7	Update Transit Fare Data	TRMS
7.3.2	Distribute Advanced Tolls and Parking Lot Charges	ISP
7.3.3	Get Transit User Image for Violation	TRMS
7.3.4	Provide Remote Terminal Payment Instrument Interface	RTS
7.3.5	Provide Transit Vehicle Payment Instrument Interface	TRVS
7.4.1.1	Process Commercial Vehicle Payments	CVAS
7.4.1.2	Process Yellow Pages Services Provider Payments	ISP

Appendix D: P-Spec Assignment (by P-Spec)

PSpec	PSpecName	Physical Entity
7.4.1.3	Process Driver Map Update Payments	ISP
7.4.1.4	Process Traveler Map Update Payments	ISP
7.4.1.5	Process Transit User Other Services Payments	TRMS
7.4.1.6	Process Traveler Trip and Other Services Payments	ISP
7.4.1.7	Collect Payment Transaction Records	ISP
7.4.1.8	Process Traveler Rideshare Payments	ISP
7.4.2	Collect Price Data for ITS Use	ISP
7.4.3	Route Traveler Advanced Payments	ISP
7.5.1	Provide Vehicle Payment Instrument Interface	VS
7.5.2	Provide Transit User Roadside Payment Instrument Interface	RTS
7.5.3	Provide Personal Payment Instrument Interface	PIAS
7.5.4	Provide Commercial Fleet Payment Instrument Interface	FMS
7.5.5	Provide Traveler Kiosk Payment Instrument Interface	RTS
8.1	Get Archive Data	ADMS
8.2	Manage Archive	ADMS
8.3	Manage Archive Data Administrator Interface	ADMS
8.4	Coordinate Archives	ADMS
8.5	Process Archived Data User System Requests	ADMS
8.6	Analyze Archive	ADMS
8.7	Process On Demand Archive Requests	ADMS
8.8	Prepare Government Reporting Inputs	ADMS
8.9	Manage Roadside Data Collection	ADMS
9	Satisfy Implementation Requirements	N/A

Appendix E: P-Spec Assignment (by Subsystem)

Subsystem	P-Spec	
ADMS Archived Data Management Subsystem	8.1	Get Archive Data
	8.2	Manage Archive
	8.3	Manage Archive Data Administrator Interface
	8.4	Coordinate Archives
	8.5	Process Archived Data User System Requests
	8.6	Analyze Archive
	8.7	Process On Demand Archive Requests
	8.8	Prepare Government Reporting Inputs
	8.9	Manage Roadside Data Collection
CVAS Commercial Vehicle Administration	2.5.1	Manage Commercial Vehicle Trips and Clearances
	2.5.2	Obtain Electronic Credential and Tax Filing Payment
	2.5.3	Update Permits and Duties Store
	2.5.4	Communicate with Other Commercial Vehicle Administration System
	2.5.5	Manage Commercial Vehicle Credentials and Enrollment
	2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities
	2.5.7	Process Commercial Vehicle Violations
	2.5.8	Process Data Received from Roadside Facilities
	2.5.9	Manage Commercial Vehicle Archive Data
	5.4.6	Process CV Violations
	7.4.1.1	Process Commercial Vehicle Payments
CVCS Commercial Vehicle Check	2.3.1	Produce Commercial Vehicle Driver Message at Roadside
	2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database
	2.3.2.2	Process Screening Transactions
	2.3.3.1	Provide Commercial Vehicle Checkstation Communications
	2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface
	2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase
	2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening
	2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection
	2.3.4	Detect Commercial Vehicle
	2.3.5	Provide Commercial Vehicle RoadsideOperator Interface
	2.3.6	Provide Commercial Vehicle Reports
	2.3.8	Provide Commercial Vehicle Border Screening
CVS Commercial Vehicle Subsystem	2.1.5	Provide Commercial Vehicle Driver Routing Interface
	2.2.2	Provide Vehicle Static Route
	2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface
	2.2.4	Provide Commercial Vehicle Driver Communications
	2.3.7	Produce Commercial Vehicle Driver Message on Vehicle
	2.4.1	Communicate Commercial Vehicle On-board Data to Roadside
	2.4.2	Collect On-board Commercial Vehicle Sensor Data
	2.4.3	Analyze Commercial Vehicle On-board Data
	2.4.4	Provide Commercial Vehicle Driver Interface
	2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager
	2.4.6	Provide Commercial Vehicle On-board Data Store Interface
	2.6.2	Transmit Commercial Vehicle Tag Data
	2.6.3	Provide Commercial Driver Tag Data Interface
	2.6.4	Provide Lock Tag Data Interface
	2.6.5	Manage Commercial Vehicle Tag Data Store
	3.3.1	Provide Cargo Data for Incident Notification
EM Emergency Management	5.1.1	Identify Emergencies from Inputs
	5.1.2	Determine Coordinated Response Plan
	5.1.3	Communicate Emergency Status
	5.1.4	Manage Emergency Response
	5.1.5	Manage Emergency Service Allocation Store
	5.1.6	Process Mayday Messages
	5.2	Provide Operator Interface for Emergency Data
	5.3.1	Select Response Mode
	5.3.2	Dispatch Vehicle
	5.3.4	Assess Response Status
	5.3.6	Maintain Vehicle Status
	5.3.7	Provide Emergency Vehicle Route
	5.5	Update Emergency Display Map Data
	5.6	Manage Emergency Services Data
EMMS Emissions Management	1.5.1	Provide Traffic Operations Personnel Pollution Data Interface
	1.5.2	Process Pollution Data

Appendix E: P-Spec Assignment (by Subsystem)

Subsystem	P-Spec	
	1.5.3	Update Pollution Display Map Data
	1.5.4	Manage Pollution State Data Store
	1.5.7	Manage Pollution Data Log
	1.5.8	Manage Pollution Reference Data Store
	1.5.9	Manage Pollution Archive Data
EVS Emergency Vehicle Subsystem	5.3.3	Track Vehicle
	5.3.5	Provide Emergency Personnel Interface
FMS Fleet and Freight Management	2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing
	2.1.2	Provide Commercial Fleet Static Route
	2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface
	2.1.4	Provide Fleet Manager Commercial Vehicle Communications
	2.1.6	Manage Driver Instruction Store
	2.2.1	Manage CV Electronic Credential and Tax Filing Interface
	2.6.1	Provide Commercial Vehicle Manager Tag Data Interface
	2.7	Manage Cargo
	7.5.4	Provide Commercial Fleet Payment Instrument Interface
ISP Information Service Provider	1.1.4.5	Provide Media System Traffic Data Interface
	1.1.4.6	Provide Traffic Data Retrieval Interface
	4.1.8	Provide Transit Operations Data Distribution Interface
	6.1.1	Provide Trip Planning Information to Traveler
	6.1.2	Confirm Traveler's Trip Plan
	6.1.3	Manage Multimodal Service Provider Interface
	6.1.4	Provide ISP Operator Interface for Trip Planning Parameters
	6.1.5	Collect Service Requests and Confirmation for Archive
	6.1.6	Manage Traveler Info Archive Data
	6.2.1.1	Collect Traffic Data for Advisory Messages
	6.2.1.2	Provide Traffic and Transit Advisory Messages
	6.2.1.3	Collect Transit Data for Advisory Messages
	6.2.1.4	Provide Traffic and Transit Broadcast Messages
	6.2.1.5	Provide ISP Operator Broadcast Parameters Interface
	6.2.4	Collect Yellow Pages Data
	6.2.6	Provide Yellow Pages Data and Reservations
	6.4.1	Screen Rider Requests
	6.4.2	Match Rider and Provider
	6.4.3	Report Ride Match Results to Requestor
	6.4.4	Confirm Traveler Rideshare Request
	6.5.1	Collect and Update Traveler Information
	6.5.2	Provide Traveler Yellow Pages Information and Reservations
	6.5.3	Register Yellow Pages Service Providers
	6.6.1	Provide Multimodal Route Selection
	6.6.2.1	Calculate Vehicle Route
	6.6.2.2	Provide Vehicle Route Calculation Data
	6.6.2.3	Provide Route Segment Data for Other Areas
	6.6.2.4	Update Vehicle Route Selection Map Data
	6.6.2.5	Provide ISP Operator Route Parameters Interface
	6.6.2.6	Calculate Vehicle Probe Data for Guidance
	6.6.3	Update Other Routes Selection Map Data
	6.6.4	Select Transit Route
	6.6.5	Select Other Routes
	7.1.6	Distribute Advanced Charges and Fares
	7.2.6	Distribute Advanced Tolls and Fares
	7.3.2	Distribute Advanced Tolls and Parking Lot Charges
	7.4.1.2	Process Yellow Pages Services Provider Payments
	7.4.1.3	Process Driver Map Update Payments
	7.4.1.4	Process Traveler Map Update Payments
	7.4.1.6	Process Traveler Trip and Other Services Payments
	7.4.1.7	Collect Payment Transaction Records
	7.4.1.8	Process Traveler Rideshare Payments
	7.4.2	Collect Price Data for ITS Use
	7.4.3	Route Traveler Advanced Payments
PIAS Personal Information Access	6.8.1.1.1	Determine Personal Portable Device Guidance Method
	6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance
	6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance
	6.8.1.2	Provide Personal Portable Device Guidance Interface
	6.8.1.3	Process Personal Portable Device Location Data
	6.8.1.4	Update Traveler Navigable Map Database
	6.8.1.5	Provide Traveler Emergency Message Interface

Appendix E: P-Spec Assignment (by Subsystem)

Subsystem	P-Spec	
	6.8.2.1	Build Traveler Personal Security Message
	6.8.2.2	Provide Traveler Emergency Communications Function
	6.8.3.1	Get Traveler Personal Request
	6.8.3.2	Provide Traveler with Personal Travel Information
	6.8.3.3	Provide Traveler Personal Interface
	6.8.3.4	Update Traveler Personal Display Map Data
	7.5.3	Provide Personal Payment Instrument Interface
PMS Parking Management	1.2.5.1	Determine Parking Lot State
	1.2.5.2	Coordinate Other Parking Data
	1.2.5.3	Provide Parking Lot Operator Interface
	1.2.5.4	Determine P+R needs for Transit Management
	1.2.5.5	Manage Parking Archive Data
	1.2.5.6	Calculate Parking Lot Occupancy
	5.4.3	Process Parking Lot Violations
	7.2.1.1	Read Parking Lot Tag Data
	7.2.1.10	Determine Advanced Charges
	7.2.1.2	Calculate Vehicle Parking Lot Charges
	7.2.1.3	Collect Bad Charge Payment Data
	7.2.1.4	Check for Advanced Parking Lot Payment
	7.2.1.5	Bill Driver for Parking Lot Charges
	7.2.1.6	Manage Parking Lot Financial Processing
	7.2.1.7	Update Parking Lot Data
	7.2.1.8	Register for Advanced Parking Lot Payment
	7.2.1.9	Manage Parking Lot Reservations
	7.2.2	Produce Parking Lot Displays
	7.2.3	Obtain Parking Lot Violator Image
	7.2.5	Detect Vehicle for Parking Lot Payment
RS Roadway Subsystem	1.1.1.1	Process Traffic Sensor Data
	1.1.1.3	Process Environmental Sensor Data
	1.1.1.4	Manage Data Collection and Monitoring
	1.1.2.6	Process Collected Vehicle Smart Probe Data
	1.1.6	Collect Vehicle Tag Data for Link Time Calculations
	1.1.7	Collect Vehicle Smart Probe Data
	1.2.7.1	Process Indicator Output Data for Roads
	1.2.7.2	Monitor Roadside Equipment Operation for Faults
	1.2.7.3	Manage Indicator Preemptions
	1.2.7.4	Process In-vehicle Signage Data
	1.2.7.5	Process Indicator Output Data for Freeways
	1.2.7.6	Provide Intersection Collision Avoidance Data
	1.2.7.7	Process Vehicle Smart Probe Data for Output
	1.3.1.3	Process Traffic Images
	1.5.5	Process Vehicle Pollution Data
	1.5.6	Detect Roadside Pollution Levels
	1.6.1.1	Detect Roadway Events
	1.6.1.2.1	Control HRI Traffic Signals
	1.6.1.2.2	Control HRI Warnings and Barriers
	1.6.1.2.3	Provide SSR Device Controls
	1.6.1.2.4	Provide HSR Device Controls
	1.6.1.2.5	Manage Device Control
	1.6.1.2.6	Maintain Device State
	1.6.1.3	Perform Equipment Self-Test
	1.6.1.4.1	Generate Alerts and Advisories
	1.6.1.4.2	Provide Closure Parameters
	1.6.1.4.3	Report Alerts and Advisories
	1.6.1.4.4	Report HRI Status on Approach
	1.6.1.5	Detect HRI Hazards
	1.6.1.6.1	Close HRI on Detection
	1.6.1.6.2	Detect Imminent Vehicle/Train Collision
	1.6.1.7.1	Control Vehicle Traffic at Passive HRI
	1.6.1.7.2	Control Vehicle Traffic at Active HRI
	1.6.1.7.3	Close HRI on Command
	1.6.3.1	Interact with Wayside Systems
	1.6.3.2	Advise and Protect Train Crews
	1.6.3.3	Provide ATS Alerts
	1.6.5.1	Provide Interactive Interface
	1.6.5.2	Determine HRI Status
	1.6.5.3	Maintain HRI Closure Data

Appendix E: P-Spec Assignment (by Subsystem)

Subsystem	P-Spec	
	3.2.5	Check Vehicle for AHS eligibility
	3.2.6	Manage AHS Check-in and Check-out
RTS Remote Traveler Support	4.4.1.7	Monitor Secure Area
	4.4.1.8	Report Traveler Emergencies
	4.7.1.1	Provide Transit User Roadside Data Interface
	4.7.1.2	Provide Transit User Roadside Vehicle Data Interface
	4.7.2.1	Detect Transit User at Roadside
	4.7.2.2	Determine Transit User Needs at Roadside
	4.7.2.3	Determine Transit Fare at Roadside
	4.7.2.4	Manage Transit Fare Billing at Roadside
	4.7.2.5	Provide Transit User Roadside Fare Interface
	4.7.2.6	Update Roadside Transit Fare Data
	4.7.2.7	Provide Transit Roadside Passenger Data
	6.3.1	Get Traveler Request
	6.3.2	Inform Traveler
	6.3.3	Provide Traveler Kiosk Interface
	6.3.4	Update Traveler Display Map Data at Kiosk
	7.3.4	Provide Remote Terminal Payment Instrument Interface
	7.5.2	Provide Transit User Roadside Payment Instrument Interface
	7.5.5	Provide Traveler Kiosk Payment Instrument Interface
TAS Toll Administration	5.4.2	Process Violations for Tolls
	7.1.1.11	Manage Toll Archive Data
	7.1.1.3	Manage Bad Toll Payment Data
	7.1.1.6	Collect Probe Data From Toll Transactions
	7.1.1.7	Update Toll Price Data
	7.1.1.8	Register for Advanced Toll Payment
	7.1.1.9	Manage Toll Financial Processing
TCS Toll Collection	7.1.1.1	Read Tag Data for Tolls
	7.1.1.10	Determine Advanced Toll Bill
	7.1.1.2	Calculate Vehicle Toll
	7.1.1.4	Check for Advanced Tolls Payment
	7.1.1.5	Bill Driver for Tolls
	7.1.2	Produce Roadside Displays
	7.1.3	Obtain Toll Violator Image
	7.1.5	Detect Vehicle for Tolls
TMS Traffic Management	1.1.1.2	Collect and Process Sensor Fault Data
	1.1.2.1	Process Traffic Data for Storage
	1.1.2.2	Process Traffic Data
	1.1.2.3	Update Data Source Static Data
	1.1.2.4	Monitor HOV lane use
	1.1.2.5	Process Tag/AVL Data for Link Time Data
	1.1.2.7	Monitor Reversible Lanes
	1.1.3	Generate Predictive Traffic Model
	1.1.4.1	Retrieve Traffic Data
	1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface
	1.1.4.3	Provide Direct Media Traffic Data Interface
	1.1.4.4	Update Traffic Display Map Data
	1.1.4.7	Manage Traffic Archive Data
	1.1.5	Exchange data with Other Traffic Centers
	1.2.1	Select Strategy
	1.2.2.1	Determine Indicator State for Freeway Management
	1.2.2.2	Determine Indicator State for Road Management
	1.2.3	Determine Ramp State
	1.2.4.1	Output Control Data for Roads
	1.2.4.2	Output Control Data for Freeways
	1.2.4.3	Output In-vehicle Signage Data
	1.2.6.1	Maintain Traffic and Sensor Static Data
	1.2.6.2	Provide Static Data Store Output Interface
	1.2.8.1	Collect Indicator Fault Data
	1.2.8.2	Maintain Indicator Fault Data Store
	1.2.8.3	Provide Indicator Fault Interface for C and M
	1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface
	1.3.1.1	Analyze Traffic Data for Incidents
	1.3.1.2	Maintain Static Data for Incident Management
	1.3.2.1	Store Possible Incident Data
	1.3.2.2	Review and Classify Possible Incidents
	1.3.2.3	Review and Classify Planned Events

Appendix E: P-Spec Assignment (by Subsystem)

Subsystem	P-Spec	
	1.3.2.4	Provide Planned Events Store Interface
	1.3.2.5	Provide Current Incidents Store Interface
	1.3.3	Respond to Current Incidents
	1.3.4.1	Retrieve Incident Data
	1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface
	1.3.4.3	Provide Media Incident Data Interface
	1.3.4.4	Update Incident Display Map Data
	1.3.4.5	Manage Resources for Incidents
	1.3.5	Manage Possible Predetermined Responses Store
	1.3.6	Manage Predetermined Incident Response Data
	1.3.7	Analyze Incident Response Log
	1.4.1	Provide Traffic Operations Personnel Demand Interface
	1.4.2	Collect Demand Forecast Data
	1.4.3	Update Demand Display Map Data
	1.4.4	Implement Demand Management Policy
	1.4.5	Calculate Forecast Demand
	1.6.2.1	Exchange Data with Rail Operations
	1.6.2.2	Manage Alerts and Advisories
	1.6.2.3	Manage Rail Traffic Control Data
	1.6.4.1	Manage HRI Closures
	1.6.4.2	Exchange Data with Traffic Management
	3.2.7	Manage AHS Operations
	5.4.1	Process TM Detected Violations
TRMS Transit Management	4.1.2.4	Provide Transit Vehicle Correction Data Output Interface
	4.1.4	Manage Transit Vehicle Deviations
	4.1.5	Provide Transit Vehicle Status Information
	4.1.6	Manage Transit Vehicle Operations Data
	4.1.7	Provide Transit Vehicle Deviation Data Output Interface
	4.2.1.1	Process Demand Responsive Transit Trip Request
	4.2.1.2	Compute Demand Responsive Transit Vehicle Availability
	4.2.1.3	Generate Demand Responsive Transit Schedule and Routes
	4.2.1.4	Confirm Demand Responsive Transit Schedule and Route
	4.2.2	Provide Transit Plans Store Interface
	4.2.3.1	Generate Transit Routes
	4.2.3.2	Generate Schedules
	4.2.3.3	Produce Transit Service Data for External Use
	4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation
	4.2.3.5	Manage Transit Operational Data Store
	4.2.3.6	Produce Transit Service Data for Manage Transit Use
	4.2.3.7	Provide Interface for Other TRM Data
	4.2.3.8	Provide Interface for Transit Service Raw Data
	4.2.3.9	Update Transit Map Data
	4.2.4	Manage Transit Archive Data
	4.3.1	Monitor Transit Vehicle Condition
	4.3.2	Generate Transit Vehicle Maintenance Schedules
	4.3.3	Generate Technician Work Assignments
	4.3.4	Monitor And Verify Maintenance Activity
	4.3.5	Report Transit Vehicle Information
	4.3.6	Update Transit Vehicle Information
	4.3.7	Manage Transit Vehicle Operations Data Store
	4.4.1.1	Manage Transit Security
	4.4.1.3	Provide Transit System Operator Security Interface
	4.4.1.4	Provide Transit External Interface for Emergencies
	4.4.1.6	Collect Transit Vehicle Emergency Information
	4.4.2	Coordinate Multiple Agency Responses to Incidents
	4.4.3	Generate Responses for Incidents
	4.5.1	Assess Transit Driver Performance
	4.5.2	Assess Transit Driver Availability
	4.5.3	Access Transit Driver Cost Effectiveness
	4.5.4	Assess Transit Driver Eligibility
	4.5.5	Generate Transit Driver Route Assignments
	4.5.6	Update Transit Driver Information
	4.5.7	Report Transit Driver Information
	4.5.8	Provide Transit Driver Information Store Interface
	4.6.8	Manage Transit Vehicle Advanced Payments
	5.4.4	Process Fare Payment Violations
	5.4.5	Process Vehicle Fare Collection Violations

Appendix E: P-Spec Assignment (by Subsystem)

Subsystem	P-Spec	
	5.4.7	Process Roadside Fare Collection Violations
	7.3.1.1	Register for Advanced Transit Fare Payment
	7.3.1.2	Determine Advanced Transit Fares
	7.3.1.3	Manage Transit Fare Financial Processing
	7.3.1.4	Check for Advanced Transit Fare Payment
	7.3.1.5	Bill Transit User for Transit Fare
	7.3.1.6	Collect Bad Transit Fare Payment Data
	7.3.1.7	Update Transit Fare Data
	7.3.3	Get Transit User Image for Violation
	7.4.1.5	Process Transit User Other Services Payments
TRVS Transit Vehicle Subsystem	4.1.1	Process Transit Vehicle Sensor Trip Data
	4.1.2.1	Determine Transit Vehicle Deviation and ETA
	4.1.2.2	Determine Transit Vehicle Corrective Instructions
	4.1.2.3	Provide Transit Vehicle Driver Interface
	4.1.2.5	Request Transit Vehicle Preemptions
	4.1.3	Provide Transit Vehicle Location Data
	4.1.9	Process Transit Vehicle Sensor Maintenance Data
	4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data
	4.2.1.6	Provide Demand Responsive Transit Driver Interface
	4.4.1.2	Manage Transit Emergencies
	4.4.1.5	Provide Transit Driver Interface for Emergencies
	4.6.1	Detect Transit User on Vehicle
	4.6.2	Determine Transit User Needs on Vehicle
	4.6.3	Determine Transit Fare on Vehicle
	4.6.4	Manage Transit Fare Billing on Vehicle
	4.6.5	Provide Transit User Fare Payment Interface on Vehicle
	4.6.6	Update Transit Vehicle Fare Data
	4.6.7	Provide Transit Vehicle Passenger Data
	6.2.1.6	Provide Transit Advisory Data On Vehicle
	6.2.3	Provide Transit User Advisory Interface
	7.3.5	Provide Transit Vehicle Payment Instrument Interface
VS Vehicle	3.1.1	Produce Collision and Crash Avoidance Data
	3.1.2	Carry-out Safety Analysis
	3.1.3	Process Vehicle On-board Data
	3.2.1	Provide Driver Interface
	3.2.2	Provide AHS Control
	3.2.3.1	Provide Command Interface
	3.2.3.2	Manage Platoon Following
	3.2.3.3	Process data for Vehicle Actuators
	3.2.3.4.1	Provide Speed Servo Control
	3.2.3.4.2	Provide Headway Servo Control
	3.2.3.4.3	Provide Lane Servo Control
	3.2.3.4.4	Provide Change Lane Servo Control
	3.2.3.4.5	Provide Vehicle Control Data Interface
	3.2.3.5	Process Vehicle Sensor Data
	3.2.3.6	Communicate with other Platoon Vehicles
	3.2.4	Process Sensor Data for AHS input
	3.3.2	Provide Communications Function
	3.3.3	Build Automatic Collision Notification Message
	3.4	Enhance Driver's Vision
	6.2.2	Prepare and Output In-vehicle Displays
	6.2.5	Provide Driver Interface
	6.7.1.1	Build Driver Personal Security Message
	6.7.1.2	Provide Driver In-vehicle Communications Function
	6.7.2.1.1	Determine In-vehicle Guidance Method
	6.7.2.1.2	Provide Dynamic In-vehicle Guidance
	6.7.2.1.3	Provide Autonomous In-vehicle Guidance
	6.7.2.2	Process Vehicle Location Data
	6.7.2.3	Provide Driver Guidance Interface
	6.7.2.4	Update Vehicle Navigable Map Database
	7.1.4	Provide Driver Toll Payment Interface
	7.1.7	Provide Payment Instrument Interface for Tolls
	7.2.4	Provide Driver Parking Lot Payment Interface
	7.2.7	Provide Payment Instrument Interface for Parking
	7.5.1	Provide Vehicle Payment Instrument Interface

Appendix F: PSpecs Traced To Equipment Packages

1.1.1.1 **Process Traffic Sensor Data**
Advanced Rail Crossing
Roadway Basic Surveillance
Roadway Freeway Control
Roadway HOV Control
Roadway Incident Detection
Roadway Reversible Lanes
Roadway Signal Controls
Standard Rail Crossing

1.1.1.2 **Collect and Process Sensor Fault Data**
Traffic Maintenance

1.1.1.3 **Process Environmental Sensor Data**
Roadway Environmental Monitoring

1.1.1.4 **Manage Data Collection and Monitoring**
Roadside Data Collection

1.1.2.1 **Process Traffic Data for Storage**
Collect Traffic Surveillance
TMC Road Weather Monitoring
TMC Traffic Network Performance Evaluation

1.1.2.2 **Process Traffic Data**
Collect Traffic Surveillance
TMC Road Weather Monitoring
TMC Signal Control
TMC Traffic Network Performance Evaluation

1.1.2.3 **Update Data Source Static Data**
Collect Traffic Surveillance

1.1.2.4 **Monitor HOV lane use**
TMC HOV Lane Management

1.1.2.5 **Process Tag/AVL Data for Link Time Data**
TMC Probe Information Collection

1.1.2.6 **Process Collected Vehicle Smart Probe Data**
Automated Road Signing

1.1.2.7 **Monitor Reversible Lanes**
TMC Reversible Lane Management

1.1.3 **Generate Predictive Traffic Model**
Rail Operations Coordination
TMC Traffic Network Performance Evaluation

1.1.4.1 **Retrieve Traffic Data**
Collect Traffic Surveillance
TMC Probe Information Collection
TMC Road Weather Monitoring
TMC Traffic Information Dissemination

1.1.4.2 **Provide Traffic Operations Personnel Traffic Data Interface**
Collect Traffic Surveillance
TMC Freeway Management
TMC Regional Traffic Control
TMC Signal Control
TMC Traffic Information Dissemination

1.1.4.3 **Provide Direct Media Traffic Data Interface**
TMC Traffic Information Dissemination

1.1.4.4 **Update Traffic Display Map Data**
Collect Traffic Surveillance

1.1.4.5 **Provide Media System Traffic Data Interface**
Basic Information Broadcast
Interactive Infrastructure Information

1.1.4.6 **Provide Traffic Data Retrieval Interface**
Basic Information Broadcast

Infrastructure Provided Route Selection
Interactive Infrastructure Information

1.1.4.7 Manage Traffic Archive Data
Traffic Data Collection

1.1.5 Exchange data with Other Traffic Centers
TMC Incident Dispatch Coordination/Communication
TMC Regional Traffic Control
TMC Traffic Network Performance Evaluation

1.1.6 Collect Vehicle Tag Data for Link Time Calculations
Roadway Probe Beacons

1.1.7 Collect Vehicle Smart Probe Data
Automated Road Signing

1.2.1 Select Strategy
TMC Signal Control

1.2.2.1 Determine Indicator State for Freeway Management
TMC Freeway Management
TMC Multi-Modal Coordination

1.2.2.2 Determine Indicator State for Road Management
TMC Multi-Modal Coordination
TMC Signal Control

1.2.3 Determine Ramp State
TMC Freeway Management
TMC Multi-Modal Coordination

1.2.4.1 Output Control Data for Roads
TMC Incident Dispatch Coordination/Communication
TMC Regional Traffic Control
TMC Signal Control

1.2.4.2 Output Control Data for Freeways
TMC Freeway Management
TMC HOV Lane Management
TMC Incident Dispatch Coordination/Communication
TMC Regional Traffic Control
TMC Reversible Lane Management

1.2.4.3 Output In-vehicle Signage Data
TMC Input to In-Vehicle Signing

1.2.5.1 Determine Parking Lot State
Parking Management

1.2.5.2 Coordinate Other Parking Data
Parking Coordination

1.2.5.3 Provide Parking Lot Operator Interface
Parking Management

1.2.5.4 Determine P+R needs for Transit Management
Parking Coordination

1.2.5.5 Manage Parking Archive Data
Parking Data Collection

1.2.5.6 Calculate Parking Lot Occupancy
Parking Surveillance

1.2.6.1 Maintain Traffic and Sensor Static Data
TMC Traffic Network Performance Evaluation

1.2.6.2 Provide Static Data Store Output Interface
TMC Traffic Network Performance Evaluation

1.2.7.1 Process Indicator Output Data for Roads
Roadside Signal Priority
Roadway Reversible Lanes
Roadway Signal Controls
Roadway Traffic Information Dissemination
Standard Rail Crossing

1.2.7.2 Monitor Roadside Equipment Operation for Faults

Roadway Freeway Control
Roadway Signal Controls

1.2.7.3 **Manage Indicator Preemptions**
Roadside Signal Priority

1.2.7.4 **Process In-vehicle Signage Data**
Automated Road Signing
Roadway In-Vehicle Signing

1.2.7.5 **Process Indicator Output Data for Freeways**
Roadway freeway control
Roadway HOV Control
Roadway Reversible Lanes
Roadway Traffic Information Dissemination

1.2.7.6 **Provide Intersection Collision Avoidance Data**
Roadway Intersection Collision Warning

1.2.7.7 **Process Vehicle Smart Probe Data for Output**
Automated Road Signing

1.2.8.1 **Collect Indicator Fault Data**
Traffic Maintenance

1.2.8.2 **Maintain Indicator Fault Data Store**
Traffic Maintenance

1.2.8.3 **Provide Indicator Fault Interface for C and M**
Traffic Maintenance

1.2.8.4 **Provide Traffic Operations Personnel Indicator Fault Interface**
Traffic Maintenance

1.3.1.1 **Analyze Traffic Data for Incidents**
TMC Incident Detection

1.3.1.2 **Maintain Static Data for Incident Management**
TMC Incident Detection

1.3.1.3 **Process Traffic Images**
Roadway Basic Surveillance

1.3.2.1 **Store Possible Incident Data**
TMC Incident Detection
TMC Road Weather Monitoring

1.3.2.2 **Review and Classify Possible Incidents**
TMC Incident Detection
TMC Road Weather Monitoring

1.3.2.3 **Review and Classify Planned Events**
TMC Incident Detection
TMC Incident Dispatch Coordination/Communication

1.3.2.4 **Provide Planned Events Store Interface**
TMC Incident Detection

1.3.2.5 **Provide Current Incidents Store Interface**
TMC Incident Detection

1.3.3 **Respond to Current Incidents**
TMC Incident Dispatch Coordination/Communication

1.3.4.1 **Retrieve Incident Data**
TMC Incident Dispatch Coordination/Communication

1.3.4.2 **Provide Traffic Operations Personnel Incident Data Interface**
TMC Incident Detection
TMC Incident Dispatch Coordination/Communication
TMC Reversible Lane Management
TMC Road Weather Monitoring

1.3.4.3 **Provide Media Incident Data Interface**
TMC Incident Detection
TMC Traffic Information Dissemination

1.3.4.4 **Update Incident Display Map Data**
TMC Incident Dispatch Coordination/Communication

1.3.4.5 **Manage Resources for Incidents**
TMC Incident Dispatch Coordination/Communication
TMC Road Weather Monitoring

1.3.5 **Manage Possible Predetermined Responses Store**
TMC Incident Dispatch Coordination/Communication

1.3.6 **Manage Predetermined Incident Response Data**
TMC Incident Dispatch Coordination/Communication

1.3.7 **Analyze Incident Response Log**
TMC Incident Dispatch Coordination/Communication

1.4.1 **Provide Traffic Operations Personnel Demand Interface**
TMC Traffic Network Performance Evaluation

1.4.2 **Collect Demand Forecast Data**
TMC Multi-Modal Coordination
TMC Traffic Network Performance Evaluation

1.4.3 **Update Demand Display Map Data**
TMC Traffic Network Performance Evaluation

1.4.4 **Implement Demand Management Policy**
TMC Toll/Parking Coordination
TMC Traffic Network Performance Evaluation

1.4.5 **Calculate Forecast Demand**
TMC Traffic Network Performance Evaluation

1.5.1 **Provide Traffic Operations Personnel Pollution Data Interface**
Emissions Data Management

1.5.2 **Process Pollution Data**
Emissions Data Management

1.5.3 **Update Pollution Display Map Data**
Emissions Data Management

1.5.4 **Manage Pollution State Data Store**
Emissions Data Management

1.5.5 **Process Vehicle Pollution Data**
Roadway Emissions Monitoring

1.5.6 **Detect Roadside Pollution Levels**
Roadway Emissions Monitoring

1.5.7 **Manage Pollution Data Log**
Emissions Data Management

1.5.8 **Manage Pollution Reference Data Store**
Emissions Data Management

1.5.9 **Manage Pollution Archive Data**
Emissions Data Collection

1.6.1.1 **Detect Roadway Events**
Advanced Rail Crossing

1.6.1.2.1 **Control HRI Traffic Signals**
Standard Rail Crossing

1.6.1.2.2 **Control HRI Warnings and Barriers**
Standard Rail Crossing

1.6.1.2.3 **Provide SSR Device Controls**
Standard Rail Crossing

1.6.1.2.4 **Provide HSR Device Controls**
Advanced Rail Crossing

1.6.1.2.5 **Manage Device Control**
Standard Rail Crossing

1.6.1.2.6 **Maintain Device State**
Standard Rail Crossing

1.6.1.3 **Perform Equipment Self-Test**
Standard Rail Crossing

Appendix G: Equipment Packages Traced to P-Specs

1.6.1.4.1 **Generate Alerts and Advisories**
Advanced Rail Crossing

1.6.1.4.2 **Provide Closure Parameters**
Standard Rail Crossing

1.6.1.4.3 **Report Alerts and Advisories**
Advanced Rail Crossing

1.6.1.4.4 **Report HRI Status on Approach**
Standard Rail Crossing

1.6.1.5 **Detect HRI Hazards**
Advanced Rail Crossing

1.6.1.6.1 **Close HRI on Detection**
Advanced Rail Crossing

1.6.1.6.2 **Detect Imminent Vehicle/Train Collision**
Advanced Rail Crossing

1.6.1.7.1 **Control Vehicle Traffic at Passive HRI**
Standard Rail Crossing

1.6.1.7.2 **Control Vehicle Traffic at Active HRI**
Standard Rail Crossing

1.6.1.7.3 **Close HRI on Command**
Standard Rail Crossing

1.6.2.1 **Exchange Data with Rail Operations**
HRI Traffic Management
Rail Operations Coordination

1.6.2.2 **Manage Alerts and Advisories**
HRI Traffic Management

1.6.2.3 **Manage Rail Traffic Control Data**
Rail Operations Coordination

1.6.3.1 **Interact with Wayside Systems**
Advanced Rail Crossing
Standard Rail Crossing

1.6.3.2 **Advise and Protect Train Crews**
Advanced Rail Crossing

1.6.3.3 **Provide ATS Alerts**
Advanced Rail Crossing

1.6.4.1 **Manage HRI Closures**
HRI Traffic Management

1.6.4.2 **Exchange Data with Traffic Management**
HRI Traffic Management

1.6.5.1 **Provide Interactive Interface**
Advanced Rail Crossing

1.6.5.2 **Determine HRI Status**
Standard Rail Crossing

1.6.5.3 **Maintain HRI Closure Data**
Standard Rail Crossing

2.1.1 **Manage Commercial Fleet Electronic Credentials and Tax Filing**
Fleet Credentials and Taxes Management and Reporting
Fleet HAZMAT Management

2.1.2 **Provide Commercial Fleet Static Route**
Fleet Administration

2.1.3 **Provide Flt Mgr Electronic Credentials and Tax Filing Interface**
Fleet Credentials and Taxes Management and Reporting

2.1.4 **Provide Fleet Manager Commercial Vehicle Communications**
Fleet Administration

2.1.5 **Provide Commercial Vehicle Driver Routing Interface**
On-board Trip Monitoring

Appendix G: Equipment Packages Traced to P-Specs

2.1.6 **Manage Driver Instruction Store**
Fleet Administration
Fleet Maintenance Management

2.2.1 **Manage CV Electronic Credential and Tax Filing Interface**
Fleet Credentials and Taxes Management and Reporting

2.2.2 **Provide Vehicle Static Route**
On-board Trip Monitoring

2.2.3 **Provide CV Driver Electronic Credential and Tax Filing Interface**
On-board CV Electronic Data

2.2.4 **Provide Commercial Vehicle Driver Communications**
On-board Trip Monitoring

2.3.1 **Produce Commercial Vehicle Driver Message at Roadside**
Roadside Electronic Screening

2.3.2.1 **Administer Commercial Vehicle Roadside Credentials Database**
Roadside Electronic Screening

2.3.2.2 **Process Screening Transactions**
Roadside Electronic Screening

2.3.3.1 **Provide Commercial Vehicle Checkstation Communications**
Roadside Safety Inspection

2.3.3.2 **Provide Commercial Vehicle Inspector Handheld Terminal Interface**
Roadside Safety Inspection

2.3.3.3 **Administer Commercial Vehicle Roadside Safety Datadase**
Roadside Safety Inspection

2.3.3.4 **Carry-out Commercial Vehicle Roadside Safety Screening**
Citation and Accident Electronic Recording
Roadside Electronic Screening
Roadside Safety Inspection

2.3.3.5 **Carry-out Commercial Vehicle Roadside Inspection**
Roadside Safety Inspection

2.3.4 **Detect Commercial Vehicle**
Roadside Electronic Screening
Roadside WIM

2.3.5 **Provide Commercial Vehicle RoadsideOperator Interface**
Roadside Electronic Screening
Roadside Safety Inspection

2.3.6 **Provide Commercial Vehicle Reports**
Roadside Electronic Screening

2.3.7 **Produce Commercial Vehicle Driver Message on Vehicle**
On-board CV Electronic Data

2.3.8 **Provide Commercial Vehicle Border Screening**
International Border Crossing

2.4.1 **Communicate Commercial Vehicle On-board Data to Roadside**
On-board CV Safety
On-board Trip Monitoring

2.4.2 **Collect On-board Commercial Vehicle Sensor Data**
On-board CV Electronic Data
On-board CV Safety
On-board Trip Monitoring

2.4.3 **Analyze Commercial Vehicle On-board Data**
On-board CV Electronic Data
On-board CV Safety
On-board Trip Monitoring

2.4.4 **Provide Commercial Vehicle Driver Interface**
On-board CV Electronic Data
On-board CV Safety
On-board Trip Monitoring

2.4.5 **Communicate Commercial Vehicle On-board Data to Vehicle Manager**
On-board Trip Monitoring

Appendix G: Equipment Packages Traced to P-Specs

2.4.6 **Provide Commercial Vehicle On-board Data Store Interface**
On-board CV Electronic Data

2.5.1 **Manage Commercial Vehicle Trips and Clearances**
Credentials and Taxes Administration
International CV Administration

2.5.2 **Obtain Electronic Credential and Tax Filing Payment**
Credentials and Taxes Administration

2.5.3 **Update Permits and Duties Store**
Credentials and Taxes Administration

2.5.4 **Communicate with Other Commercial Vehicle Administration System**
Credentials and Taxes Administration
CV Information Exchange

2.5.5 **Manage Commercial Vehicle Credentials and Enrollment**
Credentials and Taxes Administration
CV Safety Administration

2.5.6 **Output Commercial Vehicle Enrollment Data to Roadside Facilities**
Credentials and Taxes Administration
CV Information Exchange
International CV Administration

2.5.7 **Process Commercial Vehicle Violations**
Credentials and Taxes Administration

2.5.8 **Process Data Received from Roadside Facilities**
Credentials and Taxes Administration
International CV Administration

2.5.9 **Manage Commercial Vehicle Archive Data**
CV Data Collection

2.6.1 **Provide Commercial Vehicle Manager Tag Data Interface**
Fleet Administration

2.6.2 **Transmit Commercial Vehicle Tag Data**
On-board CV Electronic Data

2.6.3 **Provide Commercial Driver Tag Data Interface**
On-board CV Electronic Data

2.6.4 **Provide Lock Tag Data Interface**
On-board CV Electronic Data

2.6.5 **Manage Commercial Vehicle Tag Data Store**
On-board CV Electronic Data

2.7 **Manage Cargo**
Freight Administration and Management

3.1.1 **Produce Collision and Crash Avoidance Data**
Vehicle Intersection Collision Warning
Vehicle Intersection Control
Vehicle Lateral Warning System
Vehicle Longitudinal Warning System
Vehicle Pre-Crash Safety Systems

3.1.2 **Carry-out Safety Analysis**
Driver Safety Monitoring System
Vehicle Safety Monitoring System

3.1.3 **Process Vehicle On-board Data**
Driver Safety Monitoring System
Smart Probe
Vehicle Intersection Collision Warning
Vehicle Intersection Control
Vehicle Lateral Warning System
Vehicle Longitudinal Control
Vehicle Longitudinal Warning System
Vehicle Pre-Crash Safety Systems
Vehicle Safety Monitoring System
Vehicle Systems for AHS

3.2.1 **Provide Driver Interface**

Vehicle Lateral Control
Vehicle Longitudinal Control
Vehicle Systems for AHS

3.2.2 **Provide AHS Control**
Vehicle Systems for AHS

3.2.3.1 **Provide Command Interface**
Vehicle Lateral Control
Vehicle Longitudinal Control

3.2.3.2 **Manage Platoon Following**
Vehicle Systems for AHS

3.2.3.3 **Process data for Vehicle Actuators**
Vehicle Lateral Control
Vehicle Longitudinal Control
Vehicle Systems for AHS

3.2.3.4.1 **Provide Speed Servo Control**
Vehicle Longitudinal Control

3.2.3.4.2 **Provide Headway Servo Control**
Vehicle Longitudinal Control

3.2.3.4.3 **Provide Lane Servo Control**
Vehicle Lateral Control

3.2.3.4.4 **Provide Change Lane Servo Control**
Vehicle Lateral Control

3.2.3.4.5 **Provide Vehicle Control Data Interface**
Vehicle Lateral Control
Vehicle Longitudinal Control

3.2.3.5 **Process Vehicle Sensor Data**
Vehicle Intersection Collision Warning
Vehicle Lateral Warning System
Vehicle Longitudinal Warning System
Vehicle Pre-Crash Safety Systems
Vehicle Probe Support

3.2.3.6 **Communicate with other Platoon Vehicles**
Vehicle Systems for AHS

3.2.4 **Process Sensor Data for AHS input**
Vehicle Systems for AHS

3.2.5 **Check Vehicle for AHS eligibility**
Roadway Systems for AHS

3.2.6 **Manage AHS Check-in and Check-out**
Roadway Systems for AHS

3.2.7 **Manage AHS Operations**
TMC for AHS

3.3.1 **Provide Cargo Data for Incident Notification**
On-board Cargo Monitoring

3.3.2 **Provide Communications Function**
Vehicle Mayday I/F

3.3.3 **Build Automatic Collision Notification Message**
Vehicle Mayday I/F

3.4 **Enhance Driver's Vision**
Driver Visibility Improvement System

4.1.1 **Process Transit Vehicle Sensor Trip Data**
On-board Maintenance
On-board Transit Trip Monitoring

4.1.2.1 **Determine Transit Vehicle Deviation and ETA**
On-board Fixed Route Schedule Management

4.1.2.2 **Determine Transit Vehicle Corrective Instructions**
On-board Fixed Route Schedule Management

4.1.2.3 **Provide Transit Vehicle Driver Interface**

On-board Fixed Route Schedule Management

4.1.2.4 **Provide Transit Vehicle Correction Data Output Interface**
Transit Center Multi-Modal Coordination

4.1.2.5 **Request Transit Vehicle Preemptions**
On-board Transit Signal Priority

4.1.3 **Provide Transit Vehicle Location Data**
On-board Transit Trip Monitoring

4.1.4 **Manage Transit Vehicle Deviations**
Transit Center Multi-Modal Coordination

4.1.5 **Provide Transit Vehicle Status Information**
Transit Center Information Services
Transit Center Multi-Modal Coordination

4.1.6 **Manage Transit Vehicle Operations Data**
Transit Center Fixed-Route Operations
Transit Center Information Services
Transit Center Paratransit Operations
Transit Center Tracking and Dispatch

4.1.7 **Provide Transit Vehicle Deviation Data Output Interface**
Transit Center Multi-Modal Coordination

4.1.8 **Provide Transit Operations Data Distribution Interface**
Basic Information Broadcast
Interactive Infrastructure Information

4.1.9 **Process Transit Vehicle Sensor Maintenance Data**
On-board Maintenance

4.2.1.1 **Process Demand Responsive Transit Trip Request**
Transit Center Paratransit Operations

4.2.1.2 **Compute Demand Responsive Transit Vehicle Availability**
Transit Center Paratransit Operations

4.2.1.3 **Generate Demand Responsive Transit Schedule and Routes**
Transit Center Paratransit Operations

4.2.1.4 **Confirm Demand Responsive Transit Schedule and Route**
Transit Center Paratransit Operations

4.2.1.5 **Process Demand Responsive Transit Vehicle Availability Data**
On-board Paratransit Operations

4.2.1.6 **Provide Demand Responsive Transit Driver Interface**
On-board Paratransit Operations

4.2.2 **Provide Transit Plans Store Interface**
Transit Center Fixed-Route Operations

4.2.3.1 **Generate Transit Routes**
Transit Center Fixed-Route Operations

4.2.3.2 **Generate Schedules**
Transit Center Fixed-Route Operations
Transit Center Multi-Modal Coordination

4.2.3.3 **Produce Transit Service Data for External Use**
Transit Center Information Services

4.2.3.4 **Provide Transit Fleet Manager Interface for Services Generation**
Transit Center Fixed-Route Operations

4.2.3.5 **Manage Transit Operational Data Store**
Transit Center Fixed-Route Operations

4.2.3.6 **Produce Transit Service Data for Manage Transit Use**
Transit Center Fixed-Route Operations

4.2.3.7 **Provide Interface for Other TRM Data**
Transit Center Multi-Modal Coordination

4.2.3.8 **Provide Interface for Transit Service Raw Data**
Transit Center Multi-Modal Coordination

4.2.3.9 **Update Transit Map Data**

Transit Center Tracking and Dispatch

4.2.4 **Manage Transit Archive Data**
Transit Data Collection

4.3.1 **Monitor Transit Vehicle Condition**
Transit Garage Maintenance

4.3.2 **Generate Transit Vehicle Maintenance Schedules**
Transit Garage Maintenance

4.3.3 **Generate Technician Work Assignments**
Transit Garage Maintenance

4.3.4 **Monitor And Verify Maintenance Activity**
Transit Garage Maintenance

4.3.5 **Report Transit Vehicle Information**
Transit Garage Maintenance

4.3.6 **Update Transit Vehicle Information**
Transit Garage Maintenance

4.3.7 **Manage Transit Vehicle Operations Data Store**
Transit Garage Maintenance

4.4.1.1 **Manage Transit Security**
Transit Center Security

4.4.1.2 **Manage Transit Emergencies**
On-board Transit Security

4.4.1.3 **Provide Transit System Operator Security Interface**
Transit Center Security

4.4.1.4 **Provide Transit External Interface for Emergencies**
Transit Center Security

4.4.1.5 **Provide Transit Driver Interface for Emergencies**
On-board Transit Security

4.4.1.6 **Collect Transit Vehicle Emergency Information**
Transit Center Security

4.4.1.7 **Monitor Secure Area**
Secure Area Monitoring

4.4.1.8 **Report Traveler Emergencies**
Remote Mayday I/F

4.4.2 **Coordinate Multiple Agency Responses to Incidents**
Transit Center Security

4.4.3 **Generate Responses for Incidents**
Transit Center Security

4.5.1 **Assess Transit Driver Performance**
Transit Garage Operations

4.5.2 **Assess Transit Driver Availability**
Transit Garage Operations

4.5.3 **Access Transit Driver Cost Effectiveness**
Transit Garage Operations

4.5.4 **Assess Transit Driver Eligibility**
Transit Garage Operations

4.5.5 **Generate Transit Driver Route Assignments**
Transit Garage Operations

4.5.6 **Update Transit Driver Information**
Transit Garage Operations

4.5.7 **Report Transit Driver Information**
Transit Garage Operations

4.5.8 **Provide Transit Driver Information Store Interface**
Transit Garage Operations

4.6.1 **Detect Transit User on Vehicle**

On-board Transit Fare and Load Management

4.6.2 **Determine Transit User Needs on Vehicle**
On-board Transit Fare and Load Management

4.6.3 **Determine Transit Fare on Vehicle**
On-board Transit Fare and Load Management

4.6.4 **Manage Transit Fare Billing on Vehicle**
On-board Transit Fare and Load Management

4.6.5 **Provide Transit User Fare Payment Interface on Vehicle**
On-board Transit Fare and Load Management

4.6.6 **Update Transit Vehicle Fare Data**
On-board Transit Fare and Load Management

4.6.7 **Provide Transit Vehicle Passenger Data**
On-board Transit Fare and Load Management

4.6.8 **Manage Transit Vehicle Advanced Payments**
Transit Center Fare and Load Management
Transit Center Information Services

4.7.1.1 **Provide Transit User Roadside Data Interface**
Remote Transit Information Services

4.7.1.2 **Provide Transit User Roadside Vehicle Data Interface**
Remote Transit Information Services

4.7.2.1 **Detect Transit User at Roadside**
Remote Transit Fare Management

4.7.2.2 **Determine Transit User Needs at Roadside**
Remote Transit Fare Management

4.7.2.3 **Determine Transit Fare at Roadside**
Remote Transit Fare Management

4.7.2.4 **Manage Transit Fare Billing at Roadside**
Remote Transit Fare Management

4.7.2.5 **Provide Transit User Roadside Fare Interface**
Remote Transit Fare Management

4.7.2.6 **Update Roadside Transit Fare Data**
Remote Transit Fare Management

4.7.2.7 **Provide Transit Roadside Passenger Data**
Remote Transit Fare Management

5.1.1 **Identify Emergencies from Inputs**
Emergency Call-Taking
Mayday Support

5.1.2 **Determine Coordinated Response Plan**
Emergency Response Management
Mayday Support

5.1.3 **Communicate Emergency Status**
Emergency Call-Taking
Emergency Response Management
Mayday Support

5.1.4 **Manage Emergency Response**
Emergency Response Management

5.1.5 **Manage Emergency Service Allocation Store**
Emergency Response Management

5.1.6 **Process Mayday Messages**
Mayday Support

5.2 **Provide Operator Interface for Emergency Data**
Emergency Call-Taking
Emergency Dispatch
Emergency Response Management
Mayday Support

5.3.1 **Select Response Mode**

Emergency Response Management

5.3.2 **Dispatch Vehicle**
Emergency Dispatch

5.3.3 **Track Vehicle**
On-board EV En Route Support

5.3.4 **Assess Response Status**
Emergency Response Management

5.3.5 **Provide Emergency Personnel Interface**
On-board EV En Route Support
On-board EV Incident Management Communication

5.3.6 **Maintain Vehicle Status**
Emergency Dispatch

5.3.7 **Provide Emergency Vehicle Route**
Emergency Dispatch

5.4.1 **Process TM Detected Violations**
TMC HOV Lane Management
TMC Reversible Lane Management

5.4.2 **Process Violations for Tolls**
Toll Administration

5.4.3 **Process Parking Lot Violations**
Parking Electronic Payment

5.4.4 **Process Fare Payment Violations**
Transit Center Fare and Load Management

5.4.5 **Process Vehicle Fare Collection Violations**
Transit Center Fare and Load Management

5.4.6 **Process CV Violations**
Credentials and Taxes Administration

5.4.7 **Process Roadside Fare Collection Violations**
Transit Center Fare and Load Management

5.5 **Update Emergency Display Map Data**
Emergency Dispatch
Emergency Response Management

5.6 **Manage Emergency Services Data**
Emergency Data Collection

6.1.1 **Provide Trip Planning Information to Traveler**
Basic Information Broadcast
Infrastructure Provided Dynamic Ridesharing
Infrastructure Provided Route Selection
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.1.2 **Confirm Traveler's Trip Plan**
Infrastructure Provided Dynamic Ridesharing
Infrastructure Provided Route Selection
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.1.3 **Manage Multimodal Service Provider Interface**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.1.4 **Provide ISP Operator Interface for Trip Planning Parameters**
Infrastructure Provided Dynamic Ridesharing
Interactive Infrastructure Information

6.1.5 **Collect Service Requests and Confirmation for Archive**
ISP Data Collection

6.1.6 **Manage Traveler Info Archive Data**
ISP Data Collection

6.2.1.1 **Collect Traffic Data for Advisory Messages**
Basic Information Broadcast
ISP Data Collection

6.2.1.2 **Provide Traffic and Transit Advisory Messages**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.2.1.3 **Collect Transit Data for Advisory Messages**
Basic Information Broadcast

6.2.1.4 **Provide Traffic and Transit Broadcast Messages**
Basic Information Broadcast

6.2.1.5 **Provide ISP Operator Broadcast Parameters Interface**
Basic Information Broadcast

6.2.1.6 **Provide Transit Advisory Data On Vehicle**
On-board Transit Information Services

6.2.2 **Prepare and Output In-vehicle Displays**
Basic Vehicle Reception
In-Vehicle Signing System
Interactive Vehicle Reception

6.2.3 **Provide Transit User Advisory Interface**
On-board Transit Information Services

6.2.4 **Collect Yellow Pages Data**
Basic Information Broadcast
Infrastructure Provided Dynamic Ridesharing
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.2.5 **Provide Driver Interface**
Basic Vehicle Reception
Driver Safety Monitoring System
Driver Visibility Improvement System
In-Vehicle Signing System
Interactive Vehicle Reception
Vehicle Intersection Collision Warning
Vehicle Intersection Control
Vehicle Lateral Warning System
Vehicle Longitudinal Control
Vehicle Longitudinal Warning System
Vehicle Mayday I/F
Vehicle Safety Monitoring System

6.2.6 **Provide Yellow Pages Data and Reservations**
Infrastructure Provided Yellow Pages & Reservation

6.3.1 **Get Traveler Request**
Remote Interactive Information Reception

6.3.2 **Inform Traveler**
Remote Basic Information Reception
Remote Interactive Information Reception

6.3.3 **Provide Traveler Kiosk Interface**
Remote Basic Information Reception
Remote Interactive Information Reception
Remote Mayday I/F

6.3.4 **Update Traveler Display Map Data at Kiosk**
Remote Interactive Information Reception

6.4.1 **Screen Rider Requests**
Infrastructure Provided Dynamic Ridesharing

6.4.2 **Match Rider and Provider**
Infrastructure Provided Dynamic Ridesharing

6.4.3 **Report Ride Match Results to Requestor**
Infrastructure Provided Dynamic Ridesharing

6.4.4 **Confirm Traveler Rideshare Request**
Infrastructure Provided Dynamic Ridesharing

6.5.1 **Collect and Update Traveler Information**
Basic Information Broadcast
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.5.2 **Provide Traveler Yellow Pages Information and Reservations**
Infrastructure Provided Yellow Pages & Reservation

6.5.3 **Register Yellow Pages Service Providers**
Infrastructure Provided Yellow Pages & Reservation

6.6.1 **Provide Multimodal Route Selection**
Infrastructure Provided Route Selection
Interactive Infrastructure Information

6.6.2.1 **Calculate Vehicle Route**
Infrastructure Provided Dynamic Ridesharing
Infrastructure Provided Route Selection

6.6.2.2 **Provide Vehicle Route Calculation Data**
Infrastructure Provided Route Selection
ISP Advanced Integrated Control Support
ISP Probe Information Collection

6.6.2.3 **Provide Route Segment Data for Other Areas**
Infrastructure Provided Dynamic Ridesharing
Infrastructure Provided Route Selection
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.6.2.4 **Update Vehicle Route Selection Map Data**
Infrastructure Provided Dynamic Ridesharing
Infrastructure Provided Route Selection
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

6.6.2.5 **Provide ISP Operator Route Parameters Interface**
Infrastructure Provided Route Selection

6.6.2.6 **Calculate Vehicle Probe Data for Guidance**
ISP Probe Information Collection

6.6.3 **Update Other Routes Selection Map Data**
Infrastructure Provided Dynamic Ridesharing
Infrastructure Provided Route Selection

6.6.4 **Select Transit Route**
Infrastructure Provided Route Selection
Interactive Infrastructure Information

6.6.5 **Select Other Routes**
Infrastructure Provided Route Selection
Interactive Infrastructure Information

6.7.1.1 **Build Driver Personal Security Message**
Vehicle Mayday I/F

6.7.1.2 **Provide Driver In-vehicle Communications Function**
Vehicle Mayday I/F

6.7.2.1.1 **Determine In-vehicle Guidance Method**
Vehicle Provider-Based Route Guidance

6.7.2.1.2 **Provide Dynamic In-vehicle Guidance**
Vehicle Probe Support
Vehicle Provider-Based Route Guidance

6.7.2.1.3 **Provide Autonomous In-vehicle Guidance**
Vehicle Autonomous Route Guidance

6.7.2.2 **Process Vehicle Location Data**
Vehicle Location Determination

6.7.2.3 **Provide Driver Guidance Interface**
Vehicle Autonomous Route Guidance
Vehicle Provider-Based Route Guidance

6.7.2.4 **Update Vehicle Navigable Map Database**
Vehicle Autonomous Route Guidance
Vehicle Provider-Based Route Guidance

6.8.1.1.1 **Determine Personal Portable Device Guidance Method**
Personal Provider-Based Route Guidance

6.8.1.1.2 **Provide Personal Portable Device Dynamic Guidance**
Personal Provider-Based Route Guidance

6.8.1.1.3 **Provide Personal Portable Device Autonomous Guidance**
Personal Autonomous Route Guidance

6.8.1.2 **Provide Personal Portable Device Guidance Interface**
Personal Autonomous Route Guidance
Personal Provider-Based Route Guidance

6.8.1.3 **Process Personal Portable Device Location Data**
Personal Location Determination

6.8.1.4 **Update Traveler Navigable Map Database**
Personal Autonomous Route Guidance
Personal Provider-Based Route Guidance

6.8.1.5 **Provide Traveler Emergency Message Interface**
Personal Mayday I/F

6.8.2.1 **Build Traveler Personal Security Message**
Personal Mayday I/F

6.8.2.2 **Provide Traveler Emergency Communications Function**
Personal Mayday I/F

6.8.3.1 **Get Traveler Personal Request**
Personal Interactive Information Reception

6.8.3.2 **Provide Traveler with Personal Travel Information**
Personal Basic Information Reception
Personal Interactive Information Reception

6.8.3.3 **Provide Traveler Personal Interface**
Personal Basic Information Reception
Personal Interactive Information Reception
Personal Provider-Based Route Guidance

6.8.3.4 **Update Traveler Personal Display Map Data**
Personal Autonomous Route Guidance

7.1.1.1 **Read Tag Data for Tolls**
Toll Plaza Toll Collection

7.1.1.10 **Determine Advanced Toll Bill**
Toll Plaza Toll Collection

7.1.1.11 **Manage Toll Archive Data**
Toll Data Collection

7.1.1.2 **Calculate Vehicle Toll**
Toll Plaza Toll Collection

7.1.1.3 **Manage Bad Toll Payment Data**
Toll Administration

7.1.1.4 **Check for Advanced Tolls Payment**
Toll Plaza Toll Collection

7.1.1.5 **Bill Driver for Tolls**
Toll Plaza Toll Collection

7.1.1.6 **Collect Probe Data From Toll Transactions**
Toll Administration

7.1.1.7 **Update Toll Price Data**
Toll Administration

7.1.1.8 **Register for Advanced Toll Payment**
Toll Administration

7.1.1.9 **Manage Toll Financial Processing**
Toll Administration

7.1.2 **Produce Roadside Displays**
Toll Plaza Toll Collection

7.1.3 **Obtain Toll Violator Image**
Toll Plaza Toll Collection

7.1.4 **Provide Driver Toll Payment Interface**

Vehicle Toll/Parking Interface

7.1.5 **Detect Vehicle for Tolls**
Toll Plaza Toll Collection

7.1.6 **Distribute Advanced Charges and Fares**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.1.7 **Provide Payment Instrument Interface for Tolls**
Vehicle Toll/Parking Interface

7.2.1.1 **Read Parking Lot Tag Data**
Parking Electronic Payment

7.2.1.10 **Determine Advanced Charges**
Parking Electronic Payment

7.2.1.2 **Calculate Vehicle Parking Lot Charges**
Parking Electronic Payment

7.2.1.3 **Collect Bad Charge Payment Data**
Parking Electronic Payment

7.2.1.4 **Check for Advanced Parking Lot Payment**
Parking Electronic Payment

7.2.1.5 **Bill Driver for Parking Lot Charges**
Parking Electronic Payment

7.2.1.6 **Manage Parking Lot Financial Processing**
Parking Electronic Payment

7.2.1.7 **Update Parking Lot Data**
Parking Coordination
Parking Electronic Payment

7.2.1.8 **Register for Advanced Parking Lot Payment**
Parking Electronic Payment

7.2.1.9 **Manage Parking Lot Reservations**
Parking Management

7.2.2 **Produce Parking Lot Displays**
Parking Electronic Payment

7.2.3 **Obtain Parking Lot Violator Image**
Parking Electronic Payment

7.2.4 **Provide Driver Parking Lot Payment Interface**
Vehicle Toll/Parking Interface

7.2.5 **Detect Vehicle for Parking Lot Payment**
Parking Electronic Payment
Parking Surveillance

7.2.6 **Distribute Advanced Tolls and Fares**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.2.7 **Provide Payment Instrument Interface for Parking**
Vehicle Toll/Parking Interface

7.3.1.1 **Register for Advanced Transit Fare Payment**
Transit Center Fare and Load Management

7.3.1.2 **Determine Advanced Transit Fares**
Transit Center Fare and Load Management

7.3.1.3 **Manage Transit Fare Financial Processing**
Transit Center Fare and Load Management

7.3.1.4 **Check for Advanced Transit Fare Payment**
Transit Center Fare and Load Management

7.3.1.5 **Bill Transit User for Transit Fare**
Transit Center Fare and Load Management

7.3.1.6 **Collect Bad Transit Fare Payment Data**
Transit Center Fare and Load Management

7.3.1.7 **Update Transit Fare Data**
Transit Center Fare and Load Management

7.3.2 **Distribute Advanced Tolls and Parking Lot Charges**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.3.3 **Get Transit User Image for Violation**
Transit Center Security

7.3.4 **Provide Remote Terminal Payment Instrument Interface**
Remote Interactive Information Reception
Remote Transit Fare Management

7.3.5 **Provide Transit Vehicle Payment Instrument Interface**
On-board Transit Fare and Load Management

7.4.1.1 **Process Commercial Vehicle Payments**
Credentials and Taxes Administration

7.4.1.2 **Process Yellow Pages Services Provider Payments**
Infrastructure Provided Yellow Pages & Reservation

7.4.1.3 **Process Driver Map Update Payments**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.4.1.4 **Process Traveler Map Update Payments**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.4.1.5 **Process Transit User Other Services Payments**
Transit Center Fare and Load Management

7.4.1.6 **Process Traveler Trip and Other Services Payments**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.4.1.7 **Collect Payment Transaction Records**
ISP Data Collection

7.4.1.8 **Process Traveler Rideshare Payments**
Infrastructure Provided Dynamic Ridesharing

7.4.2 **Collect Price Data for ITS Use**
Basic Information Broadcast
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.4.3 **Route Traveler Advanced Payments**
Infrastructure Provided Yellow Pages & Reservation
Interactive Infrastructure Information

7.5.1 **Provide Vehicle Payment Instrument Interface**
Vehicle Toll/Parking Interface

7.5.2 **Provide Transit User Roadside Payment Instrument Interface**
Remote Interactive Information Reception
Remote Transit Fare Management

7.5.3 **Provide Personal Payment Instrument Interface**
Personal Interactive Information Reception

7.5.4 **Provide Commercial Fleet Payment Instrument Interface**
Fleet Credentials and Taxes Management and Reporting

7.5.5 **Provide Traveler Kiosk Payment Instrument Interface**
Remote Interactive Information Reception

8.1 **Get Archive Data**
ITS Data Repository

8.2 **Manage Archive**
ITS Data Repository

8.3 **Manage Archive Data Administrator Interface**
ITS Data Repository

8.4 **Coordinate Archives**
Virtual Data Warehouse Services

8.5 **Process Archived Data User System Requests**
ITS Data Repository

8.6 **Analyze Archive**
On-Line Analysis and Mining

8.7 **Process On Demand Archive Requests**
ITS Data Repository

8.8 **Prepare Government Reporting Inputs**
Government Reporting Systems Support

8.9 **Manage Roadside Data Collection**
Traffic and Roadside Data Archival

9 **Satisfy Implementation Requirements**

Appendix G: Equipment Packages Traced To PSpecs

Advanced Rail Crossing

1.1.1.1	Process Traffic Sensor Data
1.6.1.1	Detect Roadway Events
1.6.1.2.4	Provide HSR Device Controls
1.6.1.4.1	Generate Alerts and Advisories
1.6.1.4.3	Report Alerts and Advisories
1.6.1.5	Detect HRI Hazards
1.6.1.6.1	Close HRI on Detection
1.6.1.6.2	Detect Imminent Vehicle/Train Collision
1.6.3.1	Interact with Wayside Systems
1.6.3.2	Advise and Protect Train Crews
1.6.3.3	Provide ATS Alerts
1.6.5.1	Provide Interactive Interface

Automated Road Signing

1.1.2.6	Process Collected Vehicle Smart Probe Data
1.1.7	Collect Vehicle Smart Probe Data
1.2.7.4	Process In-vehicle Signage Data
1.2.7.7	Process Vehicle Smart Probe Data for Output

Basic Information Broadcast

1.1.4.5	Provide Media System Traffic Data Interface
1.1.4.6	Provide Traffic Data Retrieval Interface
4.1.8	Provide Transit Operations Data Distribution Interface
6.1.1	Provide Trip Planning Information to Traveler
6.2.1.1	Collect Traffic Data for Advisory Messages
6.2.1.3	Collect Transit Data for Advisory Messages
6.2.1.4	Provide Traffic and Transit Broadcast Messages
6.2.1.5	Provide ISP Operator Broadcast Parameters Interface
6.2.4	Collect Yellow Pages Data
6.5.1	Collect and Update Traveler Information
7.4.2	Collect Price Data for ITS Use

Basic Vehicle Reception

6.2.2	Prepare and Output In-vehicle Displays
6.2.5	Provide Driver Interface

Citation and Accident Electronic Recording

2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening

Collect Traffic Surveillance

1.1.2.1	Process Traffic Data for Storage
1.1.2.2	Process Traffic Data
1.1.2.3	Update Data Source Static Data
1.1.4.1	Retrieve Traffic Data
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface
1.1.4.4	Update Traffic Display Map Data

Credentials and Taxes Administration

2.5.1	Manage Commercial Vehicle Trips and Clearances
2.5.2	Obtain Electronic Credential and Tax Filing Payment
2.5.3	Update Permits and Duties Store
2.5.4	Communicate with Other Commercial Vehicle Administration System
2.5.5	Manage Commercial Vehicle Credentials and Enrollment
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities
2.5.7	Process Commercial Vehicle Violations
2.5.8	Process Data Received from Roadside Facilities
5.4.6	Process CV Violations
7.4.1.1	Process Commercial Vehicle Payments

CV Data Collection

2.5.9	Manage Commercial Vehicle Archive Data

CV Information Exchange

2.5.4	Communicate with Other Commercial Vehicle Administration System
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities

CV Safety Administration

2.5.5	Manage Commercial Vehicle Credentials and Enrollment

Driver Safety Monitoring System

3.1.2	Carry-out Safety Analysis
3.1.3	Process Vehicle On-board Data
6.2.5	Provide Driver Interface

Driver Visibility Improvement System

3.4	Enhance Driver's Vision
6.2.5	Provide Driver Interface

Emergency Call-Taking

5.1.1	Identify Emergencies from Inputs
5.1.3	Communicate Emergency Status
5.2	Provide Operator Interface for Emergency Data

Emergency Data Collection

5.6	Manage Emergency Services Data

Emergency Dispatch

5.2	Provide Operator Interface for Emergency Data
5.3.2	Dispatch Vehicle
5.3.6	Maintain Vehicle Status
5.3.7	Provide Emergency Vehicle Route
5.5	Update Emergency Display Map Data

Emergency Response Management

5.1.2	Determine Coordinated Response Plan
5.1.3	Communicate Emergency Status
5.1.4	Manage Emergency Response
5.1.5	Manage Emergency Service Allocation Store
5.2	Provide Operator Interface for Emergency Data
5.3.1	Select Response Mode
5.3.4	Assess Response Status
5.5	Update Emergency Display Map Data

Emissions Data Collection

1.5.9	Manage Pollution Archive Data

Emissions Data Management

1.5.1	Provide Traffic Operations Personnel Pollution Data Interface
1.5.2	Process Pollution Data
1.5.3	Update Pollution Display Map Data
1.5.4	Manage Pollution State Data Store
1.5.7	Manage Pollution Data Log
1.5.8	Manage Pollution Reference Data Store

Fleet Administration

2.1.2	Provide Commercial Fleet Static Route
2.1.4	Provide Fleet Manager Commercial Vehicle Communications
2.1.6	Manage Driver Instruction Store
2.6.1	Provide Commercial Vehicle Manager Tag Data Interface

Fleet Credentials and Taxes Management and Reporting

2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing
2.1.3	Provide Flt Mgr Electronic Credentials and Tax Filing Interface
2.2.1	Manage CV Electronic Credential and Tax Filing Interface
7.5.4	Provide Commercial Fleet Payment Instrument Interface

Fleet HAZMAT Management

2.1.1	Manage Commercial Fleet Electronic Credentials and Tax Filing

Fleet Maintenance Management

2.1.6	Manage Driver Instruction Store

Freight Administration and Management

2.7	Manage Cargo

Government Reporting Systems Support

8.8	Prepare Government Reporting Inputs

HRI Traffic Management

1.6.2.1	Exchange Data with Rail Operations
1.6.2.2	Manage Alerts and Advisories
1.6.4.1	Manage HRI Closures
1.6.4.2	Exchange Data with Traffic Management

In-Vehicle Signing System

6.2.2	Prepare and Output In-vehicle Displays
6.2.5	Provide Driver Interface

Infrastructure Provided Dynamic Ridesharing

6.1.1	Provide Trip Planning Information to Traveler
6.1.2	Confirm Traveler's Trip Plan
6.1.4	Provide ISP Operator Interface for Trip Planning Parameters
6.2.4	Collect Yellow Pages Data
6.4.1	Screen Rider Requests
6.4.2	Match Rider and Provider
6.4.3	Report Ride Match Results to Requestor
6.4.4	Confirm Traveler Rideshare Request
6.6.2.1	Calculate Vehicle Route
6.6.2.3	Provide Route Segment Data for Other Areas
6.6.2.4	Update Vehicle Route Selection Map Data
6.6.3	Update Other Routes Selection Map Data
7.4.1.8	Process Traveler Rideshare Payments

Infrastructure Provided Route Selection

1.1.4.6	Provide Traffic Data Retrieval Interface
6.1.1	Provide Trip Planning Information to Traveler
6.1.2	Confirm Traveler's Trip Plan
6.6.1	Provide Multimodal Route Selection
6.6.2.1	Calculate Vehicle Route
6.6.2.2	Provide Vehicle Route Calculation Data
6.6.2.3	Provide Route Segment Data for Other Areas
6.6.2.4	Update Vehicle Route Selection Map Data
6.6.2.5	Provide ISP Operator Route Parameters Interface
6.6.3	Update Other Routes Selection Map Data
6.6.4	Select Transit Route
6.6.5	Select Other Routes

Infrastructure Provided Yellow Pages & Reservation

6.1.1	Provide Trip Planning Information to Traveler
6.1.2	Confirm Traveler's Trip Plan
6.1.3	Manage Multimodal Service Provider Interface
6.2.1.2	Provide Traffic and Transit Advisory Messages
6.2.4	Collect Yellow Pages Data
6.2.6	Provide Yellow Pages Data and Reservations
6.5.1	Collect and Update Traveler Information
6.5.2	Provide Traveler Yellow Pages Information and Reservations
6.5.3	Register Yellow Pages Service Providers
6.6.2.3	Provide Route Segment Data for Other Areas
6.6.2.4	Update Vehicle Route Selection Map Data
7.1.6	Distribute Advanced Charges and Fares
7.2.6	Distribute Advanced Tolls and Fares
7.3.2	Distribute Advanced Tolls and Parking Lot Charges
7.4.1.2	Process Yellow Pages Services Provider Payments
7.4.1.3	Process Driver Map Update Payments
7.4.1.4	Process Traveler Map Update Payments
7.4.1.6	Process Traveler Trip and Other Services Payments
7.4.2	Collect Price Data for ITS Use
7.4.3	Route Traveler Advanced Payments

Interactive Infrastructure Information

1.1.4.5	Provide Media System Traffic Data Interface
1.1.4.6	Provide Traffic Data Retrieval Interface
4.1.8	Provide Transit Operations Data Distribution Interface
6.1.1	Provide Trip Planning Information to Traveler
6.1.2	Confirm Traveler's Trip Plan
6.1.3	Manage Multimodal Service Provider Interface
6.1.4	Provide ISP Operator Interface for Trip Planning Parameters
6.2.1.2	Provide Traffic and Transit Advisory Messages
6.2.4	Collect Yellow Pages Data
6.5.1	Collect and Update Traveler Information
6.6.1	Provide Multimodal Route Selection

6.6.2.3	Provide Route Segment Data for Other Areas
6.6.2.4	Update Vehicle Route Selection Map Data
6.6.4	Select Transit Route
6.6.5	Select Other Routes
7.1.6	Distribute Advanced Charges and Fares
7.2.6	Distribute Advanced Tolls and Fares
7.3.2	Distribute Advanced Tolls and Parking Lot Charges
7.4.1.3	Process Driver Map Update Payments
7.4.1.4	Process Traveler Map Update Payments
7.4.1.6	Process Traveler Trip and Other Services Payments
7.4.2	Collect Price Data for ITS Use
7.4.3	Route Traveler Advanced Payments

Interactive Vehicle Reception

6.2.2	Prepare and Output In-vehicle Displays
6.2.5	Provide Driver Interface

International Border Crossing

2.3.8	Provide Commercial Vehicle Border Screening

International CV Administration

2.5.1	Manage Commercial Vehicle Trips and Clearances
2.5.6	Output Commercial Vehicle Enrollment Data to Roadside Facilities
2.5.8	Process Data Received from Roadside Facilities

ISP Advanced Integrated Control Support

6.6.2.2	Provide Vehicle Route Calculation Data

ISP Data Collection

6.1.5	Collect Service Requests and Confirmation for Archive
6.1.6	Manage Traveler Info Archive Data
6.2.1.1	Collect Traffic Data for Advisory Messages
7.4.1.7	Collect Payment Transaction Records

ISP Probe Information Collection

6.6.2.2	Provide Vehicle Route Calculation Data
6.6.2.6	Calculate Vehicle Probe Data for Guidance

ITS Data Repository

8.1	Get Archive Data
8.2	Manage Archive
8.3	Manage Archive Data Administrator Interface
8.5	Process Archived Data User System Requests
8.7	Process On Demand Archive Requests

Mayday Support

5.1.1	Identify Emergencies from Inputs
5.1.2	Determine Coordinated Response Plan
5.1.3	Communicate Emergency Status
5.1.6	Process Mayday Messages
5.2	Provide Operator Interface for Emergency Data

On-board Cargo Monitoring

3.3.1	Provide Cargo Data for Incident Notification

On-board CV Electronic Data

2.2.3	Provide CV Driver Electronic Credential and Tax Filing Interface
2.3.7	Produce Commercial Vehicle Driver Message on Vehicle
2.4.2	Collect On-board Commercial Vehicle Sensor Data
2.4.3	Analyze Commercial Vehicle On-board Data
2.4.4	Provide Commercial Vehicle Driver Interface
2.4.6	Provide Commercial Vehicle On-board Data Store Interface
2.6.2	Transmit Commercial Vehicle Tag Data
2.6.3	Provide Commercial Driver Tag Data Interface
2.6.4	Provide Lock Tag Data Interface
2.6.5	Manage Commercial Vehicle Tag Data Store

On-board CV Safety

2.4.1	Communicate Commercial Vehicle On-board Data to Roadside
2.4.2	Collect On-board Commercial Vehicle Sensor Data
2.4.3	Analyze Commercial Vehicle On-board Data
2.4.4	Provide Commercial Vehicle Driver Interface

Appendix G: Equipment Packages Traced to P-Specs

On-board EV En Route Support

5.3.3	Track Vehicle
5.3.5	Provide Emergency Personnel Interface

On-board EV Incident Management Communication

5.3.5	Provide Emergency Personnel Interface

On-board Fixed Route Schedule Management

4.1.2.1	Determine Transit Vehicle Deviation and ETA
4.1.2.2	Determine Transit Vehicle Corrective Instructions
4.1.2.3	Provide Transit Vehicle Driver Interface

On-board Maintenance

4.1.1	Process Transit Vehicle Sensor Trip Data
4.1.9	Process Transit Vehicle Sensor Maintenance Data

On-board Paratransit Operations

4.2.1.5	Process Demand Responsive Transit Vehicle Availability Data
4.2.1.6	Provide Demand Responsive Transit Driver Interface

On-board Transit Fare and Load Management

4.6.1	Detect Transit User on Vehicle
4.6.2	Determine Transit User Needs on Vehicle
4.6.3	Determine Transit Fare on Vehicle
4.6.4	Manage Transit Fare Billing on Vehicle
4.6.5	Provide Transit User Fare Payment Interface on Vehicle
4.6.6	Update Transit Vehicle Fare Data
4.6.7	Provide Transit Vehicle Passenger Data
7.3.5	Provide Transit Vehicle Payment Instrument Interface

On-board Transit Information Services

6.2.1.6	Provide Transit Advisory Data On Vehicle
6.2.3	Provide Transit User Advisory Interface

On-board Transit Security

4.4.1.2	Manage Transit Emergencies
4.4.1.5	Provide Transit Driver Interface for Emergencies

On-board Transit Signal Priority

4.1.2.5	Request Transit Vehicle Preemptions

On-board Transit Trip Monitoring

4.1.1	Process Transit Vehicle Sensor Trip Data
4.1.3	Provide Transit Vehicle Location Data

On-board Trip Monitoring

2.1.5	Provide Commercial Vehicle Driver Routing Interface
2.2.2	Provide Vehicle Static Route
2.2.4	Provide Commercial Vehicle Driver Communications
2.4.1	Communicate Commercial Vehicle On-board Data to Roadside
2.4.2	Collect On-board Commercial Vehicle Sensor Data
2.4.3	Analyze Commercial Vehicle On-board Data
2.4.4	Provide Commercial Vehicle Driver Interface
2.4.5	Communicate Commercial Vehicle On-board Data to Vehicle Manager

On-Line Analysis and Mining

8.6	Analyze Archive

Parking Coordination

1.2.5.2	Coordinate Other Parking Data
1.2.5.4	Determine P+R needs for Transit Management
7.2.1.7	Update Parking Lot Data

Parking Data Collection

1.2.5.5	Manage Parking Archive Data

Parking Electronic Payment

5.4.3	Process Parking Lot Violations
7.2.1.1	Read Parking Lot Tag Data
7.2.1.10	Determine Advanced Charges
7.2.1.2	Calculate Vehicle Parking Lot Charges
7.2.1.3	Collect Bad Charge Payment Data
7.2.1.4	Check for Advanced Parking Lot Payment

7.2.1.5	Bill Driver for Parking Lot Charges
7.2.1.6	Manage Parking Lot Financial Processing
7.2.1.7	Update Parking Lot Data
7.2.1.8	Register for Advanced Parking Lot Payment
7.2.2	Produce Parking Lot Displays
7.2.3	Obtain Parking Lot Violator Image
7.2.5	Detect Vehicle for Parking Lot Payment

Parking Management

1.2.5.1	Determine Parking Lot State
1.2.5.3	Provide Parking Lot Operator Interface
7.2.1.9	Manage Parking Lot Reservations

Parking Surveillance

1.2.5.6	Calculate Parking Lot Occupancy
7.2.5	Detect Vehicle for Parking Lot Payment

Personal Autonomous Route Guidance

6.8.1.1.3	Provide Personal Portable Device Autonomous Guidance
6.8.1.2	Provide Personal Portable Device Guidance Interface
6.8.1.4	Update Traveler Navigable Map Database
6.8.3.4	Update Traveler Personal Display Map Data

Personal Basic Information Reception

6.8.3.2	Provide Traveler with Personal Travel Information
6.8.3.3	Provide Traveler Personal Interface

Personal Interactive Information Reception

6.8.3.1	Get Traveler Personal Request
6.8.3.2	Provide Traveler with Personal Travel Information
6.8.3.3	Provide Traveler Personal Interface
7.5.3	Provide Personal Payment Instrument Interface

Personal Location Determination

6.8.1.3	Process Personal Portable Device Location Data

Personal Mayday I/F

6.8.1.5	Provide Traveler Emergency Message Interface
6.8.2.1	Build Traveler Personal Security Message
6.8.2.2	Provide Traveler Emergency Communications Function

Personal Provider-Based Route Guidance

6.8.1.1.1	Determine Personal Portable Device Guidance Method
6.8.1.1.2	Provide Personal Portable Device Dynamic Guidance
6.8.1.2	Provide Personal Portable Device Guidance Interface
6.8.1.4	Update Traveler Navigable Map Database
6.8.3.3	Provide Traveler Personal Interface

Rail Operations Coordination

1.1.3	Generate Predictive Traffic Model
1.6.2.1	Exchange Data with Rail Operations
1.6.2.3	Manage Rail Traffic Control Data

Remote Basic Information Reception

6.3.2	Inform Traveler
6.3.3	Provide Traveler Kiosk Interface

Remote Interactive Information Reception

6.3.1	Get Traveler Request
6.3.2	Inform Traveler
6.3.3	Provide Traveler Kiosk Interface
6.3.4	Update Traveler Display Map Data at Kiosk
7.3.4	Provide Remote Terminal Payment Instrument Interface
7.5.2	Provide Transit User Roadside Payment Instrument Interface
7.5.5	Provide Traveler Kiosk Payment Instrument Interface

Remote Mayday I/F

4.4.1.8	Report Traveler Emergencies
6.3.3	Provide Traveler Kiosk Interface

Remote Transit Fare Management

4.7.2.1	Detect Transit User at Roadside

4.7.2.2	Determine Transit User Needs at Roadside
4.7.2.3	Determine Transit Fare at Roadside
4.7.2.4	Manage Transit Fare Billing at Roadside
4.7.2.5	Provide Transit User Roadside Fare Interface
4.7.2.6	Update Roadside Transit Fare Data
4.7.2.7	Provide Transit Roadside Passenger Data
7.3.4	Provide Remote Terminal Payment Instrument Interface
7.5.2	Provide Transit User Roadside Payment Instrument Interface

Remote Transit Information Services

4.7.1.1	Provide Transit User Roadside Data Interface
4.7.1.2	Provide Transit User Roadside Vehicle Data Interface

Roadside Data Collection

1.1.1.4	Manage Data Collection and Monitoring

Roadside Electronic Screening

2.3.1	Produce Commercial Vehicle Driver Message at Roadside
2.3.2.1	Administer Commercial Vehicle Roadside Credentials Database
2.3.2.2	Process Screening Transactions
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening
2.3.4	Detect Commercial Vehicle
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface
2.3.6	Provide Commercial Vehicle Reports

Roadside Safety Inspection

2.3.3.1	Provide Commercial Vehicle Checkstation Communications
2.3.3.2	Provide Commercial Vehicle Inspector Handheld Terminal Interface
2.3.3.3	Administer Commercial Vehicle Roadside Safety Datadase
2.3.3.4	Carry-out Commercial Vehicle Roadside Safety Screening
2.3.3.5	Carry-out Commercial Vehicle Roadside Inspection
2.3.5	Provide Commercial Vehicle RoadsideOperator Interface

Roadside Signal Priority

1.2.7.1	Process Indicator Output Data for Roads
1.2.7.3	Manage Indicator Preemptions

Roadside WIM

2.3.4	Detect Commercial Vehicle

Roadway Basic Surveillance

1.1.1.1	Process Traffic Sensor Data
1.3.1.3	Process Traffic Images

Roadway Emissions Monitoring

1.5.5	Process Vehicle Pollution Data
1.5.6	Detect Roadside Pollution Levels

Roadway Environmental Monitoring

1.1.1.3	Process Environmental Sensor Data

Roadway Freeway Control

1.1.1.1	Process Traffic Sensor Data
1.2.7.2	Monitor Roadside Equipment Operation for Faults
1.2.7.5	Process Indicator Output Data for Freeways

Roadway HOV Control

1.1.1.1	Process Traffic Sensor Data
1.2.7.5	Process Indicator Output Data for Freeways

Roadway In-Vehicle Signing

1.2.7.4	Process In-vehicle Signage Data

Roadway Incident Detection

1.1.1.1	Process Traffic Sensor Data

Roadway Intersection Collision Warning

1.2.7.6	Provide Intersection Collision Avoidance Data

Roadway Probe Beacons

1.1.6	Collect Vehicle Tag Data for Link Time Calculations

Roadway Reversible Lanes

1.1.1.1	Process Traffic Sensor Data
1.2.7.1	Process Indicator Output Data for Roads
1.2.7.5	Process Indicator Output Data for Freeways

Roadway Signal Controls

1.1.1.1	Process Traffic Sensor Data
1.2.7.1	Process Indicator Output Data for Roads
1.2.7.2	Monitor Roadside Equipment Operation for Faults

Roadway Systems for AHS

3.2.5	Check Vehicle for AHS eligibility
3.2.6	Manage AHS Check-in and Check-out

Roadway Traffic Information Dissemination

1.2.7.1	Process Indicator Output Data for Roads
1.2.7.5	Process Indicator Output Data for Freeways

Secure Area Monitoring

4.4.1.7	Monitor Secure Area

Smart Probe

3.1.3	Process Vehicle On-board Data

Standard Rail Crossing

1.1.1.1	Process Traffic Sensor Data
1.2.7.1	Process Indicator Output Data for Roads
1.6.1.2.1	Control HRI Traffic Signals
1.6.1.2.2	Control HRI Warnings and Barriers
1.6.1.2.3	Provide SSR Device Controls
1.6.1.2.5	Manage Device Control
1.6.1.2.6	Maintain Device State
1.6.1.3	Perform Equipment Self-Test
1.6.1.4.2	Provide Closure Parameters
1.6.1.4.4	Report HRI Status on Approach
1.6.1.7.1	Control Vehicle Traffic at Passive HRI
1.6.1.7.2	Control Vehicle Traffic at Active HRI
1.6.1.7.3	Close HRI on Command
1.6.3.1	Interact with Wayside Systems
1.6.5.2	Determine HRI Status
1.6.5.3	Maintain HRI Closure Data

TMC for AHS

3.2.7	Manage AHS Operations

TMC Freeway Management

1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface
1.2.2.1	Determine Indicator State for Freeway Management
1.2.3	Determine Ramp State
1.2.4.2	Output Control Data for Freeways

TMC HOV Lane Management

1.1.2.4	Monitor HOV lane use
1.2.4.2	Output Control Data for Freeways
5.4.1	Process TM Detected Violations

TMC Incident Detection

1.3.1.1	Analyze Traffic Data for Incidents
1.3.1.2	Maintain Static Data for Incident Management
1.3.2.1	Store Possible Incident Data
1.3.2.2	Review and Classify Possible Incidents
1.3.2.3	Review and Classify Planned Events
1.3.2.4	Provide Planned Events Store Interface
1.3.2.5	Provide Current Incidents Store Interface
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface
1.3.4.3	Provide Media Incident Data Interface

TMC Incident Dispatch Coordination/Communication

1.1.5	Exchange data with Other Traffic Centers
1.2.4.1	Output Control Data for Roads
1.2.4.2	Output Control Data for Freeways
1.3.2.3	Review and Classify Planned Events
1.3.3	Respond to Current Incidents

1.3.4.1	Retrieve Incident Data
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface
1.3.4.4	Update Incident Display Map Data
1.3.4.5	Manage Resources for Incidents
1.3.5	Manage Possible Predetermined Responses Store
1.3.6	Manage Predetermined Incident Response Data
1.3.7	Analyze Incident Response Log

TMC Input to In-Vehicle Signing

1.2.4.3	Output In-vehicle Signage Data

TMC Multi-Modal Coordination

1.2.2.1	Determine Indicator State for Freeway Management
1.2.2.2	Determine Indicator State for Road Management
1.2.3	Determine Ramp State
1.4.2	Collect Demand Forecast Data

TMC Probe Information Collection

1.1.2.5	Process Tag/AVL Data for Link Time Data
1.1.4.1	Retrieve Traffic Data

TMC Regional Traffic Control

1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface
1.1.5	Exchange data with Other Traffic Centers
1.2.4.1	Output Control Data for Roads
1.2.4.2	Output Control Data for Freeways

TMC Reversible Lane Management

1.1.2.7	Monitor Reversible Lanes
1.2.4.2	Output Control Data for Freeways
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface
5.4.1	Process TM Detected Violations

TMC Road Weather Monitoring

1.1.2.1	Process Traffic Data for Storage
1.1.2.2	Process Traffic Data
1.1.4.1	Retrieve Traffic Data
1.3.2.1	Store Possible Incident Data
1.3.2.2	Review and Classify Possible Incidents
1.3.4.2	Provide Traffic Operations Personnel Incident Data Interface
1.3.4.5	Manage Resources for Incidents

TMC Signal Control

1.1.2.2	Process Traffic Data
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface
1.2.1	Select Strategy
1.2.2.2	Determine Indicator State for Road Management
1.2.4.1	Output Control Data for Roads

TMC Toll/Parking Coordination

1.4.4	Implement Demand Management Policy

TMC Traffic Information Dissemination

1.1.4.1	Retrieve Traffic Data
1.1.4.2	Provide Traffic Operations Personnel Traffic Data Interface
1.1.4.3	Provide Direct Media Traffic Data Interface
1.3.4.3	Provide Media Incident Data Interface

TMC Traffic Network Performance Evaluation

1.1.2.1	Process Traffic Data for Storage
1.1.2.2	Process Traffic Data
1.1.3	Generate Predictive Traffic Model
1.1.5	Exchange data with Other Traffic Centers
1.2.6.1	Maintain Traffic and Sensor Static Data
1.2.6.2	Provide Static Data Store Output Interface
1.4.1	Provide Traffic Operations Personnel Demand Interface
1.4.2	Collect Demand Forecast Data
1.4.3	Update Demand Display Map Data
1.4.4	Implement Demand Management Policy
1.4.5	Calculate Forecast Demand

Toll Administration

5.4.2	Process Violations for Tolls
7.1.1.3	Manage Bad Toll Payment Data
7.1.1.6	Collect Probe Data From Toll Transactions
7.1.1.7	Update Toll Price Data
7.1.1.8	Register for Advanced Toll Payment
7.1.1.9	Manage Toll Financial Processing

Toll Data Collection

7.1.1.11	Manage Toll Archive Data

Toll Plaza Toll Collection

7.1.1.1	Read Tag Data for Tolls
7.1.1.10	Determine Advanced Toll Bill
7.1.1.2	Calculate Vehicle Toll
7.1.1.4	Check for Advanced Tolls Payment
7.1.1.5	Bill Driver for Tolls
7.1.2	Produce Roadside Displays
7.1.3	Obtain Toll Violator Image
7.1.5	Detect Vehicle for Tolls

Traffic and Roadside Data Archival

8.9	Manage Roadside Data Collection

Traffic Data Collection

1.1.4.7	Manage Traffic Archive Data

Traffic Maintenance

1.1.1.2	Collect and Process Sensor Fault Data
1.2.8.1	Collect Indicator Fault Data
1.2.8.2	Maintain Indicator Fault Data Store
1.2.8.3	Provide Indicator Fault Interface for C and M
1.2.8.4	Provide Traffic Operations Personnel Indicator Fault Interface

Transit Center Fare and Load Management

4.6.8	Manage Transit Vehicle Advanced Payments
5.4.4	Process Fare Payment Violations
5.4.5	Process Vehicle Fare Collection Violations
5.4.7	Process Roadside Fare Collection Violations
7.3.1.1	Register for Advanced Transit Fare Payment
7.3.1.2	Determine Advanced Transit Fares
7.3.1.3	Manage Transit Fare Financial Processing
7.3.1.4	Check for Advanced Transit Fare Payment
7.3.1.5	Bill Transit User for Transit Fare
7.3.1.6	Collect Bad Transit Fare Payment Data
7.3.1.7	Update Transit Fare Data
7.4.1.5	Process Transit User Other Services Payments

Transit Center Fixed-Route Operations

4.1.6	Manage Transit Vehicle Operations Data
4.2.2	Provide Transit Plans Store Interface
4.2.3.1	Generate Transit Routes
4.2.3.2	Generate Schedules
4.2.3.4	Provide Transit Fleet Manager Interface for Services Generation
4.2.3.5	Manage Transit Operational Data Store
4.2.3.6	Produce Transit Service Data for Manage Transit Use

Transit Center Information Services

4.1.5	Provide Transit Vehicle Status Information
4.1.6	Manage Transit Vehicle Operations Data
4.2.3.3	Produce Transit Service Data for External Use
4.6.8	Manage Transit Vehicle Advanced Payments

Transit Center Multi-Modal Coordination

4.1.2.4	Provide Transit Vehicle Correction Data Output Interface
4.1.4	Manage Transit Vehicle Deviations
4.1.5	Provide Transit Vehicle Status Information
4.1.7	Provide Transit Vehicle Deviation Data Output Interface
4.2.3.2	Generate Schedules
4.2.3.7	Provide Interface for Other TRM Data
4.2.3.8	Provide Interface for Transit Service Raw Data

Transit Center Paratransit Operations

4.1.6	Manage Transit Vehicle Operations Data
4.2.1.1	Process Demand Responsive Transit Trip Request
4.2.1.2	Compute Demand Responsive Transit Vehicle Availability
4.2.1.3	Generate Demand Responsive Transit Schedule and Routes
4.2.1.4	Confirm Demand Responsive Transit Schedule and Route

Transit Center Security

4.4.1.1	Manage Transit Security
4.4.1.3	Provide Transit System Operator Security Interface
4.4.1.4	Provide Transit External Interface for Emergencies
4.4.1.6	Collect Transit Vehicle Emergency Information
4.4.2	Coordinate Multiple Agency Responses to Incidents
4.4.3	Generate Responses for Incidents
7.3.3	Get Transit User Image for Violation

Transit Center Tracking and Dispatch

4.1.6	Manage Transit Vehicle Operations Data
4.2.3.9	Update Transit Map Data

Transit Data Collection

4.2.4	Manage Transit Archive Data

Transit Garage Maintenance

4.3.1	Monitor Transit Vehicle Condition
4.3.2	Generate Transit Vehicle Maintenance Schedules
4.3.3	Generate Technician Work Assignments
4.3.4	Monitor And Verify Maintenance Activity
4.3.5	Report Transit Vehicle Information
4.3.6	Update Transit Vehicle Information
4.3.7	Manage Transit Vehicle Operations Data Store

Transit Garage Operations

4.5.1	Assess Transit Driver Performance
4.5.2	Assess Transit Driver Availability
4.5.3	Access Transit Driver Cost Effectiveness
4.5.4	Assess Transit Driver Eligibility
4.5.5	Generate Transit Driver Route Assignments
4.5.6	Update Transit Driver Information
4.5.7	Report Transit Driver Information
4.5.8	Provide Transit Driver Information Store Interface

Vehicle Autonomous Route Guidance

6.7.2.1.3	Provide Autonomous In-vehicle Guidance
6.7.2.3	Provide Driver Guidance Interface
6.7.2.4	Update Vehicle Navigable Map Database

Vehicle Intersection Collision Warning

3.1.1	Produce Collision and Crash Avoidance Data
3.1.3	Process Vehicle On-board Data
3.2.3.5	Process Vehicle Sensor Data
6.2.5	Provide Driver Interface

Vehicle Intersection Control

3.1.1	Produce Collision and Crash Avoidance Data
3.1.3	Process Vehicle On-board Data
6.2.5	Provide Driver Interface

Vehicle Lateral Control

3.2.1	Provide Driver Interface
3.2.3.1	Provide Command Interface
3.2.3.3	Process data for Vehicle Actuators
3.2.3.4.3	Provide Lane Servo Control
3.2.3.4.4	Provide Change Lane Servo Control
3.2.3.4.5	Provide Vehicle Control Data Interface

Vehicle Lateral Warning System

3.1.1	Produce Collision and Crash Avoidance Data
3.1.3	Process Vehicle On-board Data
3.2.3.5	Process Vehicle Sensor Data
6.2.5	Provide Driver Interface

Vehicle Location Determination

6.7.2.2	Process Vehicle Location Data

Vehicle Longitudinal Control

3.1.3	Process Vehicle On-board Data
3.2.1	Provide Driver Interface
3.2.3.1	Provide Command Interface
3.2.3.3	Process data for Vehicle Actuators
3.2.3.4.1	Provide Speed Servo Control
3.2.3.4.2	Provide Headway Servo Control
3.2.3.4.5	Provide Vehicle Control Data Interface
6.2.5	Provide Driver Interface

Vehicle Longitudinal Warning System

3.1.1	Produce Collision and Crash Avoidance Data
3.1.3	Process Vehicle On-board Data
3.2.3.5	Process Vehicle Sensor Data
6.2.5	Provide Driver Interface

Vehicle Mayday I/F

3.3.2	Provide Communications Function
3.3.3	Build Automatic Collision Notification Message
6.2.5	Provide Driver Interface
6.7.1.1	Build Driver Personal Security Message
6.7.1.2	Provide Driver In-vehicle Communications Function

Vehicle Pre-Crash Safety Systems

3.1.1	Produce Collision and Crash Avoidance Data
3.1.3	Process Vehicle On-board Data
3.2.3.5	Process Vehicle Sensor Data

Vehicle Probe Support

3.2.3.5	Process Vehicle Sensor Data
6.7.2.1.2	Provide Dynamic In-vehicle Guidance

Vehicle Provider-Based Route Guidance

6.7.2.1.1	Determine In-vehicle Guidance Method
6.7.2.1.2	Provide Dynamic In-vehicle Guidance
6.7.2.3	Provide Driver Guidance Interface
6.7.2.4	Update Vehicle Navigable Map Database

Vehicle Safety Monitoring System

3.1.2	Carry-out Safety Analysis
3.1.3	Process Vehicle On-board Data
6.2.5	Provide Driver Interface

Vehicle Systems for AHS

3.1.3	Process Vehicle On-board Data
3.2.1	Provide Driver Interface
3.2.2	Provide AHS Control
3.2.3.2	Manage Platoon Following
3.2.3.3	Process data for Vehicle Actuators
3.2.3.6	Communicate with other Platoon Vehicles
3.2.4	Process Sensor Data for AHS input

Vehicle Toll/Parking Interface

7.1.4	Provide Driver Toll Payment Interface
7.1.7	Provide Payment Instrument Interface for Tolls
7.2.4	Provide Driver Parking Lot Payment Interface
7.2.7	Provide Payment Instrument Interface for Parking
7.5.1	Provide Vehicle Payment Instrument Interface

Virtual Data Warehouse Services

8.4	Coordinate Archives

Appendix H: Subsystem and Equipment Package Functional Summary

ADMS Archived Data Management Subsystem

Government Reporting Systems Support Equipment Package consists of:

Prepare Government Reporting Inputs (P-Spec 8.8)

Overview: This process shall support the preparation of inputs to reporting systems of the federal or state governments that require data from the ITS archive. This process shall respond to requests from the Government Reporting Systems terminator for data from the archive and generate the request in a form understood by the Manage Archive function. The data and any meta data necessary shall be returned from the Manage Archive function. This process shall receive the data and format it as requested and send it to the Government Reporting Systems terminator where it may be combined with other data before final submission.

ITS Data Repository Equipment Package consists of:

Get Archive Data (P-Spec 8.1)

Overview: This process shall collect data from each major function within ITS and external sources for archive purposes that may not exist within current ITS data sources. This process shall respond to requests from the Manage Archive Data Administrator Interface process to import data or data catalogs. This process shall send requests for data or a catalog of available data to the other functions and terminators, either a subscription for data or a one-time request. This process shall receive meta data along with the data to describe the conditions under which the data was collected or any other information about the operational data. When data is received this process shall perform quality checks such as range validation or reformat the data as necessary to meet the archive schema. This process shall execute methods on the incoming data such as cleansing, summarizations, aggregations, or transformations applied to the data before it is stored in the archive. Any changes made to the data shall be recorded in the meta-data stored in the archive to assist in the reconstruction of the original data if possible. This process shall receive inputs from the Manage Archive Data Administrator Interface that contain the parameters for managing the processing on the data. This process forwards the collected onto the Manage Archive function along with updated meta-data and a record of any methods applied to the incoming data. This process shall also support the notification of the operational source functions of any errors that may be present in the data that could be caused by equipment failures or a transmission error.

Manage Archive (P-Spec 8.2)

Overview: This process shall store the collected and formatted data in a permanent archive data store. This process shall receive the formatted data from the Get Archive Data function accompanied by any updates to the meta data that would describe the formatting operations performed on the data as it was imported. This process shall respond to requests from the administrator interface function to maintain the schema of the archive data, set update frequencies, backup schedules, user authentication schemes, cleansing algorithms. This process shall provide the administrator interface function with status of the data quality in the archive, frequency reports on use of the archive, updates to the measure of the volume of the data and other data archive metrics. This process shall receive inputs from the Coordinate Archives function to provide data and information about the archive schema to other archives. In turn the process shall receive data and schema of other archives to use to build a global schema. The process shall use the global schema to support requests from user systems for data that may be spread across multiple archives. The process shall maintain the access privileges information for the data held in the archive to maintain the security of the archive. The process shall employ such techniques as necessary to maintain the integrity of the data and ensure no data is lost from the archive. The process shall respond to requests for data to support user data products, user analysis, and inputs to government reporting systems. The process shall respond to such request by authenticating the originator of the request and providing the data that is available. The process shall also be capable of providing a sample or catalog of data contained within the archive to support the user requests.

Manage Archive Data Administrator Interface (P-Spec 8.3)

Overview: This process shall interface with the Archive Data Administrator terminator and receive inputs from the administrator concerning the management and administration of the archive. The process shall establish user authentication controls for the archive and send the information to the Manage Archive function. The process shall maintain the schema of the archive, including the data and meta data contained within the archive data. Updates to the schema shall be distributed to the Manage Archive function as well as the Get Archive Data function. The process shall send the parameters and requests to the Get Archive Data function to control what data is imported into the archive and how the data is to be formatted when it is received. The parameters sent shall include such things as the schema, data format, methods to apply to the data, cleansing parameters, quality metrics, and checking specifications. The process shall send requests to the Get Archive Data function for new data or a catalog of data that may be available. The process shall respond to requests from the Manage On Demand Archive Requests function by making requests of the Get Archive Data function to establish the source and identity of the data that may exist in ITS or non-ITS sources. Then the process shall respond to the user request with the confirmation that the request can be satisfied and specifications about the data once it is imported. In cases where the Manage Archive function will be managing a roadside data collection function, this process shall initiate and control the function by sending commands and requests to the Manage Roadside Data Collection function. This process receives the status from the other functions within Manage Archived Data and presents them to the administrator.

Process Archived Data User System Requests (P-Spec 8.5)

Overview: This process shall monitor the archive data user systems interface for requests for data from the archive. This process shall support requests from users involved in planning, research, safety, as well as operations of transportation functions. This process shall receive requests for data and catalogs of data that may be contained in the archive. This process shall translate the requests into a format that can be understood by the Manage Archive function to retrieve data from the archive. When data or a catalog of data is received from the archive, this process shall generate the requested data product for the users systems. For archive data requiring financial payment this archive process the financial requests and manages an interface to a Finanicial Institution.

Process On Demand Archive Requests (P-Spec 8.7)
Overview: This process shall receive requests for data to be imported into the archive that is not already in the archive. The process shall forward the request to the Manage Archive Data Administrator Interface function for the administrator to handle the user request. The process shall receive the response from the administrator and forward the information to the Archive Data User System.

On-Line Analysis and Mining Equipment Package consists of:

Analyze Archive (P-Spec 8.6)
Overview: This process shall support the interface with Archive Data User Systems for requests for analysis of the archive data. This process shall support analysis products that can provide users with the ability to perform activities such as data mining, data fusion, summarizations, aggregations, and recreation from archive data. This process shall receive the users systems requests and develop the request that the Manage Archive function can process to retrieve the data from the archive. This process shall be able to respond to users systems requests for a catalog of the analysis products available. When data and meta data are returned from the archive and the analysis is performed this process shall produce the output for the Archive Data User Systems terminator. For archive data requiring financial payment this archive process the financial requests and manages an interface to a Finanicial Institution.

Traffic and Roadside Data Archival Equipment Package consists of:

Manage Roadside Data Collection (P-Spec 8.9)
Overview: This process shall manage the collection of archive data directly from collection equipment located at the roadside. This process shall collect traffic information as well as environmental or other information that may be collected by roadside devices. This process shall respond to requests from the Manage Archive Data Administer Interface process to input the parameters that control the collection process. The request for data and control parameters shall be sent to the Manage Traffic function where the information is collected and returned. This process shall forward the data onto the Get Archive Data function for import into the archive. The Get Archive Data function shall be able to return status about the imported data. This process shall use the status information to adjust the collection function and report back to the administrator function. Data Flows: All input flows are unsolicited with the exception of collected_roadside_data_status and roadside_archive_data which are unsolicited. All outputs are solicited.

Virtual Data Warehouse Services Equipment Package consists of:

Coordinate Archives (P-Spec 8.4)
Overview: This process shall coordinate the information exchange between different Manage Archived Data functions represented through the Other Archives terminator. This process shall allow other archives to share data collected by other archive functions to share the data in response to local requests from users systems. This process shall use data collected from different archives to build a set of global schema which the data archive definitions for the local archive plus any archives known to the local archive. This process shall provide the global schema to the local Manage Archive function. This process shall receive the schema of the local archive to share with other archive functions. This process shall provide data to those other archives when requested. This process shall support analysis, data fusion, and data mining of archived information across geographically dispersed archives.

CVAS Commercial Vehicle Administration

Credentials and Taxes Administration Equipment Package consists of:

Manage Commercial Vehicle Trips and Clearances (P-Spec 2.5.1)
Overview: This process shall be responsible for the advance acquisition of electronic credentials and tax filing for commercial vehicles. The process will support the payment of the necessary taxes and duties that will enable a vehicle to be cleared through the credentials checks at the roadside checkstation facilities along its route, including those at border crossings. For this activity the process uses information about the vehicle's route provided by the commercial vehicle manager, or by the driver acting in that role when the vehicle is owned and operated by the driver. The actual payment activity and the subsequent notification of the roadside facilities along the route is carried out by other processes. Where the roadside facilities are outside the area served by the local ITS functions, the process requests that the necessary vehicle data is passed to the similar processes serving the appropriate areas.

Obtain Electronic Credential and Tax Filing Payment (P-Spec 2.5.2)
Overview: This process shall be responsible for making payment for electronic credential and tax filing. The data on which the payment is based shall be that for a commercial vehicle's route as provided by the commercial vehicle manager or the commercial vehicle driver who is also the owner of the vehicle. The actual payment activity will be carried out by another process in the Provide Electronic Payment Services function.

Update Permits and Duties Store (P-Spec 2.5.3)
Overview: This process shall be responsible for receiving data from Government Administrators. This data comprises updates to the list of electronic credentials and tax filing required for a commercial vehicle to pass each roadside checkstation facility, plus carrier safety ratings for use in roadside safety inspections. These updates are both loaded into a store used by other process in the commercial vehicle administration facility.

Communicate with Other Commercial Vehicle Administration System (P-Spec 2.5.4)
Overview: This process shall be responsible for communicating with commercial vehicle administration facilities in ITS functions that serve areas outside that which is served by the local function. The communications supported by the process shall enable the local function to enroll commercial vehicles in other areas, and for those other areas to enroll their commercial vehicles in the local area. The process shall thus support the coordination and the determination of electronic credentials and tax filing across geographic and jurisdictional boundaries.

Manage Commercial Vehicle Credentials and Enrollment (P-Spec 2.5.5)
Overview: This process shall be responsible for enabling commercial vehicle managers and drivers (who are owners) to enroll the electronic credentials for their vehicles. This enrollment shall be achieved by loading the credentials data into a data store from which such data shall be downloaded to the commercial vehicle roadside checkstation and border crossing facilities by another process. When the roadside facility is located in the area not served by the local Manage Commercial Vehicles function, the process sends the data to another process that is responsible for communicating with a similar

function in other geographic and/or jurisdictional areas. The process shall also be able to accept commercial vehicle enrollment requests from similar functions in other areas, query enforcement agency databases for outstanding prosecutions, and shall be able to respond to requests for information from authorized entities, such as insurance underwriters.

Output Commercial Vehicle Enrollment Data to Roadside Facilities (P-Spec 2.5.6)

Overview: This process shall be responsible for providing credentials, safety and border crossing data to commercial vehicle roadside checkstation and border crossing facilities. This data shall be output by the process periodically (e.g. daily) from an interrogation of the stores of safety history and credentials, and sent to the roadside facilities served by the local Manage Commercial Vehicles function. The process shall also provide selected credentials and safety data on request from the commercial vehicle inspectors at particular roadside checkstation facilities.

Process Commercial Vehicle Violations (P-Spec 2.5.7)

Overview: This process shall be responsible for sending details of commercial vehicle carriers and drivers that require prosecution to a process in the Manage Emergency Services function. The receiving process in that function will be responsible for sending the data to the appropriate law enforcement agency. This process shall obtain the data by periodically (e.g. daily) scanning the data in the log obtained from the commercial vehicle roadside checkstation facilities.

Process Data Received from Roadside Facilities (P-Spec 2.5.8)

Overview: This process shall be responsible for the examination of the daily logs received periodically from the commercial vehicle checkstation and border crossing facilities. It shall also be responsible for the receipt in real time of data about commercial vehicles that have failed their safety inspections. The examination of the received data shall lead the process to update the local stores containing the facility logs and vehicle safety history. This process shall also issue quarterly reports for use by government administrators, send details of the activity at the roadside facility to the Plan System Deployment function. It shall also provide responses to requests from the commercial vehicle manager for reports of fleet activity through roadside facilities, either on-demand or as periodic summaries..

Process CV Violations (P-Spec 5.4.6)

Overview: This process shall manage the details of violations committed by commercial vehicles, their drivers and/or operators, reported by the Manage Commercial Vehicles function. The process shall use the parameters in the store of commercial vehicle violation (enforcement) data to obtain the vehicle registration data from the appropriate State Department of Motor Vehicles (DMV) office, before sending all of the received data to the correct law enforcement agency. This process shall also maintain the commercial vehicle violation (enforcement) data store.

Process Commercial Vehicle Payments (P-Spec 7.4.1.1)

Overview: This process shall be responsible for transacting payments for electronic credential and tax filing by processes in the Manage Commercial Vehicles function. The payment transaction shall be initiated by processes in the Administer Commercial Vehicles facility which may accept inputs from both the commercial vehicle fleet manager and the commercial vehicle driver acting in the role of fleet manager, i.e., the owner driver. The process shall send the transaction data to the financial institution and report the response back to the requesting process.

CV Data Collection Equipment Package consists of:

Manage Commercial Vehicle Archive Data (P-Spec 2.5.9)

Overview: This process shall be responsible for processing request for archive data of commericial vehicle operations. This process shall receive operational data from the roadside check systems and administration and credentials data. This process shall receive and respond to requests from the Manage Archived Data process for either a catalog of the data contained with the commercial vehicle data stores or for the data itself. Additionally this process shall be able to produce sample products of the data available. As data is received into this process quality control metrics shall be assigned. The appropriate meta-data shall be generated and store along with the data. A catalog of the data shall be maintained to allow requesters to know what data is available from the archive store. The process shall run when a request for data is received from an external source, or when fresh data is received.

CV Information Exchange Equipment Package consists of:

Communicate with Other Commercial Vehicle Administration System (P-Spec 2.5.4)

Overview: This process shall be responsible for communicating with commercial vehicle administration facilities in ITS functions that serve areas outside that which is served by the local function. The communications supported by the process shall enable the local function to enroll commercial vehicles in other areas, and for those other areas to enroll their commercial vehicles in the local area. The process shall thus support the coordination and the determination of electronic credentials and tax filing across geographic and jurisdictional boundaries.

Output Commercial Vehicle Enrollment Data to Roadside Facilities (P-Spec 2.5.6)

Overview: This process shall be responsible for providing credentials, safety and border crossing data to commercial vehicle roadside checkstation and border crossing facilities. This data shall be output by the process periodically (e.g. daily) from an interrogation of the stores of safety history and credentials, and sent to the roadside facilities served by the local Manage Commercial Vehicles function. The process shall also provide selected credentials and safety data on request from the commercial vehicle inspectors at particular roadside checkstation facilities.

CV Safety Administration Equipment Package consists of:

Manage Commercial Vehicle Credentials and Enrollment (P-Spec 2.5.5)

Overview: This process shall be responsible for enabling commercial vehicle managers and drivers (who are owners) to enroll the electronic credentials for their vehicles. This enrollment shall be achieved by loading the credentials data into a data store from which such data shall be downloaded to the commercial vehicle roadside checkstation and border crossing facilities by another process. When the roadside facility is located in the area not served by the local Manage Commercial Vehicles function, the process sends the data to another process that is responsible for communicating with a similar function in other geographic and/or jurisdictional areas. The process shall also be able to accept commercial vehicle enrollment requests from similar functions in other areas, query enforcement agency databases for outstanding prosecutions, and shall be able to respond to requests for information from authorized entities, such as insurance underwriters.

International CV Administration Equipment Package consists of:

Manage Commercial Vehicle Trips and Clearances (P-Spec 2.5.1)

Overview: This process shall be responsible for the advance acquisition of electronic credentials and tax filing for commercial vehicles. The process will support the payment of the necessary taxes and duties that will enable a vehicle to be cleared through the credentials checks at the roadside checkstation facilities along its route, including those at border crossings. For this activity the process uses information about the vehicle's route provided by the commercial vehicle manager, or by the driver acting in that role when the vehicle is owned and operated by the driver. The actual payment activity and the subsequent notification of the roadside facilities along the route is carried out by other processes. Where the roadside facilities are outside the area served by the local ITS functions, the process requests that the necessary vehicle data is passed to the similar processes serving the appropriate areas.

Output Commercial Vehicle Enrollment Data to Roadside Facilities (P-Spec 2.5.6)

Overview: This process shall be responsible for providing credentials, safety and border crossing data to commercial vehicle roadside checkstation and border crossing facilities. This data shall be output by the process periodically (e.g. daily) from an interrogation of the stores of safety history and credentials, and sent to the roadside facilities served by the local Manage Commercial Vehicles function. The process shall also provide selected credentials and safety data on request from the commercial vehicle inspectors at particular roadside checkstation facilities.

Process Data Received from Roadside Facilities (P-Spec 2.5.8)

Overview: This process shall be responsible for the examination of the daily logs received periodically from the commercial vehicle checkstation and border crossing facilities. It shall also be responsible for the receipt in real time of data about commercial vehicles that have failed their safety inspections. The examination of the received data shall lead the process to update the local stores containing the facility logs and vehicle safety history. This process shall also issue quarterly reports for use by government administrators, send details of the activity at the roadside facility to the Plan System Deployment function. It shall also provide responses to requests from the commercial vehicle manager for reports of fleet activity through roadside facilities, either on-demand or as periodic summaries..

CVCS Commercial Vehicle Check

Citation and Accident Electronic Recording Equipment Package consists of:

Carry-out Commercial Vehicle Roadside Safety Screening (P-Spec 2.3.3.4)

Overview: This process shall be responsible for checking commercial vehicle credentials against the list of those known to have safety problems held in a store maintained by another process in the roadside checkstation facility. The process shall send the result of each check to the roadside inspector interface process so that an override input can be generated if required. The process shall send a request for the commercial vehicle to pull-in if the vehicle's credentials are in the list of those with safety problems, and shall also send a record of each decision to the process that maintains the commercial vehicle roadside checkstation facility log.

International Border Crossing Equipment Package consists of:

Provide Commercial Vehicle Border Screening (P-Spec 2.3.8)

Overview: This process shall be responsible for checking a commercial vehicle and its cargo through a border crossing point. The checks carried out by the process shall comprise a comparison of the trip identity already provided by the commercial vehicle administration processes, and held in a local data store. A check shall also be made by the process to see if the lock tag attached to the vehicle's cargo has been changed. If either of these two checks produce negative results then the process shall request the vehicle to pull-in, otherwise the vehicle shall be allowed to pass. The process shall send its decision to the process that provides the roadside inspectors' interface, to enable an override to be applied if required. The decision of the process (with the override if it is applied) shall be sent to the message output process and be written back to the vehicle's on-board tag.

Roadside Electronic Screening Equipment Package consists of:

Produce Commercial Vehicle Driver Message at Roadside (P-Spec 2.3.1)

Overview: This process shall be responsible for the output of pull-in or pass messages to commercial vehicle drivers as they approach the commercial vehicle roadside checkstation or border crossing facilities. The process shall support the use of roadside equipment such as dynamic message signs (DMS), or simple red-green lights, flashing orange lights, etc. to provide the output. These output messages shall be received by the process from other processes responsible for roadside facilities within the Manage Commercial Vehicles function. The process shall support pull-in messages that are the result of checks on a commercial vehicle's electronic credentials, safety and border crossing data, the result of the vehicle's tag not being properly read, or the result of a general pull-in decision for all vehicles being issued by inspectors at the roadside facility. The process shall also generate a message to be sent to the vehicle so that an indication can be output directly to the driver at the same time as it appears on the roadside equipment.

Administer Commercial Vehicle Roadside Credentials Database (P-Spec 2.3.2.1)

Overview: This process shall be responsible for receiving the electronic credentials sent to the roadside checkstation facility as part of a commercial vehicle's enrollment process. The process shall store the data for use by another process and shall also enable the inspector in the roadside facility to obtain a copy of the data in the store. If the requested data is not in the store, the process shall request it from another process in the commercial vehicle administration facility.

Process Screening Transactions (P-Spec 2.3.2.2)

Overview: This process shall be responsible for checking commercial vehicle credentials against those held in a store maintained by another process in the roadside checkstation facility. The process shall send the result of each check to the roadside inspector interface process so that an override input can be generated if required. The process shall send a request for the commercial vehicle to pull-in if the vehicle's credentials do not match those in the store, and shall also send a record of each decision to the process that maintains the commercial vehicle roadside checkstation facility log.

Carry-out Commercial Vehicle Roadside Safety Screening (P-Spec 2.3.3.4)
Overview: This process shall be responsible for checking commercial vehicle credentials against the list of those known to have safety problems held in a store maintained by another process in the roadside checkstation facility. The process shall send the result of each check to the roadside inspector interface process so that an override input can be generated if required. The process shall send a request for the commercial vehicle to pull-in if the vehicle's credentials are in the list of those with safety problems, and shall also send a record of each decision to the process that maintains the commercial vehicle roadside checkstation facility log.

Detect Commercial Vehicle (P-Spec 2.3.4)
Overview: This process shall be responsible for detecting the presence of commercial vehicles through the use of sensors that can differentiate between the different types of vehicle. The process shall use the sensors to determine the number of axles, gross vehicle weight and weight per axle data for use by inspectors at the roadside checkstation facilities. When a commercial vehicle is detected, the process shall transmit a request for its on-board tag data, which when received shall be passed to other processes within the roadside facility. If no tag data is received, or the data cannot be interpreted correctly, the process shall send a request for the vehicle to pull-in to be output by another process in the roadside checkstation facility.

Provide Commercial Vehicle RoadsideOperator Interface (P-Spec 2.3.5)
Overview: This process shall be responsible for providing the commercial vehicle inspector interface at the roadside checkstation facility. The process shall provide an interface which enables the inspector to monitor and if necessary override the pull-in decisions made by those of the border crossing, credentials and safety data checking processes that are present in the facility. The process shall also make it possible for the inspector to issue a manual general pull-in request for all commercial vehicles to pull into the roadside checkstation facility, to have access the contents of the facility's log, and to obtain credentials or safety data on a selected combination of carrier, driver, and vehicle. The process shall support inputs from the traffic operations personnel in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Provide Commercial Vehicle Reports (P-Spec 2.3.6)
Overview: This process shall be responsible for collecting data from those of the border crossing, credential and safety checking processes that are present in a commercial vehicle roadside checkstation facility. The data shall be stored by the process in a roadside facility log, to which the roadside inspector interface process shall have access. Once a day the process shall make a copy of the roadside facility log and send it to the commercial vehicle administration facility for further processing.

Roadside Safety Inspection Equipment Package consists of:

Provide Commercial Vehicle Checkstation Communications (P-Spec 2.3.3.1)
Overview: This process shall be responsible for providing an interface through which a commercial vehicles roadside checkstation facility can communicate with a passing commercial vehicle. When a request for on-board data is received from another process within the facility, the process shall issue a data request to the identified commercial vehicle. The data received by the process from the vehicle shall be stored in the store of collected data for use by the roadside inspection process.

Provide Commercial Vehicle Inspector Handheld Terminal Interface (P-Spec 2.3.3.2)
Overview: This process shall be responsible for providing an interface for a hand held terminal which can be used by a commercial vehicle inspector. The process shall enable the inspector to start a commercial vehicle roadside inspection, to review the results, and to add comments to the results data. The process shall support inputs from the inspectors in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the form of the visual output to be in hardcopy, or as a display.

Administer Commercial Vehicle Roadside Safety Datadase (P-Spec 2.3.3.3)
Overview: This process shall be responsible for maintaining in the commercial vehicle roadside checkstation facility a database of credentials for commercial vehicles with safety problems. This process shall store the data about these vehicles received from the commercial vehicle administration facility. It shall enable this data to be used by another process and shall also enable the inspector in the roadside facility to obtain a copy of the data in the store. If the requested data is not in the store, the process shall request it from another process in the commercial vehicle administration facility.

Carry-out Commercial Vehicle Roadside Safety Screening (P-Spec 2.3.3.4)
Overview: This process shall be responsible for checking commercial vehicle credentials against the list of those known to have safety problems held in a store maintained by another process in the roadside checkstation facility. The process shall send the result of each check to the roadside inspector interface process so that an override input can be generated if required. The process shall send a request for the commercial vehicle to pull-in if the vehicle's credentials are in the list of those with safety problems, and shall also send a record of each decision to the process that maintains the commercial vehicle roadside checkstation facility log.

Carry-out Commercial Vehicle Roadside Inspection (P-Spec 2.3.3.5)
Overview: This process shall be responsible for carrying out roadside safety inspections at the request of the roadside facility inspector. The result of the inspection shall be sent by the process to the inspector, the commercial vehicle driver, the roadside checkstation facility log, and the commercial vehicle itself. The process shall enable the inspector to add comments to the result of the inspection before it is sent to the above outputs. These comments shall be received by the process in the form of data input from the inspector's hand held terminal interface.

Provide Commercial Vehicle RoadsideOperator Interface (P-Spec 2.3.5)
Overview: This process shall be responsible for providing the commercial vehicle inspector interface at the roadside checkstation facility. The process shall provide an interface which enables the inspector to monitor and if necessary override the pull-in decisions made by those of the border crossing, credentials and safety data checking processes that are present in the facility. The process shall also make it possible for the inspector to issue a manual general pull-in request for all commercial vehicles to pull into the roadside checkstation facility, to have access the contents of the facility's log, and to obtain credentials or safety data on a selected combination of carrier, driver, and vehicle. The process shall support inputs from the traffic operations personnel in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Roadside WIM Equipment Package consists of:

Detect Commercial Vehicle (P-Spec 2.3.4)

Overview: This process shall be responsible for detecting the presence of commercial vehicles through the use of sensors that can differentiate between the different types of vehicle. The process shall use the sensors to determine the number of axles, gross vehicle weight and weight per axle data for use by inspectors at the roadside checkstation facilities. When a commercial vehicle is detected, the process shall transmit a request for its on-board tag data, which when received shall be passed to other processes within the roadside facility. If no tag data is received, or the data cannot be interpreted correctly, the process shall send a request for the vehicle to pull-in to be output by another process in the roadside checkstation facility.

CVS Commercial Vehicle Subsystem

On-board Cargo Monitoring Equipment Package consists of:

Provide Cargo Data for Incident Notification (P-Spec 3.3.1)

Overview: This process shall be responsible for providing data about a commercial vehicle's cargo in the event that the vehicle is involved in some type of emergency. The process shall produce the output on request from another process in the vehicle regardless of whether the cargo has itself suffered from any damage. The cargo data being provided by the process shall cover all types, regardless of whether or not they are classified as HAZMAT cargoes.

On-board CV Electronic Data Equipment Package consists of:

Provide CV Driver Electronic Credential and Tax Filing Interface (P-Spec 2.2.3)

Overview: This process shall be responsible for providing an interface for the commercial vehicle fleet manager. In this instance the driver is assumed to be acting in the role of a commercial vehicle manager, and is therefore likely to be the owner/driver of the vehicle. The process shall enable this interface to provide the driver with facilities for the input of data used to set up commercial vehicle routes, to pay all the necessary taxes and duties so that a commercial vehicle can be enrolled for a particular route, and to obtain a copy of the data collected by processes on-board the vehicle. The enrollment activity supported by the process shall enable a commercial vehicle to pass through the roadside checkstations along its route without stopping, unless safety checks are required. The process shall support inputs from the commercial vehicle driver in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Produce Commercial Vehicle Driver Message on Vehicle (P-Spec 2.3.7)

Overview: This process shall be responsible for the output of the pull-in or pass messages to commercial vehicle drivers directly in their vehicles as they approach a commercial vehicle roadside checkstation facility. These messages shall be generated by other processes within the facility that are responsible for checking the commercial vehicle's credentials (including those for border crossing) and safety, or may be the result of the vehicle's tag not being properly read, or may be the result of a general pull-in decision for all vehicles being issued by inspectors at the roadside checkstation facility.

Collect On-board Commercial Vehicle Sensor Data (P-Spec 2.4.2)

Overview: This process shall be responsible for continuously monitoring the conditions on-board a commercial vehicle. These inputs shall be processed by sensors, and if required converted from analog into a digital form. The process shall load all collected into an on-board vehicle data store for use by other processes in the vehicle.

Analyze Commercial Vehicle On-board Data (P-Spec 2.4.3)

Overview: This process shall be responsible for analyzing the data collected on-board a commercial vehicle, and sending it to another process for loading into a store on-board the vehicle. If the analysis of the data carried out by the process shows that there is a critical safety problem, the process shall send data to the driver's interface process for output to the driver. The process shall also accept input of data from the commercial vehicle driver via the interface process and load it into the same store.

Provide Commercial Vehicle Driver Interface (P-Spec 2.4.4)

Overview: This process shall be responsible for providing the interface between the commercial vehicle driver and processes on-board the commercial vehicle. The process shall provide interfaces to the processes responsible for collecting, analyzing and storing data about the vehicle, its cargo, the driver, etc., and for the exchange of data with the commercial vehicle manager. The process shall support inputs from the driver in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Provide Commercial Vehicle On-board Data Store Interface (P-Spec 2.4.6)

Overview: This process shall be responsible for providing the interface through which data can be written to and read from the store of data that is held on-board a commercial vehicle. The data shall be provided by and on request from, other processes within the Manage Commercial Vehicles function that are on-board the vehicle.

Transmit Commercial Vehicle Tag Data (P-Spec 2.6.2)

Overview: This process shall be responsible for providing the output of the data that has been previously stored on-board a commercial vehicle's tag on request from a commercial vehicle roadside checkstation facility. The process shall also provide the current status of the lock tag, if one is attached to the vehicle's cargo. The data shall only be sent by the process to the commercial vehicle roadside checkstation or border crossing facility that made the request. The output mechanism used by the process shall be an implementation issue, but it could be by radio, beacon, or a visual mechanism, such as a bar code.

Provide Commercial Driver Tag Data Interface (P-Spec 2.6.3)

Overview: This process shall be responsible for providing the interface through which the commercial vehicle driver can set up the data in an on-board vehicle unit (e.g. an electronic tag). In this instance the driver is assumed to be acting in the role of a commercial vehicle manager, and is thus likely to be the owner of the vehicle. The data the process enables the manager to write to the tag will be that which identifies the carrier, driver and vehicle. The process shall also enable the read this data from the tag, but shall not enable the manager to read any other data from the tag. The process shall support inputs from the commercial vehicle driver in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Provide Lock Tag Data Interface (P-Spec 2.6.4)
Overview: This process shall be responsible for producing an output of the current status of a lock tag that is being carried by the cargo of a commercial vehicle. The process shall only produce the output in response to a request for data that is received from the other process on-board the vehicle that is responsible for communication with commercial vehicle roadside checkstation facilities. The actual output mechanism used by the process shall be an implementation issue, but it could be by radio or beacon.

Manage Commercial Vehicle Tag Data Store (P-Spec 2.6.5)
Overview: This process shall be responsible for managing the store of data that is held by a commercial vehicle's on-board tag. It shall manage all of the transactions that either write data to the store and read data from it, to ensure that the data retains its consistency. The process shall ensure that the commercial vehicle manager or driver can only read the data that they are enabled to write to the store, and that the store only contains data from the last two roadside checkstation facilities passed by the commercial vehicle.

On-board CV Safety Equipment Package consists of:

Communicate Commercial Vehicle On-board Data to Roadside (P-Spec 2.4.1)
Overview: This process shall be responsible for providing the commercial vehicle end of the communications link between itself and a commercial vehicle roadside checkstation facility. The process shall enable an inspector at the facility or elsewhere to have access to the data accumulated on-board the vehicle for use in a vehicle inspection. It shall also enable the inspector to send back data about the result of the inspection for storage on-board the vehicle.

Collect On-board Commercial Vehicle Sensor Data (P-Spec 2.4.2)
Overview: This process shall be responsible for continuously monitoring the conditions on-board a commercial vehicle. These inputs shall be processed by sensors, and if required converted from analog into a digital form. The process shall load all collected into an on-board vehicle data store for use by other processes in the vehicle.

Analyze Commercial Vehicle On-board Data (P-Spec 2.4.3)
Overview: This process shall be responsible for analyzing the data collected on-board a commercial vehicle, and sending it to another process for loading into a store on-board the vehicle. If the analysis of the data carried out by the process shows that there is a critical safety problem, the process shall send data to the driver's interface process for output to the driver. The process shall also accept input of data from the commercial vehicle driver via the interface process and load it into the same store.

Provide Commercial Vehicle Driver Interface (P-Spec 2.4.4)
Overview: This process shall be responsible for providing the interface between the commercial vehicle driver and processes on-board the commercial vehicle. The process shall provide interfaces to the processes responsible for collecting, analyzing and storing data about the vehicle, its cargo, the driver, etc., and for the exchange of data with the commercial vehicle manager. The process shall support inputs from the driver in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

On-board Trip Monitoring Equipment Package consists of:

Provide Commercial Vehicle Driver Routing Interface (P-Spec 2.1.5)
Overview: This process shall be responsible for providing the communications interface through which a commercial vehicle driver can obtain details of the vehicle route that has been provided by the commercial vehicle manager. The process shall enable the output of the route instructions in audio and/or visual form. It shall be possible for the visual form to be either hardcopy output, or in the form of a display. The process shall retain the data for a particular route internally, so that successive requests for details of the same route do not require use of the communications network.

Provide Vehicle Static Route (P-Spec 2.2.2)
Overview: This process shall be responsible for providing a static commercial vehicle route using data provided by the commercial vehicle driver. A static route is one which is based on geographic data and therefore takes no account of current or predicted traffic conditions, incidents, etc. The process shall provide the route using its own route generation algorithms and data from its own store of digitized map information. In this instance the driver is assumed to be acting in the role of a commercial vehicle manager, and is therefore likely to be the owner/driver of the vehicle.

Provide Commercial Vehicle Driver Communications (P-Spec 2.2.4)
Overview: This process shall be responsible for providing communications between the commercial vehicle driver and the commercial vehicle. In this instance the driver is acting in the role of vehicle manager, and is therefore likely to be the owner/driver of the vehicle. The process shall support the receipt of data from the vehicle consisting of that processed from input received by sensors on board the vehicle The process shall enable access to the store of received data by the driver through the driver's interface process.

Communicate Commercial Vehicle On-board Data to Roadside (P-Spec 2.4.1)
Overview: This process shall be responsible for providing the commercial vehicle end of the communications link between itself and a commercial vehicle roadside checkstation facility. The process shall enable an inspector at the facility or elsewhere to have access to the data accumulated on-board the vehicle for use in a vehicle inspection. It shall also enable the inspector to send back data about the result of the inspection for storage on-board the vehicle.

Collect On-board Commercial Vehicle Sensor Data (P-Spec 2.4.2)
Overview: This process shall be responsible for continuously monitoring the conditions on-board a commercial vehicle. These inputs shall be processed by sensors, and if required converted from analog into a digital form. The process shall load all collected into an on-board vehicle data store for use by other processes in the vehicle.

Analyze Commercial Vehicle On-board Data (P-Spec 2.4.3)
Overview: This process shall be responsible for analyzing the data collected on-board a commercial vehicle, and sending it to another process for loading into a store on-board the vehicle. If the analysis of the data carried out by the process shows that there is a critical safety problem, the process shall send data to the driver's interface process for output to the driver. The process

shall also accept input of data from the commercial vehicle driver via the interface process and load it into the same store.

Provide Commercial Vehicle Driver Interface (P-Spec 2.4.4)
Overview: This process shall be responsible for providing the interface between the commercial vehicle driver and processes on-board the commercial vehicle. The process shall provide interfaces to the processes responsible for collecting, analyzing and storing data about the vehicle, its cargo, the driver, etc., and for the exchange of data with the commercial vehicle manager. The process shall support inputs from the driver in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Communicate Commercial Vehicle On-board Data to Vehicle Manager (P-Spec 2.4.5)
Overview: This process shall be responsible for providing the communications interface through which the commercial vehicle manager (or commercial vehicle driver acting in the role of the manager) can access the data stored on-board a commercial vehicle. The process shall also support the exchange of unformatted messages between the commercial vehicle manager and driver, and the ability of the driver to send the on-board data to the manager as an unsolicited data flow.

EM Emergency Management

Emergency Call-Taking Equipment Package consists of:

Identify Emergencies from Inputs (P-Spec 5.1.1)
Overview: This process shall enable existing emergency centers to receive the calls, determine response requirements (enough to determine what responding agencies to notify), and route distress calls to those predesignated responding agencies. This process shall provide the identified emergency information in a standard format as required. This process receives emergency requests from the general public, public safety agencies, and other service providers (e.g., a Mayday service provider). Every set of emergency data received shall be assigned a level of confidence by the process depending on its source, so that the subsequent processes can assess the level of response to be provided. This process shall include verification, in that it shall determine if a number of inputs might all be referring to the same incident, then designate that incident in its notifications to the most appropriate responding agencies. By reconciling numerous reports and other collaborative information from the field (e.g.,CCTV images, reports from field staff), the verification function confirms the existence, location, and nature of a reported emergency.

Communicate Emergency Status (P-Spec 5.1.3)
Overview: This process shall receive the emergency service response plans and the status of their implementation for dissemination to other ITS functions. That dissemination shall be subject to sanitization according to pre-arranged rules, implemented in this process. The process shall also read data about emergency responses from the emergency services action log. All data shall be communicated by the process in standard formats to travelers, drivers, and other ITS functions. In the case of in-vehicle, personal traveler, and transit emergencies, after each emergency becomes a verified incident, the data shall be sent as soon as new status or plan data is received. Dissemination shall be controlled according to rules determined in this process to limit the information transmitted to that information useful to the receiver. Emergency information that is received from the emergency telephone system or E911 operators, shall be disseminated only when the response plan data is first received. That has the effect of only disseminating data on incidents that have been verified, since only verified incidents will have response plans. The process shall also extract data from the emergency service action log on request from processes in other ITS functions, and from the emergency services operator. Communication to in-vehicle processes may include requests for additional information or a set of commands to the vehicle security system.

Provide Operator Interface for Emergency Data (P-Spec 5.2)
Overview: This process shall provide the emergency services operator with an interface to the other processes in the Manage Emergency Services function. The process shall enable the operator to review and update the data used to allocate emergency services to incidents, applying temporary overrides to current emergency service allocations to suit the special needs of a current incident, and requesting output of the log of emergency service actions. It shall also enable the output of a message showing the failure of an emergency vehicle dispatched in response to an incident. This output shall override all other outputs. The process shall support inputs from the emergency services operator in both manual and audio form, and shall provide its outputs in audible and visual forms. The visual output may appear in either hardcopy or as a display, or both, and an audible output shall accompany the emergency vehicle dispatch failure message.

Emergency Data Collection Equipment Package consists of:

Manage Emergency Services Data (P-Spec 5.6)
Overview: This process shall collect emergency service data, emergency vehicle management data, emergency vehicle data, and incident data. It shall distribute this data to the Manage Archive Data Request where it can be archived and accessed upon request or upon receipt of fresh data.

Emergency Dispatch Equipment Package consists of:

Provide Operator Interface for Emergency Data (P-Spec 5.2)
Overview: This process shall provide the emergency services operator with an interface to the other processes in the Manage Emergency Services function. The process shall enable the operator to review and update the data used to allocate emergency services to incidents, applying temporary overrides to current emergency service allocations to suit the special needs of a current incident, and requesting output of the log of emergency service actions. It shall also enable the output of a message showing the failure of an emergency vehicle dispatched in response to an incident. This output shall override all other outputs. The process shall support inputs from the emergency services operator in both manual and audio form, and shall provide its outputs in audible and visual forms. The visual output may appear in either hardcopy or as a display, or both, and an audible output shall accompany the emergency vehicle dispatch failure message.

Dispatch Vehicle (P-Spec 5.3.2)
Overview: This process shall direct selected emergency vehicles and drivers to respond to an incident, receive acknowledgment that they will in fact respond, and provide them with the location and details of the incident that was pre-calculated and sent to this process. If called for, the process shall send details to the Manage Traffic function to request

a traffic control preemption be provided for the vehicle(s) if that mode of priority is available and chosen. The data for the emergency vehicle driver shall be sent to the driver interface process.

Maintain Vehicle Status (P-Spec 5.3.6)
Overview: This process shall maintain a data store of the current status of all emergency vehicles available for dispatch and that have been dispatched. It shall provide data from the store on request from other processes and shall update the contents of the store with new data received from other processes. The process shall output the status of a vehicle to the process responsible for vehicle tracking for as long as it is on its way to an incident, to update ETA estimates and enable local vehicle priority to be given at intersections, if that mode of priority is chosen and granted.

Provide Emergency Vehicle Route (P-Spec 5.3.7)
Overview: This process shall calculate and assign emergency vehicle routes for incident assistance upon request.

Update Emergency Display Map Data (P-Spec 5.5)
Overview: This process shall provide updates to the store of digitized map data used as the background for displays of incidents and emergencies produced by processes in the Manage Emergency Services function. The process shall obtain the new data from a specialist data supplier or some other appropriate data source, on receiving an update request from the emergency system operator interface process within the Manage Emergency Services function.

Emergency Response Management Equipment Package consists of:

Determine Coordinated Response Plan (P-Spec 5.1.2)
Overview: This process shall determine the appropriate response for a verified emergency. This process shall classify, prioritize, and respond to verified emergencies accordingly. This process shall also determine the appropriate response plan and activate any remote controlled functions requested by a basic_vehicle terminator through the vehicle_security_ status data flow. A detailed description of the emergency, and any request for remote controlled emergency system activity, and any suggested response plan shall be sent to other processes for implementation. The same information shall also be forwarded to other emergency centers (other EM) for information and possible action.

Communicate Emergency Status (P-Spec 5.1.3)
Overview: This process shall receive the emergency service response plans and the status of their implementation for dissemination to other ITS functions. That dissemination shall be subject to sanitization according to pre-arranged rules, implemented in this process. The process shall also read data about emergency responses from the emergency services action log. All data shall be communicated by the process in standard formats to travelers, drivers, and other ITS functions. In the case of in-vehicle, personal traveler, and transit emergencies, after each emergency becomes a verified incident, the data shall be sent as soon as new status or plan data is received. Dissemination shall be controlled according to rules determined in this process to limit the information transmitted to that information useful to the receiver. Emergency information that is received from the emergency telephone system or E911 operators, shall be disseminated only when the response plan data is first received. That has the effect of only disseminating data on incidents that have been verified, since only verified incidents will have response plans. The process shall also extract data from the emergency service action log on request from processes in other ITS functions, and from the emergency services operator. Communication to in-vehicle processes may include requests for additional information or a set of commands to the vehicle security system.

Manage Emergency Response (P-Spec 5.1.4)
Overview: This process shall enable existing emergency centers to receive emergency calls, determine response requirements to the extent necessary to route the information, and route distress calls and emergency information to predesignated responding agencies and vehicles. All identified emergency information shall be provided by the process in a standard format as required. The process shall also communicate with commercial fleet managers to obtain details of cargo and other vehicle data where this will affect the response of the emergency services, e.g., in the case of a vehicle carrying a HAZMAT load. The current status of all emergency service responses shall be stored by the process in an action log, for access by the communications process.

Manage Emergency Service Allocation Store (P-Spec 5.1.5)
Overview: This process shall manage the store of data that defines the way in which the emergency service resources shall be deployed in response to emergencies. Deployment shall vary by certain criteria, such as, type of emergency, source of information, time of day, location, etc. Parameters to define this allocation shall be loaded into the data store following receipt from the process that provides the emergency services operator interface.

Provide Operator Interface for Emergency Data (P-Spec 5.2)
Overview: This process shall provide the emergency services operator with an interface to the other processes in the Manage Emergency Services function. The process shall enable the operator to review and update the data used to allocate emergency services to incidents, applying temporary overrides to current emergency service allocations to suit the special needs of a current incident, and requesting output of the log of emergency service actions. It shall also enable the output of a message showing the failure of an emergency vehicle dispatched in response to an incident. This output shall override all other outputs. The process shall support inputs from the emergency services operator in both manual and audio form, and shall provide its outputs in audible and visual forms. The visual output may appear in either hardcopy or as a display, or both, and an audible output shall accompany the emergency vehicle dispatch failure message.

Select Response Mode (P-Spec 5.3.1)
Overview: This process shall select the appropriate emergency services and their vehicle(s) to respond to incidents. The process shall determine the type and number of vehicles to be dispatched, and provide the vehicle(s) with information on the type and location of the incident. It shall request data about the vehicles that are available from the interface process to the data store of emergency vehicle status. Once the vehicle determination has been made, the status data shall be changed by the process, and incident data sent to the process responsible for the actual dispatch of the vehicle(s).

Assess Response Status (P-Spec 5.3.4)
Overview: This process shall assess the status of emergency vehicles that are responding to an incident. In making its

assessment, the process shall use data from the process managing a store of vehicle status, plus data from the emergency vehicle driver interface process. The process shall send the results of the assessment to the process responsible for managing emergency and emergency response information and update the store of vehicle status.

Update Emergency Display Map Data (P-Spec 5.5)
Overview: This process shall provide updates to the store of digitized map data used as the background for displays of incidents and emergencies produced by processes in the Manage Emergency Services function. The process shall obtain the new data from a specialist data supplier or some other appropriate data source, on receiving an update request from the emergency system operator interface process within the Manage Emergency Services function.

Mayday Support Equipment Package consists of:

Identify Emergencies from Inputs (P-Spec 5.1.1)
Overview: This process shall enable existing emergency centers to receive the calls, determine response requirements (enough to determine what responding agencies to notify), and route distress calls to those predesignated responding agencies. This process shall provide the identified emergency information in a standard format as required. This process receives emergency requests from the general public, public safety agencies, and other service providers (e.g., a Mayday service provider). Every set of emergency data received shall be assigned a level of confidence by the process depending on its source, so that the subsequent processes can assess the level of response to be provided. This process shall include verification, in that it shall determine if a number of inputs might all be referring to the same incident, then designate that incident in its notifications to the most appropriate responding agencies. By reconciling numerous reports and other collaborative information from the field (e.g.,CCTV images, reports from field staff), the verification function confirms the existence, location, and nature of a reported emergency.

Determine Coordinated Response Plan (P-Spec 5.1.2)
Overview: This process shall determine the appropriate response for a verified emergency. This process shall classify, prioritize, and respond to verified emergencies accordingly. This process shall also determine the appropriate response plan and activate any remote controlled functions requested by a basic_vehicle terminator through the vehicle_security_ status data flow. A detailed description of the emergency, and any request for remote controlled emergency system activity, and any suggested response plan shall be sent to other processes for implementation. The same information shall also be forwarded to other emergency centers (other EM) for information and possible action.

Communicate Emergency Status (P-Spec 5.1.3)
Overview: This process shall receive the emergency service response plans and the status of their implementation for dissemination to other ITS functions. That dissemination shall be subject to sanitization according to pre-arranged rules, implemented in this process. The process shall also read data about emergency responses from the emergency services action log. All data shall be communicated by the process in standard formats to travelers, drivers, and other ITS functions. In the case of in-vehicle, personal traveler, and transit emergencies, after each emergency becomes a verified incident, the data shall be sent as soon as new status or plan data is received. Dissemination shall be controlled according to rules determined in this process to limit the information transmitted to that information useful to the receiver. Emergency information that is received from the emergency telephone system or E911 operators, shall be disseminated only when the response plan data is first received. That has the effect of only disseminating data on incidents that have been verified, since only verified incidents will have response plans. The process shall also extract data from the emergency service action log on request from processes in other ITS functions, and from the emergency services operator. Communication to in-vehicle processes may include requests for additional information or a set of commands to the vehicle security system.

Process Mayday Messages (P-Spec 5.1.6)
Overview: This process shall receive mayday messages from vehicles and drivers, determine whether the mayday message indicates an emergency that requires the attention of public safety agencies, and forward mayday emergency data to the appropriate agency when assistance is required. The content of the data flow 'mayday emergency data' shall include all the key data from the incoming data flow 'emergency request details' and an agency ID indicating the mayday provider that received and processed the mayday message. While not depicted in the logical architecture, the process will also be heavily dependent on voice communications to better ascertain the nature and severity of the emergency and to report this information to the appropriate local agency. This process shall also receive and keep a historical log of signals sent in the tracking_vehicle data flow.

Provide Operator Interface for Emergency Data (P-Spec 5.2)
Overview: This process shall provide the emergency services operator with an interface to the other processes in the Manage Emergency Services function. The process shall enable the operator to review and update the data used to allocate emergency services to incidents, applying temporary overrides to current emergency service allocations to suit the special needs of a current incident, and requesting output of the log of emergency service actions. It shall also enable the output of a message showing the failure of an emergency vehicle dispatched in response to an incident. This output shall override all other outputs. The process shall support inputs from the emergency services operator in both manual and audio form, and shall provide its outputs in audible and visual forms. The visual output may appear in either hardcopy or as a display, or both, and an audible output shall accompany the emergency vehicle dispatch failure message.

EMMS Emissions Management

Emissions Data Collection Equipment Package consists of:

Manage Pollution Archive Data (P-Spec 1.5.9)
Overview: This process shall collect and store the pollution data being collected from sensors in the geographic area being served by the Manage Traffic function. The process shall integrate data from distributed roadside sensors (provided by another process) with that obtained directly from sensors looking at the general (wide area) environment.

Emissions Data Management Equipment Package consists of:

Provide Traffic Operations Personnel Pollution Data Interface (P-Spec 1.5.1)
Overview: This process shall provide the interface between the traffic operations personnel and the processes and data

stores used within the Manage Emissions facility of the Manage Traffic function. The process shall enable the personnel to access and update the pollution reference data used by other processes within the facility, and to access the pollution state data provided by those processes. The process shall support inputs from the traffic operations personnel. Where appropriate and/or requested by the traffic operations personnel, the process shall incorporate map data of the relevant part(s) of the surface street and freeway network served by the Manage Traffic function. The process shall obtain the map from a local data store, which it shall request to be updated by another process as and when required.

Process Pollution Data (P-Spec 1.5.2)
Overview: This process shall process the pollution data being collected from sensors in the geographic area being served by the Manage Traffic function. The process shall integrate data from distributed roadside sensors (provided by another process) with that obtained directly from sensors looking at the general (wide area) environment. The data shall be checked by the process against the pollution levels that have been set up as reference points. If the process finds that the detected levels of pollution exceed the reference levels it shall generate pollution warnings. The process shall send these warnings to other processes in the Manage Traffic function for output to drivers and travelers.

Update Pollution Display Map Data (P-Spec 1.5.3)
Overview: This process shall provide updates to the map data used in displays of pollution data produced by processes in the Manage Emissions facility of the Manage Traffic function. The process shall obtain the map data from a specialist map data supplier or some other appropriate data source, on receiving an update request from the traffic operations personnel interface process within the Manage Emissions facility.

Manage Pollution State Data Store (P-Spec 1.5.4)
Overview: This process shall manage the store of pollution state data in the Manage Emissions facility of the Manage Traffic function. The data in the store shall be that which has been received by the process from other processes within the facility. The process shall manage the data in the store to enable its contents to be available to other processes within the Manage Traffic function, and to traffic operations personnel, via an interface process within the Manage Emissions facility.

Manage Pollution Data Log (P-Spec 1.5.7)
Overview: This process shall manage the log of pollution data within the Manage Emissions facility of the Manage Traffic function. The process shall receive data for entry into the log from other processes within the facility. It shall also send the contents of the log to the Manage Archive Data function for use in planning future modifications to the ITS network.

Manage Pollution Reference Data Store (P-Spec 1.5.8)
Overview: This process shall manage the store of pollution reference data within the Manage Emissions facility of the Manage Traffic function. It shall make the contents of the store available to other processes within the facility that are responsible for emissions management, and on request to the traffic operations personnel interface process. The process shall accept updates to the stored data from the traffic operations personnel interface process.

EVS Emergency Vehicle Subsystem

On-board EV En Route Support Equipment Package consists of:

Track Vehicle (P-Spec 5.3.3)
Overview: This process shall manage information about the location of all emergency vehicles available for dispatch and that have been dispatched, and the ETA for vehicles en route. The process shall send this data to the store of emergency vehicle status data. If the vehicle is on its way to an emergency, as indicated by the received vehicle status, the process shall also send data to processes in the Manage Traffic function that will enable the vehicle to have whatever level and mode of priority is available and granted at traffic signals.

Provide Emergency Personnel Interface (P-Spec 5.3.5)
Overview: This process shall provide an interface for emergency personnel, through which data can be exchanged with other processes in the Manage Emergency Services function. It shall support the exchange of incident data to which responses are being made by emergency personnel. The process shall support inputs from emergency personnel in both audible and manual forms, with outputs being available in both audio or visual forms. The visual form may include display and hardcopy formats. Both inputs and outputs shall be provided in such a way that while alerting the driver to the information they contain, they shall in no way impair the driver's ability to operate the vehicle in a safe manner.

On-board EV Incident Management Communication Equipment Package consists of:

Provide Emergency Personnel Interface (P-Spec 5.3.5)
Overview: This process shall provide an interface for emergency personnel, through which data can be exchanged with other processes in the Manage Emergency Services function. It shall support the exchange of incident data to which responses are being made by emergency personnel. The process shall support inputs from emergency personnel in both audible and manual forms, with outputs being available in both audio or visual forms. The visual form may include display and hardcopy formats. Both inputs and outputs shall be provided in such a way that while alerting the driver to the information they contain, they shall in no way impair the driver's ability to operate the vehicle in a safe manner.

FMS Fleet and Freight Management

Fleet Administration Equipment Package consists of:

Provide Commercial Fleet Static Route (P-Spec 2.1.2)
Overview: This process shall be responsible for providing a static commercial vehicle route using data provided by the commercial vehicle manager. A static route is one which is based on geographic data and therefore takes no account of current or predicted traffic conditions, incidents, etc. The process shall provide the route using its own route generation algorithms and data from its own store of digitized map information.

Provide Fleet Manager Commercial Vehicle Communications (P-Spec 2.1.4)
Overview: This process shall be responsible for providing the communications interface and data storage facility for data

that is exchanged between the commercial vehicle manager and commercial vehicle drivers in their vehicles. The process shall support the receipt of data from the vehicle consisting of that processed from input received by sensors on board the vehicle and text data used to exchange general information with the driver. Only the output to the vehicle of the data that contains the general text message shall be supported by the process. The process shall enable access to the store of received data by the manager through the manager's interface process.

Manage Driver Instruction Store (P-Spec 2.1.6)
Overview: This process shall be responsible for managing the store of driver route instructions so that they can be loaded with data for retrieval by the commercial vehicle driver. The data for loading into the store shall be sent to the process from other processes in the Manage Commercial Vehicle Fleet Operations facility of the Manage Commercial Vehicles function. The process shall enable the data to comprise vehicle route data and vehicle load information, including the points along the route at which identified cargo is to be picked up and/or dropped off. The process shall support the retrieval of this data by the commercial vehicle driver through the driver's interface process.

Provide Commercial Vehicle Manager Tag Data Interface (P-Spec 2.6.1)
Overview: This process shall be responsible for providing an interface through which the commercial vehicle manager can set up the data in the tag on-board a commercial vehicle. The data that the process enables the manager to write to the tag will be that which identifies the carrier, driver and vehicle. The process shall also enable the manager to read this data from the tag, but shall not enable the reading of any other data from the tag. Data provided by the manager shall also be sent by the process to the tag the process that manages electronic credentials and tax filing for use by the manager in future enrollments. The process shall support inputs from the commercial vehicle manager in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Fleet Credentials and Taxes Management and Reporting Equipment Package consists of:

Manage Commercial Fleet Electronic Credentials and Tax Filing (P-Spec 2.1.1)
Overview: This process shall be responsible for providing the commercial vehicle manager with the ability to manage the activities of commercial vehicles. The process shall provide the capability for the manager to obtain commercial vehicle routes. When a route has been confirmed, the process shall enable the manager to enroll commercial vehicles for electronic clearance at roadside check station facilities, to process and pay for electronic credential and tax filing, to send tag data to the Provide Commercial Vehicle On-board Data facility, and to provide vehicle route instructions for use by the commercial vehicle driver. Periodically it shall also send reports about taxes that have been paid to the Administer Commercial Vehicles facility. The process shall also enable the manager to obtain commercial vehicle activity reports from the logs provided by roadside checkstation facilities. It shall be possible to obtain these reports either on request or at periodic intervals.

Provide Flt Mgr Electronic Credentials and Tax Filing Interface (P-Spec 2.1.3)
Overview: This process shall be responsible for providing an interface for the commercial vehicle manager. The process shall enable this interface to provide the manager with facilities for the input of data used to set up commercial vehicle routes, to pay the necessary taxes and duties so that a commercial vehicle can be enrolled for a particular route, to exchange general information messages with a driver in a vehicle, and to set up instructions for a driver to take a vehicle on a particular route. It shall be possible for the driver's route instructions input by the manager to include details of the cargo to be picked up and/or dropped off at each point along the route. The enrollment activity supported by the process shall enable a commercial vehicle to pass through the roadside checkstations along its route without stopping, unless safety checks are required. The process shall support inputs from the commercial vehicle manager in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be in hardcopy, or as a display.

Manage CV Electronic Credential and Tax Filing Interface (P-Spec 2.2.1)
Overview: This process shall be responsible for providing the commercial vehicle driver with the ability to manage the activities of a commercial vehicle. In this instance the driver is assumed to be acting in the role of a commercial vehicle manager, and is therefore probably the owner/driver of the vehicle. The process shall provide the capability for the driver to obtain commercial vehicle routes, to enroll commercial vehicles for electronic clearance at roadside check station facilities, and to process and pay for electronic credential and tax filing.

Provide Commercial Fleet Payment Instrument Interface (P-Spec 7.5.4)
Overview: This process shall be responsible for providing the interface through which credit identity or stored credit values may be collected from the tags used by commercial fleet managers. The process shall support the use of the tag data to complete payment for the filing of electronic credentials and tax information that will enable a commercial vehicle to be cleared to travel within the geographic area served by a particular jurisdictional authority. This process shall also enable the stored credit value to be debited as an alternative method of payment.

Fleet HAZMAT Management Equipment Package consists of:

Manage Commercial Fleet Electronic Credentials and Tax Filing (P-Spec 2.1.1)
Overview: This process shall be responsible for providing the commercial vehicle manager with the ability to manage the activities of commercial vehicles. The process shall provide the capability for the manager to obtain commercial vehicle routes. When a route has been confirmed, the process shall enable the manager to enroll commercial vehicles for electronic clearance at roadside check station facilities, to process and pay for electronic credential and tax filing, to send tag data to the Provide Commercial Vehicle On-board Data facility, and to provide vehicle route instructions for use by the commercial vehicle driver. Periodically it shall also send reports about taxes that have been paid to the Administer Commercial Vehicles facility. The process shall also enable the manager to obtain commercial vehicle activity reports from the logs provided by roadside checkstation facilities. It shall be possible to obtain these reports either on request or at periodic intervals.

Fleet Maintenance Management Equipment Package consists of:

Manage Driver Instruction Store (P-Spec 2.1.6)
Overview: This process shall be responsible for managing the store of driver route instructions so that they can be loaded

with data for retrieval by the commercial vehicle driver. The data for loading into the store shall be sent to the process from other processes in the Manage Commercial Vehicle Fleet Operations facility of the Manage Commercial Vehicles function. The process shall enable the data to comprise vehicle route data and vehicle load information, including the points along the route at which identified cargo is to be picked up and/or dropped off. The process shall support the retrieval of this data by the commercial vehicle driver through the driver's interface process.

Freight Administration and Management Equipment Package consists of:

Manage Cargo (P-Spec 2.7)

Overview: This process shall be responsible for providing facilities for the management of cargo shipments. The process shall enable these shipments to be routed via intermodal shippers and depots and may not need the services of a commercial vehicle manager or driver.

ISP Information Service Provider

Basic Information Broadcast Equipment Package consists of:

Provide Media System Traffic Data Interface (P-Spec 1.1.4.5)

Overview: This process shall provide the interface through which traffic and incident data can be output to the Media. The output shall comprise traffic and incident data that is suitable for output to the Media System as determined by traffic managers. This interface is only for the output of data that has been requested by the Media.

Provide Traffic Data Retrieval Interface (P-Spec 1.1.4.6)

Overview: This process shall provide customized sets of traffic data for broadcast, advisories, and personalized data to travelers, traveler information data archive, and the media. This process shall use the parameters in the data store 'traffic_data_retreival_parameters' to define exactly what data shall be retrieved as a result of each request. The process shall select the appropriate subset of traffic data which will be sent to each ITS function which is requesting data. The process shall accept traveler profiles for use in determining what personalized data to send to the traveler. The process shall send kiosk and personal traffic requests to the archival process.

Provide Transit Operations Data Distribution Interface (P-Spec 4.1.8)

Overview: This process shall provide customized sets of transit vehicle schedule deviations to travelers, the traveler information data archive, and to the media. The process shall only provide data to the media and data archive when prompted by the arrival of new deviation data in the transit_vehicle_operational_data store, which is maintained by another process in the Manage Transit function. The outputs shall be made available following a direct request from the other ITS function, or as part of a subscription process relating to a traveler's transit profile. The process shall obtain the required data from the process that manages the store of transit vehicle operating data. The process shall send kiosk and personal transit deviation requests to the archival process.

Provide Trip Planning Information to Traveler (P-Spec 6.1.1)

Overview: This process shall obtain all the information needed to fulfill the traveler's request for a trip. The process shall support the request for trips that require the use of one or more modes of transport, and shall use the preferences and constraints specified by the traveler in the trip request, plus data from the store of trip planning parameters, to select the most appropriate modes. It shall send details of the trip requirements to the specialized processes that provide route information for the different modes of transport. When route data is received back from these processes, this process shall ensure that the whole trip is covered by one coherent route for which all the data such as costs, arrival times, and modal change points are known. The information provided to the traveler by the process shall be sufficient to enable the traveler to understand the routing, modes and cost of the trip. The trip information shall be stored for possible use in subsequent trip confirmation. The process also includes parking lot data. This data is used in transactions requiring electronic payment of parking lot services, as well as for a traveler making a parking lot reservation. This process shall exchange all input and output data from and to the traveler with the appropriate traveler interface process. The traveler shall send parking lot data, traveler trip requests, and traveler current condition requests to the archival process.

Collect Traffic Data for Advisory Messages (P-Spec 6.2.1.1)

Overview: This process shall collect and fuse traffic data that will be used to create broadcast or advisory messages to travelers. The input data for this process shall consist of historical, current, and predicted traffic and planned event data. The process shall extract from the data those elements appropriate for advisory or broadcast messages and load it into the store of traveler_traffic_information_data store. The data can be provided to the process either via direct request from the process or as a result of periodic (unrequested) updates.

Collect Transit Data for Advisory Messages (P-Spec 6.2.1.3)

Overview: This process shall collect and fuse transit advisory data that will be used to create broadcast or advisory messages to travelers. The process shall extract from the data those elements appropriate for advisory or broadcast messages and load it into the traveler_transit_information_data store. The data can be provided to the process either via direct request from the process or as a result of periodic (unrequested) updates. The process shall fuse all the received data into a coherent set, which is loaded into a traveler_transit_information_data store for access by other processes.

Provide Traffic and Transit Broadcast Messages (P-Spec 6.2.1.4)

Overview: This process shall extract advisory data from stores of traveler traffic and transit information at locally determined intervals and send it out to drivers or transit users in vehicles as wide area broadcast messages. The content and rate of these messages shall be based upon parameters from the broadcast_parameters_data store, which is managed by the ISP operator.

Provide ISP Operator Broadcast Parameters Interface (P-Spec 6.2.1.5)

Overview: This process shall provide the interface through which the ISP operator can manipulate data in the broadcast_parameters_data store. The data, in this store, shall be used by another process to define the scope and rate of wide area broadcast messages to vehicles. The process shall provide the ISP operator with the ability to request parameter data output and/or update the data store with new parameter values.

Collect Yellow Pages Data (P-Spec 6.2.4)
Overview: This process shall collect and fuse data about (yellow pages) services in order to provide information to users in vehicles. The process shall fuse all the received yellow pages data into a coherent set and loaded into the yellow_pages_information_data store for access by processes in response to requests from users in vehicles.

Collect and Update Traveler Information (P-Spec 6.5.1)
Overview: This process shall collect and update data about incidents, road construction, weather, events and yellow pages data. This data shall be obtained by the process from other ITS functions and from outside sources such as the weather service, yellow pages service providers and the media. The process shall load the data into a local store for use by the process that provides yellow pages information and reservations.

Collect Price Data for ITS Use (P-Spec 7.4.2)
Overview: This process shall be responsible for collecting data about the prices being charged for tolls, parking lots and transit fares. This process shall accept data sent to it by the other processes when they have updated their data and automatically sent it, or this process shall request a transfer of data from the other processes. The process shall load the data into the price_data_for_services data store from which some or all of it can be read on request from processes in other ITS functions.

Infrastructure Provided Dynamic Ridesharing Equipment Package consists of:

Provide Trip Planning Information to Traveler (P-Spec 6.1.1)
Overview: This process shall obtain all the information needed to fulfill the traveler's request for a trip. The process shall support the request for trips that require the use of one or more modes of transport, and shall use the preferences and constraints specified by the traveler in the trip request, plus data from the store of trip planning parameters, to select the most appropriate modes. It shall send details of the trip requirements to the specialized processes that provide route information for the different modes of transport. When route data is received back from these processes, this process shall ensure that the whole trip is covered by one coherent route for which all the data such as costs, arrival times, and modal change points are known. The information provided to the traveler by the process shall be sufficient to enable the traveler to understand the routing, modes and cost of the trip. The trip information shall be stored for possible use in subsequent trip confirmation. The process also includes parking lot data. This data is used in transactions requiring electronic payment of parking lot services, as well as for a traveler making a parking lot reservation. This process shall exchange all input and output data from and to the traveler with the appropriate traveler interface process. The traveler shall send parking lot data, traveler trip requests, and traveler current condition requests to the archival process.

Confirm Traveler's Trip Plan (P-Spec 6.1.2)
Overview: This process shall confirm a trip previously requested by a traveler and any financial transactions that this may require. The process shall base the trip confirmation upon information created by the process responsible for trip planning and stored locally. Confirmation details shall be sent to specialized processes (such as those responsible for demand responsive transit, ridesharing, etc.) to make reservations for their services. The response to these reservation requests and any necessary payment transactions shall be sent to the traveler. This process shall exchange all input and output data to and from the traveler via the appropriate traveler interface process. The trip confirmation shall be sent to the archival process.

Provide ISP Operator Interface for Trip Planning Parameters (P-Spec 6.1.4)
Overview: This process shall manage the data store containing parameters used by the trip planning processes. These parameters shall govern the way in which multimodal trips are planned by other processes within Provide Trip Planning Services. This process shall accept inputs from the ISP Operator to define or update trip planning parameters. This process shall output these trip planning parameters to the ISP Operator.

Collect Yellow Pages Data (P-Spec 6.2.4)
Overview: This process shall collect and fuse data about (yellow pages) services in order to provide information to users in vehicles. The process shall fuse all the received yellow pages data into a coherent set and loaded into the yellow_pages_information_data store for access by processes in response to requests from users in vehicles.

Screen Rider Requests (P-Spec 6.4.1)
Overview: This process shall accept and screen traveler requests for ride-sharing. These requests shall be sent to the process as a result of trip plan requests received from travelers by other processes. This process shall use eligibility data from a local rideshare_data store, to screen travelers before they are matched with other travelers and to enable ridesharing for all or part of their proposed trips. Traveler rideshare requests and rideshare data from the rideshare_data data store shall be sent to the data archival process.

Match Rider and Provider (P-Spec 6.4.2)
Overview: This process shall match travelers for ridesharing trips. The process shall attempt to achieve a match by considering some or all of the following: the origin and destination of the traveler's proposed trip, any routing constraints, preferences specified by the traveler, compatibility of this rideshare with rideshares confirmed by other travelers, the requesting traveler's eligibility data, and traffic data obtained on request from the Manage Traffic function. The process shall consider the possible disbenefits to other travelers who will be part of the same rideshare when finding the rideshare best suited to the travelerÆs requirements. The process shall store data about selected rideshares in the rideshare_data store, and shall update the data when confirmation of the rideshare acceptance is received from another process.

Report Ride Match Results to Requestor (P-Spec 6.4.3)
Overview: This process shall report ridesharing match results to requesters. The data for the results shall be provided to this process by other processes responsible for assessing traveler eligibility, and the actual match with travelers in other rideshares. The process shall output data indicating a failure when either the data from the eligibility process shows a failure, or no ridesharing match can be found. The process shall also determine that no ridesharing match can be found if no match is found between the traveler's rideshare request and the rideshare data provided as input to it by another process. When a successful match is found, the process shall output the rideshare data to the process from which the traveler's request was received.

Confirm Traveler Rideshare Request (P-Spec 6.4.4)

Overview: This process shall confirm the traveler's rideshare match and initiate a payment transaction where appropriate. The process shall send the payment transaction data for action by a process in the Provide Electronic Payment Services function. The results of this transaction shall be sent by this process to the process providing the overall trip confirmation. Once a rideshare match is confirmed, this data is sent to the rideshare match process where it can be factored in to subsequent matches.

Calculate Vehicle Route (P-Spec 6.6.2.1)

Overview: This process shall calculate trip planning and real-time dynamic guidance routes for all types of vehicles. The route data provided by the process in response to requests from vehicles using infrastructure based in-vehicle guidance shall only contain data necessary for the vehicle to provide guidance (since the data is intended for use by an in-vehicle navigation unit). The route provided for trip planning purposes shall contain data in a form which can be presented to a user via display (or alternatively in audio form). The process shall select the route according to the data included in the route request. Data provided by the requesting process includes preferences and constraints. The process shall have the capability of using current and/or predicted conditions of the road network in route calculation. The process shall have the capability of including additional factors such as current or predicted weather in the calculation of route. If the process cannot find the data it needs in the route_segment_details_data store, it shall request the process responsible for providing route calculation data to obtain it from the appropriate source. The process shall have the capability of outputting routes for special priority vehicles to the Manage Traffic function so that signal preemption could be provided for the special priority vehicle. The process shall send details of routes for commercial vehicles with hazardous or unusual loads to the Manage Incidents function for monitoring (as a potential, or a planned event). Route guidance data and vehicle guidance route requests and acceptances shall be sent to the data archival process.

Provide Route Segment Data for Other Areas (P-Spec 6.6.2.3)

Overview: This process shall obtain from another ISP current or predicted data for road links that are outside the area served by the local supplier. This area, which may be defined on a geographic or jurisdictional basis, is the portion of the transportation network on which the ISP maintains real time information. Identification of which ISP to contact is based upon a store that maps a link to the ISP which maintains real time information about this link. If there is no map to another ISP in the data store, then the process will return default or static data for the link(s). This process shall also respond to similar requests from other ISPs for real time data on links within the local database.

Update Vehicle Route Selection Map Data (P-Spec 6.6.2.4)

Overview: This process shall provide the interface to map update providers, or other appropriate data sources, through which updates of the digitized map data can be obtained. The process shall request new data from the provider on request from the ISP operator interface process. The data received from the supplier shall be loaded into a the map_data_for_route_selection data store by the process in such a way that it can be easily used by the route selection process in determining vehicle routes, trip plannning, and on-line vehicle guidance.

Update Other Routes Selection Map Data (P-Spec 6.6.3)

Overview: This process shall provide the interface to a map update providers through which to obtain fresh updates of digitized map data used in identification of non-vehicle portions of routes. The process shall request new data from the provider on request from the ISP operator interface process. The data received from the supplier shall be loaded into the map_data_for_general_use data store by the process in such a way that it can be easily used by the route selection process in determining non-vehicle routes for use in on-line traveler guidance and trip planning.

Process Traveler Rideshare Payments (P-Spec 7.4.1.8)

Overview: This process shall be responsible for transacting payments for ridesharing that are required for the confirmation of a traveler's trip. The process shall start the transaction by receiving data from a process in the Provide Driver and Traveler Services function and shall send the data to the appropriate financial institution. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into a store of transaction records.

Infrastructure Provided Route Selection Equipment Package consists of:

Provide Traffic Data Retrieval Interface (P-Spec 1.1.4.6)

Overview: This process shall provide customized sets of traffic data for broadcast, advisories, and personalized data to travelers, traveler information data archive, and the media. This process shall use the parameters in the data store 'traffic_data_retreival_parameters' to define exactly what data shall be retrieved as a result of each request. The process shall select the appropriate subset of traffic data which will be sent to each ITS function which is requesting data. The process shall accept traveler profiles for use in determining what personalized data to send to the traveler. The process shall send kiosk and personal traffic requests to the archival process.

Provide Trip Planning Information to Traveler (P-Spec 6.1.1)

Overview: This process shall obtain all the information needed to fulfill the traveler's request for a trip. The process shall support the request for trips that require the use of one or more modes of transport, and shall use the preferences and constraints specified by the traveler in the trip request, plus data from the store of trip planning parameters, to select the most appropriate modes. It shall send details of the trip requirements to the specialized processes that provide route information for the different modes of transport. When route data is received back from these processes, this process shall ensure that the whole trip is covered by one coherent route for which all the data such as costs, arrival times, and modal change points are known. The information provided to the traveler by the process shall be sufficient to enable the traveler to understand the routing, modes and cost of the trip. The trip information shall be stored for possible use in subsequent trip confirmation. The process also includes parking lot data. This data is used in transactions requiring electronic payment of parking lot services, as well as for a traveler making a parking lot reservation. This process shall exchange all input and output data from and to the traveler with the appropriate traveler interface process. The traveler shall send parking lot data, traveler trip requests, and traveler current condition requests to the archival process.

Confirm Traveler's Trip Plan (P-Spec 6.1.2)

Overview: This process shall confirm a trip previously requested by a traveler and any financial transactions that this may require. The process shall base the trip confirmation upon information created by the process responsible for trip planning and stored locally. Confirmation details shall be sent to specialized processes (such as those responsible for demand

responsive transit, ridesharing, etc.) to make reservations for their services. The response to these reservation requests and any necessary payment transactions shall be sent to the traveler. This process shall exchange all input and output data to and from the traveler via the appropriate traveler interface process. The trip confirmation shall be sent to the archival process.

Provide Multimodal Route Selection (P-Spec 6.6.1)
Overview: This process shall manage the creation of multimodal routes (those with one or more modes in them) in response to travelerÆs trip or route requests. It shall support on-line route guidance for travelers using personal devices, route guidance for vehicles, selection of specialized vehicle based routes for other ITS functions, (such as Manage Emergency Services and Manage Commercial Vehicles), and selection of multimodal routes in response to trip planning requests from travelers. The multimodal routes provided by the process shall take account of the traveler's preferences and constraints. Constraints can include the access needs of those with disabilities. Preferences can include minimizing waiting time at modal interchange points, level of traveler security, or minimum cost. Trip requests, traveler route requests, and traveler route acceptances shall be sent to the data archival process.

Calculate Vehicle Route (P-Spec 6.6.2.1)
Overview: This process shall calculate trip planning and real-time dynamic guidance routes for all types of vehicles. The route data provided by the process in response to requests from vehicles using infrastructure based in-vehicle guidance shall only contain data necessary for the vehicle to provide guidance (since the data is intended for use by an in-vehicle navigation unit). The route provided for trip planning purposes shall contain data in a form which can be presented to a user via display (or alternatively in audio form). The process shall select the route according to the data included in the route request. Data provided by the requesting process includes preferences and constraints. The process shall have the capability of using current and/or predicted conditions of the road network in route calculation. The process shall have the capability of including additional factors such as current or predicted weather in the calculation of route. If the process cannot find the data it needs in the route_segment_details_data store, it shall request the process responsible for providing route calculation data to obtain it from the appropriate source. The process shall have the capability of outputting routes for special priority vehicles to the Manage Traffic function so that signal preemption could be provided for the special priority vehicle. The process shall send details of routes for commercial vehicles with hazardous or unusual loads to the Manage Incidents function for monitoring (as a potential, or a planned event). Route guidance data and vehicle guidance route requests and acceptances shall be sent to the data archival process.

Provide Vehicle Route Calculation Data (P-Spec 6.6.2.2)
Overview: This process shall update the data stores containing information which is used by the another process to calculate vehicle routes. This process shall also provide data about links (speed or travel times), and queues to be broadcast to vehicles (to support autonomous guidance with dynamic link updates). The process shall fuse link and queue data received from Manage Traffic sources with probe data received from vehicles under infrastructure based route guidance, or with probe data obtained from other sources (such as from an electronic toll collection system). The process shall obtain route segment data as requested data or as data received at periodic intervals from other ITS functions. The process shall have the capability to request data about route segments outside its own area by sending a data request to the process that provides the interface with other ISP's. Link addresses, mapped to other ISPs, will be maintained by this process and stored in the link_data_store. Usage of current road networks shall be sent to the data archival process.

Provide Route Segment Data for Other Areas (P-Spec 6.6.2.3)
Overview: This process shall obtain from another ISP current or predicted data for road links that are outside the area served by the local supplier. This area, which may be defined on a geographic or jurisdictional basis, is the portion of the transportation network on which the ISP maintains real time information. Identification of which ISP to contact is based upon a store that maps a link to the ISP which maintains real time information about this link. If there is no map to another ISP in the data store, then the process will return default or static data for the link(s). This process shall also respond to similar requests from other ISPs for real time data on links within the local database.

Update Vehicle Route Selection Map Data (P-Spec 6.6.2.4)
Overview: This process shall provide the interface to map update providers, or other appropriate data sources, through which updates of the digitized map data can be obtained. The process shall request new data from the provider on request from the ISP operator interface process. The data received from the supplier shall be loaded into a the map_data_for_route_selection data store by the process in such a way that it can be easily used by the route selection process in determining vehicle routes, trip plannning, and on-line vehicle guidance.

Provide ISP Operator Route Parameters Interface (P-Spec 6.6.2.5)
Overview: This process shall provide the interface through which the ISP operator can input and update route calculation parameters used by the Provide Driver and Traveler Services function. The process shall provide an interface through which the ISP operator can review and request update of map data. The operator shall be able to use the process to request digitized map updates from suppliers, request output of trip planning and route selection control parameters, or to update the control parameters in the route_selection_parameters data store. The process shall support inputs from the ISP operator in manual or audio form, and shall provide its outputs in audible or visual forms. It shall enable the visual output to be in hardcopy, and/or display.

Update Other Routes Selection Map Data (P-Spec 6.6.3)
Overview: This process shall provide the interface to a map update providers through which to obtain fresh updates of digitized map data used in identification of non-vehicle portions of routes. The process shall request new data from the provider on request from the ISP operator interface process. The data received from the supplier shall be loaded into the map_data_for_general_use data store by the process in such a way that it can be easily used by the route selection process in determining non-vehicle routes for use in on-line traveler guidance and trip planning.

Select Transit Route (P-Spec 6.6.4)
Overview: This process shall determine routes that are based on regular transit services. Routes shall be provided by the

process to travelers in response to trip planning and on-line personal guidance requests. The data provided by the process shall be different for the two types of requests since trip planning information will not need the detail that guidance data requires. The process shall base routes on the current state of the regular transit services using data obtained from processes in the Manage Transit function. It shall also respond to any preferences and constraints, such as those for travelers with special needs, that are specified in the route request. Data on the current use of transit routes in on-line guidance shall be provided by the process to the Manage Demand function to aid in demand management. This data on current use of the transit routes in on-line guidance is stored in the transit_mode_routes data store.

Select Other Routes (P-Spec 6.6.5)
Overview: This process shall determine routes, or portions of routes, not based on use of vehicles or regular transit services. Routes shall be provided by the process for travelers in response to trip planning, on-line personal guidance requests, and for data archival. Data provided by the process will be different for the two types of requests since the data for trip planning will not need the level of detail that guidance data requires. The process shall calculate its routes using digitized map data obtained and updated by another process. It shall make use of the alternative modes, (such as ferries, walking, cycling, etc.) that have been specified in the route request, and shall also take account of any preferences and constraints, (such as those for travelers with special needs). Data on current use of routes in on-line guidance shall be provided by the process to the Manage Demand function.

Infrastructure Provided Yellow Pages & Reservation Equipment Package consists of:

Provide Trip Planning Information to Traveler (P-Spec 6.1.1)
Overview: This process shall obtain all the information needed to fulfill the traveler's request for a trip. The process shall support the request for trips that require the use of one or more modes of transport, and shall use the preferences and constraints specified by the traveler in the trip request, plus data from the store of trip planning parameters, to select the most appropriate modes. It shall send details of the trip requirements to the specialized processes that provide route information for the different modes of transport. When route data is received back from these processes, this process shall ensure that the whole trip is covered by one coherent route for which all the data such as costs, arrival times, and modal change points are known. The information provided to the traveler by the process shall be sufficient to enable the traveler to understand the routing, modes and cost of the trip. The trip information shall be stored for possible use in subsequent trip confirmation. The process also includes parking lot data. This data is used in transactions requiring electronic payment of parking lot services, as well as for a traveler making a parking lot reservation. This process shall exchange all input and output data from and to the traveler with the appropriate traveler interface process. The traveler shall send parking lot data, traveler trip requests, and traveler current condition requests to the archival process.

Confirm Traveler's Trip Plan (P-Spec 6.1.2)
Overview: This process shall confirm a trip previously requested by a traveler and any financial transactions that this may require. The process shall base the trip confirmation upon information created by the process responsible for trip planning and stored locally. Confirmation details shall be sent to specialized processes (such as those responsible for demand responsive transit, ridesharing, etc.) to make reservations for their services. The response to these reservation requests and any necessary payment transactions shall be sent to the traveler. This process shall exchange all input and output data to and from the traveler via the appropriate traveler interface process. The trip confirmation shall be sent to the archival process.

Manage Multimodal Service Provider Interface (P-Spec 6.1.3)
Overview: This process shall collect data about services that are available to travelers from multimodal service providers. These suppliers shall be those that provide travel services that are not part of regular transit or demand responsive transit operations, e.g. heavy rail, and may not involve surface transportation, e.g. ferry and airline operations. The process shall provide data formatted for use as part of a traveler's multimodal trip, and shall support subsequent confirmation of any portion provided by the Multimodal Service Provider.

Provide Traffic and Transit Advisory Messages (P-Spec 6.2.1.2)
Overview: This process shall provide advisory data to users in vehicles (drivers or transit users) as a result of a request from the driver or transit user. (e.g. This process supports a request/response type of exchange with the user.) The advisory information is extracted from the data stores of traveler traffic and transit information. The process shall have the capability to filter the advisory data, read from the data stores, store so that the output only contains data that is relevant to the current location of the vehicle from which the request was made. When the user requests location specific data, the vehicle's location shall be provided to the process in the request message. Advisory data requests shall be sent to the data archival process.

Collect Yellow Pages Data (P-Spec 6.2.4)
Overview: This process shall collect and fuse data about (yellow pages) services in order to provide information to users in vehicles. The process shall fuse all the received yellow pages data into a coherent set and loaded into the yellow_pages_information_data store for access by processes in response to requests from users in vehicles.

Provide Yellow Pages Data and Reservations (P-Spec 6.2.6)
Overview: This process shall extract data from the yellow_pages_information_data store upon request for data from the driver or a transit user in a vehicle. The data read from the store may be filtered, by the process, so that output only contains that which is relevant to the current location of the vehicle. The process shall also enable the user to make reservations for yellow pages services from a vehicle. Yellow pages advisory requests shall be sent to the data archival process.

Collect and Update Traveler Information (P-Spec 6.5.1)
Overview: This process shall collect and update data about incidents, road construction, weather, events and yellow pages data. This data shall be obtained by the process from other ITS functions and from outside sources such as the weather service, yellow pages service providers and the media. The process shall load the data into a local store for use by the process that provides yellow pages information and reservations.

Provide Traveler Yellow Pages Information and Reservations (P-Spec 6.5.2)
Overview: This process shall provide information and reservation services obtained from yellow pages service providers.

The process shall provide the information and reservation data so that it can easily form part of a traveler's information request or trip planning activities. The process shall be able to request additional yellow pages information if the process cannot find the required data in the tourist_information data store. The process shall send requests for payment to a process in the Provide Electronic Payment Services function for action, and shall send the response back to the process from which the payment request was received. The traveler's yellow pages requests shall be sent to the data archival process.

Register Yellow Pages Service Providers (P-Spec 6.5.3)
Overview: This process shall register yellow pages service providers. The process shall accept requests for registration from the providers and shall pass the data to a process in the Provide Electronic Payment Services function for action. The process shall send the result of this action to the provider, and if successful, shall send a request for the process that manages the contents of the store of tourist information to request data from the provider. The details of the provider shall also be loaded into the store used by that process, so that data from the provider can readily be obtained in the future. This process shall perform updating of the yellow pages service provider details.

Provide Route Segment Data for Other Areas (P-Spec 6.6.2.3)
Overview: This process shall obtain from another ISP current or predicted data for road links that are outside the area served by the local supplier. This area, which may be defined on a geographic or jurisdictional basis, is the portion of the transportation network on which the ISP maintains real time information. Identification of which ISP to contact is based upon a store that maps a link to the ISP which maintains real time information about this link. If there is no map to another ISP in the data store, then the process will return default or static data for the link(s). This process shall also respond to similar requests from other ISPs for real time data on links within the local database.

Update Vehicle Route Selection Map Data (P-Spec 6.6.2.4)
Overview: This process shall provide the interface to map update providers, or other appropriate data sources, through which updates of the digitized map data can be obtained. The process shall request new data from the provider on request from the ISP operator interface process. The data received from the supplier shall be loaded into a the map_data_for_route_selection data store by the process in such a way that it can be easily used by the route selection process in determining vehicle routes, trip plannning, and on-line vehicle guidance.

Distribute Advanced Charges and Fares (P-Spec 7.1.6)
Overview: This process shall be responsible for receiving requests for advanced payment of tolls from the parking lot charge or transit fare collection facilities within the Provide Electronic Payment Services function. It shall pass the requests on to another process in the toll collection facility, and shall return transaction success or failure details to the requesting process. The process shall also receive requests for the advanced payment of parking lot charges and transit fares from the toll payment interface process. It shall send these requests to other processes in the Provide Electronic Payment Services function and when received, return the results to the toll payment interface process.

Distribute Advanced Tolls and Fares (P-Spec 7.2.6)
Overview: This process shall be responsible for receiving requests for advanced payment of parking lot charges from the toll or transit fare collection facilities within the Provide Electronic Payment Services function. It shall pass the requests on to another process in the Provide Electronic Parking Lot Payment facility, and shall return transaction success or failure details to the requesting process. The process shall also receive requests for the advanced payment of tolls and transit fares from the parking lot payment interface process. It shall send these requests to other processes in the Provide Electronic Payment Services function and when received, return the results to the Parking Lot payment interface process.

Distribute Advanced Tolls and Parking Lot Charges (P-Spec 7.3.2)
Overview: This process shall be responsible for receiving requests for advanced payment of transit fares from the toll and parking lot charge collection facilities within the Provide Electronic Payment Services function. It shall pass the advanced fare requests on to another process in the Process Electronic Transit Fare Payment facility, and when received, shall return transit success or failure details to the requesting process. The process shall also receive requests for advanced payment of tolls and parking lot charges from transit vehicle and roadside (transit stop) fare collection facilities. It shall send these requests to other processes in the Provide Electronic Payment Services function and when received, return the results to the requesting process.

Process Yellow Pages Services Provider Payments (P-Spec 7.4.1.2)
Overview: This process shall be responsible for transacting payments for the registration of other (yellow pages) service providers. The process shall be initiated by receiving data from a process in the Provide Driver and Traveler Services function and shall send the data to the financial institution. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into a store of transaction records.

Process Driver Map Update Payments (P-Spec 7.4.1.3)
Overview: This process shall be responsible for transacting payments from the driver for updates to the navigable map database in the vehicle. The process shall receive the transaction request data from a process in the Provide Driver and Traveler Services function and shall send the data to the financial institution for action. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into the payment_transaction_records data store.

Process Traveler Map Update Payments (P-Spec 7.4.1.4)
Overview: This process shall be responsible for transacting payments from the traveler for updates to the navigable map database carried in the personal device. The process shall receive the transaction request data from a process in the Provide Driver and Traveler Services function and shall send the data to the financial institution. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into the payment_transaction_records data store.

Process Traveler Trip and Other Services Payments (P-Spec 7.4.1.6)
Overview: This process shall be responsible for transacting advanced payments required for the confirmation of a trip by a traveler. Payments supported by the process shall comprise those for any tolls, parking lot charges, transit fares, or other (yellow pages) services that need to be paid for the trip to be confirmed. The process shall receive the transaction data from a process in the Provide Driver and Traveler Services function and shall send the data to the financial institution. Tolls, fares and parking lot charges are sent to the Route Traveler Advanced Payment function for processing. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into the payment_transaction_records data store.

Collect Price Data for ITS Use (P-Spec 7.4.2)
Overview: This process shall be responsible for collecting data about the prices being charged for tolls, parking lots and transit fares. This process shall accept data sent to it by the other processes when they have updated their data and automatically sent it, or this process shall request a transfer of data from the other processes. The process shall load the data into the price_data_for_services data store from which some or all of it can be read on request from processes in other ITS functions.

Route Traveler Advanced Payments (P-Spec 7.4.3)
Overview: This process shall be responsible for receiving a traveler's request for advanced payment (for tolls, parking lot charges, and/or transit fares) and routing it to the appropriate part of the Provide Electronic Payment Services function. The process shall also receive responses to the advanced payment requests and shall return them to the originating process.

Interactive Infrastructure Information Equipment Package consists of:

Provide Media System Traffic Data Interface (P-Spec 1.1.4.5)
Overview: This process shall provide the interface through which traffic and incident data can be output to the Media. The output shall comprise traffic and incident data that is suitable for output to the Media System as determined by traffic managers. This interface is only for the output of data that has been requested by the Media.

Provide Traffic Data Retrieval Interface (P-Spec 1.1.4.6)
Overview: This process shall provide customized sets of traffic data for broadcast, advisories, and personalized data to travelers, traveler information data archive, and the media. This process shall use the parameters in the data store 'traffic_data_retreival_parameters' to define exactly what data shall be retrieved as a result of each request. The process shall select the appropriate subset of traffic data which will be sent to each ITS function which is requesting data. The process shall accept traveler profiles for use in determining what personalized data to send to the traveler. The process shall send kiosk and personal traffic requests to the archival process.

Provide Transit Operations Data Distribution Interface (P-Spec 4.1.8)
Overview: This process shall provide customized sets of transit vehicle schedule deviations to travelers, the traveler information data archive, and to the media. The process shall only provide data to the media and data archive when prompted by the arrival of new deviation data in the transit_vehicle_operational_data store, which is maintained by another process in the Manage Transit function. The outputs shall be made available following a direct request from the other ITS function, or as part of a subscription process relating to a traveler's transit profile. The process shall obtain the required data from the process that manages the store of transit vehicle operating data. The process shall send kiosk and personal transit deviation requests to the archival process.

Provide Trip Planning Information to Traveler (P-Spec 6.1.1)
Overview: This process shall obtain all the information needed to fulfill the traveler's request for a trip. The process shall support the request for trips that require the use of one or more modes of transport, and shall use the preferences and constraints specified by the traveler in the trip request, plus data from the store of trip planning parameters, to select the most appropriate modes. It shall send details of the trip requirements to the specialized processes that provide route information for the different modes of transport. When route data is received back from these processes, this process shall ensure that the whole trip is covered by one coherent route for which all the data such as costs, arrival times, and modal change points are known. The information provided to the traveler by the process shall be sufficient to enable the traveler to understand the routing, modes and cost of the trip. The trip information shall be stored for possible use in subsequent trip confirmation. The process also includes parking lot data. This data is used in transactions requiring electronic payment of parking lot services, as well as for a traveler making a parking lot reservation. This process shall exchange all input and output data from and to the traveler with the appropriate traveler interface process. The traveler shall send parking lot data, traveler trip requests, and traveler current condition requests to the archival process.

Confirm Traveler's Trip Plan (P-Spec 6.1.2)
Overview: This process shall confirm a trip previously requested by a traveler and any financial transactions that this may require. The process shall base the trip confirmation upon information created by the process responsible for trip planning and stored locally. Confirmation details shall be sent to specialized processes (such as those responsible for demand responsive transit, ridesharing, etc.) to make reservations for their services. The response to these reservation requests and any necessary payment transactions shall be sent to the traveler. This process shall exchange all input and output data to and from the traveler via the appropriate traveler interface process. The trip confirmation shall be sent to the archival process.

Manage Multimodal Service Provider Interface (P-Spec 6.1.3)
Overview: This process shall collect data about services that are available to travelers from multimodal service providers. These suppliers shall be those that provide travel services that are not part of regular transit or demand responsive transit operations, e.g. heavy rail, and may not involve surface transportation, e.g. ferry and airline operations. The process shall provide data formatted for use as part of a traveler's multimodal trip, and shall support subsequent confirmation of any portion provided by the Multimodal Service Provider.

Provide ISP Operator Interface for Trip Planning Parameters (P-Spec 6.1.4)
Overview: This process shall manage the data store containing parameters used by the trip planning processes. These parameters shall govern the way in which multimodal trips are planned by other processes within Provide Trip Planning

Services. This process shall accept inputs from the ISP Operator to define or update trip planning parameters. This process shall output these trip planning parameters to the ISP Operator.

Provide Traffic and Transit Advisory Messages (P-Spec 6.2.1.2)
Overview: This process shall provide advisory data to users in vehicles (drivers or transit users) as a result of a request from the driver or transit user. (e.g. This process supports a request/response type of exchange with the user.) The advisory information is extracted from the data stores of traveler traffic and transit information. The process shall have the capability to filter the advisory data, read from the data stores, store so that the output only contains data that is relevant to the current location of the vehicle from which the request was made. When the user requests location specific data, the vehicle's location shall be provided to the process in the request message. Advisory data requests shall be sent to the data archival process.

Collect Yellow Pages Data (P-Spec 6.2.4)
Overview: This process shall collect and fuse data about (yellow pages) services in order to provide information to users in vehicles. The process shall fuse all the received yellow pages data into a coherent set and loaded into the yellow_pages_information_data store for access by processes in response to requests from users in vehicles.

Collect and Update Traveler Information (P-Spec 6.5.1)
Overview: This process shall collect and update data about incidents, road construction, weather, events and yellow pages data. This data shall be obtained by the process from other ITS functions and from outside sources such as the weather service, yellow pages service providers and the media. The process shall load the data into a local store for use by the process that provides yellow pages information and reservations.

Provide Multimodal Route Selection (P-Spec 6.6.1)
Overview: This process shall manage the creation of multimodal routes (those with one or more modes in them) in response to travelerÆs trip or route requests. It shall support on-line route guidance for travelers using personal devices, route guidance for vehicles, selection of specialized vehicle based routes for other ITS functions, (such as Manage Emergency Services and Manage Commercial Vehicles), and selection of multimodal routes in response to trip planning requests from travelers. The multimodal routes provided by the process shall take account of the traveler's preferences and constraints. Constraints can include the access needs of those with disabilities. Preferences can include minimizing waiting time at modal interchange points, level of traveler security, or minimum cost. Trip requests, traveler route requests, and traveler route acceptances shall be sent to the data archival process.

Provide Route Segment Data for Other Areas (P-Spec 6.6.2.3)
Overview: This process shall obtain from another ISP current or predicted data for road links that are outside the area served by the local supplier. This area, which may be defined on a geographic or jurisdictional basis, is the portion of the transportation network on which the ISP maintains real time information. Identification of which ISP to contact is based upon a store that maps a link to the ISP which maintains real time information about this link. If there is no map to another ISP in the data store, then the process will return default or static data for the link(s). This process shall also respond to similar requests from other ISPs for real time data on links within the local database.

Update Vehicle Route Selection Map Data (P-Spec 6.6.2.4)
Overview: This process shall provide the interface to map update providers, or other appropriate data sources, through which updates of the digitized map data can be obtained. The process shall request new data from the provider on request from the ISP operator interface process. The data received from the supplier shall be loaded into a the map_data_for_route_selection data store by the process in such a way that it can be easily used by the route selection process in determining vehicle routes, trip plannning, and on-line vehicle guidance.

Select Transit Route (P-Spec 6.6.4)
Overview: This process shall determine routes that are based on regular transit services. Routes shall be provided by the process to travelers in response to trip planning and on-line personal guidance requests. The data provided by the process shall be different for the two types of requests since trip planning information will not need the detail that guidance data requires. The process shall base routes on the current state of the regular transit services using data obtained from processes in the Manage Transit function. It shall also respond to any preferences and constraints, such as those for travelers with special needs, that are specified in the route request. Data on the current use of transit routes in on-line guidance shall be provided by the process to the Manage Demand function to aid in demand management. This data on current use of the transit routes in on-line guidance is stored in the transit_mode_routes data store.

Select Other Routes (P-Spec 6.6.5)
Overview: This process shall determine routes, or portions of routes, not based on use of vehicles or regular transit services. Routes shall be provided by the process for travelers in response to trip planning, on-line personal guidance requests, and for data archival. Data provided by the process will be different for the two types of requests since the data for trip planning will not need the level of detail that guidance data requires. The process shall calculate its routes using digitized map data obtained and updated by another process. It shall make use of the alternative modes, (such as ferries, walking, cycling, etc.) that have been specified in the route request, and shall also take account of any preferences and constraints, (such as those for travelers with special needs). Data on current use of routes in on-line guidance shall be provided by the process to the Manage Demand function.

Distribute Advanced Charges and Fares (P-Spec 7.1.6)
Overview: This process shall be responsible for receiving requests for advanced payment of tolls from the parking lot charge or transit fare collection facilities within the Provide Electronic Payment Services function. It shall pass the requests on to another process in the toll collection facility, and shall return transaction success or failure details to the requesting process. The process shall also receive requests for the advanced payment of parking lot charges and transit fares from the toll payment interface process. It shall send these requests to other processes in the Provide Electronic Payment Services function and when received, return the results to the toll payment interface process.

Distribute Advanced Tolls and Fares (P-Spec 7.2.6)
Overview: This process shall be responsible for receiving requests for advanced payment of parking lot charges from the toll or transit fare collection facilities within the Provide Electronic Payment Services function. It shall pass the requests on to another process in the Provide Electronic Parking Lot Payment facility, and shall return transaction success or failure details to the requesting process. The process shall also receive requests for the advanced payment of tolls and transit fares from the parking lot payment interface process. It shall send these requests to other processes in the Provide Electronic Payment Services function and when received, return the results to the Parking Lot payment interface process.

Distribute Advanced Tolls and Parking Lot Charges (P-Spec 7.3.2)
Overview: This process shall be responsible for receiving requests for advanced payment of transit fares from the toll and parking lot charge collection facilities within the Provide Electronic Payment Services function. It shall pass the advanced fare requests on to another process in the Process Electronic Transit Fare Payment facility, and when received, shall return transit success or failure details to the requesting process. The process shall also receive requests for advanced payment of tolls and parking lot charges from transit vehicle and roadside (transit stop) fare collection facilities. It shall send these requests to other processes in the Provide Electronic Payment Services function and when received, return the results to the requesting process.

Process Driver Map Update Payments (P-Spec 7.4.1.3)
Overview: This process shall be responsible for transacting payments from the driver for updates to the navigable map database in the vehicle. The process shall receive the transaction request data from a process in the Provide Driver and Traveler Services function and shall send the data to the financial institution for action. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into the payment_transaction_records data store.

Process Traveler Map Update Payments (P-Spec 7.4.1.4)
Overview: This process shall be responsible for transacting payments from the traveler for updates to the navigable map database carried in the personal device. The process shall receive the transaction request data from a process in the Provide Driver and Traveler Services function and shall send the data to the financial institution. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into the payment_transaction_records data store.

Process Traveler Trip and Other Services Payments (P-Spec 7.4.1.6)
Overview: This process shall be responsible for transacting advanced payments required for the confirmation of a trip by a traveler. Payments supported by the process shall comprise those for any tolls, parking lot charges, transit fares, or other (yellow pages) services that need to be paid for the trip to be confirmed. The process shall receive the transaction data from a process in the Provide Driver and Traveler Services function and shall send the data to the financial institution. Tolls, fares and parking lot charges are sent to the Route Traveler Advanced Payment function for processing. The process shall send the response from the financial institution to the requesting process and shall send details of the transaction to another process for entry into the payment_transaction_records data store.

Collect Price Data for ITS Use (P-Spec 7.4.2)
Overview: This process shall be responsible for collecting data about the prices being charged for tolls, parking lots and transit fares. This process shall accept data sent to it by the other processes when they have updated their data and automatically sent it, or this process shall request a transfer of data from the other processes. The process shall load the data into the price_data_for_services data store from which some or all of it can be read on request from processes in other ITS functions.

Route Traveler Advanced Payments (P-Spec 7.4.3)
Overview: This process shall be responsible for receiving a traveler's request for advanced payment (for tolls, parking lot charges, and/or transit fares) and routing it to the appropriate part of the Provide Electronic Payment Services function. The process shall also receive responses to the advanced payment requests and shall return them to the originating process.

ISP Advanced Integrated Control Support Equipment Package consists of:

Provide Vehicle Route Calculation Data (P-Spec 6.6.2.2)
Overview: This process shall update the data stores containing information which is used by the another process to calculate vehicle routes. This process shall also provide data about links (speed or travel times), and queues to be broadcast to vehicles (to support autonomous guidance with dynamic link updates). The process shall fuse link and queue data received from Manage Traffic sources with probe data received from vehicles under infrastructure based route guidance, or with probe data obtained from other sources (such as from an electronic toll collection system). The process shall obtain route segment data as requested data or as data received at periodic intervals from other ITS functions. The process shall have the capability to request data about route segments outside its own area by sending a data request to the process that provides the interface with other ISP's. Link addresses, mapped to other ISPs, will be maintained by this process and stored in the link_data_store. Usage of current road networks shall be sent to the data archival process.

ISP Data Collection Equipment Package consists of:

Collect Service Requests and Confirmation for Archive (P-Spec 6.1.5)
Overview: This process shall receive all traveler requests, such as requests for traffic and transit information, requests for current conditions such as weather, trip requests, guidance route requests, advisory requests, yellow page information requests, and service confirmations. These requests shall be stored in the service_req_and_confirm_data data store and output to the traveler information data archive. The process shall run when a new request or confirmation is received from an external source.

Manage Traveler Info Archive Data (P-Spec 6.1.6)
Overview: This process shall accept traveler information service requests and confirmations, parking management information, payment transaction data, rideshare requests, commercial and non-commercial probe data, route guidance data,

and origin/destination data, and store it in its local traveler info data archive data store, together with a catalog to describe the data. When requested by the Manage Archive Data function, this information will be sent to that function. The process shall also provide a control interface to the ISP Operator, responding with the status received from the requester of the archive. The process shall run when a request for data or a catalog is received from an external source, when a command is received from the ISP Operator, or when fresh data is received.

Collect Traffic Data for Advisory Messages (P-Spec 6.2.1.1)
Overview: This process shall collect and fuse traffic data that will be used to create broadcast or advisory messages to travelers. The input data for this process shall consist of historical, current, and predicted traffic and planned event data. The process shall extract from the data those elements appropriate for advisory or broadcast messages and load it into the store of traveler_traffic_information_data store. The data can be provided to the process either via direct request from the process or as a result of periodic (unrequested) updates.

Collect Payment Transaction Records (P-Spec 7.4.1.7)
Overview: This process shall be responsible for the collection and maintenance of a data store that contains transaction records for payments made for various services provided. The process shall load information into the payment_transaction_records data store for services comprising updates of map databases for drivers and travelers, registration of other (yellow pages) service providers (so that information about what they have to offer is available to travelers and transit users), advanced payment of tolls, parking lot charges, transit fares and other (yellow pages) services that form part of travelers' trips. The data shall be stored by the process with all references to the identity of the payment source, i.e., driver, traveler, commercial vehicle fleet manager, and any other payment information, removed.

ISP Probe Information Collection Equipment Package consists of:

Provide Vehicle Route Calculation Data (P-Spec 6.6.2.2)
Overview: This process shall update the data stores containing information which is used by the another process to calculate vehicle routes. This process shall also provide data about links (speed or travel times), and queues to be broadcast to vehicles (to support autonomous guidance with dynamic link updates). The process shall fuse link and queue data received from Manage Traffic sources with probe data received from vehicles under infrastructure based route guidance, or with probe data obtained from other sources (such as from an electronic toll collection system). The process shall obtain route segment data as requested data or as data received at periodic intervals from other ITS functions. The process shall have the capability to request data about route segments outside its own area by sending a data request to the process that provides the interface with other ISP's. Link addresses, mapped to other ISPs, will be maintained by this process and stored in the link_data_store. Usage of current road networks shall be sent to the data archival process.

Calculate Vehicle Probe Data for Guidance (P-Spec 6.6.2.6)
Overview: This process shall calculate route segment travel times from vehicle probe data. The probe data shall be accepted by the process from a variety of sources including toll collection points and vehicles receiving on-line infrastructure based guidance. The process shall be responsible for combining the data obtained from these sources and producing one set of route segment travel times or route segment speeds. The process shall indicate route segments for which no data, or insufficient data, is available (this indication could be by setting the link time or speed to zero). Vehicle guidance probe data shall be sent to the data archival process.

PIAS Personal Information Access

Personal Autonomous Route Guidance Equipment Package consists of:

Provide Personal Portable Device Autonomous Guidance (P-Spec 6.8.1.1.3)
Overview: This process shall provide autonomous on-line guidance when requested by the traveler from a personal portable device. It shall calculate the route using data obtained from a navigable map database stored in the traveler's personal portable device. Guidance shall be provided by the process in the form of actual instructions to the traveler, e.g. cross the road here, take the subway to a specific station. The process shall provide guidance for the shortest route, within the preferences and constraints specified by the traveler in the guidance request.

Provide Personal Portable Device Guidance Interface (P-Spec 6.8.1.2)
Overview: This process shall be responsible for providing a user interface for the traveler through which personal guidance can be delivered. The process shall enable the traveler to input data to request a a suitable route. This process shall be capable of supporting two types of route guidance: dynamic (infrastructure based guidance is provided to the personal protable device), and autonomous (the personal portable device uses only locally available data- there is no information provided by the infrastructure). The process shall also act as the interface for output of on-line guidance to the traveler. Mutlimodal routes shall be supported by the process. The process shall not provide on-line guidance until the route has been accepted by the traveler. For those forms of guidance that require an on-board map database, the process shall provide an interface through which the traveler may obtain and pay for an initial copy of the database plus updates when needed. The process shall support inputs from the traveler in either manual or audio form, and shall provide outputs in audible or visual forms. It shall enable the visual output to be either in hardcopy, or display. Both types of output shall be produced in such a way that in using them the traveler does not become a hazard to other travelers.

Update Traveler Navigable Map Database (P-Spec 6.8.1.4)
Overview: This process shall update the traveler's navigable database based on digitized data obtained from a map provider, or other appropriate data source. The update shall be initiated by the traveler through another process. The process shall have the capability to allow a financial transaction (to pay for the update) to be completed using processes in the Provide Electronic Payment Services function. When the new map data is received, it shall be loaded by the process into the traveler_map_database data store for use by other processes. The result of the update request (successful or not) shall be sent back to the traveler interface process for output to the traveler.

Update Traveler Personal Display Map Data (P-Spec 6.8.3.4)
Overview: This process shall provide updates to the digitized map data used as the background for displays on travelers'

personal devices. These displays include details of traffic, trip and travel information for use by travelers. The process shall obtain the new map data from a map provider process or some other appropriate data source on request from the traveler via the traveler interface process. The process shall load data into the map_data_for_traveler_personal_displays data store. The data will be compatible with the types of displays that are found on personal devices.

Personal Basic Information Reception Equipment Package consists of:

Provide Traveler with Personal Travel Information (P-Spec 6.8.3.2)

Overview: This process shall provide the traveler (using a personal device) with data about all requested trip, traffic, transit, other (yellow pages) services information, confirmation of any requested reservations, and payments made as part of confirmed trip plans. The data shall be sent by the process to an interface process which is responsible for its actual output to the traveler. This data shall include digitized map data to act as the background to the output when the data is shown in a suitable format. This process shall request data from other ITS functions or be sent it as a result of requests from another process.

Provide Traveler Personal Interface (P-Spec 6.8.3.3)

Overview: This process shall provide an interface in a personal device through which travelers can plan and confirm trips, as well as obtain current traffic and transit information. The process shall support trip planning and confirmation of other (yellow pages) services such as lodging, restaurants, theaters, and other tourist activities. The process shall be able to load in the traveler_personal_regular_data store frequently used information such as traveler identity (the owner of the personal device), home and work locations, etc. This will reduce the amount of input needed by the traveler for each trip request. The process shall also carry out input data verification and require input confirmation, with the traveler, before passing the data to other processes. The traveler's payment information and location (when traveler is using a portable device) shall be obtained by this process from other processes. The process shall support inputs from the traveler in both manual and audio form, and shall provide its outputs in audible and visual forms that are consistent with a personal device. This process shall include forms suitable for travelers with hearing and vision physical disabilities. The process shall display data for as long as required by the traveler and must enable viewing of previously output data. When used with a portable device, the process shall provide the traveler the option to filter the data (to be displayed) relevant to the travelers current location.

Personal Interactive Information Reception Equipment Package consists of:

Get Traveler Personal Request (P-Spec 6.8.3.1)

Overview: This process shall receive traveler requests from a personal device (portable, or non portable) then provide support for trip planning, traffic, transit and other (yellow pages) services information, trip confirmation, yellow pages services confirmation, and payment requests. The process shall send these requests to the appropriate processes within the Provide Driver and Traveler Services function for further processing to generate responses. The interface to the traveler shall be provided through a separate process, from which input to this process originates.

Provide Traveler with Personal Travel Information (P-Spec 6.8.3.2)

Overview: This process shall provide the traveler (using a personal device) with data about all requested trip, traffic, transit, other (yellow pages) services information, confirmation of any requested reservations, and payments made as part of confirmed trip plans. The data shall be sent by the process to an interface process which is responsible for its actual output to the traveler. This data shall include digitized map data to act as the background to the output when the data is shown in a suitable format. This process shall request data from other ITS functions or be sent it as a result of requests from another process.

Provide Traveler Personal Interface (P-Spec 6.8.3.3)

Overview: This process shall provide an interface in a personal device through which travelers can plan and confirm trips, as well as obtain current traffic and transit information. The process shall support trip planning and confirmation of other (yellow pages) services such as lodging, restaurants, theaters, and other tourist activities. The process shall be able to load in the traveler_personal_regular_data store frequently used information such as traveler identity (the owner of the personal device), home and work locations, etc. This will reduce the amount of input needed by the traveler for each trip request. The process shall also carry out input data verification and require input confirmation, with the traveler, before passing the data to other processes. The traveler's payment information and location (when traveler is using a portable device) shall be obtained by this process from other processes. The process shall support inputs from the traveler in both manual and audio form, and shall provide its outputs in audible and visual forms that are consistent with a personal device. This process shall include forms suitable for travelers with hearing and vision physical disabilities. The process shall display data for as long as required by the traveler and must enable viewing of previously output data. When used with a portable device, the process shall provide the traveler the option to filter the data (to be displayed) relevant to the travelers current location.

Provide Personal Payment Instrument Interface (P-Spec 7.5.3)

Overview: This process shall be responsible for providing the interface through which credit identity or stored credit may be collected from the tag being used by a traveler with a personal device. The process shall support the collection of this data from any location in which the device (and hence the tag) is being used. It shall provide an interface through which the credit identity can be used for the payment of advanced tolls, parking lot charges, transit fares, display updates, and/or map updates. The process shall also enable the stored credit value on the tag to be used for the same purposes.

Personal Location Determination Equipment Package consists of:

Process Personal Portable Device Location Data (P-Spec 6.8.1.3)

Overview: This process shall provide the traveler's current location. It shall calculate the location from one or more sources of position data such as GPS or DGPS, and shall refine its calculations using techniques such as map matching, dead reckoning, etc. The process shall provide the location to the to other processes for use in autonomous and dynamic guidance. This location should be precise as is practical within cost and technology constraints. It is intended for use by traveler personal navigation and guidance systems, as well as emergency notification systems.

Appendix H: Subsystem and Equipment Package Functional Summary

Personal Mayday I/F Equipment Package consists of:

Provide Traveler Emergency Message Interface (P-Spec 6.8.1.5)

Overview: This process shall provide an emergency notification interface for a traveler using a personal portable device. The emergency notification interface shall enable the output of messages generated by a traveler's emergency request to another process.

Build Traveler Personal Security Message (P-Spec 6.8.2.1)

Overview: This process shall respond to the input of a request from a traveler for action by the emergency services. Input of the request shall be received by the process from the traveler via a panic button or some other functionally similar form of input device provided as part of the traveler's personal portable device. When the input is received, the process shall send a message to the communications process, containing the traveler's current location and identity.

Provide Traveler Emergency Communications Function (P-Spec 6.8.2.2)

Overview: This process shall prepare and send an emergency message from a traveler's personal portable device to the Manage Emergency Services function. The message shall only be sent by the process in response to data received from another process that monitors traveler inputs. Once an emergency message has been sent, the process shall send a message to that effect to another process for output to the traveler. The process shall then await a response from the Manage Emergency Services function, and when received again send a message to the other process for output to the traveler. Output of the emergency message to the Manage Emergency Services function shall be repeated by the process at regular intervals until a response is received.

Personal Provider-Based Route Guidance Equipment Package consists of:

Determine Personal Portable Device Guidance Method (P-Spec 6.8.1.1.1)

Overview: This process shall act as the interface for personal guidance requests received from travelers with personal portable devices. The process shall select the best method for personal guidance based on data in the traveler's request Two methods shall be available to the process, comprising dynamic infrastructure based guidance is provided to the personal portable device), and autonomous (the personal portable device uses only locally available data- there is no information provided by the infrastructure) If the communications link to the central source fails, the process shall use the last set of guidance data that was received, and if this is not sufficient for the traveler to reach the requested destination, automatically revert to the use of autonomous guidance using local data only.

Provide Personal Portable Device Dynamic Guidance (P-Spec 6.8.1.1.2)

Overview: This process shall enable dynamic traveler guidance data to be calculated. The process shall base its guidance request on the data input by the traveler from a personal portable device through other processes, and on the traveler's current location as provided by another process.

Provide Personal Portable Device Guidance Interface (P-Spec 6.8.1.2)

Overview: This process shall be responsible for providing a user interface for the traveler through which personal guidance can be delivered. The process shall enable the traveler to input data to request a a suitable route. This process shall be capable of supporting two types of route guidance: dynamic (infrastructure based guidance is provided to the personal protable device), and autonomous (the personal portable device uses only locally available data- there is no information provided by the infrastructure). The process shall also act as the interface for output of on-line guidance to the traveler. Mutlimodal routes shall be supported by the process. The process shall not provide on-line guidance until the route has been accepted by the traveler. For those forms of guidance that require an on-board map database, the process shall provide an interface through which the traveler may obtain and pay for an initial copy of the database plus updates when needed. The process shall support inputs from the traveler in either manual or audio form, and shall provide outputs in audible or visual forms. It shall enable the visual output to be either in hardcopy, or display. Both types of output shall be produced in such a way that in using them the traveler does not become a hazard to other travelers.

Update Traveler Navigable Map Database (P-Spec 6.8.1.4)

Overview: This process shall update the traveler's navigable database based on digitized data obtained from a map provider, or other appropriate data source. The update shall be initiated by the traveler through another process. The process shall have the capability to allow a financial transaction (to pay for the update) to be completed using processes in the Provide Electronic Payment Services function. When the new map data is received, it shall be loaded by the process into the traveler_map_database data store for use by other processes. The result of the update request (successful or not) shall be sent back to the traveler interface process for output to the traveler.

Provide Traveler Personal Interface (P-Spec 6.8.3.3)

Overview: This process shall provide an interface in a personal device through which travelers can plan and confirm trips, as well as obtain current traffic and transit information. The process shall support trip planning and confirmation of other (yellow pages) services such as lodging, restaurants, theaters, and other tourist activities. The process shall be able to load in the traveler_personal_regular_data store frequently used information such as traveler identity (the owner of the personal device), home and work locations, etc. This will reduce the amount of input needed by the traveler for each trip request. The process shall also carry out input data verification and require input confirmation, with the traveler, before passing the data to other processes. The traveler's payment information and location (when traveler is using a portable device) shall be obtained by this process from other processes. The process shall support inputs from the traveler in both manual and audio form, and shall provide its outputs in audible and visual forms that are consistent with a personal device. This process shall include forms suitable for travelers with hearing and vision physical disabilities. The process shall display data for as long as required by the traveler and must enable viewing of previously output data. When used with a portable device, the process shall provide the traveler the option to filter the data (to be displayed) relevant to the travelers current location.

PMS Parking Management

Parking Coordination Equipment Package consists of:

Coordinate Other Parking Data (P-Spec 1.2.5.2)

Overview: This process shall process shall continuously communicate and exchange data with parking operators and systems. The exchange of data shall be triggered by either a request from a remote Parking Management Subsystem for data from the operators or systems the Provide Electronic Payment function belongs, or because data needs to be sent from the local Parking Management Substystem to another remote Parking Management Subsystem. This data shall include parking lot state, parking price information, parking availability, etc.

Determine P+R needs for Transit Management (P-Spec 1.2.5.4)

Overview: This process shall be responsible for calculating the need for transit services to provide a park and ride (P+R) operation at a parking lot. This calculation shall be based on the rate of change of the current parking lot occupancy. The results of the calculation shall be sent to the Manage Transit function in the form of a request for an additional (or reduced) level of service, depending on demand at the parking lot. The results of the request shall also be passed to other processes within the function.

Update Parking Lot Data (P-Spec 7.2.1.7)

Overview: This process shall be responsible for maintaining a store of data containing the parking lot charges, which may vary according to the type of vehicle. The process shall also act as the interface to the parking service provider to enable changes to be made to the stored data, for the output and input of responses to parking lot price change requests from the Manage Traffic function, and for requests for parking lot price data from the Centralized Payments facility. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Parking Data Collection Equipment Package consists of:

Manage Parking Archive Data (P-Spec 1.2.5.5)

Overview: This process shall obtain parking lot availability and charge data and distribute it to the Manage Archive Data function. The process shall run when a request for data is received from an external source.

Parking Electronic Payment Equipment Package consists of:

Process Parking Lot Violations (P-Spec 5.4.3)

Overview: This process shall manage the details of parking lot payment violations reported by the Provide Electronic Payment Services function. The process shall use the parameters in the store of parking lot violation (enforcement) data to obtain the vehicle registration data from the appropriate State Department of Motor Vehicles (DMV) office (or alternate source) for vehicles that are not equipped with a tag, before sending all of the received information to the correct law enforcement agency. This process shall also maintain the store of parking lot violation (enforcement) data, entering all information received from other processes.

Read Parking Lot Tag Data (P-Spec 7.2.1.1)

Overview: This process shall be responsible for requesting the data from the parking lot tag being carried on-board the vehicle and used as the payment instrument being read. If there is no tag or the data it contains cannot be properly read, the process shall send a message for the vehicle to pull in for output by another process, and send a request to other processes to obtain an image of the vehicle. If there is no entry time data on the tag, then the process shall re-write this data plus the number of the entry lane onto the tag, so that it can be used as the mechanism for charging for the use of the parking lot. If the entry time is present, the process shall combine it with the vehicle characteristics, e.g., size, type, etc. to form the data upon which the parking lot payment transaction can be based, and send it to another process.

Determine Advanced Charges (P-Spec 7.2.1.10)

Overview: This process shall be responsible for receiving a request to pay an advanced parking lot charge. It shall obtain the required parking lot charge from a data store and shall then forward the data to the billing processes. The store of parking lot charges shall be maintained by another process.

Calculate Vehicle Parking Lot Charges (P-Spec 7.2.1.2)

Overview: This process shall be responsible for calculating the parking lot charge for the detected vehicle based on its characteristics and data obtained from the tag being carried by the vehicle. The process shall obtain the cost of the use of the parking lot by reading data from a store that contains the standard prices for parking lot charges.

Collect Bad Charge Payment Data (P-Spec 7.2.1.3)

Overview: This process shall be responsible for maintaining a data store containing a list of invalid driver credit identities. The process shall use this data to check credit identities provided for checking by the billing process. This checking shall ensure that the current parking lot payment transaction is using a credit identity that has not previously had an invalid transaction. Details of possible invalid credit identities shall be sent by the process to the financial institution for verification. The process shall also receive from the financial institution details of invalid payment instrument data that has been found by other means.

Check for Advanced Parking Lot Payment (P-Spec 7.2.1.4)

Overview: This process shall be responsible for checking to see if the required parking lot charge payment has already been made. The process shall determine the existence of an advanced payment for the parking lot charges by comparing the received payment information with that in the store containing the list of advanced payments. If the payment has already been made then the process shall remove the requirement for local billing and remove the record of the advanced payment from the store. Details of each payment transaction shall be sent by the process to another process with the payment information received from the driver removed.

Bill Driver for Parking Lot Charges (P-Spec 7.2.1.5)

Overview: This process shall be responsible for either obtaining payment for the current or advanced parking lot charge. The process shall achieve this either by requesting that the charge be deducted from the credit being stored by the parking lot tag that is acting as the payment instrument, or informing the driver that payment for the charge will be debited from

the credit identity provided by the tag. Before sending data to the tag, the process shall check that either the credit identity is not already in the list of bad payers, or the stored credit is not less that the parking lot charge. If either of these conditions is true the process shall obtain an image of the driver and vehicle which can be forwarded to the appropriate enforcement agency via another process. When the appropriate payment transaction has been completed, the parking lot entry time data shall be cleared from the tag so that it can be used for the next visit by the vehicle to a parking lot. The tag may be in the form of some type of credit or debit card, or an electronic purse. Details of the transaction shall always be sent to the process that manages parking lot transactions which will also send details to the financial institution if a credit or debit card is involved. Where an advanced parking lot charge payment is identified, no action is taken if the credit identity is on the bad payers list, or the stored credit is less than the charge, other than the payment is not confirmed.

Manage Parking Lot Financial Processing (P-Spec 7.2.1.6)
Overview: This process shall be responsible for maintaining a log of all transactions that are carried out by other processes in the Process Electronic Parking Lot Payment facility. The identity of the payee shall have been removed from the data before it is stored. At periodic intervals the process shall output the accumulated records to another process in the Provide Electronic Payment Services function. It shall also output the same data on request to the parking operator, either in hardcopy form, or as a visual display. The process shall be responsible for sending details of transactions to the financial institution to enable the users to be billed through their credit identities. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Update Parking Lot Data (P-Spec 7.2.1.7)
Overview: This process shall be responsible for maintaining a store of data containing the parking lot charges, which may vary according to the type of vehicle. The process shall also act as the interface to the parking service provider to enable changes to be made to the stored data, for the output and input of responses to parking lot price change requests from the Manage Traffic function, and for requests for parking lot price data from the Centralized Payments facility. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Register for Advanced Parking Lot Payment (P-Spec 7.2.1.8)
Overview: This process shall be responsible for responding to requests for parking lot charges to be paid in advance. It shall provide the parking operator with the opportunity to deny the request for advanced payment of a parking lot charge. If approved, the advanced parking lot charge data shall be forwarded by the process to other processes for the actual cost to be obtained and the payment transactions initiated.

Produce Parking Lot Displays (P-Spec 7.2.2)
Overview: This process shall be responsible for driving the displays that tell vehicles whether or not their parking lot charge payment has been confirmed or rejected. The process shall receive the data for output via the displays from other processes. The data input and output formats shall use an appropriate form of display that shall be easily readable under all lighting conditions and over the range of speeds that vehicles are expected to use when entering or leaving a parking lot. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Obtain Parking Lot Violator Image (P-Spec 7.2.3)
Overview: This process shall be responsible for obtaining an image of a violator for use by other processes. The form of the image data obtained by this process shall be very accurate so that there can be no mistake of the determination of the identity of the vehicle and/or driver, and shall be easily passed on by the other processes to the appropriate law enforcement agency(ies) so that punitive action may be taken. The process shall be capable of obtaining an image of the required accuracy under all lighting conditions and over the range of speeds with which vehicles will enter or leave parking lots.

Detect Vehicle for Parking Lot Payment (P-Spec 7.2.5)
Overview: This process shall be responsible for producing a vehicle's characteristics from data received by sensors located at or near the parking lot entry and exit lanes. The data shall be sent by the process to another process in a form suitable for use in calculating the parking lot charge for the vehicle. The process shall ensure that the data includes such things as vehicle size, type, identifiable features, etc.

Parking Management Equipment Package consists of:

Determine Parking Lot State (P-Spec 1.2.5.1)
Overview: This process shall implement the selected control strategies on some or all of the parking lots in the surface street and freeway network served by the Manage Traffic function. It shall use the current parking lot occupancy provided by another process to determine the parking lot state to be used in sign settings implemented by other processes in the function, when this is not subject to a strategy override. The parking lot state shall be determined using threshold occupancy values contained in the static data provided by the Plan System Deployment function. Fixed thresholds for the states: 'full', 'almost full' and 'available' are in the data flow 'static_data_for_parking_lots'. In addition, threshold transitions can depend on whether the actual occupancy of the lot is increasing or decreasing, allowing hysteresis in the parking lot state transitions, so as to control jitter between parking lot states. The process shall also provide the current parking lot occupancy to other processes in the function.

Provide Parking Lot Operator Interface (P-Spec 1.2.5.3)
Overview: This process shall provide the interface to a local parking lot operator that controls the use of the lot. The operator shall provide inputs of occupancy and/or the current lot state to this process. This process shall provide the operator with outputs that request a change to the lot state, which the operator shall implement by activating local dynamic message signs (DMS) and controlling the use of entry/exit barriers, and data about transit services that provide a park and ride (P+R) operation to be output through local DMS.

Manage Parking Lot Reservations (P-Spec 7.2.1.9)
Overview: This process shall be responsible for maintaining a store of parking lot data. This data shall cover the capacity of the parking lot, i.e., the maximum number of spaces available, which may vary according to the type of vehicle. The process shall also act as the interface for inquiries from other ITS functions both for details of parking lot capacity, both

now and in the future and for the reservation of spaces as part of travelers' confirmed trips. The parking lot data also contains data on the hours of operation of parking lots. This data is used in transactions requiring electronic payment of parking lot services, as well as for a traveler making a parking lot reservation.

Parking Surveillance Equipment Package consists of:

Calculate Parking Lot Occupancy (P-Spec 1.2.5.6)

Overview: This process shall calculate the occupancy of a parking lot based on processed traffic sensor data provided by other processes within the Manage Traffic function. The process shall use the static data for parking lots to determine the part(s) of the supplied data that apply to its entry and exit lanes, so that the numbers of vehicles entering and leaving can be calculated. These calculated flows shall be used by the process to generate the current parking lot occupancy.

Detect Vehicle for Parking Lot Payment (P-Spec 7.2.5)

Overview: This process shall be responsible for producing a vehicle's characteristics from data received by sensors located at or near the parking lot entry and exit lanes. The data shall be sent by the process to another process in a form suitable for use in calculating the parking lot charge for the vehicle. The process shall ensure that the data includes such things as vehicle size, type, identifiable features, etc.

RS Roadway Subsystem

Advanced Rail Crossing Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)

Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Detect Roadway Events (P-Spec 1.6.1.1)

Overview: This process is responsible for monitoring local sensor data obtained from traffic surveillance and then determining and reporting the current state of all traffic in the HRI vicinity. The process provides triggers for other processes within Manage HRI Traffic Volume. It also monitors the device controls as they are initiated by the Activate HRI

Provide HSR Device Controls (P-Spec 1.6.1.2.4)

Overview: This process is responsible for initiating the activation of HRI devices, barriers and other special safety features for High Speed Rail at active vehicular and pedestrian grade crossings. This process responds to requests sent by the Control HRI Traffic Signals process based on detection of an oncoming train. This process sends command information to the Manage Device Control containing control signals and commands that are unique to the HSR functions, such as trapped vehicle detection. State information is also sent to the Maintain Device State process to monitor the last known state of

Generate Alerts and Advisories (P-Spec 1.6.1.4.1)

Overview: This process is responsible for generating the messages to advise and protect motorists, travelers and train crews approaching and crossing railroad grade crossings. Based on the severity of the hazard condition sent by the Detect HRI Hazards process this process will either send an hri_advisory command for non-time critical data or an hri_alert command for time critical data to the Report Alerts and Advisories. These users that will receive these messages include drivers,

Report Alerts and Advisories (P-Spec 1.6.1.4.3)

Overview: This process is responsible for reporting real-time HRI traffic volume advisories and real-time highway traffic alerts. Depending on the input received from the Generate Alerts and Advisories process, this process sends alerts or advisories to a train to describe the operational status of the intersection and alerts about any hazards. This process also sends the commands to Output Control Data for Roads process that will control the dynamic message signs in the area of an HRI to display the appropriate alert or advisory. Messages for local beacon broadcast are processed and sent to the Report

Detect HRI Hazards (P-Spec 1.6.1.5)

Overview: This process is responsible for detecting real-time HRI blockages or collisions in the vicinity of an HRI that create a blockage or other hazard at the HRI. Based upon information received from the Provide Advance Warnings process this process can send a request to the Control Traffic Volume at Active HRI that the local signal strategy be preempted. A hazard condition message can also be sent to the Generate Alerts and Advisories process for further action or the Provide Closures Parameters process to possibly adjust the time to closing.

Close HRI on Detection (P-Spec 1.6.1.6.1)

Overview: This process is responsible for protecting highway vehicles approaching and crossing railroad grade crossings by initiating the closure up to 3 minutes before train arrival. This process receives the near term status of the crossing including any approaching trains or trapped vehicles. With this information along with the local control plan data the predicted hri state is computed and sent to the Detect Imminent Vehicle/Train Collision process. If a hri_predicted_collision message is returned then this process sends out an hri_hazard message to the Detect HRI Hazard which will in turn result in a change to the device control strategy. This process also receives rail operations advisories for processing along with the state and control plan data. As needed this process will output any rail_operations_message data to the Interact with Rail Operations process.

Detect Imminent Vehicle/Train Collision (P-Spec 1.6.1.6.2)

Overview: This process is responsible for detecting imminent collisions between vehicles and trains at railroad grade crossings. Using the data contained in the predicted_hri_state message this process performs the necessary calculations to determine whether a collision is imminent. If so, this process returns a hri_predicted_collision message to the Close_HRI_on_Detection process.

Interact with Wayside Systems (P-Spec 1.6.3.1)

Overview: This process is responsible for interfacing to railroad owned and maintained wayside equipment, such as Wayside

Interface Units, Crossing Gate Controllers, etc. All these devices are expected to provide real-time information to the HRI about approaching trains and their own health. In addition, advanced implementations will make use of a communications path back to approaching trains provided by the railroad's equipment.

Advise and Protect Train Crews (P-Spec 1.6.3.2)
Overview: This process is responsible for generating advisories/ alerts that are routed to the wayside equipment for transmission to the train crews. If the intersection is blocked, or there is an incident at the intersection this information will be passed to the Interact with Wayside Systems process for routing to the wayside equipment. The wayside equipment can then route the information directly to the train crews, or to rail operations.

Provide ATS Alerts (P-Spec 1.6.3.3)
Overview: This process is responsible for automatically protecting commuter, intercity, transit and freight trains as they approach and cross grade crossings. It also reports HRI rail traffic advisories to traffic management and rail operations. It is responsible for verifying and reporting overall HRI status to approaching trains so that crews can act within safe service braking distances. It provides for notification of Automatic Train Stop systems (ATS, PTS, etc) with sufficient advance warning to allow emergency brake application time to stop a train before it encounters an HRI hazard. Finally, it provides automatic status indications about the HRI to the crews of approaching trains.

Provide Interactive Interface (P-Spec 1.6.5.1)
Overview: This process is responsible for initiating reports of the health status of the HRI to both Traffic Management and Rail Operations. In addition the process initiates reporting of the health status of the HRI to the wayside interface equipment (and ultimately to the train when the advanced HRI functionality is in place).

Automated Road Signing Equipment Package consists of:

Process Collected Vehicle Smart Probe Data (P-Spec 1.1.2.6)
Overview: This process shall be responsible for the processing of vehicle smart probe data. The process receives data from vehicle subsystems and processes the data to estimate type and level of roadway conditions and hazards. The process shall send the road condition and hazard estimates to the Provide Device Control facility for output to future passing vehicles. It shall send this data, together with the fixed unit identity and fixed location to the traffic data storage process for loading into the current and long term data stores.

Collect Vehicle Smart Probe Data (P-Spec 1.1.7)
Overview: This process shall collect data from vehicle smart probes. This data shall include information about conditions in the vicinity of the vehicle operating as a smart probe. It shall receive this data from passing vehicles and shall add its own identity and location before sending the data on to the process which outputs the data.

Process In-vehicle Signage Data (P-Spec 1.2.7.4)
Overview: This process shall output data for use by in-vehicle signage equipment on vehicles traveling along the road (surface street) and freeway network served by the Manage Traffic function. This data shall be able to provide information from any of the types of indicators that are supported by the function, e.g. intersection controller, pedestrian controller, dynamic message sign (dms), plus data about incidents and link information such as speed, travel times or roadway conditions. The process shall be responsible for its own fault monitoring, which shall check that output data is being sent and that it is an accurate representation of the input data. When a fault is detected this process shall report it to the process responsible for the monitoring of roadside equipment faults.

Process Vehicle Smart Probe Data for Output (P-Spec 1.2.7.7)
Overview: This process shall output data about the conditions on roads and freeways. The process shall be provided with this data by other processes in the Manage Traffic function, which have received and processed data output by smart probes in vehicles. The data shall be output by the process for reception by those vehicles that are passing the deployed instance of this process (e.g. by dedicated short range communications). The process shall perform its own fault detection and report faults that are found to the fault monitoring process.

Roadside Data Collection Equipment Package consists of:

Manage Data Collection and Monitoring (P-Spec 1.1.1.4)
Overview: This process shall collect and monitor sensor data from the roadside. The process shall collect the sensor data including sensor status and sensor faults from roadside equipment and distribute it to the Manage Archive Data function. The process shall run when a request for data is received from an external source.

Roadside Signal Priority Equipment Package consists of:

Process Indicator Output Data for Roads (P-Spec 1.2.7.1)
Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on the roads (surface streets) served by the function. It shall perform the functions needed to provide control at intersections or pedestrian crossings, generate the output for dynamic message signs (dms) and highway advisory radios (HAR), or provide the interface for data to be sent to the units (or systems) that manage multimodal crossings. The dms may be either those that display variable text messages, or those that have fixed format display(s)(e.g. vehicle restrictions, or lane open/close).

Manage Indicator Preemptions (P-Spec 1.2.7.3)
Overview: This process shall receive indicator (e.g. signal) preemption and priority requests from other functions within ITS. These requests shall enable the process to give selected vehicles (e.g. those that belong to Transit Authorities or Emergency Services) signal preemption or priority at intersections, pedestrian crossings and multimodal crossings in the surface street and freeway network served by the instance of the Manage Traffic function. Sending of the priority request output shall also generate an output to the monitoring process to suspend its activities while the priority request is being served. This process shall only generate its data flow outputs when input data is received.

Appendix H: Subsystem and Equipment Package Functional Summary

Roadway Basic Surveillance Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)

Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Process Traffic Images (P-Spec 1.3.1.3)

Overview: This process shall process raw traffic image data received from sensors located on the road (surface street) and freeway network served by the Manage Traffic function. The process shall transform the raw data into images that can be sent to another process within the Manage Incidents facility. It shall also act as the control interface through which the images of traffic conditions which are analyzed for incidents can be changed by the traffic operations personnel, who shall also be supplied with images for viewing.

Roadway Emissions Monitoring Equipment Package consists of:

Process Vehicle Pollution Data (P-Spec 1.5.5)

Overview: This process shall obtain pollution data about individual vehicles and analyze it against reference data obtained from another process within the Manage Emissions facility of the Manage Traffic function. The process shall use this reference data to determine whether or not a vehicle is possibly violating the acceptable levels of pollution output. When the process determines that a possible violation has occurred, it shall send the detected pollution levels and the vehicle identity to the process responsible for law enforcement in the Manage Emergency Services function for action.

Detect Roadside Pollution Levels (P-Spec 1.5.6)

Overview: This process shall process the local area pollution data analyzed by sensors looking at the levels of pollution at the roadside within the geographic area served by the Manage Traffic function. The process shall pass the data on to another process within the Manage Emissions facility for integration with wide area pollution data and comparison with thresholds for pollution incidents.

Roadway Environmental Monitoring Equipment Package consists of:

Process Environmental Sensor Data (P-Spec 1.1.1.3)

Overview: This process shall be responsible for collecting data obtained from environmental sensors. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Roadway Freeway Control Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)

Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Monitor Roadside Equipment Operation for Faults (P-Spec 1.2.7.2)

Overview: This process shall monitor the operation of the processes that output in-vehicle signage, highway advisory radio, as well as indicator data in the road (surface street) and freeway network. It shall report any instances where the indicator response does not match that expected from the contents of the indicator control data it is receiving, the in-vehicle signage process reports a fault, or the HAR processes report a fault.

Process Indicator Output Data for Freeways (P-Spec 1.2.7.5)

Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on freeways served by the function. It shall perform the functions needed to output control data to ramp metering controllers and multimodal crossings, generate the output for dynamic message signs (dms), or generate the output for highway advisory radios(HAR). The dms may be either those that display variable text messages, or those that have fixed format display(s), for such things as vehicle restrictions, or lane open/close.

Roadway HOV Control Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)

Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Process Indicator Output Data for Freeways (P-Spec 1.2.7.5)

Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on freeways served by the function. It shall perform the functions needed to output control data to ramp metering controllers and multimodal crossings, generate the output for dynamic message signs (dms), or generate the output for highway advisory radios(HAR). The dms may be either those that display variable text messages, or those that have fixed format display(s), for such things as vehicle restrictions, or lane open/close.

Roadway In-Vehicle Signing Equipment Package consists of:

Process In-vehicle Signage Data (P-Spec 1.2.7.4)

Overview: This process shall output data for use by in-vehicle signage equipment on vehicles traveling along the road (surface street) and freeway network served by the Manage Traffic function. This data shall be able to provide information from any of the types of indicators that are supported by the function, e.g. intersection controller, pedestrian controller, dynamic message sign (dms), plus data about incidents and link information such as speed, travel times or roadway conditions. The process shall be responsible for its own fault monitoring, which shall check that output data is being sent and that it is an accurate representation of the input data. When a fault is detected this process shall report it to the process

responsible for the monitoring of roadside equipment faults.

Roadway Incident Detection Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)

Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Roadway Intersection Collision Warning Equipment Package consists of:

Provide Intersection Collision Avoidance Data (P-Spec 1.2.7.6)

Overview: This process shall provide collision avoidance data to vehicles that are approaching intersections served by the Manage Traffic function. The process shall use the data available from traffic sensors to determine any vehicle position conflict(s) that will arise if no action is taken. This process shall output data giving the direction from which the potential collision hazard will arise to the vehicle(s) that is(are) likely to receive the impact.

Roadway Probe Beacons Equipment Package consists of:

Collect Vehicle Tag Data for Link Time Calculations (P-Spec 1.1.6)

Overview: This process shall collect data from toll and parking tags on passing vehicles. This shall be achieved by transmitting a tag data request message and collecting any tag reply data that is received. This reply data shall be translated by the process into a unique but anonymous ID that does not store or transmit the identity of the tag in any way that is traceable to the tag owner, e.g. credit identity or stored credit value. This ID is then passed on to another process for further link travel time calculation analysis.

Roadway Reversible Lanes Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)

Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Process Indicator Output Data for Roads (P-Spec 1.2.7.1)

Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on the roads (surface streets) served by the function. It shall perform the functions needed to provide control at intersections or pedestrian crossings, generate the output for dynamic message signs (dms) and highway advisory radios (HAR), or provide the interface for data to be sent to the units (or systems) that manage multimodal crossings. The dms may be either those that display variable text messages, or those that have fixed format display(s)(e.g. vehicle restrictions, or lane open/close).

Process Indicator Output Data for Freeways (P-Spec 1.2.7.5)

Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on freeways served by the function. It shall perform the functions needed to output control data to ramp metering controllers and multimodal crossings, generate the output for dynamic message signs (dms), or generate the output for highway advisory radios(HAR). The dms may be either those that display variable text messages, or those that have fixed format display(s), for such things as vehicle restrictions, or lane open/close.

Roadway Signal Controls Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)

Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Process Indicator Output Data for Roads (P-Spec 1.2.7.1)

Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on the roads (surface streets) served by the function. It shall perform the functions needed to provide control at intersections or pedestrian crossings, generate the output for dynamic message signs (dms) and highway advisory radios (HAR), or provide the interface for data to be sent to the units (or systems) that manage multimodal crossings. The dms may be either those that display variable text messages, or those that have fixed format display(s)(e.g. vehicle restrictions, or lane open/close).

Monitor Roadside Equipment Operation for Faults (P-Spec 1.2.7.2)

Overview: This process shall monitor the operation of the processes that output in-vehicle signage, highway advisory radio, as well as indicator data in the road (surface street) and freeway network. It shall report any instances where the indicator response does not match that expected from the contents of the indicator control data it is receiving, the in-vehicle signage process reports a fault, or the HAR processes report a fault.

Roadway Systems for AHS Equipment Package consists of:

Check Vehicle for AHS eligibility (P-Spec 3.2.5)

Overview: This process shall be responsible for checking that vehicles are eligible for using the automated highway system (ahs) lanes on a highway. The process shall decide whether or not the vehicle is suitable for has operation by checking locally stored data that has been provided by a process in the Manage Traffic function, against data from the vehicle provided through the check request by a process on-board the vehicle. The process shall send the results of the check to the process on-board the vehicle that requested the ahs check-in. The vehicles that are successfully checked-in shall also be down loaded with ahs control data from this process.

Manage AHS Check-in and Check-out (P-Spec 3.2.6)
Overview: This process shall be responsible for managing the checking in and checking out of suitably equipped vehicles requesting to use automated highway system (ahs) lanes. The process shall provide the special vehicle control parameters needed for ahs operation to the process that manages ahs check-in and collect data on vehicles that request check-in and check-out from that process. This process shall send a record of all check-in and check-out transactions regardless of whether they are successful or not, to the process responsible for managing ahs operational data.

Roadway Traffic Information Dissemination Equipment Package consists of:

Process Indicator Output Data for Roads (P-Spec 1.2.7.1)
Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on the roads (surface streets) served by the function. It shall perform the functions needed to provide control at intersections or pedestrian crossings, generate the output for dynamic message signs (dms) and highway advisory radios (HAR), or provide the interface for data to be sent to the units (or systems) that manage multimodal crossings. The dms may be either those that display variable text messages, or those that have fixed format display(s)(e.g. vehicle restrictions, or lane open/close).

Process Indicator Output Data for Freeways (P-Spec 1.2.7.5)
Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on freeways served by the function. It shall perform the functions needed to output control data to ramp metering controllers and multimodal crossings, generate the output for dynamic message signs (dms), or generate the output for highway advisory radios(HAR). The dms may be either those that display variable text messages, or those that have fixed format display(s), for such things as vehicle restrictions, or lane open/close.

Standard Rail Crossing Equipment Package consists of:

Process Traffic Sensor Data (P-Spec 1.1.1.1)
Overview: This process shall be responsible for collecting surveillance obtained from the roadside, vehicles, pedestrians (travelers using other modes of transport), railroad grade and multimodal crossings. Where any of the data is provided in analog form, the process shall be responsible for converting it into digital form and calibrating. The converted data shall be sent to other processes for distribution, further analysis and storage.

Process Indicator Output Data for Roads (P-Spec 1.2.7.1)
Overview: This process shall implement the indicator output data generated by other processes within the Manage Traffic function for use on the roads (surface streets) served by the function. It shall perform the functions needed to provide control at intersections or pedestrian crossings, generate the output for dynamic message signs (dms) and highway advisory radios (HAR), or provide the interface for data to be sent to the units (or systems) that manage multimodal crossings. The dms may be either those that display variable text messages, or those that have fixed format display(s)(e.g. vehicle restrictions, or lane open/close).

Control HRI Traffic Signals (P-Spec 1.6.1.2.1)
Overview: This process is responsible for interpreting the hri_control message and safely directing the activation of the appropriate devices. This process will both directly command devices at the HRI and will disseminate necessary control information to the Process Indicator Output Data for Roads function to allow integrated control of adjacent traffic signals. Data will also be sent to SSR and/or HSR Device Control functions to control these specialized devices at the crossing. When sensor data indicates an approaching train this process notifies the Process Indicator Output Data for Roads function to allow the signal timing to be adjusted and dynamic message signs, if available, to be updated. This allows the traffic signals in the area adjacent to an HRI to be used to clear the Storage Area in advance of an approaching train and to manage

Control HRI Warnings and Barriers (P-Spec 1.6.1.2.2)
Overview: This process is responsible for initiating the activation of HRI barriers at active vehicular and pedestrian grade crossings. When a request is sent to activate the HRI barriers perhaps because of a detection of an oncoming train, this process sends the device control signal to the Manage Device Controls process to activate the barriers. This process also returns state information to the Maintain Device State process concerning the commands that have been initiated by this process.

Provide SSR Device Controls (P-Spec 1.6.1.2.3)
Overview: This process is responsible for initiating the activation of HRI Standard Speed Rail control devices at active vehicular and pedestrian grade crossings. This process responds to requests sent by the Control HRI Traffic Signals process based on detection of an oncoming train. This process sends command information to the Manage Device Control containing control signals and commands that are unique to the SSR functions. State information is also sent to the Maintain Device State process to monitor the last known state of the controls commands being processed.

Manage Device Control (P-Spec 1.6.1.2.5)
Overview: This process is responsible for managing and selecting the appropriate device control messages. This process gathers the control signals from the other Activate HRI Device Control processes and forwards them as needed to the Process Indicator Output Data for Roads process within Provide Device Control. These control signals are used to activate all of the HRI unique roadside devices such as gates or other barriers, lights, adjacent traffic signals, message signs or in-vehicle signage beacons.

Maintain Device State (P-Spec 1.6.1.2.6)
Overview: This process is responsible for managing and selecting the appropriate device control state messages. This process collects the device state messages that are produced by the other Activate HRI Device Controls processes and forwards the appropriate signals to the Detect Roadway Events process that monitors the status of the HRI commands being processed. This information is also used in the equipment diagnostic monitoring and testing.

Perform Equipment Self-Test (P-Spec 1.6.1.3)
Overview: This process is responsible for performing real-time equipment checks and reporting the status of the equipment associated with an active grade crossing. Based on receipt of the sensor data of the surrounding highway and rail traffic and

receipt of any near term events this process can execute a real-time check of the equipment and determine the relative health and status of the active grade crossing equipment. The output is sent onto the Monitor HRI Status process for further processing with other diagnostic data.

Provide Closure Parameters (P-Spec 1.6.1.4.2)
Overview: This process is responsible for providing the HRI predicted time to closure to be used in broadcast message alerts to approaching vehicles. This time is calculated from data provided by the Detect HRI Hazards process.

Report HRI Status on Approach (P-Spec 1.6.1.4.4)
Overview: This process is responsible for providing real-time HRI status to vehicles as they approach an HRI. It must discriminate between vehicles near, but not approaching, the HRI (e.g. on parallel side streets, etc.). This process develops the message to be broadcast to nearby vehicles by receiving time_to_closing data and the hazard_condition signal and calculating the appropriate window of time to display the message. The message is built from the approach_warning data received from the Report Alerts and Advisories process.

Control Vehicle Traffic at Passive HRI (P-Spec 1.6.1.7.1)
Overview: This process is responsible for controlling traffic volume at passive grade crossings. It provides a mechanism for rail operations to close grade crossings that have active traffic devices but no real-time train detection mechanisms. This process also will allow for a train crew member to manually activate closure of the crossing. In such an event a crew_close_hri signal is sent to the Close_HRI_on_Command process.

Control Vehicle Traffic at Active HRI (P-Spec 1.6.1.7.2)
Overview: This process is responsible for controlling vehicular traffic at an active HRI by controlling the operation of traffic control devices in accordance with a predetermined local control plan. The local_control_plan is communicated to the Close_HRI_on_Detection process. This local control plan can be preempted by a strategy_preemption message from the Detect_HRI_Hazards process or by such inputs as an event_notice from the Detect_Roadway_Events process or hri_traffic_surveillance data. The outputs of this process include the command messages to close the HRI, requests for information from the Manage Traffic function, and information about the current hri_traffic_data.

Close HRI on Command (P-Spec 1.6.1.7.3)
Overview: This process is responsible for closing the HRI to vehicular traffic, either on command from the Control Traffic Volume at Active HRI process, or from direct command from rail operations (as an override). A third mechanism for closing the HRI is defined for passive crossings, i.e. crossings without active train detection systems. Upon command from rail operations, or via manual operation by a train crewman, active traffic devices at an otherwise passive grade crossing may be activated to close the crossing.

Interact with Wayside Systems (P-Spec 1.6.3.1)
Overview: This process is responsible for interfacing to railroad owned and maintained wayside equipment, such as Wayside Interface Units, Crossing Gate Controllers, etc. All these devices are expected to provide real-time information to the HRI about approaching trains and their own health. In addition, advanced implementations will make use of a communications path back to approaching trains provided by the railroad's equipment.

Determine HRI Status (P-Spec 1.6.5.2)
Overview: This process is responsible for monitoring critical HRI functions and merging them into a single coherent picture of the state of the hri. It also is responsible for assuring that the HRI always reverts to the safest possible operating condition in the event of any operational malfunctions.

Maintain HRI Closure Data (P-Spec 1.6.5.3)
Overview: This process is responsible for managing a log of the HRI operation for use in strategy planning, demand management and traffic management.

RTS Remote Traveler Support

Remote Basic Information Reception Equipment Package consists of:

Inform Traveler (P-Spec 6.3.2)
Overview: This process provides the traveler (located at a kiosk) with data about all requested trip, traffic, transit, yellow pages services information, confirmation of any requested reservations, and payments made as part of confirmed trip plans. The data is sent by the process to an interface process that is responsible for its actual output to the traveler. This data may include digitized map data to act as the background to the output when the data is to be shown in a suitable format. This process shall receive data from other ITS functions by requesting it or be sent data as a result of requests from another process.

Provide Traveler Kiosk Interface (P-Spec 6.3.3)
Overview: This process shall provide an interface at a kiosk through which travelers can input data and can receive data. The functions that the traveler can perform include plan and confirm trips, obtain current traffic and transit information, and declare emergencies. The process shall support the inclusion of yellow pages services such as lodging, restaurants, theaters, and other tourist activities as a part of trip planning and confirmation. The process shall be able to store frequently used data, such as the kiosk location, to reduce the amount of input needed by the traveler for each request. The process shall also carry out input data verification and require input confirmation before passing any of the traveler data to other processes (except when an emergency is being declared). The traveler's payment information shall be obtained by this process from another process specially designed for that purpose. The process shall support traveler inputs in manual or audio form, and shall provide its outputs in audible or visual forms consistent with a kiosk. These forms shall include those that are suitable for travelers with hearing or vision physical disabilities. The process shall enable viewing of data that has been previously output. Where it is appropriate, the process shall use the kiosk's location to filter data being displayed to only show information relevant to the kiosk'Æs location, or to a specific location requested by the user.

Appendix H: Subsystem and Equipment Package Functional Summary

Remote Interactive Information Reception Equipment Package consists of:

Get Traveler Request (P-Spec 6.3.1)

Overview: This process shall receive input data from a traveler located at a kiosk and send requests to the appropriate processes within the Provide Driver and Traveler Services function for further processing. The process shall provide support for trip planning, traffic, transit, yellow pages services information requests, trip confirmation, yellow pages confirmation, and payment requests. The actual interface to the traveler is provided through a separate process, which creates the input flow to this process.

Inform Traveler (P-Spec 6.3.2)

Overview: This process provides the traveler (located at a kiosk) with data about all requested trip, traffic, transit, yellow pages services information, confirmation of any requested reservations, and payments made as part of confirmed trip plans. The data is sent by the process to an interface process that is responsible for its actual output to the traveler. This data may include digitized map data to act as the background to the output when the data is to be shown in a suitable format. This process shall receive data from other ITS functions by requesting it or be sent data as a result of requests from another process.

Provide Traveler Kiosk Interface (P-Spec 6.3.3)

Overview: This process shall provide an interface at a kiosk through which travelers can input data and can receive data. The functions that the traveler can perform include plan and confirm trips, obtain current traffic and transit information, and declare emergencies. The process shall support the inclusion of yellow pages services such as lodging, restaurants, theaters, and other tourist activities as a part of trip planning and confirmation. The process shall be able to store frequently used data, such as the kiosk location, to reduce the amount of input needed by the traveler for each request. The process shall also carry out input data verification and require input confirmation before passing any of the traveler data to other processes (except when an emergency is being declared). The traveler's payment information shall be obtained by this process from another process specially designed for that purpose. The process shall support traveler inputs in manual or audio form, and shall provide its outputs in audible or visual forms consistent with a kiosk. These forms shall include those that are suitable for travelers with hearing or vision physical disabilities. The process shall enable viewing of data that has been previously output. Where it is appropriate, the process shall use the kiosk's location to filter data being displayed to only show information relevant to the kiosk'Æs location, or to a specific location requested by the user.

Update Traveler Display Map Data at Kiosk (P-Spec 6.3.4)

Overview: This process shall provide updates to the digitized map data used as the background for displays of trip, traffic and transit information. This data shall be suitable for use in kiosk displays. The process shall obtain the new data from map data suppliers or some other appropriate data source.

Provide Remote Terminal Payment Instrument Interface (P-Spec 7.3.4)

Overview: This process shall be responsible for providing the interface through which payment information can be read from a transit user tag. The process shall support reading this data from transit users at the roadside, e.g., a transit stop, for use in paying the current transit fare and (if required) advanced payments. The process shall support advanced payments for tolls, parking lot charges, and/or transit fares. The process shall collect either the credit identity or the stored credit value data from the tag, and update the stored credit value as a result of the fare and (possibly) advanced charges.

Provide Transit User Roadside Payment Instrument Interface (P-Spec 7.5.2)

Overview: This process shall be responsible for providing the interface through which credit identities and stored credit values may be collected from tags being used by transit users. The process shall support the collection of this data at the roadside (which in this instance is a transit stop). Payments by the transit user for fares, other services, payment of advanced tolls, and/or parking lot charges shall be supported by the process. It shall also provide an interface through which stored credit held by the tag can be debited for the same types of payment.

Provide Traveler Kiosk Payment Instrument Interface (P-Spec 7.5.5)

Overview: This process shall be responsible for providing the interface through which credit identities and stored credit values may be collected from payment instruments being used by travelers. The process shall support the collection of data at the roadside (which in this instance is a kiosk) and use this data for payments needed to confirm a traveler's trip. Payments supported by the process shall include those for advanced tolls, parking lot charges, transit fares, and/or other (yellow pages) services. It shall also provide an interface through which the stored credit held by the tag can be debited for the same types of payment.

Remote Mayday I/F Equipment Package consists of:

Report Traveler Emergencies (P-Spec 4.4.1.8)

Overview: This process shall provide an interface in the Provide Driver and Traveler Services function through which travelers can declare emergencies. The traveler may be at a kiosk or other device, transit stop, transit depot, etc. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Provide Traveler Kiosk Interface (P-Spec 6.3.3)

Overview: This process shall provide an interface at a kiosk through which travelers can input data and can receive data. The functions that the traveler can perform include plan and confirm trips, obtain current traffic and transit information, and declare emergencies. The process shall support the inclusion of yellow pages services such as lodging, restaurants, theaters, and other tourist activities as a part of trip planning and confirmation. The process shall be able to store frequently used data, such as the kiosk location, to reduce the amount of input needed by the traveler for each request. The process shall also carry out input data verification and require input confirmation before passing any of the traveler data to other processes (except when an emergency is being declared). The traveler's payment information shall be obtained by this process from another process specially designed for that purpose. The process shall support traveler inputs in manual or audio form, and shall provide its outputs in audible or visual forms consistent with a kiosk. These forms shall include those that are suitable for travelers with hearing or vision physical disabilities. The process shall enable viewing of data that has been previously output. Where it is appropriate, the process shall use the kiosk's location to filter data being displayed to only show information relevant to the kiosk'Æs location, or to a specific location requested by the user.

Appendix H: Subsystem and Equipment Package Functional Summary

Remote Transit Fare Management Equipment Package consists of:

Detect Transit User at Roadside (P-Spec 4.7.2.1)

Overview: This process shall detect transit users embarking at a roadside transit stop and read data from the payment instrument that they are carrying. The process shall provide an image of all transit users which shall be used for violation processing of those who do not have a payment instrument or whose transit fare transaction fails. It shall obtain an image of the required accuracy under all lighting conditions and over the range of speeds with which transit users will pass through the fare collection point at the roadside, i.e., a transit stop.

Determine Transit User Needs at Roadside (P-Spec 4.7.2.2)

Overview: This process shall determine the transit user's travel routing based on the user's destination and the location of the roadside transit stop from which the route request is being made. The process shall support the transit user's routing enabling it to include travel on all or part of the route(s) operating from the stop and (possibly) transfer to another route. In order for this to be achieved, the process requires access to the complete range of transit services (routes and schedules) that are available to the transit user. Details of all transactions with the transit user's payment details removed, shall be sent by this process to the interface process for loading into the transit roadside fare collection data store.

Determine Transit Fare at Roadside (P-Spec 4.7.2.3)

Overview: This process shall calculate the transit user's fare based on the origin and destination provided by the user. The process shall calculate the fare using the transit routing, transit fare category, and transit user history components of the ride data together with data provided by the interface process to the database of transit fares. The accumulated data shall be sent by the process to another process for the actual implementation of the fare payment transaction.

Manage Transit Fare Billing at Roadside (P-Spec 4.7.2.4)

Overview: This process shall generate the data necessary to enable the financial transaction between the transit user and the transit provider to be completed at the roadside, i.e., at a transit stop. The process shall accept and process current transit passenger fare collection information. The process shall perform the front end transaction between the transit user and the transit system, and use the infrastructure interactive mode of operation to complete the back end processing. This means that the process shall send data about each transaction to processes in the Provide Electronic Payment Services function for the back end financial authorization and transaction processing. The process shall then await the return of the result for display to the transit user before accepting the next transaction. A failed transaction shall result in the transmission of an image of the transit user to another process. A record of the status of all transit fare processing shall be sent to another process for storage in a fare collection database.

Provide Transit User Roadside Fare Interface (P-Spec 4.7.2.5)

Overview: This process shall provide the interface for the transit user at the roadside, i.e., at a transit stop. The interface shall enable the transit user to specify the required destination of a transit service ride and request other (yellow pages) services. The process shall prompt the transit user for information necessary for the transaction that has not been provided. The result of the transit service ride fare payment plus other services request and payment, shall be reported back to the transit user by the process. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Update Roadside Transit Fare Data (P-Spec 4.7.2.6)

Overview: This process shall provide a database at the roadside, i.e., a transit stop, for use in fare processing. The database shall contain transit fare information from which the fares for all possible trips within the transit operational network can be determined.

Provide Transit Roadside Passenger Data (P-Spec 4.7.2.7)

Overview: This process shall create passenger loading and fare statistics data based upon data collected at the roadside and send this data to the store of transit operations data. The process may send the data at regular periodic intervals, on-demand, or through some other trigger mechanism. The process shall create its outputs using information collected in the store of fare transaction data. This data is received from other processes at the roadside, i.e., at a transit stop.

Provide Remote Terminal Payment Instrument Interface (P-Spec 7.3.4)

Overview: This process shall be responsible for providing the interface through which payment information can be read from a transit user tag. The process shall support reading this data from transit users at the roadside, e.g., a transit stop, for use in paying the current transit fare and (if required) advanced payments. The process shall support advanced payments for tolls, parking lot charges, and/or transit fares. The process shall collect either the credit identity or the stored credit value data from the tag, and update the stored credit value as a result of the fare and (possibly) advanced charges.

Provide Transit User Roadside Payment Instrument Interface (P-Spec 7.5.2)

Overview: This process shall be responsible for providing the interface through which credit identities and stored credit values may be collected from tags being used by transit users. The process shall support the collection of this data at the roadside (which in this instance is a transit stop). Payments by the transit user for fares, other services, payment of advanced tolls, and/or parking lot charges shall be supported by the process. It shall also provide an interface through which stored credit held by the tag can be debited for the same types of payment.

Remote Transit Information Services Equipment Package consists of:

Provide Transit User Roadside Data Interface (P-Spec 4.7.1.1)

Overview: This process shall communicate with the Transit Management Center (TRMC) by providing public transit information at roadside locations. These locations may consist of transit vehicle stops or other locations that provide general public transit information. The process shall enable the roadside unit to obtain information about the transit services on request from the local transit user interface process and to receive data about late running services from other processes within the Manage Transit function. The received data shall be loaded into a local data store for future use. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Provide Transit User Roadside Vehicle Data Interface (P-Spec 4.7.1.2)
Overview: This process shall provide the roadside (transit stop) interface through which transit users receive information about an approaching transit vehicle or one that has already arrived. The process shall output the data to the transit user as soon as it is received and shall load the data into the local store for future use. Output of the data shall be maintained until the vehicle leaves the stop, when the process shall cease output of the data and delete it from the local store. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Secure Area Monitoring Equipment Package consists of:

Monitor Secure Area (P-Spec 4.4.1.7)
Overview: This process shall monitor the secure area environment. Data shall be obtained by the process from a variety of sources and assessed for any security problems. Problems shall be passed by the process to other processes for review and the required action. Information about incidents shall also be sent by this process to another process for output to the media, using interface parameters set up by the transit system operator. The process shall also provide facilities for the control of video cameras and audio output in the secure area environment.

TAS Toll Administration

Toll Administration Equipment Package consists of:

Process Violations for Tolls (P-Spec 5.4.2)
Overview: This process shall manage the details of toll payment violations reported by the Provide Electronic Payments Services function. The process shall use the parameters in the store of toll payment violation (enforcement) data to obtain the vehicle registration data from the appropriate State Department of Motor Vehicles (DMV) office (or alternate source) for vehicles that are not equipped with a tag, before sending all of the received information to the correct law enforcement agency. This process shall also maintain the toll payment enforcement datastore, entering all information received from other processes.

Manage Bad Toll Payment Data (P-Spec 7.1.1.3)
Overview: This process shall be responsible for maintaining a data store containing a list of invalid driver credit identities. This process shall use this data to verify credit identities and commercial vehicle carrier numbers provided for checking by the billing process. Verification shall ensure that the current toll payment transaction is using a credit identity or carrier identity that has not previously had an invalid transaction. Details of potential invalid credit identities or carrier numbers shall be sent by this process to the financial institution for verification. This process shall also receive from the financial institution details of invalid payment instrument data that has been found by other means.

Collect Probe Data From Toll Transactions (P-Spec 7.1.1.6)
Overview: This process shall calculate the time taken for vehicles to travel between successive toll plazas and send it to the Manage Traffic and Provide Driver and Traveler Services functions. The process shall periodically request the data from the process that manages toll financial processing and ensure that any references to the driver and/or vehicle identity plus any other payment information are removed from the data before it is sent to the other functions.

Update Toll Price Data (P-Spec 7.1.1.7)
Overview: This process shall be responsible for maintaining a store of data containing the toll price, which may vary according to the type of vehicle. The process shall also act as the interface for the output and input of responses to toll price change requests from the Manage Traffic function, the provision of toll price information to the Centralized Payments facility, and to the toll administrator to enable changes to be made to the stored data. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Register for Advanced Toll Payment (P-Spec 7.1.1.8)
Overview: This process shall be responsible for responding to requests for tolls to be paid in advance. It shall provide the toll administrator with the opportunity to review the requests for advanced toll payments. If approved, the advanced toll data shall be forwarded by the process to other processes for the actual toll cost to be obtained and payment transactions initiated.

Manage Toll Financial Processing (P-Spec 7.1.1.9)
Overview: This process shall be responsible for maintaining a log of all toll transactions that are carried out by other processes in the toll payments system. At periodic intervals the process shall output the accumulated records to the toll administrator and the archive function. It shall also output the data on request to the process that calculates probe data from the average travel time between toll plazas. The identity of the payee shall be removed from the data before it is used in any of these outputs. The process shall also be responsible for sending details of transactions to the financial institution to enable the users to be billed through their credit identities. For commercial vehicles, this will be done using the data provided by the vehicle's on-board tag and shall enable billing to the financial institution to be made by carrier.

Toll Data Collection Equipment Package consists of:

Manage Toll Archive Data (P-Spec 7.1.1.11)
Overview: This process shall obtain toll operational data and toll pricing data and distribute it to the Manage Archived Data function. As data is received into this process quality control metrics shall be assigned. The appropriate meta-data shall be generated and store along with the data. A catalog of the data shall be maintained to allow requesters to know what data is available from the archive store. The process shall run when a request for data is received from an external source, or when fresh data is received.

TCS Toll Collection

Toll Plaza Toll Collection Equipment Package consists of:

Read Tag Data for Tolls (P-Spec 7.1.1.1)
Overview: This process shall be responsible for requesting the data from the toll tag being carried on-board the vehicle and used as a payment instrument. If there is no tag or the data it contains cannot be properly read, this process shall provide a

message for the vehicle operator to contact the toll authority (or toll system operator). The process shall send a request to other processes to obtain an image of the vehicle. If the vehicle is exiting a closed toll system the data shall be checked by this process to see if it contains an entry point toll segment number. If not present, the process would be referred to another process for off-line resolution. If the toll segment identity is present, it shall be combined with the vehicle characteristics, e.g., size, type, etc., to form the data upon which the toll payment transaction can be based, and the data sent to another process. If the vehicle is entering a closed toll system, the entry point toll segment shall be written onto the tag so that it can be used as the mechanism for charging for the use of the toll road.

Determine Advanced Toll Bill (P-Spec 7.1.1.10)

Overview: This process shall be responsible for receiving a request to pay an advanced toll. It shall obtain the price of the toll segment(s) for which advanced payment is being requested from a local data store and shall then forward it to the billing processes. The store of toll prices shall be maintained by another process.

Calculate Vehicle Toll (P-Spec 7.1.1.2)

Overview: This process shall be responsible for calculating the toll for the detected vehicle based on the vehicle's characteristics and data obtained from the tag being carried by the vehicle. This process shall calculate the cost of the toll using segment(s) traveled by the vehicle. Segment information is obtained by reading data that contains standard prices for toll segments plus any variations to pricing received from the toll operator.

Check for Advanced Tolls Payment (P-Spec 7.1.1.4)

Overview: This process shall be responsible for checking to see if the required toll payment has already been made. The process shall determine the existence of an advanced payment for the toll segment(s) by comparing the received payment information with that in the store containing the list of advanced payments. If the payment has already been made then the process shall remove the requirement for local billing and remove the record of the advanced payment from the store. Details of each payment transaction shall be sent by the process to another process with the payment information received from the driver removed.

Bill Driver for Tolls (P-Spec 7.1.1.5)

Overview: This process shall be responsible for either obtaining payment for the current or advanced toll. The process shall achieve this either by requesting that the toll cost be deducted from the credit being stored by the toll tag that is acting as the payment instrument, or by informing the driver that payment for the toll will be debited to the credit identity provided by the tag. Before sending data to the tag, the process shall check that either the credit identity is not already in the list of bad payers, or the stored credit is not less that the toll cost. If either of these conditions is true, the process shall obtain an image of the driver and vehicle which can be forwarded to the appropriate enforcement agency via another process. When the appropriate payment transaction has been completed, the toll entry segment identity shall be cleared from the tag so that it can be used the next time that the vehicle is on a toll road. The tag may be in the form of some type of credit or debit card, or an electronic purse. Details of the transaction shall always be sent by this process to the process that manages toll transactions. Where an advanced toll payment is identified, the process shall take no action if the credit identity is on the bad payers list, or the stored credit is less than the toll cost, other than the payment is not confirmed.

Produce Roadside Displays (P-Spec 7.1.2)

Overview: This process shall be responsible for driving the displays that tell vehicles whether or not their driver's toll payment has been confirmed or rejected. The process shall receive the data for output via the displays from other processes. The data input and output forms shall use an appropriate form of display that shall be easily readable under all lighting conditions and over the range of speeds that vehicles are expected to use when passing through the toll plaza. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Obtain Toll Violator Image (P-Spec 7.1.3)

Overview: This process shall be responsible for obtaining an image of a violator for use by other processes. The form of the image data obtained by this process shall be very accurate so that there can be no mistake of the determination of the identity of the vehicle and/or driver, and shall be easily passed on by the other processes to the appropriate law enforcement agency(ies) so that punitive action may be taken. The process shall be capable of obtaining an image of the required accuracy under all lighting conditions and over the range of speeds with which vehicles will pass through the toll plaza.

Detect Vehicle for Tolls (P-Spec 7.1.5)

Overview: This process shall be responsible for producing a vehicle's characteristics from data received by sensors located at the roadside, at or near the toll collection point. The data shall be sent by the process to another process in a form suitable for use in calculating the toll cost for the vehicle. The process shall ensure that the data includes such things as vehicle size, weight, axle count, type, identifiable features, etc.

TMS Traffic Management

Collect Traffic Surveillance Equipment Package consists of:

Process Traffic Data for Storage (P-Spec 1.1.2.1)

Overview: This process shall receive data from other processes and store the data into the long term and current data stores. The data shall comprise sensor data, both smoothed and unsmoothed: processed sensor surveillance data, data sent to control indicators (output devices e.g. intersection controllers, pedestrian controllers, dynamic message signs, ramp metering equipment), parking lot management data and other street equipment, the status data received from the indicators, plus current traffic conditions, planned events, current incidents, parking lot states, freeway ramp states, link travel times, roadway conditions provided by vehicle probes, and selected traffic control strategy. The data stored by the process in the current data store shall be the values collected over a relatively short period of time. The data stored in the long term data store shall be retained for a longer period. The data retained in the long term data store may be aggregated so as to reduce the storage requirements for long historical records, the amount of aggregation to be an implementation decision.

Process Traffic Data (P-Spec 1.1.2.2)
Overview: This process shall receive and process data from sensors (both traffic and environmental) at the roadway. The process distributes data to Provide Device Control processes that are responsible for freeway, highway rail intersections, parking lot, surface street and freeway management. It also sends the data to another Provide Traffic Surveillance process for loading into the stores of current and long term data. Information about the various sensors to aid in this processing and distribution of data is accessed from the data store static_data_for_sensor_processing.

Update Data Source Static Data (P-Spec 1.1.2.3)
Overview: This process shall be responsible for the maintenance of the store of static data used in the processing of sensor data. This sensor data shall be used to provide traffic surveillance information for use by other processes within the Manage Traffic function. The store shall contain data showing the relationship between sensors and the surface street and freeway network, i.e. where they are located, to which part(s) of the network their data applies, the type of data, etc. It shall also hold information about the ownership of each link (that is, the agency or entity responsible for collecting and storing surveillance of the link) in the network which shall be used by processes involved in exchanging surveillance information (and optionally control) with other Traffic Management Subsystems (TMS's). The contents of the store shall be provided by the Plan System Deployment function.

Retrieve Traffic Data (P-Spec 1.1.4.1)
Overview: This process shall on request retrieve traffic data from the data stores managed by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function. It shall be possible for requests to originate from traffic operations personnel, the media operator, the Manage Demand facility within the Manage Traffic function, the Plan System Deployment function and the Provide Driver and Traveler Services function. With the exception of those from the Manage Demand facility and the Plan System Deployment function, all requests shall be provided by interface processes. The process shall also generate traffic data for output by other processes to in-vehicle signage functions.

Provide Traffic Operations Personnel Traffic Data Interface (P-Spec 1.1.4.2)
Overview: This process shall provide the interface through which traffic operations personnel can obtain access to the data stored by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function, and set up the parameters that govern the data that is available to non-traffic operations people via a separate process to the media operator. This stored data shall comprise current and long term (historic) data on traffic conditions, weather conditions and roadside equipment activity, plus prediction estimates of traffic conditions. The data shall apply to some or all of the surface street and freeway network served by the specific instance of the Manage Traffic function. Where appropriate and/or requested by the traffic operations personnel, the process shall provide the data output in the form of an overlay onto a map of the relevant part(s) of the surface street and freeway network served by the instance of the function. The process shall obtain the map from a local data store, which it shall enable the traffic operations personnel to update as and when required.

Update Traffic Display Map Data (P-Spec 1.1.4.4)
Overview: This process shall provide updates to a store of digitized map data when a request is received from traffic operations personnel via their interface process. The map data shall be for use as the background for displays of traffic data requested by traffic operations personnel and media operators through their respective interface processes. This process shall obtain the new map data from either a specialized data supplier or some other appropriate data source.

HRI Traffic Management Equipment Package consists of:

Exchange Data with Rail Operations (P-Spec 1.6.2.1)
Overview: This process is responsible for exchanging routine data with rail operations. Such data being sent to the rail operators includes event schedules, requests for information from the Rail Operators, incident notification based on rail operations messages received from Close_HRI_on_Detection process and hri_priority_message data received from the Manage Alerts and Advisories process. This process receives maintenance schedules, train schedules, and incident notifications from the rail operators. This information is used to develop the rail operations update data that is passed onto the Manage Rail Traffic Control Data process and the rail operations priority data that is sent to the Manage Alerts and Advisories process.

Manage Alerts and Advisories (P-Spec 1.6.2.2)
Overview: This process is responsible for acquiring HRI advisory or alert data from rail operations and for providing HRI status to rail operations. The data managed by this process may be time critical, as in the case of alerts or priority messages, or not time critical, as in the case of advisories.

Manage HRI Closures (P-Spec 1.6.4.1)
Overview: This process is responsible for coordination and managing of HRI closures at the Traffic management Center. It interfaces with Manage Incidents process to provide incident information and to receive strategy overrides as required by the larger incident management function.

Exchange Data with Traffic Management (P-Spec 1.6.4.2)
Overview: This process is responsible for interacting with traffic management processes. It collects data from processes that are within the HRI elements located at the roadside and forwards the data as needed to other processes within traffic management. It also acts as the interface between rail operations and traffic management processes through its interface with the Interact with Rail Operations process.

Rail Operations Coordination Equipment Package consists of:

Generate Predictive Traffic Model (P-Spec 1.1.3)
Overview: This process shall be responsible for continually producing and updating a predictive model of the traffic flow conditions in the road or freeway network served by the Manage Traffic function that an instance of this process is allocated to. The prediction shall be based on current surveillance, historic traffic data and surveillance, current incidents, planned events, current traffic control strategy, data received from other Traffic Management Subsystems (TMS's) serving other geographic and/or jurisdictional areas, and current and predicted weather conditions. The predictive model of traffic

flow produced by this process shall be used by processes in the Manage Traffic function and other ITS functions.

Exchange Data with Rail Operations (P-Spec 1.6.2.1)
Overview: This process is responsible for exchanging routine data with rail operations. Such data being sent to the rail operators includes event schedules, requests for information from the Rail Operators, incident notification based on rail operations messages received from Close_HRI_on_Detection process and hri_priority_message data received from the Manage Alerts and Advisories process. This process receives maintenance schedules, train schedules, and incident notifications from the rail operators. This information is used to develop the rail operations update data that is passed onto the Manage Rail Traffic Control Data process and the rail operations priority data that is sent to the Manage Alerts and Advisories process.

Manage Rail Traffic Control Data (P-Spec 1.6.2.3)
Overview: This process is responsible for providing and maintaining a current store of rail operations data. The data is assembled from the rail_operations_update information sent by the Exchange Data with Rail Operations process. Queries for this information are received from the Manage Alerts and Advisories process and the Interact with Vehicle Traffic Management processes.

TMC for AHS Equipment Package consists of:

Manage AHS Operations (P-Spec 3.2.7)
Overview: This process shall be responsible for recording data about vehicles that have requested check-in and check-out for the use of the automated highway system (ahs) lanes, and for receiving ahs control parameters from a process in the Manage Traffic function. The process shall provide a process at the roadside with the vehicle control parameters needed for ahs operation. The process shall keep a log of all ahs check-in and check-out transactions received from the roadside process regardless of whether they are successful or not, and periodically pass this data on to the Plan System Deployment function.

TMC Freeway Management Equipment Package consists of:

Provide Traffic Operations Personnel Traffic Data Interface (P-Spec 1.1.4.2)
Overview: This process shall provide the interface through which traffic operations personnel can obtain access to the data stored by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function, and set up the parameters that govern the data that is available to non-traffic operations people via a separate process to the media operator. This stored data shall comprise current and long term (historic) data on traffic conditions, weather conditions and roadside equipment activity, plus prediction estimates of traffic conditions. The data shall apply to some or all of the surface street and freeway network served by the specific instance of the Manage Traffic function. Where appropriate and/or requested by the traffic operations personnel, the process shall provide the data output in the form of an overlay onto a map of the relevant part(s) of the surface street and freeway network served by the instance of the function. The process shall obtain the map from a local data store, which it shall enable the traffic operations personnel to update as and when required.

Determine Indicator State for Freeway Management (P-Spec 1.2.2.1)
Overview: This process shall implement selected traffic control strategies and transit vehicle overall priority on some or all of the indicators covering the freeway network served by the Manage Traffic function. It shall implement the strategies only using the indicators (e.g. dynamic message signs (DMS)) specified in the implementation request and shall coordinate its actions with those of the process that controls the road network. The process shall also be capable of monitoring the extra inputs that will arise where tunnels are involved, including the detection of fire and the consequent requirement to re-route traffic.

Determine Ramp State (P-Spec 1.2.3)
Overview: This process shall implement the selected control strategies on some or all of the freeway entry ramps in the freeway network served by the Manage Traffic function. It shall implement the strategies only using the ramps that are specified in the implementation request and shall coordinate its actions with those of the process that controls the road network. The process shall base its ramp metering decisions on the data from sensors and ramp meters monitoring traffic conditions upstream and downstream of the ramps. Data from sensors on the ramp used to detect flow past the meter, extent of queues on the ramp, and the presence of vehicles will also be used as the basis for the ramp metering decisions. The decision making process shall use an algorithm to determine the ramp's state based on the ramp control strategy and the sensor input data received. The process shall coordinate its activities with the process responsible for controlling the road(surface street) network.

Output Control Data for Freeways (P-Spec 1.2.4.2)
Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the freeway network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators, such as dynamic message signs (DMS), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall have been sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

TMC HOV Lane Management Equipment Package consists of:

Monitor HOV lane use (P-Spec 1.1.2.4)
Overview: This process shall be responsible for monitoring the use of High Occupancy Vehicle (HOV) lanes and detecting vehicles that do not have the required number of occupants. The process also provides data on HOV lane usage for storage in the stores of current and long term data.

Output Control Data for Freeways (P-Spec 1.2.4.2)
Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the freeway network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators,

such as dynamic message signs (DMS), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall have been sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

Process TM Detected Violations (P-Spec 5.4.1)
Overview: This process shall manage the details of high occupancy vehicle (HOV) lane use, wrong-way vehicle detection in reversible lanes, and pollution violations reported by the Manage Traffic function. The process shall use the parameters in the store of traffic management (TM) violation (enforcement) data to obtain the vehicle registration data from the appropriate State Department of Motor Vehicles (DMV) office, before sending all of the received information to the correct law enforcement agency. This process shall also maintain the TM enforcement data store, entering all information received from other processes.

TMC Incident Detection Equipment Package consists of:

Analyze Traffic Data for Incidents (P-Spec 1.3.1.1)
Overview: This process shall analyze traffic sensor data, vehicle probe data, or video images for anomalies that could indicate occurrence of an incident. The data may be collected from roads(surface street) and/or highways served by the Manage Traffic function. The process shall pass on any anomalies that it detects to another process in the Manage Incidents facility as possible detected incidents.

Maintain Static Data for Incident Management (P-Spec 1.3.1.2)
Overview: This process shall maintain the store of static data (data about the location and features of the road or highway links in the transportation network). This data store is used by another process within the Manage Incidents facility to identify and locate incidents. The static data shall be input to this process from another process within the Planning for Deployment function, and it shall be possible for that process to request a copy of the current static data.

Store Possible Incident Data (P-Spec 1.3.2.1)
Overview: This process shall receive data on possible incidents from other processes within the Manage Incidents facility and other ITS functions. The process shall load all data that it receives into the store of possible incidents. As part of the loading activity, the process shall enter the data into the relevant parts of the standard format for incident data, and shall assign a level of confidence (e.g. related to the source of the data or time of its detection) to that data.

Review and Classify Possible Incidents (P-Spec 1.3.2.2)
Overview: This process shall review input data about possible incidents and provide verification of the incident. The process shall have the capability of using algorithms to automatically identify and verify an incident. The process shall have the capability to classify an incident as current incident or a planned event and shall be load the data into the store of possible incidents as either current incidents or planned events. The process shall report any incidents that it is unable to verify or classify to the traffic operations personnel for manual verification and classification. The process shall allow the traffic operations personnel to request all possible incidents and carry out the verification and classification process manually.

Review and Classify Planned Events (P-Spec 1.3.2.3)
Overview: This process shall receive updates of planned events and review the complete list of them to determine when an incident should be reclassified from planned event to current incident. It shall carry out the re-classification process automatically either upon receiving notice that the store of planned events has been updated, or at some periodic rate. The criteria for reclassifying an incident could be that the planned start time of the event has passed. The process shall request details of planned events from the process that manages their data store and shall send details of any new (re-classified) current incidents to the process that manages their data store. It shall also provide updates of planned events and current incidents to other ITS functions, and details of any new planned events to the process responsible for the output of data to vehicle signage functions.

Provide Planned Events Store Interface (P-Spec 1.3.2.4)
Overview: This process shall provide the interface to, and manage the use of the store containing details of planned events. The process shall enter details of all new planned events into the store, retrieve details on request, and delete details of an incident when it has been re-classified as a current incident.. The process shall be able to receive details of planned events from within the local Manage Incidents facility, and from similar facilities in other Traffic Management Subsystems (TMS's). When requested, the process shall also be able to provide details of its planned events to the Manage Incidents facilities in other TMS's.

Provide Current Incidents Store Interface (P-Spec 1.3.2.5)
Overview: This process shall provide the interface to, and manage the use of the store of current incident details. The process shall enter the details of all new current incidents into the store, retrieve details on request, and delete details of incidents when they cease to be current. The process shall be able to receive details of current incidents from within the local Manage Incidents facility, and from similar facilities in other Traffic Management Subsystems (TMS's). When requested, the process shall also be able to provide details of its current incidents to the Manage Incidents facilities in other TMS's.

Provide Traffic Operations Personnel Incident Data Interface (P-Spec 1.3.4.2)
Overview: This process shall provide the interface between the traffic operations personnel and the Manage Incidents facility of the Manage Traffic function. It shall enable the personnel to request and amend details of predicted and current incidents and predetermined incident responses, obtain and control incident video image data and manually re-classify incidents as possible or current or a planned event. It shall also output to the traffic operations personnel incident details to which no predetermined response currently exists. The process shall support inputs from and outputs to the traffic operations personnel Where appropriate and/or requested by the traffic operations personnel, the process shall provide the output 'display' in a form incorporating a map of the relevant part(s) of the surface street and freeway network served by

the function. The process shall obtain the map from a local data store, which it shall request to be updated by another process as and when required.

Provide Media Incident Data Interface (P-Spec 1.3.4.3)

Overview: This process shall provide the interface between the Media and the Manage Incidents facility. It shall enable the media to request details of incidents and shall allow transmission of incident information to the media. The media shall also provide raw input data on possible incidents. The process shall enable the output to incorporate a map of the area to which the incidents relate.

TMC Incident Dispatch Coordination/Communication Equipment Package consists of:

Exchange data with Other Traffic Centers (P-Spec 1.1.5)

Overview: This process shall exchange data with similar processes in other Traffic Management Subsystems (TMS's). The other TMS can be adjacent geographically, under control of a different jurisdiction, or part of a more complex hierarchy. The exchange of data shall be triggered by either a request from a remote TMS for data from the TMS to which the Manage Traffic function belongs, or because data needs to be sent from the local TMS to a remote TMS. This data shall include traffic control preemption for vehicle routes which pass through the local network but have a destination in an area served by a remote TMS, or include data about an incident that has an impact on the traffic conditions in the network served by a remote TMS. The data received from remote TMS's shall be used either to vary the current traffic control strategy to give signal preemption to emergency vehicles or enable the passage of commercial vehicles with unusual loads, or as input to the local traffic predictive model estimation process.

Output Control Data for Roads (P-Spec 1.2.4.1)

Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the road (surface street) network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators, such as intersection and pedestrian controllers, dynamic message signs (DMS), highway advisory radio (HAR), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall be sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

Output Control Data for Freeways (P-Spec 1.2.4.2)

Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the freeway network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators, such as dynamic message signs (DMS), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall have been sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

Review and Classify Planned Events (P-Spec 1.3.2.3)

Overview: This process shall receive updates of planned events and review the complete list of them to determine when an incident should be reclassified from planned event to current incident. It shall carry out the re-classification process automatically either upon receiving notice that the store of planned events has been updated, or at some periodic rate. The criteria for reclassifying an incident could be that the planned start time of the event has passed. The process shall request details of planned events from the process that manages their data store and shall send details of any new (re-classified) current incidents to the process that manages their data store. It shall also provide updates of planned events and current incidents to other ITS functions, and details of any new planned events to the process responsible for the output of data to vehicle signage functions.

Respond to Current Incidents (P-Spec 1.3.3)

Overview: This process shall provide responses to incidents that become current, i.e. active. Three general strategies for response to incidents can be supported by the process: 1) Operator enters response (there is no set of predetermined responses), 2) the operator selects response from a set of predetermined responses (possibly modifying the response), and 3) the process automatically accesses and implements a response from a set of predetermined responses (while informing the operator of the actions taken). Where predetermined responses are utilized, the operator shall have the capability to view, modify, or override the predetermined response. The predetermined response to each type of incident shall be defined for the process in the store defined_responses_data. If the process cannot find a predetermined response for a particular incident, it shall send the details of the incident to the traffic operations personnel so that they can provide an update to the store of predetermined responses. The process shall output the predetermined responses to an incident when it receives notification from another process in the Manage Incidents facility that a new current incident has occurred. At the same time it shall also output the incident data to the process responsible for providing broadcast data to roadside processes. The other process in the Manage Incidents facility shall also provide details of incidents that have ceased to be current (terminated) so that this process can send out data to clear the actions requested and roadside broadcast information output in response to its occurrence.

Retrieve Incident Data (P-Spec 1.3.4.1)

Overview: This process shall retrieve incident data from the stores of planned events and current incidents that are managed by other processes in the Manage Incidents facility of the Manage Traffic function. The process shall retrieve data as the result of a request which may come from the traffic operations personnel or the media operator. The output shall be returned to the source of the request, except where the media operator has specified that the data should be output to the media system.

Provide Traffic Operations Personnel Incident Data Interface (P-Spec 1.3.4.2)

Overview: This process shall provide the interface between the traffic operations personnel and the Manage Incidents

facility of the Manage Traffic function. It shall enable the personnel to request and amend details of predicted and current incidents and predetermined incident responses, obtain and control incident video image data and manually re-classify incidents as possible or current or a planned event. It shall also output to the traffic operations personnel incident details to which no predetermined response currently exists. The process shall support inputs from and outputs to the traffic operations personnel Where appropriate and/or requested by the traffic operations personnel, the process shall provide the output 'display' in a form incorporating a map of the relevant part(s) of the surface street and freeway network served by the function. The process shall obtain the map from a local data store, which it shall request to be updated by another process as and when required.

Update Incident Display Map Data (P-Spec 1.3.4.4)

Overview: This process shall provide updates to the store of digitized map data used with displays of incident data produced by processes in the Manage Incidents facility of the Manage Traffic function. The process shall obtain the new data from a map provider or other appropriate data source, on receiving an update request from the traffic operations personnel interface process within the Manage Incidents facility.

Manage Resources for Incidents (P-Spec 1.3.4.5)

Overview: This process shall provide the capability for the Manage Traffic function to generate and receive requests for resources in responding to incidents. The process shall provide the capability for traffic operations personnel to request resources from the Construction and Maintenance to provide equipment and support for incident response and clean up. The process shall be able to receive resource requests from the Manage Emergency function and respond with the status of the response by Construction and Maintenance or the traffic operations personnel.

Manage Possible Predetermined Responses Store (P-Spec 1.3.5)

Overview: This process shall manage the data store containing possible predetermined responses to incidents used within the Manage Incidents facility. These responses shall be those that another process within the facility has found to be worth including in the store of predetermined responses from an analysis of the incident response log. This process shall enable retrieval of the data from the store for presentation to traffic operations personnel and its possible transfer to the process that manages the store of predetermined incident responses that are actually used by other processes in the Manage

Manage Predetermined Incident Response Data (P-Spec 1.3.6)

Overview: This process shall manage data held in the store of predetermined incident responses that are used by processes within the Manage Incidents facility of the Manage Traffic function. The process shall provide details of the current predetermined responses in response to requests from traffic operations personnel, and shall also update the store with new responses received from the process that manages the store of possible predetermined responses.

Analyze Incident Response Log (P-Spec 1.3.7)

Overview: This process shall analyze the data in the log of incident responses within the Manage Incidents facility of the Manage Traffic functions. The process shall analyze the log so that possible standard predetermined incident responses can be identified from the data in the incident_response_log data store. Any such possible standard predetermined responses that are identified shall be passed by this process to the process that manages the store of possible predetermined responses.

TMC Input to In-Vehicle Signing Equipment Package consists of:

Output In-vehicle Signage Data (P-Spec 1.2.4.3)

Overview: This process shall format and output data for use by roadside processes in creating in-vehicle signage. This process supports a full range of functionality for in-vehicle signage (from display of signage to location specific advisory data). The process shall be capable of outputting some or all of the following advisory data: link state data, current incidents, planned events, and highway rail intersection status. The process shall be capable of outputting some or all of the following signage data: dynamic message sign contents or fixed signage. The data shall be structured by this process so that it can be output by each roadside process to vehicles for use by in-vehicle signage equipment.

TMC Multi-Modal Coordination Equipment Package consists of:

Determine Indicator State for Freeway Management (P-Spec 1.2.2.1)

Overview: This process shall implement selected traffic control strategies and transit vehicle overall priority on some or all of the indicators covering the freeway network served by the Manage Traffic function. It shall implement the strategies only using the indicators (e.g. dynamic message signs (DMS)) specified in the implementation request and shall coordinate its actions with those of the process that controls the road network. The process shall also be capable of monitoring the extra inputs that will arise where tunnels are involved, including the detection of fire and the consequent requirement to re-route traffic.

Determine Indicator State for Road Management (P-Spec 1.2.2.2)

Overview: This process shall implement selected traffic control strategies and transit priority on some or all of the indicators covering the road (surface street) network served by the Manage Traffic function. It shall implement the strategies only using the indicators (intersection and pedestrian controllers, variable message signs (dms), etc.) that are specified in the implementation request and shall coordinate its actions with those of the processes that control the freeway network and the ramps that give access to the freeway network.

Determine Ramp State (P-Spec 1.2.3)

Overview: This process shall implement the selected control strategies on some or all of the freeway entry ramps in the freeway network served by the Manage Traffic function. It shall implement the strategies only using the ramps that are specified in the implementation request and shall coordinate its actions with those of the process that controls the road network. The process shall base its ramp metering decisions on the data from sensors and ramp meters monitoring traffic conditions upstream and downstream of the ramps. Data from sensors on the ramp used to detect flow past the meter, extent of queues on the ramp, and the presence of vehicles will also be used as the basis for the ramp metering decisions. The decision making process shall use an algorithm to determine the ramp's state based on the ramp control strategy and the sensor input data received. The process shall coordinate its activities with the process responsible for controlling the road(surface street) network.

Collect Demand Forecast Data (P-Spec 1.4.2)

Overview: This process shall collect data from other ITS functions for use as input to the demand forecasting process within the Manage Demand facility of the Manage Traffic function. The process shall support data retrieval from other functions on request from the traffic operations personnel and through the receipt of unsolicited data from ITS functions. It shall load all the data that it receives in a consistent format into the input store used by the demand forecasting process.

TMC Probe Information Collection Equipment Package consists of:

Process Tag/AVL Data for Link Time Data (P-Spec 1.1.2.5)

Overview: This process shall be responsible for processing tag and AVL data collected from roadside readers or obtained from an analysis of toll transaction records. The process shall receive the processed tag and AVL data from the data collection process and shall calculate the travel time for the links under tag surveillance that have been traveled by the vehicles carrying the tags. This shall be achieved by noting the successive times at which the tag data is received and calculating the travel time from the difference. The data obtained from the toll tag transaction record analysis and/or tag reader locations shall not need any further processing as it shall contain the average travel times between successive toll collection plazas and tag reading locations. The process shall maintain a data store which contains the average travel time for each link in the surface street and freeway network under tag surveillance calculated from the previously described data. Calculation of the actual average values shall employ some type of aggregation processing (e.g. smoothing or similar technique) and be stored for differing time categories (e.g. times of day, day of week, holidays) in periodic increments. The current delay time for a link shall be the difference between current travel time value and the aggregate processed (e.g. average) value for that time category.

Retrieve Traffic Data (P-Spec 1.1.4.1)

Overview: This process shall on request retrieve traffic data from the data stores managed by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function. It shall be possible for requests to originate from traffic operations personnel, the media operator, the Manage Demand facility within the Manage Traffic function, the Plan System Deployment function and the Provide Driver and Traveler Services function. With the exception of those from the Manage Demand facility and the Plan System Deployment function, all requests shall be provided by interface processes. The process shall also generate traffic data for output by other processes to in-vehicle signage functions.

TMC Regional Traffic Control Equipment Package consists of:

Provide Traffic Operations Personnel Traffic Data Interface (P-Spec 1.1.4.2)

Overview: This process shall provide the interface through which traffic operations personnel can obtain access to the data stored by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function, and set up the parameters that govern the data that is available to non-traffic operations people via a separate process to the media operator. This stored data shall comprise current and long term (historic) data on traffic conditions, weather conditions and roadside equipment activity, plus prediction estimates of traffic conditions. The data shall apply to some or all of the surface street and freeway network served by the specific instance of the Manage Traffic function. Where appropriate and/or requested by the traffic operations personnel, the process shall provide the data output in the form of an overlay onto a map of the relevant part(s) of the surface street and freeway network served by the instance of the function. The process shall obtain the map from a local data store, which it shall enable the traffic operations personnel to update as and when required.

Exchange data with Other Traffic Centers (P-Spec 1.1.5)

Overview: This process shall exchange data with similar processes in other Traffic Management Subsystems (TMS's). The other TMS can be adjacent geographically, under control of a different jurisdiction, or part of a more complex hierarchy. The exchange of data shall be triggered by either a request from a remote TMS for data from the TMS to which the Manage Traffic function belongs, or because data needs to be sent from the local TMS to a remote TMS. This data shall include traffic control preemption for vehicle routes which pass through the local network but have a destination in an area served by a remote TMS, or include data about an incident that has an impact on the traffic conditions in the network served by a remote TMS. The data received from remote TMS's shall be used either to vary the current traffic control strategy to give signal preemption to emergency vehicles or enable the passage of commercial vehicles with unusual loads, or as input to the local traffic predictive model estimation process.

Output Control Data for Roads (P-Spec 1.2.4.1)

Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the road (surface street) network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators, such as intersection and pedestrian controllers, dynamic message signs (DMS), highway advisory radio (HAR), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall be sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

Output Control Data for Freeways (P-Spec 1.2.4.2)

Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the freeway network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators, such as dynamic message signs (DMS), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall have been sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

TMC Reversible Lane Management Equipment Package consists of:

Monitor Reversible Lanes (P-Spec 1.1.2.7)

Overview: This process shall be responsible for monitoring the use of reversible lanes and detecting wrong-way vehicles in

reversible lanes. The process shall monitor sensor data and video images from the reversible lanes, and use this information along with the lane status (which direction it is currently operating) to identify when a vehicle is traveling in the wrong direction on the reversible lane.

Output Control Data for Freeways (P-Spec 1.2.4.2)
Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the freeway network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators, such as dynamic message signs (DMS), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall have been sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

Provide Traffic Operations Personnel Incident Data Interface (P-Spec 1.3.4.2)
Overview: This process shall provide the interface between the traffic operations personnel and the Manage Incidents facility of the Manage Traffic function. It shall enable the personnel to request and amend details of predicted and current incidents and predetermined incident responses, obtain and control incident video image data and manually re-classify incidents as possible or current or a planned event. It shall also output to the traffic operations personnel incident details to which no predetermined response currently exists. The process shall support inputs from and outputs to the traffic operations personnel Where appropriate and/or requested by the traffic operations personnel, the process shall provide the output 'display' in a form incorporating a map of the relevant part(s) of the surface street and freeway network served by the function. The process shall obtain the map from a local data store, which it shall request to be updated by another process as and when required.

Process TM Detected Violations (P-Spec 5.4.1)
Overview: This process shall manage the details of high occupancy vehicle (HOV) lane use, wrong-way vehicle detection in reversible lanes, and pollution violations reported by the Manage Traffic function. The process shall use the parameters in the store of traffic management (TM) violation (enforcement) data to obtain the vehicle registration data from the appropriate State Department of Motor Vehicles (DMV) office, before sending all of the received information to the correct law enforcement agency. This process shall also maintain the TM enforcement data store, entering all information received from other processes.

TMC Road Weather Monitoring Equipment Package consists of:

Process Traffic Data for Storage (P-Spec 1.1.2.1)
Overview: This process shall receive data from other processes and store the data into the long term and current data stores. The data shall comprise sensor data, both smoothed and unsmoothed: processed sensor surveillance data, data sent to control indicators (output devices e.g. intersection controllers, pedestrian controllers, dynamic message signs, ramp metering equipment), parking lot management data and other street equipment, the status data received from the indicators, plus current traffic conditions, planned events, current incidents, parking lot states, freeway ramp states, link travel times, roadway conditions provided by vehicle probes, and selected traffic control strategy. The data stored by the process in the current data store shall be the values collected over a relatively short period of time. The data stored in the long term data store shall be retained for a longer period. The data retained in the long term data store may be aggregated so as to reduce the storage requirements for long historical records, the amount of aggregation to be an implementation decision.

Process Traffic Data (P-Spec 1.1.2.2)
Overview: This process shall receive and process data from sensors (both traffic and environmental) at the roadway. The process distributes data to Provide Device Control processes that are responsible for freeway, highway rail intersections, parking lot, surface street and freeway management. It also sends the data to another Provide Traffic Surveillance process for loading into the stores of current and long term data. Information about the various sensors to aid in this processing and distribution of data is accessed from the data store static_data_for_sensor_processing.

Retrieve Traffic Data (P-Spec 1.1.4.1)
Overview: This process shall on request retrieve traffic data from the data stores managed by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function. It shall be possible for requests to originate from traffic operations personnel, the media operator, the Manage Demand facility within the Manage Traffic function, the Plan System Deployment function and the Provide Driver and Traveler Services function. With the exception of those from the Manage Demand facility and the Plan System Deployment function, all requests shall be provided by interface processes. The process shall also generate traffic data for output by other processes to in-vehicle signage functions.

Store Possible Incident Data (P-Spec 1.3.2.1)
Overview: This process shall receive data on possible incidents from other processes within the Manage Incidents facility and other ITS functions. The process shall load all data that it receives into the store of possible incidents. As part of the loading activity, the process shall enter the data into the relevant parts of the standard format for incident data, and shall assign a level of confidence (e.g. related to the source of the data or time of its detection) to that data.

Review and Classify Possible Incidents (P-Spec 1.3.2.2)
Overview: This process shall review input data about possible incidents and provide verification of the incident. The process shall have the capability of using algorithms to automatically identify and verify an incident. The process shall have the capability to classify an incident as current incident or a planned event and shall be load the data into the store of possible incidents as either current incidents or planned events. The process shall report any incidents that it is unable to verify or classify to the traffic operations personnel for manual verification and classification. The process shall allow the traffic operations personnel to request all possible incidents and carry out the verification and classification process manually.

Provide Traffic Operations Personnel Incident Data Interface (P-Spec 1.3.4.2)

Overview: This process shall provide the interface between the traffic operations personnel and the Manage Incidents facility of the Manage Traffic function. It shall enable the personnel to request and amend details of predicted and current incidents and predetermined incident responses, obtain and control incident video image data and manually re-classify incidents as possible or current or a planned event. It shall also output to the traffic operations personnel incident details to which no predetermined response currently exists. The process shall support inputs from and outputs to the traffic operations personnel Where appropriate and/or requested by the traffic operations personnel, the process shall provide the output 'display' in a form incorporating a map of the relevant part(s) of the surface street and freeway network served by the function. The process shall obtain the map from a local data store, which it shall request to be updated by another process as and when required.

Manage Resources for Incidents (P-Spec 1.3.4.5)

Overview: This process shall provide the capability for the Manage Traffic function to generate and receive requests for resources in responding to incidents. The process shall provide the capability for traffic operations personnel to request resources from the Construction and Maintenance to provide equipment and support for incident response and clean up. The process shall be able to receive resource requests from the Manage Emergency function and respond with the status of the response by Construction and Maintenance or the traffic operations personnel.

TMC Signal Control Equipment Package consists of:

Process Traffic Data (P-Spec 1.1.2.2)

Overview: This process shall receive and process data from sensors (both traffic and environmental) at the roadway. The process distributes data to Provide Device Control processes that are responsible for freeway, highway rail intersections, parking lot, surface street and freeway management. It also sends the data to another Provide Traffic Surveillance process for loading into the stores of current and long term data. Information about the various sensors to aid in this processing and distribution of data is accessed from the data store static_data_for_sensor_processing.

Provide Traffic Operations Personnel Traffic Data Interface (P-Spec 1.1.4.2)

Overview: This process shall provide the interface through which traffic operations personnel can obtain access to the data stored by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function, and set up the parameters that govern the data that is available to non-traffic operations people via a separate process to the media operator. This stored data shall comprise current and long term (historic) data on traffic conditions, weather conditions and roadside equipment activity, plus prediction estimates of traffic conditions. The data shall apply to some or all of the surface street and freeway network served by the specific instance of the Manage Traffic function. Where appropriate and/or requested by the traffic operations personnel, the process shall provide the data output in the form of an overlay onto a map of the relevant part(s) of the surface street and freeway network served by the instance of the function. The process shall obtain the map from a local data store, which it shall enable the traffic operations personnel to update as and when required.

Select Strategy (P-Spec 1.2.1)

Overview: This process shall select the appropriate traffic control strategy to be implemented over a road and/or freeway section served by the specific instance of the Manage Traffic function. The strategy shall be selected by the process from a number that are available, e.g. adaptive control, fixed time control, local operations. The selected strategy shall be passed by the process to the actual control processes for implementation according to the part of the network to which it is to be applied, i.e. surface roads, freeways (i.e. limited access roads), ramps and/or parking lots. The definition of strategy can be extended to include a strategy for the operations of sensors such as video cameras used to provide traffic surveillance data. The process shall make it possible for the current strategy selection to be modified to accommodate the effects of such things as incidents, emergency vehicle preemption, the passage of commercial vehicles with unusual loads, equipment faults and overrides from the traffic operations personnel. The strategy for control of freeways and parking lots is through use of DMS signs and lane indicators. The strategy for control of ramps is through the timing plans for ramp meters. The selected strategy shall be sent to the process within the Provide Traffic Surveillance facility responsible for maintaining the store of long term data.

Determine Indicator State for Road Management (P-Spec 1.2.2.2)

Overview: This process shall implement selected traffic control strategies and transit priority on some or all of the indicators covering the road (surface street) network served by the Manage Traffic function. It shall implement the strategies only using the indicators (intersection and pedestrian controllers, variable message signs (dms), etc.) that are specified in the implementation request and shall coordinate its actions with those of the processes that control the freeway network and the ramps that give access to the freeway network.

Output Control Data for Roads (P-Spec 1.2.4.1)

Overview: This process shall transfer data to processes responsible for controlling equipment located at the roadside within the road (surface street) network served by the Manage Traffic function. This data shall contain outputs for use by roadside indicators, such as intersection and pedestrian controllers, dynamic message signs (DMS), highway advisory radio (HAR), etc. Data for use by in-vehicle signage equipment shall be sent to another process for output to roadside processes. All data shall be sent to this process by processes within the Manage Traffic function. This process shall also be responsible for the monitoring of input data showing the way in which the indicators are responding to the data that they are being sent, and the reporting of any errors in their responses as faults to the Collect and Process Indicator Fault Data facility within the Manage Traffic function. All output and input data shall be sent by the process to another process in the Manage Traffic function to be loaded into the store of long term data.

TMC Toll/Parking Coordination Equipment Package consists of:

Implement Demand Management Policy (P-Spec 1.4.4)

Overview: This process shall implement the traffic and travel demand forecast data produced by the demand forecasting process in the Manage Travel Demand facility of the Manage Traffic function. The new demand forecast data shall be implemented in such a way that it can influence the demand from travelers for various types of services provided by ITS functions. The process shall when required, request changes to transit services, and/or the charges for tolls, and/or the use of parking lot spaces (as per the locally determined demand policy). It shall communicate the results of its policy

implementation to the process that provides the interface to the traffic operations personnel.

TMC Traffic Information Dissemination Equipment Package consists of:

Retrieve Traffic Data (P-Spec 1.1.4.1)

Overview: This process shall on request retrieve traffic data from the data stores managed by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function. It shall be possible for requests to originate from traffic operations personnel, the media operator, the Manage Demand facility within the Manage Traffic function, the Plan System Deployment function and the Provide Driver and Traveler Services function. With the exception of those from the Manage Demand facility and the Plan System Deployment function, all requests shall be provided by interface processes. The process shall also generate traffic data for output by other processes to in-vehicle signage functions.

Provide Traffic Operations Personnel Traffic Data Interface (P-Spec 1.1.4.2)

Overview: This process shall provide the interface through which traffic operations personnel can obtain access to the data stored by other processes in the Provide Traffic Surveillance facility of the Manage Traffic function, and set up the parameters that govern the data that is available to non-traffic operations people via a separate process to the media operator. This stored data shall comprise current and long term (historic) data on traffic conditions, weather conditions and roadside equipment activity, plus prediction estimates of traffic conditions. The data shall apply to some or all of the surface street and freeway network served by the specific instance of the Manage Traffic function. Where appropriate and/or requested by the traffic operations personnel, the process shall provide the data output in the form of an overlay onto a map of the relevant part(s) of the surface street and freeway network served by the instance of the function. The process shall obtain the map from a local data store, which it shall enable the traffic operations personnel to update as and when required.

Provide Direct Media Traffic Data Interface (P-Spec 1.1.4.3)

Overview: This process shall be responsible for providing the interface between the media and the process responsible for obtaining data from the stores of traffic data maintained by other processes within the Provide Traffic Surveillance facility of the Manage Traffic function. The process shall enable the media to request and be provided with current, long term (historic) and predicted traffic data. The data may be provided in one or more formats: as a data stream, as processed and displayed to Traffic Operations Personnel (e.g. graphical summaries of link speeds),or as a display (with data included on a map of relevant part(s) of the road and freeway served by the Manage Traffic function. The media shall only be able to request and see displayed that data that the traffic operations personnel have made available, through the use of the definition in the traffic data media parameters.

Provide Media Incident Data Interface (P-Spec 1.3.4.3)

Overview: This process shall provide the interface between the Media and the Manage Incidents facility. It shall enable the media to request details of incidents and shall allow transmission of incident information to the media. The media shall also provide raw input data on possible incidents. The process shall enable the output to incorporate a map of the area to which the incidents relate.

TMC Traffic Network Performance Evaluation Equipment Package consists of:

Process Traffic Data for Storage (P-Spec 1.1.2.1)

Overview: This process shall receive data from other processes and store the data into the long term and current data stores. The data shall comprise sensor data, both smoothed and unsmoothed: processed sensor surveillance data, data sent to control indicators (output devices e.g. intersection controllers, pedestrian controllers, dynamic message signs, ramp metering equipment), parking lot management data and other street equipment, the status data received from the indicators, plus current traffic conditions, planned events, current incidents, parking lot states, freeway ramp states, link travel times, roadway conditions provided by vehicle probes, and selected traffic control strategy. The data stored by the process in the current data store shall be the values collected over a relatively short period of time. The data stored in the long term data store shall be retained for a longer period. The data retained in the long term data store may be aggregated so as to reduce the storage requirements for long historical records, the amount of aggregation to be an implementation decision.

Process Traffic Data (P-Spec 1.1.2.2)

Overview: This process shall receive and process data from sensors (both traffic and environmental) at the roadway. The process distributes data to Provide Device Control processes that are responsible for freeway, highway rail intersections, parking lot, surface street and freeway management. It also sends the data to another Provide Traffic Surveillance process for loading into the stores of current and long term data. Information about the various sensors to aid in this processing and distribution of data is accessed from the data store static_data_for_sensor_processing.

Generate Predictive Traffic Model (P-Spec 1.1.3)

Overview: This process shall be responsible for continually producing and updating a predictive model of the traffic flow conditions in the road or freeway network served by the Manage Traffic function that an instance of this process is allocated to. The prediction shall be based on current surveillance, historic traffic data and surveillance, current incidents, planned events, current traffic control strategy, data received from other Traffic Management Subsystems (TMS's) serving other geographic and/or jurisdictional areas, and current and predicted weather conditions. The predictive model of traffic flow produced by this process shall be used by processes in the Manage Traffic function and other ITS functions.

Exchange data with Other Traffic Centers (P-Spec 1.1.5)

Overview: This process shall exchange data with similar processes in other Traffic Management Subsystems (TMS's). The other TMS can be adjacent geographically, under control of a different jurisdiction, or part of a more complex hierarchy. The exchange of data shall be triggered by either a request from a remote TMS for data from the TMS to which the Manage Traffic function belongs, or because data needs to be sent from the local TMS to a remote TMS. This data shall include traffic control preemption for vehicle routes which pass through the local network but have a destination in an area served by a remote TMS, or include data about an incident that has an impact on the traffic conditions in the network served by a remote TMS. The data received from remote TMS's shall be used either to vary the current traffic control strategy to give signal preemption to emergency vehicles or enable the passage of commercial vehicles with unusual loads, or as input to the

local traffic predictive model estimation process.

Maintain Traffic and Sensor Static Data (P-Spec 1.2.6.1)

Overview: This process shall maintain the store of static and link data used by other processes within the Manage Traffic function. Link data shall also be sent to the Provide Driver and Traveler Services function to enable it to obtain data about links that are not in the geographic area which it serves.

Provide Static Data Store Output Interface (P-Spec 1.2.6.2)

Overview: This process shall provide updates of static data to other processes in the Provide Traffic Control facility of the Manage Traffic function. An update of the data shall only be provided when this process has been notified by another process that the contents of the store of static data has been changed. This process shall provide updates to the map update provider about changes to the static data of a particular region.

Provide Traffic Operations Personnel Demand Interface (P-Spec 1.4.1)

Overview: This process shall provide the interface between the traffic operations personnel and the processes and data stores used within the Manage Demand facility of the Manage Traffic function. It shall enable the traffic operations personnel to access the data used as input by the demand forecasting process and the results of that process, to request that the input data be updated, set the policies used as input to the Calculate Forecast Demand process, to request that the demand forecasting process runs, and to run the process that implements the results. Where appropriate and/or requested by the traffic operations personnel, the process shall provide the output in a form that includes a map of the relevant part(s) of the road and freeway network served by the Manage Travel Demand function. The process shall obtain the map from a local data store, which it shall request to be updated by another process when required.

Collect Demand Forecast Data (P-Spec 1.4.2)

Overview: This process shall collect data from other ITS functions for use as input to the demand forecasting process within the Manage Demand facility of the Manage Traffic function. The process shall support data retrieval from other functions on request from the traffic operations personnel and through the receipt of unsolicited data from ITS functions. It shall load all the data that it receives in a consistent format into the input store used by the demand forecasting process.

Update Demand Display Map Data (P-Spec 1.4.3)

Overview: This process shall provide updates to the store of map data used for displays of forecast traffic and travel demand produced by processes in the Manage Travel Demand facility of the Manage Traffic function. The process shall obtain the new data from a specialist map data supplier or some other appropriate source, on receiving an update request from the traffic operations personnel interface process within the Manage Travel Demand facility.

Implement Demand Management Policy (P-Spec 1.4.4)

Overview: This process shall implement the traffic and travel demand forecast data produced by the demand forecasting process in the Manage Travel Demand facility of the Manage Traffic function. The new demand forecast data shall be implemented in such a way that it can influence the demand from travelers for various types of services provided by ITS functions. The process shall when required, request changes to transit services, and/or the charges for tolls, and/or the use of parking lot spaces (as per the locally determined demand policy). It shall communicate the results of its policy implementation to the process that provides the interface to the traffic operations personnel.

Calculate Forecast Demand (P-Spec 1.4.5)

Overview: This process shall provide a forecast of traffic and travel demand in the geographic area served by the Manage Traffic function to which this instance of the Manage Travel Demand facility belongs. The process shall base its forecast on the current and predicted traffic levels traveler demand patterns obtained from an analysis of data obtained from elsewhere within the Manage Traffic function and from other ITS functions as well as locally determined demand policy. The process shall produce a demand forecast that changes the way that services are provided by ITS functions according to locally determined demand policy.

Traffic Data Collection Equipment Package consists of:

Manage Traffic Archive Data (P-Spec 1.1.4.7)

Overview: This process shall collect traffic data and ahs operational data to distribute to the Manage Archive Data function. The process shall run when a request for data is received from an external source, or when fresh data is received.

Traffic Maintenance Equipment Package consists of:

Collect and Process Sensor Fault Data (P-Spec 1.1.1.2)

Overview: This process shall be responsible for collecting sensor status, identifying faults, and logging faults that have been detected by processes in other parts of the Manage Traffic function. It shall be possible for the faults to have been detected locally at the sensors, or centrally through communications links with the sensors. The process shall pass on new fault data to another processes for communication to the Construction and Maintenance terminator and shall receive fault clearances from the same terminator. It shall also maintain a store of the current fault state of all sensors. The process shall provide facilities that enable traffic operations personnel to review and update the current fault status of all sensors. Details of faulty and fixed equipment shall be passed by the process to the traffic control strategy selection process so that it can adjust its strategy to take account of the fault(s).

Collect Indicator Fault Data (P-Spec 1.2.8.1)

Overview: This process shall collect data about faults in the operation of indicators (e.g. signals, dms, har) that have been detected by processes in other parts of the Manage Traffic function. It shall be possible for the faults to be detected locally at the indicators, or centrally through communications links with the indicators.

Maintain Indicator Fault Data Store (P-Spec 1.2.8.2)

Overview: This process shall collect data about indicator faults that have been detected by processes in other parts of the Manage Traffic function. It shall be possible for the faults to have been detected locally at the indicators, or centrally through communications links with the indicators. The process shall pass on new fault data to another process for communication to the Construction and Maintenance terminator and shall receive fault clearances from the same process

communicating with that terminator. It shall also maintain a store of the current fault state of all indicators. The process shall provide facilities that enable traffic operations personnel to review and update the current fault status of all indicators. Details of faulty and fixed equipment shall be passed by the process to the traffic control strategy selection process so that it can adjust its strategy to take account of the current fault(s).

Provide Indicator Fault Interface for C and M (P-Spec 1.2.8.3)
Overview: This process shall provide an interface for the exchange of data with the Construction and Maintenance terminator. The interface shall be used to both send data containing details of new indicator equipment faults, and to receive clearances when the faults are cleared. The details of new equipment faults and the clearances shall be received from and sent to another process.

Provide Traffic Operations Personnel Indicator Fault Interface (P-Spec 1.2.8.4)
Overview: This process shall provide the interface through which traffic operations personnel access data about faults on indicator equipment controlled by the Manage Traffic function. The process shall enable the personnel to monitor all indicator equipment faults that have been detected, and if necessary, amend that data. It shall also enable the traffic operations personnel to manually input faults in cases where they cannot otherwise be detected.

TRMS Transit Management

Transit Center Fare and Load Management Equipment Package consists of:

Manage Transit Vehicle Advanced Payments (P-Spec 4.6.8)
Overview: This process shall act as the interface for advanced payment of tolls and parking lot charges from the transit user. Requests for these advanced payments shall be passed to other processes in the Provide Electronic Payment Services function for transaction processing. The process shall ensure that the response to these requests from transit users is returned to the transit vehicle from which it was made.

Process Fare Payment Violations (P-Spec 5.4.4)
Overview: This process shall manage the details of fare payment violations reported by the Provide Electronic Payments function. The process shall use the parameters in the store of fare payment violation (enforcement) data to process and send the data to the correct law enforcement agency. This process shall also maintain the fare payment enforcement data store, entering all information received from other processes.

Process Vehicle Fare Collection Violations (P-Spec 5.4.5)
Overview: This process shall manage the details of fare collection violations reported by the Manage Transit function that have taken place on-board a transit vehicle. The process shall use the parameters in the store of vehicle fare collection violation (enforcement) data to process and send the information to the correct law enforcement agency. This process shall also maintain the vehicle fare collection enforcement data store, entering all information received from other processes.

Process Roadside Fare Collection Violations (P-Spec 5.4.7)
Overview: This process shall manage the details of fare collection violations reported by the Manage Transit function that have taken place at the roadside, i.e., at a transit stop. The process shall use the parameters in the store of roadside fare collection violation (enforcement) data to process and send the information to the correct law enforcement agency. This process shall also maintain the roadside fare collection enforcement data store, entering all information received from other processes.

Register for Advanced Transit Fare Payment (P-Spec 7.3.1.1)
Overview: This process shall be responsible for responding to requests for transit fares to be paid in advance. The advanced transit fare data shall be forwarded by the process to other processes for the actual cost to be obtained and the payment transactions initiated.

Determine Advanced Transit Fares (P-Spec 7.3.1.2)
Overview: This process shall be responsible for receiving a request to pay an advanced transit fare. It shall obtain the required transit fare data from a local store of transit fares and shall then forward the data to the billing processes. The store of fare data shall be maintained by another process.

Manage Transit Fare Financial Processing (P-Spec 7.3.1.3)
Overview: This process shall be responsible for maintaining a log of all the transactions carried out by other processes in the Process Electronic Transit Fare Payment facility. The identity of the payee shall have been removed from the data before it is stored. At periodic intervals the process shall output the accumulated records to the transit fleet manager, the transit system operator and to another process in the Provide Electronic Payment Services function. The process shall also be responsible for sending details of transactions to the financial institution to enable the users to be billed through their credit identities. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Check for Advanced Transit Fare Payment (P-Spec 7.3.1.4)
Overview: This process shall be responsible for checking to see if the required transit fare payment has already been made. The process shall determine the existence of an advance payment for the transit fare by comparing the received payment information with that in the store containing the list of advanced payments. If the payment has already been made then the process shall remove the requirement for local billing and remove the record of the advanced payment from the store. Details of each payment transaction shall be sent by the process to another process with the payment information received from the transit user removed.

Bill Transit User for Transit Fare (P-Spec 7.3.1.5)
Overview: This process shall be responsible for obtaining payment for a transit fare transaction using data provided by the transit user. The process shall achieve this either by requesting that the fare be deducted from the credit being stored by the tag that is acting as the payment instrument for the transit user, or informing the transit user that payment for the fare will be debited to the credit identity provided by the tag. Before sending data to the tag, the process shall check that the transit user's credit identity is not already in the list of bad payers, and if it is request an image of the user which can be forwarded to

the appropriate enforcement agency via another process. The tag may be in the form of cash, some type of credit or debit card, an electronic purse, or an intelligent transit ticket upon which pre-payment has been recorded, etc. Details of the transaction shall always be sent by the process to the process that manages transit fare transactions. The process shall load details of advanced transit fare payments into a data store for use by another process when the transit user eventually passes a fare payment point. If requested the process shall provide a copy of the current bad payers list to processes in the transit vehicle fare collection facility for use in on-board payment validation.

Collect Bad Transit Fare Payment Data (P-Spec 7.3.1.6)
Overview: This process shall be responsible for maintaining a data store containing a list of invalid transit user credit identities. The process shall use this data to check credit identities provided for checking by the billing process. This checking shall ensure that the current transit fare payment transaction is using a credit identity that has not previously had an invalid transaction. Details of possible invalid credit identities shall be sent by the process to the financial institution for verification. The process shall also receive from the financial institution details of invalid payment instrument data that has been found by other means.

Update Transit Fare Data (P-Spec 7.3.1.7)
Overview: This process shall be responsible for managing the store of data that provides the actual value of transit fares for each segment of each regular transit route. The process shall also act as the interface through which the transit system operator can output and make changes to the stored data, and copies of this data can be provided to the Centralized Payments facility on request. The process shall support inputs from the transit system operator in both manual and audio form, and shall provide its outputs in audible and visual forms. It shall enable the visual output to be either in hardcopy, or as a display. The process shall automatically output the new fares for use by process on-board a transit vehicle and at the roadside, as well as by other ITS functions.

Process Transit User Other Services Payments (P-Spec 7.4.1.5)
Overview: This process shall be responsible for collecting advance payments for other (yellow pages) services. The transaction data shall be provided by processes in the Manage Transit function in response to reservation requests from a transit user either at the roadside, i.e., a transit stop, or on-board a transit vehicle. The process shall send the received transaction data to the financial institution and shall send the response to the requesting process. It shall also send details of the transaction to another process for entry into a store of transaction records.

Transit Center Fixed-Route Operations Equipment Package consists of:

Manage Transit Vehicle Operations Data (P-Spec 4.1.6)
Overview: This process shall manage the store of transit vehicle operating data. When any new data is received from another process, this process shall load it into the data store. This process shall also retrieve selected data on request from other processes in the Manage Transit function.

Provide Transit Plans Store Interface (P-Spec 4.2.2)
Overview: This process shall provide the interface to the store of current regular transit plans, i.e., routes and schedules and demand responsive transit schedules. The process shall enable the store to be used by the Demand Responsive Transit facility as a source of data about regular transit services when it is generating its schedules. The demand responsive transit schedule data shall be accessible as input to the regular transit route and schedule generation processes.

Generate Transit Routes (P-Spec 4.2.3.1)
Overview: This process shall generate new transit routes. The process shall use parameters set up by the transit fleet manager, operational data for the current routes and schedules, plus the current routes and digitized map data, as sources of input from which the new routes are generated. The process shall also use the requested input data containing the demand responsive transit routes and schedules. The generation of new routes by the process shall be initiated as a result of data received from the transit fleet manager interface process, with the output being sent to other processes for storage. The output data produced by the process shall include sufficient data for a specialist map data provider to generate maps showing transit routes and stops, either as separate data or as part of the general digitized map data provided to other ITS functions.

Generate Schedules (P-Spec 4.2.3.2)
Overview: This process shall generate new transit schedules for use by the regular transit operation. The process shall use parameters set up by the transit fleet manager, operational data for the current routes and schedules, plus the current routes and schedules themselves, as sources of input from which the new schedules are generated. The process shall also use the data containing the demand responsive transit routes and schedules to generate the new schedules. The generation of new schedules by the process shall be initiated as a result of data received from the transit fleet manager interface process or a request for services to a parking lot. The process shall send its output to another process for storage.

Provide Transit Fleet Manager Interface for Services Generation (P-Spec 4.2.3.4)
Overview: This process shall provide the interface through which the transit fleet manager controls the generation of new routes and schedules (transit services). The transit fleet manager shall be able to review and update the parameters used by the routes and schedules generation processes and to initiate these processes. This process shall also act as the interface through which the Manage Demand facility in the Manage Traffic function can request changes to the current routes and schedules in its efforts to adjust the modal split of travelers' trips in order to make the most efficient use of the road and highway network served by the local ITS functions. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Manage Transit Operational Data Store (P-Spec 4.2.3.5)
Overview: This process shall collect transit operational data and load it into a data store for use by the routes and schedules generation processes. The data shall be provided to this process by other processes in the Manage Transit function and shall enable an accurate picture of how routes and schedules are currently operating in terms of the numbers of vehicles that are available, the numbers of passengers that they are carrying, and the numbers of passengers passing through each roadside facility (transit stop).

Produce Transit Service Data for Manage Transit Use (P-Spec 4.2.3.6)
Overview: This process shall obtain transit routes and services data and distribute it internally to other processes in the Manage Transit function. The process shall only provide its outputs when fresh data is received from another process. If this does not happen for a long period of time (days), then the process shall initiate its own request for fresh data.

Transit Center Information Services Equipment Package consists of:

Provide Transit Vehicle Status Information (P-Spec 4.1.5)
Overview: This process shall provide transit vehicle operational data to processes within the Manage Transit function, and on request to the transit fleet manager and the Manage Travel Demand facility in the Manage Traffic function. This process shall also provide transit probe and AVL information to the Manage Traffic function. Transit probe information can be provided by fixed route, flexibly routed, and paratransit services. The data shall be obtained by this process from another process that manages a store of transit vehicle operating data.

Manage Transit Vehicle Operations Data (P-Spec 4.1.6)
Overview: This process shall manage the store of transit vehicle operating data. When any new data is received from another process, this process shall load it into the data store. This process shall also retrieve selected data on request from other processes in the Manage Transit function.

Produce Transit Service Data for External Use (P-Spec 4.2.3.3)
Overview: This process shall obtain transit routes and services data and distribute it to ITS functions that are outside the transit center. The process shall run when a request for data is received from an external source, or when fresh data is received. In the latter case, the data shall only be sent by the process to the multimodal transportation service provider. For data requests that include an origin and a destination, the process shall only provide details of the transit service(s) that link the two points. The details shall only cover those portion(s) of the service(s) that are needed to complete the requested trip and not full details of the services.

Manage Transit Vehicle Advanced Payments (P-Spec 4.6.8)
Overview: This process shall act as the interface for advanced payment of tolls and parking lot charges from the transit user. Requests for these advanced payments shall be passed to other processes in the Provide Electronic Payment Services function for transaction processing. The process shall ensure that the response to these requests from transit users is returned to the transit vehicle from which it was made.

Transit Center Multi-Modal Coordination Equipment Package consists of:

Provide Transit Vehicle Correction Data Output Interface (P-Spec 4.1.2.4)
Overview: This process shall provide the interface through which multimodal transportation service providers are informed of a transit vehicle schedule deviation. The output delivered by the process results from input received from another process in the Manage Transit function, and shall relate to the deviation of an individual transit vehicle. The process shall provide the output in a form that enables adjustments to be made to any connecting services being provided by the multimodal supplier so that transit users are not inconvenienced by the deviation of a transit vehicle on one service. A zero (or null) output shall be provided when no deviations are present.

Manage Transit Vehicle Deviations (P-Spec 4.1.4)
Overview: This process shall manage large deviations of individual transit vehicles, deviations in rural areas, and deviations of large numbers of vehicles. The process shall generate the necessary corrective actions which may involve more than the vehicles concerned and more far reaching action, such as, the introduction of extra vehicles, wide area signal preemption by the Manage Traffic function, the premature termination of some services, etc. All corrective actions generated by this process shall be subject to the approval of the transit fleet manager before being implemented. Confirmation that the requested overall priority has been given by the Manage Traffic function shall be received by the process.

Provide Transit Vehicle Status Information (P-Spec 4.1.5)
Overview: This process shall provide transit vehicle operational data to processes within the Manage Transit function, and on request to the transit fleet manager and the Manage Travel Demand facility in the Manage Traffic function. This process shall also provide transit probe and AVL information to the Manage Traffic function. Transit probe information can be provided by fixed route, flexibly routed, and paratransit services. The data shall be obtained by this process from another process that manages a store of transit vehicle operating data.

Provide Transit Vehicle Deviation Data Output Interface (P-Spec 4.1.7)
Overview: This process shall provide the interface through which multimodal transportation service providers are informed of transit vehicle schedule deviations. The output delivered by the process shall result from input received from another process in the Manage Transit function, and shall relate to the deviation of a number of transit vehicles such that the disruption will affect several services, possibly on different routes. The process shall provide the output in a form that enables adjustments to be made to any connecting services being provided by the multimodal supplier so that transit users are not inconvenienced by the deviations. A zero (or null) output shall be provided when no deviations are present.

Generate Schedules (P-Spec 4.2.3.2)
Overview: This process shall generate new transit schedules for use by the regular transit operation. The process shall use parameters set up by the transit fleet manager, operational data for the current routes and schedules, plus the current routes and schedules themselves, as sources of input from which the new schedules are generated. The process shall also use the data containing the demand responsive transit routes and schedules to generate the new schedules. The generation of new schedules by the process shall be initiated as a result of data received from the transit fleet manager interface process or a request for services to a parking lot. The process shall send its output to another process for storage.

Provide Interface for Other TRM Data (P-Spec 4.2.3.7)
Overview: This process shall provide the interface through which transit routes and schedules can be exchanged with other transit centers (Other TRM). This data shall be output when data is received from another (local) process and shall enable coordination between services provided by adjacent transit operations, particularly where they serve the same geographic

areas. The process shall also provide routes and schedules to the local process when the data is received from other transit centers.

Provide Interface for Transit Service Raw Data (P-Spec 4.2.3.8)
Overview: This process shall provide and manage the interface to the store in which the raw transit service data is held. This data shall be sent to the process by the routes and schedules generation processes, which are the only other processes permitted to access the store, and then in read-only mode. The received data shall be loaded into the store and distributed by this process to the three processes that are responsible for distributing the data within the transit center (TRM), to other local ITS functions, and to other transit centers (Other TRM), respectively. The process shall read data from the store and return it to whichever of the other three processes has made a data request. Data shall also be received by the process from other transit centers (Other TRM) and from multimodal transportation service providers. The process shall load this data into the data store for use by the local route and schedule generation processes.

Transit Center Paratransit Operations Equipment Package consists of:

Manage Transit Vehicle Operations Data (P-Spec 4.1.6)
Overview: This process shall manage the store of transit vehicle operating data. When any new data is received from another process, this process shall load it into the data store. This process shall also retrieve selected data on request from other processes in the Manage Transit function.

Process Demand Responsive Transit Trip Request (P-Spec 4.2.1.1)
Overview: This process shall provide the interface through which processes in the Provide Driver and Traveler Service function can gain access to the Provide Demand Responsive Transit Service facility. The process shall enable the interface to support the receipt of trip requests, their transfer to another process for the actual demand responsive schedule generation, the output of the proposed schedule and their (possible) subsequent confirmation. The process shall store the input and schedule data relating to each request until such time as the request is confirmed or the data in the request is no longer valid, e.g. the time(s) used in the proposed schedule has(ve) passed. The confirmation of a particular schedule shall be sent by the process to another process that will enable the schedule to be implemented.

Compute Demand Responsive Transit Vehicle Availability (P-Spec 4.2.1.2)
Overview: This process shall provide the facility for the calculation of the location and availability of transit vehicles for use in demand responsive transit operations. The process shall base its calculation on the vehicle's current location and on the output from a process that determines vehicle availability from data input to sensors. The output shall be loaded by the process into a store for use by another process.

Generate Demand Responsive Transit Schedule and Routes (P-Spec 4.2.1.3)
Overview: This process shall provide dynamic routing and scheduling of transit vehicles so that a demand responsive transit service can be provided. The generation of the specific route and schedule by the process shall be initiated by a request from the management process. The choice of route and schedule produced by the process shall depend on what other demand responsive transit schedules have been planned, the availability and location of vehicles, and the relevance of any regular transit routes and schedules. The process shall send its output to another process for output to the requesting process, and shall also load it into a data store for use if the schedule is later confirmed.

Confirm Demand Responsive Transit Schedule and Route (P-Spec 4.2.1.4)
Overview: This process shall provide output when a demand responsive transit schedule is confirmed. The outputs shall contain details of the schedule and shall be sent to the transit fleet manager and to processes that provide interfaces to the transit driver, a store of data used by the regular transit routes and schedule generation processes, and the transit driver schedule generation processes. The process shall obtain the data for the outputs from the store of data provided by the schedule generation process.

Transit Center Security Equipment Package consists of:

Manage Transit Security (P-Spec 4.4.1.1)
Overview: This process shall manage the security in the transit system by monitoring for potential incidents. Data shall be obtained by the process from a variety of sources and assessed for any security problems. Problems shall be passed by the process to the transit system operator for review and the required action. Information about incidents shall also be sent by this process to another process for output to the media, using interface parameters set up by the transit system operator.

Provide Transit System Operator Security Interface (P-Spec 4.4.1.3)
Overview: This process shall provide an interface for the transit system operator to identify and act upon potential information security problems and emergencies. This information shall be provided by other processes through input data flows. This process shall also provide the capability for the transit system operator to update parameters that control the output of data about the potential security problems to the media. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Provide Transit External Interface for Emergencies (P-Spec 4.4.1.4)
Overview: This process shall provide the interface through which information about security problems and emergencies detected within the transit system are distributed directly to the media and other information systems. This process shall construct its output from the data supplied by other processes. This data shall contain parameters that define the way (format, content, etc.) in which the information is output by the process. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Collect Transit Vehicle Emergency Information (P-Spec 4.4.1.6)
Overview: This process shall collect data about emergencies that occur on-board transit vehicles for output to the media and the Manage Emergency Services function. These emergencies may be reported by either the transit driver or a transit user, the latter through such interfaces as panic buttons, alarm switches, etc. For output to the media interface process, the data shall be combined with the data in the media interface parameters data store.

Coordinate Multiple Agency Responses to Incidents (P-Spec 4.4.2)

Overview: This process shall provide transit fleet managers with an interface through which they can control the coordination data sent to the Manage Emergency Services function following the detection of a security problem or emergency within the transit operations network by other processes. The process shall use data from the store of predefined responses to security problems and emergencies in the outputs that it sends to the Manage Emergency Services function. If no match can be found then the process shall send all the available data to the transit fleet manager for action. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Generate Responses for Incidents (P-Spec 4.4.3)
Overview: This process shall provide the interface through which the transit fleet manager can enter and review predefined responses to security problems and emergencies that have been detected by other processes within the Manage Transit function. This data shall be stored in a form which can be used by another process to provide coordination data to the Manage Emergency Services function. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Get Transit User Image for Violation (P-Spec 7.3.3)
Overview: This process shall be responsible for obtaining an image of a transit user who is trying to carry out an invalid fare payment transaction. The process shall send the image request to other processes either at the roadside, i.e., a transit stop, or on-board a transit vehicle, depending on where the transaction is being attempted. However if the collection method is set to batch, then the process shall take no further action, as an image of the offending transit user will not be available. When the image is received, the process shall use it to form part of the data sent to a process in the Manage Emergency Services function for forwarding to the appropriate enforcement agency.

Transit Center Tracking and Dispatch Equipment Package consists of:

Manage Transit Vehicle Operations Data (P-Spec 4.1.6)
Overview: This process shall manage the store of transit vehicle operating data. When any new data is received from another process, this process shall load it into the data store. This process shall also retrieve selected data on request from other processes in the Manage Transit function.

Update Transit Map Data (P-Spec 4.2.3.9)
Overview: This process shall provide updates to the store of digitized map data used by the transit route generation process and as the background for displays of transit services requested by the transit fleet manager. The process shall obtain the new data from a specialist data supplier or some other appropriate data source, after receiving an update request from the transit fleet manager interface process within the function. The processes requiring data for use in transit route generation and as the background to displays will read the data from the store loaded by this process.

Transit Data Collection Equipment Package consists of:

Manage Transit Archive Data (P-Spec 4.2.4)
Overview: This process shall obtain transit passenger and deployment data, transit user payment transaction data, transit emergency data, transit security data, maintenance and personnel data, and distribute it to the Manage Archive Data function. The process shall run when a request for data is received from an external source, or when fresh data is received.

Transit Garage Maintenance Equipment Package consists of:

Monitor Transit Vehicle Condition (P-Spec 4.3.1)
Overview: This process shall monitor the condition of a transit vehicle. It shall use the transit vehicle maintenance specification to analyze brake, drive train, sensors, fuel, steering, tire, processor, communications equipment, and transit vehicle mileage to identify mileage based maintenance, out-of-specification or imminent failure conditions. The data resulting from this analysis shall be loaded by the process into the store of transit vehicle operations data, through the output flow transit vehicle maintenance. This data is then sent to the process that generates transit vehicle maintenance schedules.

Generate Transit Vehicle Maintenance Schedules (P-Spec 4.3.2)
Overview: This process shall generate transit vehicle maintenance schedules and includes what and when maintenance or repair is to be performed. Transit vehicle availability listings (current and forecast) shall also be generated by the process to support transit vehicle assignment planning. The maintenance and/or repair that is to be performed on the transit vehicle shall be scheduled by the process for a specific month, week, day(s), and hour(s). The availability of the transit vehicle that is also output by the process shall be based upon the transit vehicle maintenance schedule. The process shall load each transit vehicle maintenance schedule that it produces into the store of transit vehicle operations data, through the process that maintains this data store.

Generate Technician Work Assignments (P-Spec 4.3.3)
Overview: This process shall assign transit maintenance personnel to a transit vehicle maintenance schedule. The maintenance schedule shall be received from another process and shall define what and when maintenance repair is to be performed to a specific transit vehicle. The process shall base the personnel assignment upon details about the personnel obtained from the transit fleet manager and held in a local data store. These details shall comprise personnel eligibility, work assignments, preferences and seniority. The process shall also provide these details to the transit fleet manager on request. When a work assignment has been generated, the process shall send it to the transit maintenance personnel and also to the process that monitors and verifies maintenance work activity. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Monitor And Verify Maintenance Activity (P-Spec 4.3.4)
Overview: This process shall verify that the transit vehicle maintenance activities were performed correctly and that a time stamped maintenance log for record keeping was generated. The correctness of the maintenance activities shall be judged by the process against the transit vehicle's status, the maintenance personnel's work assignment, and the transit maintenance schedules produced by other processes. The process shall save a time stamped record of all the maintenance activities performed on the vehicle into the transit vehicle maintenance log.

Report Transit Vehicle Information (P-Spec 4.3.5)

Overview: This process shall provide the transit fleet managers with the capability of requesting and receiving transit vehicle maintenance information. The process shall obtain the data for each request from the store of transit vehicle operations data, through the process that manages the data store, and shall produce the output to the transit fleet manager in an easily understood form. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Update Transit Vehicle Information (P-Spec 4.3.6)
Overview: This process shall provide the transit maintenance personnel with the capability to update transit vehicle maintenance information. The process shall send the data received from the transit maintenance personnel to the transit vehicle operations data store management process for use by other processes.

Manage Transit Vehicle Operations Data Store (P-Spec 4.3.7)
Overview: This process shall manage the store of transit vehicle operations data. It shall be able to load data it receives about vehicle maintenance into the store and provide that data on request to other processes.

Transit Garage Operations Equipment Package consists of:

Assess Transit Driver Performance (P-Spec 4.5.1)
Overview: This process shall assess the transit driver's performance at previous work assignments. The process shall carry out this activity by 1) utilizing standardized performance evaluation criteria set forth by governmental regulations and transit operating company policies, 2) assessing the transit driver's driving history, and 3) assessing comments from the transit driver's supervisor(s). It shall also use the details of any moving violations or accidents, supervisor comments, government regulations, and company policies. The data shall be sent to this process by the process that provides the interface to a local data store, each time that the store is updated with driver performance data.

Assess Transit Driver Availability (P-Spec 4.5.2)
Overview: This process shall assess the transit driver's availability based on previous work assignments plus health and vacation commitments. The process shall carry out this activity by 1) utilizing standardized transit driver work criteria set forth by governmental regulations and company policies, 2) monitoring the transit driver's health status and vacation status, and 3) monitoring the transit driver's accumulated work hours. The data shall be sent to this process by the process that provides the interface to a local data store, each time that the store is updated with driver availability data.

Access Transit Driver Cost Effectiveness (P-Spec 4.5.3)
Overview: This process shall assess the transit driver's cost effectiveness when carrying out previous work assignments. The process shall perform this activity by 1) utilizing standard transit driver cost criteria set forth by governmental regulations and company policies, and 2) monitoring the transit driver's hourly wage and accumulated work hours. The data shall be sent to this process by the process that provides the interface to a local data store, each time that the store is updated with driver cost effectiveness data.

Assess Transit Driver Eligibility (P-Spec 4.5.4)
Overview: This process shall assess the transit driver's eligibility for future work assignments. The process shall carry out this activity by 1) monitoring the transit driver's performance, availability and cost effectiveness, 2) utilizing standardized transit driver eligibility criteria set forth by governmental regulations and company policies, and 3) ensuring that the transit driver has the required experience, education and certifications. The data shall be sent to this process in one of two ways: 1) by the process that provides the interface to a local data store, each time that the store is updated with driver eligibility data, or 2) the data is produced as the result of analysis work carried out by other processes within the Manage Traffic function.

Generate Transit Driver Route Assignments (P-Spec 4.5.5)
Overview: This process shall assign transit drivers to transit schedules. The transit driver's eligibility, route preferences, seniority, and transit vehicle availability shall be used by the process to determine the transit driver's route assignment. The output produced by the process shall be sent to the transit driver in the form of the next work assignment. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Update Transit Driver Information (P-Spec 4.5.6)
Overview: This process shall provide the interface through which the transit driver can input data to the store of transit driver information. The interface provided by this process shall enable the transit driver to update personal availability and route assignment information. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Report Transit Driver Information (P-Spec 4.5.7)
Overview: This process shall provide the interface between the transit fleet manager and the store of driver information. The interface provided by the process shall enable the fleet manager to review and update transit driver information. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Provide Transit Driver Information Store Interface (P-Spec 4.5.8)
Overview: This process shall provide the read and write interface to the store of transit driver information. The interface enables the contents of the store to be updated with inputs received from the transit driver and transit fleet manager via other processes, as well as, inputs resulting from analysis of driver availability, cost effectiveness, eligibility, and performance carried out by other processes. The process shall also supply data to these processes when the store is updated with information from the transit driver and fleet manager. It shall also supply data to the process that generates driver route assignments when any of the analysis inputs is received.

TRVS Transit Vehicle Subsystem

On-board Fixed Route Schedule Management Equipment Package consists of:

Determine Transit Vehicle Deviation and ETA (P-Spec 4.1.2.1)
Overview: This process shall determine the schedule deviation and estimated times of arrival (ETA) at transit stops of a transit vehicle. The data shall be sent by this process to other processes in the Manage Transit function for use in calculating corrective instructions for output to the transit vehicle drivers, for use in calculation of a much wider return to schedule strategy where more than one vehicle and/or service is involved, and for storage as transit vehicle operational data.

This process shall also send the data to the transit driver interface process, so that the driver is aware of the actual schedule deviation. This output shall be set to zero (no deviation) when that condition occurs, even when it has followed a period of deviation from schedule.

Determine Transit Vehicle Corrective Instructions (P-Spec 4.1.2.2)
Overview: This process shall generate outputs that enable a transit vehicle schedule deviation to be corrected. The process shall derive its outputs from data received from another process in the Manage Traffic function. The outputs produced by the process shall consist of corrective instructions for output to the transit vehicle driver by a process on-board the vehicle, and preemption requests for traffic signal controllers at road and freeway intersections. The process shall only produce this output when another process has determined that deviation is small, or the transit vehicle is operating in an urban area. In all other conditions, the process shall provide an output that shows that there are no corrective instructions.

Provide Transit Vehicle Driver Interface (P-Spec 4.1.2.3)
Overview: This process shall provide a schedule correction interface for the transit driver in the transit vehicle. The interface shall provide data to the driver about how far the vehicle is from its schedule and what corrective action the driver must take. The data shall be received by the process from other processes in the Manage Traffic function. The output delivered by the process shall be available in audio or visual form in such way that while alerting the driver to the information it contains, it shall in no way impair the driver's ability to operate the vehicle in a manner that is both safe to its passengers and to other vehicles on the roads and freeways. The process shall maintain the output until new data is received from the other processes.

On-board Maintenance Equipment Package consists of:

Process Transit Vehicle Sensor Trip Data (P-Spec 4.1.1)
Overview: This process shall collect and process data available to sensors on-board transit vehicles. This data shall be sent by this process to other processes on-board the transit vehicle and elsewhere in the Manage Traffic function for use in determining vehicle schedule deviations and for storage as operations data.

Process Transit Vehicle Sensor Maintenance Data (P-Spec 4.1.9)
Overview: This process shall collect and process vehicle maintenance data available to sensors on-board transit vehicles. When processed, the data shall be sent by this process on request to another process in the Manage Transit function for storage as transit vehicle operating data so that it can subsequently be used for work on future vehicle maintenance.

On-board Paratransit Operations Equipment Package consists of:

Process Demand Responsive Transit Vehicle Availability Data (P-Spec 4.2.1.5)
Overview: This process shall manage data input to sensor(s) on board a transit vehicle. Data including the vehicle's availability for use in demand responsive transit services shall be provided by this process to other processes within the Manage Transit function.

Provide Demand Responsive Transit Driver Interface (P-Spec 4.2.1.6)
Overview: This process shall provide the interface through which a transit driver will be sent instructions about the demand responsive transit schedule that has been confirmed. The process shall send the data in a format that will enable the driver to implement the schedule. The output provided by the process shall be available in audio or visual form in such a way that while alerting the driver to the information it contains, it shall in no way impair the driver's ability to operate the vehicle in a manner that is both safe to its passengers, and to other vehicles on the roads and freeways. The input and output forms shall also include those that are suitable for travelers with physical disabilities.

On-board Transit Fare and Load Management Equipment Package consists of:

Detect Transit User on Vehicle (P-Spec 4.6.1)
Overview: This process shall detect embarking transit users on-board a transit vehicle and read data from the payment instrument that they are carrying. The process shall provide an image of all transit users which shall be used for violation processing of those who do not have a payment instrument or whose transit fare transaction fails. It shall obtain an image of the required accuracy under all lighting conditions and over the range of speeds with which transit users will pass through the fare collection point on a transit vehicle.

Determine Transit User Needs on Vehicle (P-Spec 4.6.2)
Overview: This process shall determine the transit user's travel routing based on the transit vehicle's current location and the user's destination. The process shall support the transit user's routing, enabling it to include travel on the vehicle for all or part of its route and (possibly) transfer to another vehicle on another route. In order to achieve this capability, the process shall have access to the complete range of transit services (routes and schedules) that are available to the transit user. The transit vehicle's location shall be provided by other processes within the Manage Transit function. Details of all transactions with the transit user's payment details removed, shall be sent by this process to the interface process for loading into a data store.

Determine Transit Fare on Vehicle (P-Spec 4.6.3)
Overview: This process shall calculate the transit user's fare based on the origin and destination provided by the user. The process shall calculate the fare using the transit routing, transit fare category, and transit user history components of the ride data, in addition to information provided by the interface process for the transit fares data store. The accumulated data shall be sent by this process to another process for the actual implementation of the fare payment transaction.

Manage Transit Fare Billing on Vehicle (P-Spec 4.6.4)
Overview: This process shall manage the transit user fare payments on-board a transit vehicle. The process shall receive information about the fare that is to be paid and the method of payment adopted by the transit user. It shall always support two modes of operation to complete the back end financial processing: infrastructure interactive, or semi-autonomous batch processing. The interactive method shall be used for individual transactions, such as those in paratransit type operations where value/volume ratios are high. It shall send transit user fare payment data to processes in the Provide Electronic Payment Services function for financial authorization and transaction processing, plus the return of the result for

display to the transit user. A failed transaction shall result in the transmission of an image of the transit user to another process. Batch processing shall be used by the process for routes where value/volume ratios are low. It shall be performed using all the same data flows and processes as in the interactive method, except that transaction records are queued in a transaction buffer store which shall be maintained by this process. The accumulated data for the fare transactions shall be sent to the Provide Electronic Payment Services function on command from the transit vehicle driver, or when the transit vehicle has reached a convenient point on its route. The transit vehicle driver shall be notified when batch processing has completed successfully. In either mode of operation, a record of the status of all transit fare processing shall be sent to an interface process for the fare collection storage database.

Provide Transit User Fare Payment Interface on Vehicle (P-Spec 4.6.5)

Overview: This process shall provide the fare payment interface for the transit user on-board a transit vehicle. The process shall prompt the transit user for information necessary that has not been provided for the transaction. The result of the transit service ride fare payment plus other services request and payment, shall be reported back to the transit user by the process. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Update Transit Vehicle Fare Data (P-Spec 4.6.6)

Overview: This process shall provide a database on-board the transit vehicle for use in fare processing. The database shall contain transit fare information from which the fares for all possible trips within the transit operational network can be determined.

Provide Transit Vehicle Passenger Data (P-Spec 4.6.7)

Overview: This process shall provide passenger loading and fare statistics data to other ITS functions. The process shall send the data automatically at regular periodic intervals using data collected in the store of fare transaction data. This store receives data from the process that interfaces to the user on-board a transit vehicle.

Provide Transit Vehicle Payment Instrument Interface (P-Spec 7.3.5)

Overview: This process shall be responsible for providing the interface through which the payment information can be read from a transit user tag. The process shall support the reading of this data from transit users embarking on-board transit vehicles, for use in paying the current transit fare, and if required, advanced payments. The process shall support advanced payments for tolls, and/or parking lot charges, and/or transit fares. It shall be possible for the process to collect either the credit identity or the stored credit value data from the tag, and to update the stored credit value as a result of the fare and (possibly) advanced charges having been paid.

On-board Transit Information Services Equipment Package consists of:

Provide Transit Advisory Data On Vehicle (P-Spec 6.2.1.6)

Overview: This process shall gather transit advisory data and provide it via another process to the transit user on-board a transit vehicle. The interface shall receive requests from the transit user specifying the required destination of a transit service ride and other (yellow pages) type services. The transit user may also request and receive information about the state of traffic on the roadway, as well as transit route and stop data (i.e., traffic and transit advisory data). This process extracts data from the store of traveler transit information upon request for advisory data from the driver or transit user in a vehicle. The process shall filter the data read from the store so that output only contains that which is relevant to the current location of the vehicle from which the request was made. The vehicle's location shall be provided to the process in the request data. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Provide Transit User Advisory Interface (P-Spec 6.2.3)

Overview: This process shall provide a data input and output interface for a transit user on-board a transit vehicle. The process shall enable traffic and travel advisory information, plus yellow pages information to be requested and output to the transit user. When constructing the outputs the process shall use the data in the store of vehicle display definitions data. In addition to the traveler's request/ response for information, broadcast advisories about the imminent arrival of the transit vehicle at the next stop are also displayed for the transit user. The process shall handle all inputs and outputs in such a way that they do not impair the vehicle driver's ability to control the transit vehicle in a manner that is safe to both its occupants, to other road and freeway users, and to pedestrians. The input and output forms shall also include those that are suitable for travelers with physical disabilities.

On-board Transit Security Equipment Package consists of:

Manage Transit Emergencies (P-Spec 4.4.1.2)

Overview: This process shall support the management of emergencies that occur in the transit system by processing information received from transit vehicles. The process shall accept inputs from either the transit vehicle driver or a transit user, the latter through such interfaces as panic buttons, alarm switches, etc. The reported emergencies shall be sent to another process for action by the transit system operator and subsequently for output to the media. The process shall also send acknowledgment data to the process providing the interface to the transit driver.

Provide Transit Driver Interface for Emergencies (P-Spec 4.4.1.5)

Overview: This process shall provide an interface to the transit vehicle through which the driver can both report an emergency situation and receive an acknowledgment. The process shall provide this interface in such a way that its operation for both inputs and outputs shall be transparent to transit users on board the vehicle and to anyone outside the vehicle, and shall not compromise the safe operation of the vehicle by the driver.

On-board Transit Signal Priority Equipment Package consists of:

Request Transit Vehicle Preemptions (P-Spec 4.1.2.5)

Overview: This process shall provide the interface through which requests for preemption can be output from a transit vehicle. The output shall be received by the process as a result of data sent from another process in the Manage Transit function. The process shall provide the output in a form that can be used by the controllers at intersections, pedestrian crossings and multimodal crossings on the roads (surface streets) and freeway network served by the Manage Traffic function to provide priority of the transit vehicle. If no data is received from the other process, or it shows that no preemption is needed, the process shall produce no output.

On-board Transit Trip Monitoring Equipment Package consists of:

Process Transit Vehicle Sensor Trip Data (P-Spec 4.1.1)

Overview: This process shall collect and process data available to sensors on-board transit vehicles. This data shall be sent by this process to other processes on-board the transit vehicle and elsewhere in the Manage Traffic function for use in determining vehicle schedule deviations and for storage as operations data.

Provide Transit Vehicle Location Data (P-Spec 4.1.3)

Overview: This process shall provide the transit vehicle's current location with a high degree of accuracy. The location shall be computed by this process from data sent by other processes that provides basic vehicle location and on-board vehicle conditions, such as proximity to transit stop, vehicle doors opened or closed, etc. The data shall be output continuously by the process and sent to other processes for their use and for storage.

VS Vehicle

Basic Vehicle Reception Equipment Package consists of:

Prepare and Output In-vehicle Displays (P-Spec 6.2.2)

Overview: This process shall provide in-vehicle advisory and broadcast data for output to drivers and transit users. The process shall format requests from users for advisory data and output the requests to other processes. The request for advisory data shall allow the user to request only information relevant to the location of the vehicle. The request may be repeated, periodically, or when the vehicle changes location by a distance determined by the implementation. Data broadcast to the driver shall include traffic related data(incidents, link data and in-vehicle signage), as well as data from the vehicle itself. This vehicle data includes vehicle conditions, smart probe data, safety and position warnings, and enhanced vision images. Safety and warning messages shall be prioritized by the process to supersede advisory and broadcast messages. The process shall also support the transfer of reservation requests from the users in vehicles for other services such as yellow pages.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Driver Safety Monitoring System Equipment Package consists of:

Carry-out Safety Analysis (P-Spec 3.1.2)

Overview: This process shall be responsible for producing safety warnings for display to the driver and output to the vehicle control processes. The process shall base its output on input from another process in the vehicle that is analyzing inputs to sensors. When data about a safety situation is received, the process shall output the appropriate messages to another process in the vehicle to warn the driver. If the vehicle is so equipped, the process shall send data to the process in the vehicle responsible for its control.

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Driver Visibility Improvement System Equipment Package consists of:

Enhance Driver's Vision (P-Spec 3.4)

Overview: This process shall be responsible for providing data from which a continuously updated display showing an enhanced version of the driver's vision. The process shall produce the data for this display using inputs to sensors mounted on the vehicle. It shall operate at all times and shall send its output to another process for integration with other messages for the driver.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the

process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

In-Vehicle Signing System Equipment Package consists of:

Prepare and Output In-vehicle Displays (P-Spec 6.2.2)

Overview: This process shall provide in-vehicle advisory and broadcast data for output to drivers and transit users. The process shall format requests from users for advisory data and output the requests to other processes. The request for advisory data shall allow the user to request only information relevant to the location of the vehicle. The request may be repeated, periodically, or when the vehicle changes location by a distance determined by the implementation. Data broadcast to the driver shall include traffic related data(incidents, link data and in-vehicle signage), as well as data from the vehicle itself. This vehicle data includes vehicle conditions, smart probe data, safety and position warnings, and enhanced vision images. Safety and warning messages shall be prioritized by the process to supersede advisory and broadcast messages. The process shall also support the transfer of reservation requests from the users in vehicles for other services such as yellow pages.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Interactive Vehicle Reception Equipment Package consists of:

Prepare and Output In-vehicle Displays (P-Spec 6.2.2)

Overview: This process shall provide in-vehicle advisory and broadcast data for output to drivers and transit users. The process shall format requests from users for advisory data and output the requests to other processes. The request for advisory data shall allow the user to request only information relevant to the location of the vehicle. The request may be repeated, periodically, or when the vehicle changes location by a distance determined by the implementation. Data broadcast to the driver shall include traffic related data(incidents, link data and in-vehicle signage), as well as data from the vehicle itself. This vehicle data includes vehicle conditions, smart probe data, safety and position warnings, and enhanced vision images. Safety and warning messages shall be prioritized by the process to supersede advisory and broadcast messages. The process shall also support the transfer of reservation requests from the users in vehicles for other services such as yellow pages.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Smart Probe Equipment Package consists of:

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Vehicle Autonomous Route Guidance Equipment Package consists of:

Provide Autonomous In-vehicle Guidance (P-Spec 6.7.2.1.3)

Overview: This process shall provide autonomous in-vehicle guidance. It shall calculate the route using data obtained from an in-vehicle navigable map database which can be supplemented with link queue and travel time data obtained from a central source, if specified by the driver and available. The process shall provide guidance in the form of actual driving instructions, e.g. turn left at the next intersection, take the right lane, etc. When link queue and travel time data are being used, the process shall provide guidance for the best route for current traffic conditions, within the preferences and constraints specified by the driver in the guidance request.

Provide Driver Guidance Interface (P-Spec 6.7.2.3)

Overview: This process shall provide a user interface for the vehicle's driver through which route guidance is provided. Three types of route guidance provided by other processes shall be supported by this process(dynamic infrastructure based, autonomous with infrastructure data update, and autonomous). The process shall enable input by the driver of the type of

guidance required, the data from which the route is to be determined and output of the resulting route. The process shall not provide on-line guidance until the route has been accepted by the driver. For those forms of guidance that require an on-board map database, the process shall provide an interface through which the driver may obtain and pay for an initial copy of the database plus updates when needed. The process shall support inputs from the driver in either manual or audio form, and shall provide its outputs in audible or visual forms. It shall enable the visual output to be either in hardcopy, and/or display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Update Vehicle Navigable Map Database (P-Spec 6.7.2.4)
Overview: This process shall update the vehicle's navigable database based on digitized data obtained from a map provider, or other appropriate data source. The update shall be initiated by the driver through another process .The process shall have the capability to allow a financial transaction (to pay for the update) to be successfully completed using processes in the Provide Electronic Payment Services function. When the new map data is received, it shall be loaded by the process into the vehicle_map_database data store for use by other processes. The result of the update request (successful or not) shall be sent back to the driver interface process for output to the driver.

Vehicle Intersection Collision Warning Equipment Package consists of:

Produce Collision and Crash Avoidance Data (P-Spec 3.1.1)
Overview: This process shall be responsible for sensing and evaluating the likelihood of a collision between two vehicles or a vehicle and a stationary object. The process shall base its detection on input from two other processes. One of these processes shall be that which continuously processes sensor inputs on-board the vehicle and the second shall be that which detects collision situations at intersections. When either event is detected this process shall output the appropriate messages to another process in the vehicle to warn the driver. If the vehicle is suitably equipped, the process shall initiate the deployment of crash restraint devices in advance of the collision and/or generate data to initiate direct operation of the vehicle to take evasive maneuvers.

Process Vehicle On-board Data (P-Spec 3.1.3)
Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Process Vehicle Sensor Data (P-Spec 3.2.3.5)
Overview: This process shall be responsible for providing the facility to decode the input being sent to on-board vehicle sensors. The process shall support inputs to those sensors that monitor conditions both on-board the vehicle and in the way the vehicle relates to its surroundings. The data produced by the process shall be sent to another process which shall determine if any action is required.

Provide Driver Interface (P-Spec 6.2.5)
Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Vehicle Intersection Control Equipment Package consists of:

Produce Collision and Crash Avoidance Data (P-Spec 3.1.1)
Overview: This process shall be responsible for sensing and evaluating the likelihood of a collision between two vehicles or a vehicle and a stationary object. The process shall base its detection on input from two other processes. One of these processes shall be that which continuously processes sensor inputs on-board the vehicle and the second shall be that which detects collision situations at intersections. When either event is detected this process shall output the appropriate messages to another process in the vehicle to warn the driver. If the vehicle is suitably equipped, the process shall initiate the deployment of crash restraint devices in advance of the collision and/or generate data to initiate direct operation of the vehicle to take evasive maneuvers.

Process Vehicle On-board Data (P-Spec 3.1.3)
Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Provide Driver Interface (P-Spec 6.2.5)
Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the

driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Vehicle Lateral Control Equipment Package consists of:

Provide Driver Interface (P-Spec 3.2.1)

Overview: This process shall be responsible for providing an interface through which a vehicle driver can initiate, monitor and terminate automatic control of the vehicle. The output that any of these actions generates in terms of messages to the driver shall be sent by this process to another process that is in the Provide Driver and Traveler Services function and in the vehicle. The driver inputs shall be received by this process from another process that is also in the Provide Driver and Traveler Services function and in the vehicle.

Provide Command Interface (P-Spec 3.2.3.1)

Overview: This process shall be responsible for providing the interface through which all driver commands are passed to the correct processes in the vehicle for action. The process shall also pass all messages about vehicle control status on to another process in the vehicle for output to the driver. It shall also monitor the health of the other in-vehicle processes involved in automatic vehicle control. This process shall take the appropriate mode canceling action when any failures are detected in these processes.

Process data for Vehicle Actuators (P-Spec 3.2.3.3)

Overview: This process shall be responsible for providing the interface between other automatic vehicle control process and the actuators which actually change the vehicle's controls. The process shall both implement commands and monitor the operation of the actuators to check that they only move when requested. If they move for any other reason, e.g. the driver has touched the vehicle controls, the process shall disable automatic operation. The process shall perform its own built-in self test (BIST) analysis. It shall report any errors that this shows to another process in the vehicle and shall cease to accept further requests to change the vehicle's actuators.

Provide Lane Servo Control (P-Spec 3.2.3.4.3)

Overview: This process shall be responsible for providing the data which enables the vehicle's steering to be adjusted so that it maintains a position that is in the middle of its current lane. The process shall enable this to be temporarily overridden as a result of action being taken by other processes to change lanes. The process shall perform its own built-in self test (BIST) analysis. It shall report any errors that this shows to another process in the vehicle and shall cease to accept further requests to change the vehicle's throttle position.

Provide Change Lane Servo Control (P-Spec 3.2.3.4.4)

Overview: This process shall be responsible for providing the data which enables the vehicle's steering to be adjusted so that it will move either left or right from one lane to another. The process shall enable this to temporarily override the lane center holding facility available from another process in the vehicle. The process shall perform its own built-in self test (BIST) analysis. It shall report any errors that this shows to another process in the vehicle and shall cease to accept further requests to change the vehicle's throttle position.

Provide Vehicle Control Data Interface (P-Spec 3.2.3.4.5)

Overview: This process shall be responsible for providing a communications and data processing interface between processes in the Provide Vehicle Control and Monitoring function. These processes shall comprise those responsible for controlling individual functions, e.g. throttle, brake, etc., and those that interface to actuators and those that monitor vehicle operation.

Vehicle Lateral Warning System Equipment Package consists of:

Produce Collision and Crash Avoidance Data (P-Spec 3.1.1)

Overview: This process shall be responsible for sensing and evaluating the likelihood of a collision between two vehicles or a vehicle and a stationary object. The process shall base its detection on input from two other processes. One of these processes shall be that which continuously processes sensor inputs on-board the vehicle and the second shall be that which detects collision situations at intersections. When either event is detected this process shall output the appropriate messages to another process in the vehicle to warn the driver. If the vehicle is suitably equipped, the process shall initiate the deployment of crash restraint devices in advance of the collision and/or generate data to initiate direct operation of the vehicle to take evasive maneuvers.

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Process Vehicle Sensor Data (P-Spec 3.2.3.5)

Overview: This process shall be responsible for providing the facility to decode the input being sent to on-board vehicle sensors. The process shall support inputs to those sensors that monitor conditions both on-board the vehicle and in the way the vehicle relates to its surroundings. The data produced by the process shall be sent to another process which shall determine if any action is required.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic

control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Vehicle Location Determination Equipment Package consists of:

Process Vehicle Location Data (P-Spec 6.7.2.2)

Overview: This process shall provide the vehicle's current location. It shall calculate the location from one or more sources of position data such as GPS, DGPS, odometer and differential odometers, and shall refine its calculations using techniques such as map matching, etc. Location data (intended for use by in-vehicle navigation, guidance systems, and any emergency notification systems) should be provided by the process in a manner that is as precise as is practical within cost and technology constraints. Location data intended for transit vehicles and driver advisories may be less precise.

Vehicle Longitudinal Control Equipment Package consists of:

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Provide Driver Interface (P-Spec 3.2.1)

Overview: This process shall be responsible for providing an interface through which a vehicle driver can initiate, monitor and terminate automatic control of the vehicle. The output that any of these actions generates in terms of messages to the driver shall be sent by this process to another process that is in the Provide Driver and Traveler Services function and in the vehicle. The driver inputs shall be received by this process from another process that is also in the Provide Driver and Traveler Services function and in the vehicle.

Provide Command Interface (P-Spec 3.2.3.1)

Overview: This process shall be responsible for providing the interface through which all driver commands are passed to the correct processes in the vehicle for action. The process shall also pass all messages about vehicle control status on to another process in the vehicle for output to the driver. It shall also monitor the health of the other in-vehicle processes involved in automatic vehicle control. This process shall take the appropriate mode canceling action when any failures are detected in these processes.

Process data for Vehicle Actuators (P-Spec 3.2.3.3)

Overview: This process shall be responsible for providing the interface between other automatic vehicle control process and the actuators which actually change the vehicle's controls. The process shall both implement commands and monitor the operation of the actuators to check that they only move when requested. If they move for any other reason, e.g. the driver has touched the vehicle controls, the process shall disable automatic operation. The process shall perform its own built-in self test (BIST) analysis. It shall report any errors that this shows to another process in the vehicle and shall cease to accept further requests to change the vehicle's actuators.

Provide Speed Servo Control (P-Spec 3.2.3.4.1)

Overview: This process shall be responsible for providing data which enables the vehicle's throttle to be regulated in such a way that a desired vehicle speed is maintained. The process shall enable the throttle to be overridden temporarily in order to maintain a desired headway between the vehicle and others in a platoon. The data that actually changes the throttle's position shall be sent to the process that provides data to in-vehicle actuators. The process shall perform its own built-in self test (BIST) analysis. It shall report any errors that this shows to another process in the vehicle and shall cease to accept further requests to change the vehicle's throttle position.

Provide Headway Servo Control (P-Spec 3.2.3.4.2)

Overview: This process shall be responsible for providing data which enables the vehicle's brake and throttle to be regulated in such a way that its headway, i.e. the distance between it and the vehicle in front, is maintained. The process shall support the brake movements that either maintain the vehicle's headway for normal operation, or hold it at the value used in platoon following, whether on or off automated highway system (ahs) lanes. The process shall perform its own built-in self test (BIST) analysis. It shall report any errors that this shows to another process in the vehicle and shall cease to accept further requests to change the vehicle's brake setting.

Provide Vehicle Control Data Interface (P-Spec 3.2.3.4.5)

Overview: This process shall be responsible for providing a communications and data processing interface between processes in the Provide Vehicle Control and Monitoring function. These processes shall comprise those responsible for controlling individual functions, e.g. throttle, brake, etc., and those that interface to actuators and those that monitor vehicle operation.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Appendix H: Subsystem and Equipment Package Functional Summary

Vehicle Longitudinal Warning System Equipment Package consists of:

Produce Collision and Crash Avoidance Data (P-Spec 3.1.1)

Overview: This process shall be responsible for sensing and evaluating the likelihood of a collision between two vehicles or a vehicle and a stationary object. The process shall base its detection on input from two other processes. One of these processes shall be that which continuously processes sensor inputs on-board the vehicle and the second shall be that which detects collision situations at intersections. When either event is detected this process shall output the appropriate messages to another process in the vehicle to warn the driver. If the vehicle is suitably equipped, the process shall initiate the deployment of crash restraint devices in advance of the collision and/or generate data to initiate direct operation of the vehicle to take evasive maneuvers.

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Process Vehicle Sensor Data (P-Spec 3.2.3.5)

Overview: This process shall be responsible for providing the facility to decode the input being sent to on-board vehicle sensors. The process shall support inputs to those sensors that monitor conditions both on-board the vehicle and in the way the vehicle relates to its surroundings. The data produced by the process shall be sent to another process which shall determine if any action is required.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Vehicle Mayday I/F Equipment Package consists of:

Provide Communications Function (P-Spec 3.3.2)

Overview: This process shall be responsible for sending messages it receives from other processes in this facility to the Manage Emergency Services function. It shall also be responsible for passing on the resulting response to the driver via processes in the Provide Driver and Traveler Services function. this process is also capable of receiving requests for additional data from the Manage Emergency Services function and transmitting follow-up details. this process can also receive commands related to the vehicle's security system from the Manage Emergency Services function and forward the commands to the vehicle's security system.

Build Automatic Collision Notification Message (P-Spec 3.3.3)

Overview: This process shall be responsible for preparing and submitting data for transmission to the Manage Emergency Services function. The data shall be sent by this process when an emergency situation is detected by analyzing inputs from the vehicle. This process shall produce its outputs regardless of any action by the driver and shall be designed to be as the result of a crash which may have prevented the driver from initiating the emergency request personally.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Build Driver Personal Security Message (P-Spec 6.7.1.1)

Overview: This process shall respond to the input of a request from a driver for action by the emergency services. Input of the request shall be received by the process from the driver via a panic button or some other functionally similar form of input device provided as part of the in-vehicle equipment. When the input is received, the process shall send a message to the communications process, containing the vehicle's current location, its identity and basic vehicle data relevant to its current condition, as well as any other data, such as personal medical history, vehicle orientation, etc., that may be developed in-vehicle by other systems.

Provide Driver In-vehicle Communications Function (P-Spec 6.7.1.2)

Overview: This process shall prepare and send an emergency message from a driver to the Manage Emergency Services function. The message shall only be sent by the process in response to data received from another process that monitors driver inputs. Once an emergency message has been sent, the process shall send a message to that effect to another process in the Provide Vehicle Monitoring and Control function for output to the driver. The process shall then await a response from the Manage Emergency Services function, and then send a detailed message to the other process for output to the

driver. Output of the emergency message to the Manage Emergency Services function shall be repeated by the process at regular intervals until a response is received.

Vehicle Pre-Crash Safety Systems Equipment Package consists of:

Produce Collision and Crash Avoidance Data (P-Spec 3.1.1)

Overview: This process shall be responsible for sensing and evaluating the likelihood of a collision between two vehicles or a vehicle and a stationary object. The process shall base its detection on input from two other processes. One of these processes shall be that which continuously processes sensor inputs on-board the vehicle and the second shall be that which detects collision situations at intersections. When either event is detected this process shall output the appropriate messages to another process in the vehicle to warn the driver. If the vehicle is suitably equipped, the process shall initiate the deployment of crash restraint devices in advance of the collision and/or generate data to initiate direct operation of the vehicle to take evasive maneuvers.

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Process Vehicle Sensor Data (P-Spec 3.2.3.5)

Overview: This process shall be responsible for providing the facility to decode the input being sent to on-board vehicle sensors. The process shall support inputs to those sensors that monitor conditions both on-board the vehicle and in the way the vehicle relates to its surroundings. The data produced by the process shall be sent to another process which shall determine if any action is required.

Vehicle Probe Support Equipment Package consists of:

Process Vehicle Sensor Data (P-Spec 3.2.3.5)

Overview: This process shall be responsible for providing the facility to decode the input being sent to on-board vehicle sensors. The process shall support inputs to those sensors that monitor conditions both on-board the vehicle and in the way the vehicle relates to its surroundings. The data produced by the process shall be sent to another process which shall determine if any action is required.

Provide Dynamic In-vehicle Guidance (P-Spec 6.7.2.1.2)

Overview: This process shall enable dynamic vehicle route guidance data to be calculated. The process shall perform the same dynamic vehicle route guidance services for vehicles that are under automatic control using automatic highway system (ahs)lanes. When providing dynamic guidance, the process provides vehicle travel times as probe data to another process in the Provide Driver and Traveler Services function. The process shall base its guidance request on data input by the driver through another process, and on the vehicleÆs current location as provided by another process.

Vehicle Provider-Based Route Guidance Equipment Package consists of:

Determine In-vehicle Guidance Method (P-Spec 6.7.2.1.1)

Overview: This process shall act as the interface for guidance requests received from drivers in vehicles. The process shall select the best method for in-vehicle guidance based on data in the driver's request. Three general methods of route guidance are supported: 1) dynamic (infrastructure based guidance is provided to the vehicle unit), 2) dynamic autonomous (link and queue speed or travel times are obtained from the infrastructure and used by the autonomous in vehicle unit), and autonomous (the in vehicle unit uses only locally available data- there is no information provided by the infrastructure). When dynamic guidance is selected, the vehicle's travel time for each link shall be provided by the process back to a central source of data. If the communications link to the central source fails in either of the modes that use it, the process shall automatically revert to the use of local data only. When the original mode was centralized guidance, the process shall use the last set of guidance data that was received, and if this is not sufficient for the vehicle to reach the requested destination, automatically revert to autonomous guidance using local data only.

Provide Dynamic In-vehicle Guidance (P-Spec 6.7.2.1.2)

Overview: This process shall enable dynamic vehicle route guidance data to be calculated. The process shall perform the same dynamic vehicle route guidance services for vehicles that are under automatic control using automatic highway system (ahs)lanes. When providing dynamic guidance, the process provides vehicle travel times as probe data to another process in the Provide Driver and Traveler Services function. The process shall base its guidance request on data input by the driver through another process, and on the vehicleÆs current location as provided by another process.

Provide Driver Guidance Interface (P-Spec 6.7.2.3)

Overview: This process shall provide a user interface for the vehicle's driver through which route guidance is provided. Three types of route guidance provided by other processes shall be supported by this process(dynamic infrastructure based, autonomous with infrastructure data update, and autonomous). The process shall enable input by the driver of the type of guidance required, the data from which the route is to be determined and output of the resulting route. The process shall not provide on-line guidance until the route has been accepted by the driver. For those forms of guidance that require an on-board map database, the process shall provide an interface through which the driver may obtain and pay for an initial copy of the database plus updates when needed. The process shall support inputs from the driver in either manual or audio form, and shall provide its outputs in audible or visual forms. It shall enable the visual output to be either in hardcopy, and/or display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Update Vehicle Navigable Map Database (P-Spec 6.7.2.4)

Overview: This process shall update the vehicle's navigable database based on digitized data obtained from a map provider, or other appropriate data source. The update shall be initiated by the driver through another process .The process shall have the capability to allow a financial transaction (to pay for the update) to be successfully completed using processes in the Provide Electronic Payment Services function. When the new map data is received, it shall be loaded by the process into

the vehicle_map_database data store for use by other processes. The result of the update request (successful or not) shall be sent back to the driver interface process for output to the driver.

Vehicle Safety Monitoring System Equipment Package consists of:

Carry-out Safety Analysis (P-Spec 3.1.2)

Overview: This process shall be responsible for producing safety warnings for display to the driver and output to the vehicle control processes. The process shall base its output on input from another process in the vehicle that is analyzing inputs to sensors. When data about a safety situation is received, the process shall output the appropriate messages to another process in the vehicle to warn the driver. If the vehicle is so equipped, the process shall send data to the process in the vehicle responsible for its control.

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Provide Driver Interface (P-Spec 6.2.5)

Overview: This process shall provide a user interface for a driver through which traffic and travel advisory information can be obtained. The process shall enable traffic and travel advisory information to be requested and output to the driver, and shall also support the automatic output of wide area broadcast information (including in vehicle signage) to the driver. The process shall support output of safety and vision enhancement information to the user. When constructing all outputs the process shall use the vehicle_display_definitions_data store parameters. One purpose of the vehicle_display_definitions_data store is to provide a translation table for road sign and message templates used for in-vehicle display. Part of the input interface provided by the process shall enable the driver to invoke and cancel automatic control of the vehicle including the use of automated highway system (ahs) lanes. The process shall support inputs from the driver in manual or audio form, and shall provide its outputs in audible or visual forms. Visual output may be either in hardcopy, or as a display. Both types of output shall not impair the driver's ability to control the vehicle in a safe manner.

Vehicle Systems for AHS Equipment Package consists of:

Process Vehicle On-board Data (P-Spec 3.1.3)

Overview: This process shall be responsible for processing data received as input to sensors located on-board a vehicle. The process shall continuously analyze these inputs and produce data from which safety and/or position warnings and actions can be produced by another process. It shall also analyze the data to check for hazardous roadside conditions such as flooding, ice, snow, etc. and if detected shall output this data to processes in the Manage Traffic function.

Provide Driver Interface (P-Spec 3.2.1)

Overview: This process shall be responsible for providing an interface through which a vehicle driver can initiate, monitor and terminate automatic control of the vehicle. The output that any of these actions generates in terms of messages to the driver shall be sent by this process to another process that is in the Provide Driver and Traveler Services function and in the vehicle. The driver inputs shall be received by this process from another process that is also in the Provide Driver and Traveler Services function and in the vehicle.

Provide AHS Control (P-Spec 3.2.2)

Overview: This process shall be responsible for providing the facility that enables vehicles to operate in automatic highway system (ahs) lanes. This mode of operation shall only be initiated by the process when a request is received from the driver via other processes in the vehicle. The first action of the process must be to send data to the process that provides the ahs check-in facility. If a positive response is received from that process, i.e. the vehicle's check in is accepted, then the process shall enable ahs operation by sending the data to the vehicle control processes. Once the vehicle is in ahs operation, the process shall continuously monitor for an input from the driver that cancels ahs mode, and when this is received send mode canceling data to the vehicle control processes. Similarly the process shall also continuously monitor input from the process analyzing vehicle condition and the vehicle's presence on an ahs lane. The process shall send mode canceling data to the vehicle control processes, if the condition does not support ahs lane operation, or the vehicle is no longer on an ahs lane.

Manage Platoon Following (P-Spec 3.2.3.2)

Overview: This process shall be responsible for providing the facility for the automatic control of vehicles to be extended to cover the platooning of vehicles. The process shall enable vehicles to follow each other very closely (inches apart) in a platoon, responding to changes in speed and direction of the lead vehicle. The process shall monitor data from other vehicles in the platoon received via another process, and shall also send data about itself to the same process for communication to other platoon vehicles. If the data received from the process shows that the vehicle has been left on its own, i.e. there are no other vehicles in front or behind, the process shall send data to another process in the vehicle to increase speed and catch up with any platoon that may be ahead. The process shall only allow the vehicle to join or continue running in a platoon if it and/or the driver are considered to be in a safe condition, using data received from other processes in the vehicle.

Process data for Vehicle Actuators (P-Spec 3.2.3.3)

Overview: This process shall be responsible for providing the interface between other automatic vehicle control process and the actuators which actually change the vehicle's controls. The process shall both implement commands and monitor the operation of the actuators to check that they only move when requested. If they move for any other reason, e.g. the driver has touched the vehicle controls, the process shall disable automatic operation. The process shall perform its own built-in self test (BIST) analysis. It shall report any errors that this shows to another process in the vehicle and shall cease to accept further requests to change the vehicle's actuators.

Communicate with other Platoon Vehicles (P-Spec 3.2.3.6)

Overview: This process shall be responsible for communicating with the other vehicles that are in a platoon. The process shall support communications with the platoon vehicles that are both immediately in front of and behind the vehicle in

which it operates. The passing of data in both directions, i.e. both to and from the vehicles, shall be supported by the process.

Process Sensor Data for AHS input (P-Spec 3.2.4)

Overview: This process shall be responsible for analyzing the input from the vehicle that provides information about its condition and that it is on an automatic highway system (ahs) lane. The process shall continuously analyze this data and provide output to the process that provides ahs control.

Vehicle Toll/Parking Interface Equipment Package consists of:

Provide Driver Toll Payment Interface (P-Spec 7.1.4)

Overview: This process shall be responsible for providing an interface through which drivers can request and pay for other services when paying their tolls at toll plazas. The services supported by this process include advanced payment for parking lot charges and transit fares. The process shall query the driver for sufficient information to enable the advanced parking lot charge and/or transit fare to be determined and the cost either billed to a credit identity provided by the driver's payment instrument, or deducted from credit stored on the instrument. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Provide Payment Instrument Interface for Tolls (P-Spec 7.1.7)

Overview: This process shall be responsible for providing the interface through which the payment information can be read from a vehicle tag. The process shall enable the use of the data from the tag for the purposes of paying for current tolls, plus if required, the cost of advanced parking lot charges, and/or transit fares, as well as providing the data for use in traffic flow analysis. The tag data which can be collected by the process shall include credit identity, stored credit value, and the toll segment identity at the vehicle's entry point so that closed toll system can be used. When stored credit is used, the process shall enable the deduction of the cost of the toll and (possibly) advanced payments from the credit value on the tag. The process shall support collection of data from tags on-board a range of vehicle types including private cars or vans, commercial vehicles, transit vehicles, including those used for demand responsive transit services.

Provide Driver Parking Lot Payment Interface (P-Spec 7.2.4)

Overview: This process shall be responsible for providing an interface through which drivers can request other services when paying their charges at parking lots. The services supported by this process include advanced parking lot payment, as well as advanced payment for tolls and transit fares. The process shall query the driver for sufficient information to enable the advanced toll, parking lot charge, and/or transit fare to be determined and the cost either billed to a credit identity provided by the driver's payment instrument, or deducted from credit stored on the instrument. The input and output forms shall include those that are suitable for travelers with physical disabilities.

Provide Payment Instrument Interface for Parking (P-Spec 7.2.7)

Overview: This process shall be responsible for providing the interface through which the payment information can be read from a vehicle tag. The process shall enable the use of the data from the tag for the purposes of paying the current parking lot charge and if required, advanced payments for tolls and/or transit fares. It shall be possible for the process to collect either the credit identity or the stored credit value data from the tag, and to update the stored credit value as a result of the parking lot charge and (possibly) advanced charges having been paid. The time at which the vehicle entered the parking lot shall also be collected from the tag by the process so that the charge for the use of the lot can be calculated. The process shall support collection of data from tags on-board a range of vehicle types including private cars or vans, commercial vehicles, transit vehicles, including those used for demand responsive transit services.

Provide Vehicle Payment Instrument Interface (P-Spec 7.5.1)

Overview: This process shall be responsible for providing the interface through which driver credit identities and stored credit may be entered into the ITS from on-board vehicle tags. The types of vehicles from which data is collected shall include private cars or vans, commercial vehicles, and transit vehicles, including those used for demand responsive transit services. This process shall also provide an interface through which the stored credit held by the tag can be debited for the payment of current or advanced tolls, plus advanced parking lot charges, and/or transit fares.

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
actuator_commands	3.2.3.4.5 (Vehicle)	3.2.3.3 (Vehicle)
advanced_charge_transactions	7.2.1.4 (Parking Management)	7.2.1.6 (Parking Management)
advanced_charges_needed	7.2.1.8 (Parking Management)	7.2.1.10 (Parking Management)
advanced_fare_billing	7.3.1.2 (Transit Management)	7.3.1.4 (Transit Management)
advanced_fare_transactions	7.3.1.4 (Transit Management)	7.3.1.3 (Transit Management)
advanced_fares_and_charges_request	7.1.4 (Vehicle)	7.1.6 (Information Service Provider)
advanced_fares_and_charges_response	7.1.6 (Information Service Provider)	7.1.4 (Vehicle)
advanced_fares_needed	7.3.1.1 (Transit Management)	7.3.1.2 (Transit Management)
advanced_other_charges_confirm	7.2.1.8 (Parking Management)	7.2.6 (Information Service Provider)
advanced_other_charges_request	7.2.6 (Information Service Provider)	7.2.1.8 (Parking Management)
advanced_other_fares_confirm	7.3.1.1 (Transit Management)	7.3.2 (Information Service Provider)
advanced_other_fares_request	7.3.2 (Information Service Provider)	7.3.1.1 (Transit Management)
advanced_other_tolls_confirm	7.1.1.8 (Toll Administration)	7.1.6 (Information Service Provider)
advanced_other_tolls_request	7.1.6 (Information Service Provider)	7.1.1.8 (Toll Administration)
advanced_parking_lot_billing	7.2.1.10 (Parking Management)	7.2.1.4 (Parking Management)
advanced_toll_billing	7.1.1.10 (Toll Collection)	7.1.1.4 (Toll Collection)
advanced_toll_needed	7.1.1.8 (Toll Administration)	7.1.1.10 (Toll Collection)
advanced_toll_transactions	7.1.1.4 (Toll Collection)	7.1.1.9 (Toll Administration)
advanced_tolls_and_charges_roadside_confirm	7.3.2 (Information Service Provider)	4.7.2.5 (Remote Traveler Support)
advanced_tolls_and_charges_roadside_request	4.7.2.5 (Remote Traveler Support)	7.3.2 (Information Service Provider)
advanced_tolls_and_charges_vehicle_confirm	7.3.2 (Information Service Provider)	4.6.8 (Transit Management)
advanced_tolls_and_charges_vehicle_request	4.6.8 (Transit Management)	7.3.2 (Information Service Provider)
advanced_tolls_and_fares_request	7.2.4 (Vehicle)	7.2.6 (Information Service Provider)
advanced_tolls_and_fares_response	7.2.6 (Information Service Provider)	7.2.4 (Vehicle)
advanced_traveler_charges_confirm	7.2.1.8 (Parking Management)	7.4.3 (Information Service Provider)
advanced_traveler_charges_request	7.4.3 (Information Service Provider)	7.2.1.8 (Parking Management)
advanced_traveler_fares_confirm	7.3.1.1 (Transit Management)	7.4.3 (Information Service Provider)
advanced_traveler_fares_request	7.4.3 (Information Service Provider)	7.3.1.1 (Transit Management)
advanced_traveler_tolls_confirm	7.1.1.8 (Toll Administration)	7.4.3 (Information Service Provider)
advanced_traveler_tolls_request	7.4.3 (Information Service Provider)	7.1.1.8 (Toll Administration)
advisory_data	6.2.1.2 (Information Service Provider)	6.2.2 (Vehicle)
advisory_data_request	6.2.2 (Vehicle)	6.2.1.2 (Information Service Provider)
advisory_data_request_for_archive	6.2.1.2 (Information Service Provider)	6.1.5 (Information Service Provider)
ahs_check_response	3.2.5 (Roadway Subsystem)	3.2.2 (Vehicle)
ahs_checking_data	3.2.5 (Roadway Subsystem)	3.2.6 (Roadway Subsystem)
ahs_checking_details	3.2.6 (Roadway Subsystem)	3.2.7 (Traffic Management)
ahs_control_data	1.4.4 (Traffic Management)	3.2.7 (Traffic Management)
ahs_control_data_changes	3.2.7 (Traffic Management)	3.2.6 (Roadway Subsystem)
ahs_control_data_update	3.2.2 (Vehicle)	3.2.3.4.5 (Vehicle)
ahs_control_information	3.2.6 (Roadway Subsystem)	3.2.5 (Roadway Subsystem)
ahs_operational_data	3.2.7 (Traffic Management)	1.1.4.7 (Traffic Management)
ahs_route	6.7.2.1.2 (Vehicle)	3.2.2 (Vehicle)
ahs_route_data	3.2.2 (Vehicle)	3.2.6 (Roadway Subsystem)
ahs_route_request	3.2.2 (Vehicle)	6.7.2.1.2 (Vehicle)
ahs_status	3.2.2 (Vehicle)	3.2.1 (Vehicle)
ahs_vehicle_condition	3.2.2 (Vehicle)	3.2.5 (Roadway Subsystem)
ahs_vehicle_data	3.2.4 (Vehicle)	3.2.2 (Vehicle)
analyze_archive_data_request	8.6 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
approach_warning	1.6.1.4.3 (Roadway Subsystem)	1.6.1.4.4 (Roadway Subsystem)
approaching_train_announcement	1.6.3.1 (Roadway Subsystem)	1.6.3.2 (Roadway Subsystem)
approaching_train_data	1.6.3.1 (Roadway Subsystem)	1.6.1.1 (Roadway Subsystem)
approved_corrective_plan	4.1.4 (Transit Management)	4.1.2.2 (Transit Vehicle Subsystem)
archive_administration_data	8.2 (Archived Data Management Subsystem)	8.3 (Archived Data Management Subsystem)
archive_administration_request	8.3 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
archive_data_for_analysis	8.2 (Archived Data Management Subsystem)	8.6 (Archived Data Management Subsystem)
archive_data_product	8.2 (Archived Data Management Subsystem)	8.5 (Archived Data Management Subsystem)
archive_data_product_request	8.5 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
archive_environmental_sensor_data	1.1.1.3 (Roadway Subsystem)	1.1.1.4 (Roadway Subsystem)
archive_manage_emergency_vehicle_data	5.3.6 (Emergency Management)	5.6 (Emergency Management)
archive_pollution_data	1.5.2 (Emissions Management)	1.5.9 (Emissions Management)
archive_pollution_reference_data	1.5.8 (Emissions Management)	1.5.9 (Emissions Management)
archive_pollution_state_data	1.5.4 (Emissions Management)	1.5.9 (Emissions Management)
archive_provide_emergency_service_allocation_data	5.1.5 (Emergency Management)	5.6 (Emergency Management)
archive_request_confirmation	8.3 (Archived Data Management Subsystem)	8.7 (Archived Data Management Subsystem)
ats_advisory	1.6.3.2 (Roadway Subsystem)	1.6.3.3 (Roadway Subsystem)
ats_alert	1.6.3.3 (Roadway Subsystem)	1.6.3.1 (Roadway Subsystem)
ats_status	1.6.3.1 (Roadway Subsystem)	1.6.3.3 (Roadway Subsystem)
ats_warning_notification	1.6.3.3 (Roadway Subsystem)	1.6.3.2 (Roadway Subsystem)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
autonomous_traveler_guidance_accepted	6.8.1.1.1 (Personal Information Access)	6.8.1.1.3 (Personal Information Access)
autonomous_traveler_guidance_data	6.8.1.1.3 (Personal Information Access)	6.8.1.1.1 (Personal Information Access)
autonomous_traveler_guidance_data_request	6.8.1.1.1 (Personal Information Access)	6.8.1.1.3 (Personal Information Access)
autonomous_vehicle_guidance_accepted	6.7.2.1.1 (Vehicle)	6.7.2.1.3 (Vehicle)
autonomous_vehicle_guidance_data	6.7.2.1.3 (Vehicle)	6.7.2.1.1 (Vehicle)
autonomous_vehicle_guidance_data_request	6.7.2.1.1 (Vehicle)	6.7.2.1.3 (Vehicle)
bad_tag_list_request	4.6.4 (Transit Vehicle Subsystem)	7.3.1.5 (Transit Management)
bad_tag_list_update	7.3.1.5 (Transit Management)	4.6.4 (Transit Vehicle Subsystem)
bad_transit_collected_fare_payment	5.4.4 (Transit Management)	4.2.4 (Transit Management)
bad_transit_roadside_fare_payment	5.4.7 (Transit Management)	4.2.4 (Transit Management)
bad_transit_vehicle_fare_payment	5.4.5 (Transit Management)	4.2.4 (Transit Management)
barrier_control_request	1.6.1.2.1 (Roadway Subsystem)	1.6.1.2.2 (Roadway Subsystem)
barrier_device_control	1.6.1.2.2 (Roadway Subsystem)	1.6.1.2.5 (Roadway Subsystem)
barrier_device_control_state	1.6.1.2.2 (Roadway Subsystem)	1.6.1.2.6 (Roadway Subsystem)
billing_for_charges_needed	7.2.1.4 (Parking Management)	7.2.1.5 (Parking Management)
billing_for_fares_needed	7.3.1.4 (Transit Management)	7.3.1.5 (Transit Management)
billing_for_tolls_needed	7.1.1.4 (Toll Collection)	7.1.1.5 (Toll Collection)
brake_commands	3.2.3.4.2 (Vehicle)	3.2.3.4.5 (Vehicle)
broadcast_data	6.2.1.4 (Information Service Provider)	6.2.2 (Vehicle)
cargo_data_request	3.3.3 (Vehicle)	3.3.1 (Commercial Vehicle Subsystem)
cf_driver_instructions_request	2.1.3 (Fleet and Freight Management)	2.1.6 (Fleet and Freight Management)
cf_driver_load_data	2.1.3 (Fleet and Freight Management)	2.1.6 (Fleet and Freight Management)
cf_driver_route	2.1.1 (Fleet and Freight Management)	2.1.6 (Fleet and Freight Management)
cf_driver_route_instructions	2.1.6 (Fleet and Freight Management)	2.1.5 (Commercial Vehicle Subsystem)
cf_driver_route_instructions_output	2.1.6 (Fleet and Freight Management)	2.1.3 (Fleet and Freight Management)
cf_driver_route_instructions_request	2.1.5 (Commercial Vehicle Subsystem)	2.1.6 (Fleet and Freight Management)
cf_enrollment_information	2.5.1 (Commercial Vehicle Administration)	2.1.1 (Fleet and Freight Management)
cf_enrollment_payment_confirmation	2.5.1 (Commercial Vehicle Administration)	2.1.1 (Fleet and Freight Management)
cf_enrollment_payment_request	2.1.1 (Fleet and Freight Management)	2.5.1 (Commercial Vehicle Administration)
cf_enrollment_request	2.1.1 (Fleet and Freight Management)	2.5.1 (Commercial Vehicle Administration)
cf_hazmat_request	5.1.4 (Emergency Management)	2.1.1 (Fleet and Freight Management)
cf_hazmat_route_information	2.1.1 (Fleet and Freight Management)	5.1.1 (Emergency Management)
cf_hazmat_vehicle_information	2.1.1 (Fleet and Freight Management)	5.1.4 (Emergency Management)
cf_manager_activity_report	2.1.1 (Fleet and Freight Management)	2.1.3 (Fleet and Freight Management)
cf_manager_activity_report_request	2.1.3 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
cf_manager_credit_identity	7.5.4 (Fleet and Freight Management)	2.1.3 (Fleet and Freight Management)
cf_manager_enrollment_cost	2.1.3 (Fleet and Freight Management)	7.5.4 (Fleet and Freight Management)
cf_manager_enrollment_information	2.1.1 (Fleet and Freight Management)	2.1.3 (Fleet and Freight Management)
cf_manager_enrollment_payment_confirmation	2.1.1 (Fleet and Freight Management)	2.1.3 (Fleet and Freight Management)
cf_manager_enrollment_payment_request	2.1.3 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
cf_manager_enrollment_request	2.1.3 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
cf_manager_route_data	2.1.1 (Fleet and Freight Management)	2.1.3 (Fleet and Freight Management)
cf_manager_route_request	2.1.3 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
cf_manager_storage_request	2.1.3 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
cf_on_board_vehicle_data	2.4.5 (Commercial Vehicle Subsystem)	2.1.4 (Fleet and Freight Management)
cf_periodic_activity_report	2.5.8 (Commercial Vehicle Administration)	2.1.1 (Fleet and Freight Management)
cf_request_activity_report	2.1.1 (Fleet and Freight Management)	2.5.8 (Commercial Vehicle Administration)
cf_request_on_board_vehicle_data	2.1.4 (Fleet and Freight Management)	2.4.5 (Commercial Vehicle Subsystem)
cf_request_vehicle_data	2.1.3 (Fleet and Freight Management)	2.1.4 (Fleet and Freight Management)
cf_roadside_activity_report	2.5.8 (Commercial Vehicle Administration)	2.1.1 (Fleet and Freight Management)
cf_route	6.6.1 (Information Service Provider)	2.1.1 (Fleet and Freight Management)
cf_route_request	2.1.1 (Fleet and Freight Management)	6.6.1 (Information Service Provider)
cf_static_route_data	2.1.2 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
cf_static_route_request	2.1.1 (Fleet and Freight Management)	2.1.2 (Fleet and Freight Management)
cf_tag_data	2.6.1 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
cf_tag_data_store_output	2.6.5 (Commercial Vehicle Subsystem)	2.6.1 (Fleet and Freight Management)
cf_tag_data_store_request	2.6.1 (Fleet and Freight Management)	2.6.5 (Commercial Vehicle Subsystem)
cf_tag_data_store_write	2.6.1 (Fleet and Freight Management)	2.6.5 (Commercial Vehicle Subsystem)
cf_tag_initialization_data	2.1.1 (Fleet and Freight Management)	2.6.1 (Fleet and Freight Management)
cf_tax_audit_data	2.1.1 (Fleet and Freight Management)	2.5.1 (Commercial Vehicle Administration)
cf_vehicle_data	2.1.4 (Fleet and Freight Management)	2.1.3 (Fleet and Freight Management)
charge_payment_violator_data	7.2.1.5 (Parking Management)	7.2.1.3 (Parking Management)
close_hri	1.6.1.7.2 (Roadway Subsystem)	1.6.1.7.3 (Roadway Subsystem)
closure_event_data	1.6.4.1 (Traffic Management)	1.6.4.2 (Traffic Management)
collected_roadside_data	8.9 (Archived Data Management Subsystem)	8.1 (Archived Data Management Subsystem)
collected_roadside_data_status	8.1 (Archived Data Management Subsystem)	8.9 (Archived Data Management Subsystem)
collection_administration_request	8.3 (Archived Data Management Subsystem)	8.9 (Archived Data Management Subsystem)
collection_administration_status	8.9 (Archived Data Management Subsystem)	8.3 (Archived Data Management Subsystem)
collision_data	3.1.3 (Vehicle)	3.1.1 (Vehicle)
confirm_advanced_charges_payment	7.2.1.5 (Parking Management)	7.2.1.8 (Parking Management)
confirm_advanced_fares_payment	7.3.1.5 (Transit Management)	7.3.1.1 (Transit Management)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
confirm_advanced_tolls_payment	7.1.1.5 (Toll Collection)	7.1.1.8 (Toll Administration)
confirm_roadside_fare_payment	7.3.1.5 (Transit Management)	4.7.2.4 (Remote Traveler Support)
confirm_vehicle_fare_payment	7.3.1.5 (Transit Management)	4.6.4 (Transit Vehicle Subsystem)
control_data_for_highways	1.2.4.2 (Traffic Management)	1.1.5 (Traffic Management)
control_data_for_roads	1.2.4.1 (Traffic Management)	1.1.5 (Traffic Management)
control_status	3.2.3.1 (Vehicle)	3.2.1 (Vehicle)
coordination_data_freeways_to_roads	1.2.2.1 (Traffic Management)	1.2.2.2 (Traffic Management)
coordination_data_ramps_to_roads	1.2.3 (Traffic Management)	1.2.2.2 (Traffic Management)
coordination_data_roads_to_freeways	1.2.2.2 (Traffic Management)	1.2.2.1 (Traffic Management)
coordination_data_roads_to_ramps	1.2.2.2 (Traffic Management)	1.2.3 (Traffic Management)
crew_close_hri	1.6.1.7.1 (Roadway Subsystem)	1.6.1.7.3 (Roadway Subsystem)
current_charge_transactions	7.2.1.5 (Parking Management)	7.2.1.6 (Parking Management)
current_conditions	6.5.1 (Information Service Provider)	6.1.1 (Information Service Provider)
current_fare_transactions	7.3.1.5 (Transit Management)	7.3.1.3 (Transit Management)
current_highway_network_data	1.2.2.1 (Traffic Management)	1.1.2.1 (Traffic Management)
current_highway_network_state	1.2.2.1 (Traffic Management)	6.6.2.2 (Information Service Provider)
current_hri_state	1.6.1.1 (Roadway Subsystem)	1.6.1.6.1 (Roadway Subsystem)
current_incident_data	1.3.2.3 (Traffic Management)	1.1.2.1 (Traffic Management)
current_incident_data	1.3.2.3 (Traffic Management)	1.1.3 (Traffic Management)
current_incident_data_for_vehicle_signage	1.3.3 (Traffic Management)	1.2.4.3 (Traffic Management)
current_incident_static_data	1.3.1.2 (Traffic Management)	1.2.6.1 (Traffic Management)
current_incidents	1.3.2.3 (Traffic Management)	1.3.4.1 (Traffic Management)
current_incidents_data	1.3.2.5 (Traffic Management)	1.3.2.3 (Traffic Management)
current_incidents_data_output	1.3.2.3 (Traffic Management)	1.3.3 (Traffic Management)
current_incidents_data_request	1.3.2.3 (Traffic Management)	1.3.2.5 (Traffic Management)
current_incidents_data_update	1.3.2.3 (Traffic Management)	1.3.2.5 (Traffic Management)
current_incidents_new_data	1.3.2.2 (Traffic Management)	1.3.2.5 (Traffic Management)
current_incidents_request	1.3.4.1 (Traffic Management)	1.3.2.3 (Traffic Management)
current_other_routes_use	6.6.5 (Information Service Provider)	1.4.2 (Traffic Management)
current_other_routes_use_for_archive	6.6.5 (Information Service Provider)	6.1.6 (Information Service Provider)
current_ramp_state	1.2.3 (Traffic Management)	1.1.2.1 (Traffic Management)
current_road_network_data	1.2.2.2 (Traffic Management)	1.1.2.1 (Traffic Management)
current_road_network_state	1.2.2.2 (Traffic Management)	6.6.2.2 (Information Service Provider)
current_road_network_use	6.6.2.2 (Information Service Provider)	1.1.2.1 (Traffic Management)
current_road_network_use	6.6.2.2 (Information Service Provider)	1.2.1 (Traffic Management)
current_road_network_use	6.6.2.2 (Information Service Provider)	1.3.1.1 (Traffic Management)
current_road_network_use_for_archive	6.6.2.2 (Information Service Provider)	6.1.6 (Information Service Provider)
current_toll_transactions	7.1.1.5 (Toll Collection)	7.1.1.9 (Toll Administration)
current_traffic_pollution_data	1.5.2 (Emissions Management)	1.1.4.6 (Information Service Provider)
current_transit_routes_use	6.6.4 (Information Service Provider)	1.4.2 (Traffic Management)
cv_archive_data	2.5.9 (Commercial Vehicle Administration)	8.1 (Archived Data Management Subsystem)
cv_archive_request	8.1 (Archived Data Management Subsystem)	2.5.9 (Commercial Vehicle Administration)
cv_archive_status	8.1 (Archived Data Management Subsystem)	2.5.9 (Commercial Vehicle Administration)
cv_archived_inspection_data	2.3.3.5 (Commercial Vehicle Check)	2.3.6 (Commercial Vehicle Check)
cv_archived_safety_data	2.3.3.4 (Commercial Vehicle Check)	2.3.6 (Commercial Vehicle Check)
cv_border_daily_log	2.3.6 (Commercial Vehicle Check)	2.5.8 (Commercial Vehicle Administration)
cv_border_data	2.3.4 (Commercial Vehicle Check)	2.3.8 (Commercial Vehicle Check)
cv_border_database_update	2.5.6 (Commercial Vehicle Administration)	2.3.8 (Commercial Vehicle Check)
cv_border_decision	2.3.8 (Commercial Vehicle Check)	2.3.5 (Commercial Vehicle Check)
cv_border_override	2.3.5 (Commercial Vehicle Check)	2.3.8 (Commercial Vehicle Check)
cv_border_pull_in_output	2.3.8 (Commercial Vehicle Check)	2.3.1 (Commercial Vehicle Check)
cv_border_record	2.3.8 (Commercial Vehicle Check)	2.3.6 (Commercial Vehicle Check)
cv_check_credentials_request	2.5.1 (Commercial Vehicle Administration)	2.5.5 (Commercial Vehicle Administration)
cv_check_credentials_response	2.5.5 (Commercial Vehicle Administration)	2.5.1 (Commercial Vehicle Administration)
cv_commit_local_enrollment	2.5.4 (Commercial Vehicle Administration)	2.5.5 (Commercial Vehicle Administration)
cv_commit_remote_enrollment	2.5.5 (Commercial Vehicle Administration)	2.5.4 (Commercial Vehicle Administration)
cv_confirmed_enrollment	2.5.2 (Commercial Vehicle Administration)	2.5.1 (Commercial Vehicle Administration)
cv_credentials_data_output	2.3.2.1 (Commercial Vehicle Check)	2.3.5 (Commercial Vehicle Check)
cv_credentials_data_request	2.3.5 (Commercial Vehicle Check)	2.3.2.1 (Commercial Vehicle Check)
cv_credentials_database_update	2.5.6 (Commercial Vehicle Administration)	2.3.2.1 (Commercial Vehicle Check)
cv_credentials_enrollment_data	2.5.5 (Commercial Vehicle Administration)	2.5.9 (Commercial Vehicle Administration)
cv_credentials_information_request	2.3.2.1 (Commercial Vehicle Check)	2.5.6 (Commercial Vehicle Administration)
cv_credentials_information_response	2.5.6 (Commercial Vehicle Administration)	2.3.2.1 (Commercial Vehicle Check)
cv_critical_safety_problem	2.4.3 (Commercial Vehicle Subsystem)	2.4.4 (Commercial Vehicle Subsystem)
cv_daily_logs	2.5.8 (Commercial Vehicle Administration)	2.5.9 (Commercial Vehicle Administration)
cv_driver_credit_identity	7.5.1 (Vehicle)	2.2.3 (Commercial Vehicle Subsystem)
cv_driver_data_input	2.4.4 (Commercial Vehicle Subsystem)	2.4.3 (Commercial Vehicle Subsystem)
cv_driver_data_output	2.4.3 (Commercial Vehicle Subsystem)	2.4.4 (Commercial Vehicle Subsystem)
cv_driver_enrollment_cost	2.2.3 (Commercial Vehicle Subsystem)	7.5.1 (Vehicle)
cv_driver_enrollment_information	2.2.1 (Fleet and Freight Management)	2.2.3 (Commercial Vehicle Subsystem)
cv_driver_enrollment_payment_confirmation	2.2.1 (Fleet and Freight Management)	2.2.3 (Commercial Vehicle Subsystem)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
cv_driver_enrollment_payment_request	2.2.3 (Commercial Vehicle Subsystem)	2.2.1 (Fleet and Freight Management)
cv_driver_enrollment_request	2.2.3 (Commercial Vehicle Subsystem)	2.2.1 (Fleet and Freight Management)
cv_driver_route_data	2.2.1 (Fleet and Freight Management)	2.2.3 (Commercial Vehicle Subsystem)
cv_driver_route_request	2.2.3 (Commercial Vehicle Subsystem)	2.2.1 (Fleet and Freight Management)
cv_driver_storage_request	2.2.3 (Commercial Vehicle Subsystem)	2.2.1 (Fleet and Freight Management)
cv_electronic_clearance_data	2.6.2 (Commercial Vehicle Subsystem)	2.3.4 (Commercial Vehicle Check)
cv_enrollment_information	2.5.1 (Commercial Vehicle Administration)	2.2.1 (Fleet and Freight Management)
cv_enrollment_list	2.5.1 (Commercial Vehicle Administration)	2.5.2 (Commercial Vehicle Administration)
cv_enrollment_payment_confirmation	2.5.1 (Commercial Vehicle Administration)	2.2.1 (Fleet and Freight Management)
cv_enrollment_payment_request	2.2.1 (Fleet and Freight Management)	2.5.1 (Commercial Vehicle Administration)
cv_enrollment_request	2.2.1 (Fleet and Freight Management)	2.5.1 (Commercial Vehicle Administration)
cv_general_decision	2.3.4 (Commercial Vehicle Check)	2.3.5 (Commercial Vehicle Check)
cv_general_input_message	2.4.5 (Commercial Vehicle Subsystem)	2.4.4 (Commercial Vehicle Subsystem)
cv_general_output_message	2.4.4 (Commercial Vehicle Subsystem)	2.4.5 (Commercial Vehicle Subsystem)
cv_general_override	2.3.5 (Commercial Vehicle Check)	2.3.4 (Commercial Vehicle Check)
cv_general_pull_in_output	2.3.4 (Commercial Vehicle Check)	2.3.1 (Commercial Vehicle Check)
cv_get_on_board_data	2.3.3.5 (Commercial Vehicle Check)	2.3.3.1 (Commercial Vehicle Check)
cv_incident_override	1.3.3 (Traffic Management)	1.2.1 (Traffic Management)
cv_incidents_for_other_TMC	1.2.1 (Traffic Management)	1.1.5 (Traffic Management)
cv_inspection_data	2.3.3.5 (Commercial Vehicle Check)	2.3.3.1 (Commercial Vehicle Check)
cv_inspection_data_output	2.3.3.1 (Commercial Vehicle Check)	2.4.1 (Commercial Vehicle Subsystem)
cv_inspection_data_update	2.4.1 (Commercial Vehicle Subsystem)	2.4.6 (Commercial Vehicle Subsystem)
cv_inspection_results	2.3.3.5 (Commercial Vehicle Check)	2.3.3.2 (Commercial Vehicle Check)
cv_inspector_safety_data_input	2.3.3.2 (Commercial Vehicle Check)	2.3.3.5 (Commercial Vehicle Check)
cv_lock_tag_data	2.6.4 (Commercial Vehicle Subsystem)	2.6.2 (Commercial Vehicle Subsystem)
cv_manual_pull_in	2.3.5 (Commercial Vehicle Check)	2.3.4 (Commercial Vehicle Check)
cv_on_board_border_record	2.3.8 (Commercial Vehicle Check)	2.6.2 (Commercial Vehicle Subsystem)
cv_on_board_data	2.4.1 (Commercial Vehicle Subsystem)	2.3.3.1 (Commercial Vehicle Check)
cv_on_board_data_current_copy	2.4.6 (Commercial Vehicle Subsystem)	2.4.1 (Commercial Vehicle Subsystem)
cv_on_board_data_needed	2.4.1 (Commercial Vehicle Subsystem)	2.4.6 (Commercial Vehicle Subsystem)
cv_on_board_data_output	2.4.6 (Commercial Vehicle Subsystem)	2.4.5 (Commercial Vehicle Subsystem)
cv_on_board_data_required	2.4.5 (Commercial Vehicle Subsystem)	2.4.6 (Commercial Vehicle Subsystem)
cv_on_board_data_update	2.4.3 (Commercial Vehicle Subsystem)	2.4.6 (Commercial Vehicle Subsystem)
cv_on_board_pull_in_output	2.3.1 (Commercial Vehicle Check)	2.3.7 (Commercial Vehicle Subsystem)
cv_on_board_screening_record	2.3.2.2 (Commercial Vehicle Check)	2.6.2 (Commercial Vehicle Subsystem)
cv_on_board_vehicle_data	2.4.5 (Commercial Vehicle Subsystem)	2.2.4 (Commercial Vehicle Subsystem)
cv_output_on_board_vehicle_data	2.4.4 (Commercial Vehicle Subsystem)	2.4.5 (Commercial Vehicle Subsystem)
cv_provide_credentials_data_for_inspections	2.6.5 (Commercial Vehicle Subsystem)	2.4.6 (Commercial Vehicle Subsystem)
cv_provide_enrollment_data	2.5.1 (Commercial Vehicle Administration)	2.5.4 (Commercial Vehicle Administration)
cv_remote_enrollment_confirmation	2.5.4 (Commercial Vehicle Administration)	2.5.1 (Commercial Vehicle Administration)
cv_remote_enrollment_request	2.5.1 (Commercial Vehicle Administration)	2.5.4 (Commercial Vehicle Administration)
cv_request_electronic_clearance_data	2.3.4 (Commercial Vehicle Check)	2.6.2 (Commercial Vehicle Subsystem)
cv_request_enrollment_data	2.5.4 (Commercial Vehicle Administration)	2.5.1 (Commercial Vehicle Administration)
cv_request_lock_tag_data	2.6.2 (Commercial Vehicle Subsystem)	2.6.4 (Commercial Vehicle Subsystem)
cv_request_on_board_data	2.3.3.1 (Commercial Vehicle Check)	2.4.1 (Commercial Vehicle Subsystem)
cv_request_on_board_vehicle_data	2.2.4 (Commercial Vehicle Subsystem)	2.4.5 (Commercial Vehicle Subsystem)
cv_request_permits_and_duties_update	2.5.1 (Commercial Vehicle Administration)	2.5.3 (Commercial Vehicle Administration)
cv_request_vehicle_data	2.2.3 (Commercial Vehicle Subsystem)	2.2.4 (Commercial Vehicle Subsystem)
cv_roadside_daily_log	2.3.6 (Commercial Vehicle Check)	2.5.8 (Commercial Vehicle Administration)
cv_roadside_facility_location	2.5.3 (Commercial Vehicle Administration)	2.5.5 (Commercial Vehicle Administration)
cv_roadside_operator_data_request	2.3.5 (Commercial Vehicle Check)	2.3.6 (Commercial Vehicle Check)
cv_roadside_operator_output	2.3.6 (Commercial Vehicle Check)	2.3.5 (Commercial Vehicle Check)
cv_route	6.6.1 (Information Service Provider)	2.2.1 (Fleet and Freight Management)
cv_route_request	2.2.1 (Fleet and Freight Management)	6.6.1 (Information Service Provider)
cv_safety_data	2.3.4 (Commercial Vehicle Check)	2.3.3.4 (Commercial Vehicle Check)
cv_safety_data_request	2.3.5 (Commercial Vehicle Check)	2.3.3.3 (Commercial Vehicle Check)
cv_safety_data_response	2.3.3.3 (Commercial Vehicle Check)	2.3.5 (Commercial Vehicle Check)
cv_safety_database_update	2.5.6 (Commercial Vehicle Administration)	2.3.3.3 (Commercial Vehicle Check)
cv_safety_decision	2.3.3.4 (Commercial Vehicle Check)	2.3.5 (Commercial Vehicle Check)
cv_safety_information_request	2.3.3.3 (Commercial Vehicle Check)	2.5.6 (Commercial Vehicle Administration)
cv_safety_information_response	2.5.6 (Commercial Vehicle Administration)	2.3.3.3 (Commercial Vehicle Check)
cv_safety_override	2.3.5 (Commercial Vehicle Check)	2.3.3.4 (Commercial Vehicle Check)
cv_safety_pull_in_output	2.3.3.4 (Commercial Vehicle Check)	2.3.1 (Commercial Vehicle Check)
cv_screening_data	2.3.4 (Commercial Vehicle Check)	2.3.2.2 (Commercial Vehicle Check)
cv_screening_decision	2.3.2.2 (Commercial Vehicle Check)	2.3.5 (Commercial Vehicle Check)
cv_screening_override	2.3.5 (Commercial Vehicle Check)	2.3.2.2 (Commercial Vehicle Check)
cv_screening_pull_in_output	2.3.2.2 (Commercial Vehicle Check)	2.3.1 (Commercial Vehicle Check)
cv_screening_record	2.3.2.2 (Commercial Vehicle Check)	2.3.6 (Commercial Vehicle Check)
cv_start_inspection	2.3.3.2 (Commercial Vehicle Check)	2.3.3.5 (Commercial Vehicle Check)
cv_static_route_data	2.2.2 (Commercial Vehicle Subsystem)	2.2.1 (Fleet and Freight Management)
cv_static_route_request	2.2.1 (Fleet and Freight Management)	2.2.2 (Commercial Vehicle Subsystem)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
cv_tag_data_store_needed	2.6.2 (Commercial Vehicle Subsystem)	2.6.5 (Commercial Vehicle Subsystem)
cv_tag_data_store_output	2.6.5 (Commercial Vehicle Subsystem)	2.6.3 (Commercial Vehicle Subsystem)
cv_tag_data_store_read	2.6.5 (Commercial Vehicle Subsystem)	2.6.2 (Commercial Vehicle Subsystem)
cv_tag_data_store_request	2.6.3 (Commercial Vehicle Subsystem)	2.6.5 (Commercial Vehicle Subsystem)
cv_tag_data_store_update	2.6.2 (Commercial Vehicle Subsystem)	2.6.5 (Commercial Vehicle Subsystem)
cv_tag_data_store_write	2.6.3 (Commercial Vehicle Subsystem)	2.6.5 (Commercial Vehicle Subsystem)
cv_update_new_credentials_request	2.5.1 (Commercial Vehicle Administration)	2.5.5 (Commercial Vehicle Administration)
cv_update_new_credentials_response	2.5.5 (Commercial Vehicle Administration)	2.5.1 (Commercial Vehicle Administration)
cv_update_safety_problems_list	2.3.3.5 (Commercial Vehicle Check)	2.5.8 (Commercial Vehicle Administration)
cv_vehicle_data	2.2.4 (Commercial Vehicle Subsystem)	2.2.3 (Commercial Vehicle Subsystem)
cv_violation_data	2.5.7 (Commercial Vehicle Administration)	5.4.6 (Commercial Vehicle Administration)
data_from_front_vehicle	3.2.3.6 (Vehicle)	3.2.3.2 (Vehicle)
data_from_rear_vehicle	3.2.3.6 (Vehicle)	3.2.3.2 (Vehicle)
data_to_front_vehicle	3.2.3.2 (Vehicle)	3.2.3.6 (Vehicle)
data_to_rear_vehicle	3.2.3.2 (Vehicle)	3.2.3.6 (Vehicle)
defined_incident_response_changes	1.3.5 (Traffic Management)	1.3.6 (Traffic Management)
defined_incident_response_data	1.3.6 (Traffic Management)	1.3.4.2 (Traffic Management)
defined_incident_response_data_request	1.3.4.2 (Traffic Management)	1.3.6 (Traffic Management)
defined_incident_response_update_request	1.3.4.2 (Traffic Management)	1.3.5 (Traffic Management)
defined_incident_response_updates	1.3.4.2 (Traffic Management)	1.3.6 (Traffic Management)
demand_data_update_request	1.4.1 (Traffic Management)	1.4.2 (Traffic Management)
demand_forecast_request	1.4.1 (Traffic Management)	1.4.5 (Traffic Management)
demand_forecast_result	1.4.5 (Traffic Management)	1.4.1 (Traffic Management)
demand_management_activate	1.4.1 (Traffic Management)	1.4.4 (Traffic Management)
demand_management_result	1.4.4 (Traffic Management)	1.4.1 (Traffic Management)
demand_overrides	1.4.4 (Traffic Management)	1.2.1 (Traffic Management)
detailed_emergency_status	5.1.4 (Emergency Management)	5.1.3 (Emergency Management)
device_control_state	1.6.1.2.6 (Roadway Subsystem)	1.6.1.1 (Roadway Subsystem)
device_status	1.6.1.3 (Roadway Subsystem)	1.6.5.2 (Roadway Subsystem)
dms_data_for_highways	1.2.4.2 (Traffic Management)	1.2.7.5 (Roadway Subsystem)
dms_data_for_roads	1.2.4.1 (Traffic Management)	1.2.7.1 (Roadway Subsystem)
dms_status_for_highways	1.2.7.5 (Roadway Subsystem)	1.2.4.2 (Traffic Management)
dms_status_for_roads	1.2.7.1 (Roadway Subsystem)	1.2.4.1 (Traffic Management)
dms_updates_for_highways	1.3.3 (Traffic Management)	1.2.4.2 (Traffic Management)
dms_updates_for_roads	1.3.3 (Traffic Management)	1.2.4.1 (Traffic Management)
driver_advanced_payment_at_lot	7.2.4 (Vehicle)	7.2.7 (Vehicle)
driver_advanced_payment_at_toll	7.1.4 (Vehicle)	7.1.7 (Vehicle)
driver_advanced_payment_for_map	6.7.2.3 (Vehicle)	7.5.1 (Vehicle)
driver_advisory_information	6.2.2 (Vehicle)	6.2.5 (Vehicle)
driver_advisory_information_request	6.2.5 (Vehicle)	6.2.2 (Vehicle)
driver_ahs_input	3.2.1 (Vehicle)	3.2.2 (Vehicle)
driver_broadcast_information	6.2.2 (Vehicle)	6.2.5 (Vehicle)
driver_commands	3.2.3.1 (Vehicle)	3.2.3.4.5 (Vehicle)
driver_credit_identity	7.5.1 (Vehicle)	6.7.2.3 (Vehicle)
driver_guidance_accepted	6.7.2.3 (Vehicle)	6.7.2.1.1 (Vehicle)
driver_guidance_data	6.7.2.3 (Vehicle)	6.7.2.1.1 (Vehicle)
driver_guidance_request	6.7.2.3 (Vehicle)	6.7.2.1.1 (Vehicle)
driver_input	3.2.1 (Vehicle)	3.2.3.1 (Vehicle)
driver_input_request	6.7.2.1.1 (Vehicle)	6.7.2.3 (Vehicle)
driver_manual_input	3.2.3.1 (Vehicle)	3.2.3.3 (Vehicle)
driver_map_update_payment_request	6.7.2.4 (Vehicle)	7.4.1.3 (Information Service Provider)
driver_map_update_payment_response	7.4.1.3 (Information Service Provider)	6.7.2.4 (Vehicle)
driver_map_update_payments_transactions	7.4.1.3 (Information Service Provider)	7.4.1.7 (Information Service Provider)
driver_map_update_request	6.7.2.3 (Vehicle)	6.7.2.4 (Vehicle)
driver_map_update_response	6.7.2.4 (Vehicle)	6.7.2.3 (Vehicle)
driver_parking_payment_credit_identity	7.2.7 (Vehicle)	7.2.4 (Vehicle)
driver_personal_emergency_request	6.7.1.1 (Vehicle)	6.7.1.2 (Vehicle)
driver_selection	3.2.3.1 (Vehicle)	3.2.3.2 (Vehicle)
driver_toll_payment_credit_identity	7.1.7 (Vehicle)	7.1.4 (Vehicle)
driving_guidance_instructions	6.7.2.1.1 (Vehicle)	6.7.2.3 (Vehicle)
dynamic_traveler_guidance_data	6.8.1.1.2 (Personal Information Access)	6.8.1.1.1 (Personal Information Access)
dynamic_traveler_guidance_data_request	6.8.1.1.1 (Personal Information Access)	6.8.1.1.2 (Personal Information Access)
dynamic_vehicle_guidance_data	6.7.2.1.2 (Vehicle)	6.7.2.1.1 (Vehicle)
dynamic_vehicle_guidance_data_request	6.7.2.1.1 (Vehicle)	6.7.2.1.2 (Vehicle)
em_archive_data	5.6 (Emergency Management)	8.1 (Archived Data Management Subsystem)
em_archive_request	8.1 (Archived Data Management Subsystem)	5.6 (Emergency Management)
em_archive_status	8.1 (Archived Data Management Subsystem)	5.6 (Emergency Management)
emergency_acknowledge_transit_details	4.4.1.1 (Transit Management)	4.4.1.8 (Remote Traveler Support)
emergency_data_for_other_TMC	1.2.1 (Traffic Management)	1.1.5 (Traffic Management)
emergency_data_request	5.1.3 (Emergency Management)	3.3.2 (Vehicle)
emergency_message_auto_output	3.3.2 (Vehicle)	6.2.2 (Vehicle)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
emergency_message_driver_output	6.7.1.2 (Vehicle)	6.2.2 (Vehicle)
emergency_message_traveler_output	6.8.2.2 (Personal Information Access)	6.8.1.5 (Personal Information Access)
emergency_request_driver_acknowledge	5.1.3 (Emergency Management)	6.7.1.2 (Vehicle)
emergency_request_driver_details	6.7.1.2 (Vehicle)	5.1.6 (Emergency Management)
emergency_request_personal_traveler_acknowledge	5.1.3 (Emergency Management)	6.8.2.2 (Personal Information Access)
emergency_request_personal_traveler_details	6.8.2.2 (Personal Information Access)	5.1.1 (Emergency Management)
emergency_request_transit_details	4.4.1.8 (Remote Traveler Support)	4.4.1.1 (Transit Management)
emergency_request_traveler_acknowledge	5.1.3 (Emergency Management)	4.4.1.8 (Remote Traveler Support)
emergency_request_traveler_details	4.4.1.8 (Remote Traveler Support)	5.1.1 (Emergency Management)
emergency_request_vehicle_acknowledge	5.1.3 (Emergency Management)	3.3.2 (Vehicle)
emergency_request_vehicle_details	3.3.2 (Vehicle)	5.1.6 (Emergency Management)
emergency_response_data_for_communications	5.1.2 (Emergency Management)	5.1.3 (Emergency Management)
emergency_response_data_for_management	5.1.2 (Emergency Management)	5.1.4 (Emergency Management)
emergency_service_allocation_data	5.1.5 (Emergency Management)	5.1.2 (Emergency Management)
emergency_service_allocation_data_output	5.1.5 (Emergency Management)	5.2 (Emergency Management)
emergency_service_allocation_data_output_request	5.2 (Emergency Management)	5.1.5 (Emergency Management)
emergency_service_allocation_data_request	5.1.2 (Emergency Management)	5.1.5 (Emergency Management)
emergency_service_allocation_data_updates	5.2 (Emergency Management)	5.1.5 (Emergency Management)
emergency_service_allocation_override	5.2 (Emergency Management)	5.1.4 (Emergency Management)
emergency_service_allocations	5.1.4 (Emergency Management)	5.2 (Emergency Management)
emergency_service_log_for_archive	5.1.3 (Emergency Management)	5.6 (Emergency Management)
emergency_service_log_output	5.1.3 (Emergency Management)	5.2 (Emergency Management)
emergency_service_log_output_request	5.2 (Emergency Management)	5.1.3 (Emergency Management)
emergency_traffic_control_request	5.3.2 (Emergency Management)	1.2.1 (Traffic Management)
emergency_traffic_control_response	1.2.1 (Traffic Management)	5.3.2 (Emergency Management)
emergency_vehicle_acknowledge	5.3.4 (Emergency Management)	5.1.4 (Emergency Management)
emergency_vehicle_dispatch_data	5.3.1 (Emergency Management)	5.3.2 (Emergency Management)
emergency_vehicle_dispatch_failure	5.1.4 (Emergency Management)	5.2 (Emergency Management)
emergency_vehicle_dispatch_request	5.3.2 (Emergency Management)	5.3.5 (Emergency Vehicle Subsystem)
emergency_vehicle_dispatch_response	5.3.5 (Emergency Vehicle Subsystem)	5.3.2 (Emergency Management)
emergency_vehicle_dispatch_status	5.3.1 (Emergency Management)	5.1.4 (Emergency Management)
emergency_vehicle_incident_details	5.1.4 (Emergency Management)	5.3.1 (Emergency Management)
emergency_vehicle_preemptions	5.3.3 (Emergency Vehicle Subsystem)	1.2.7.3 (Roadway Subsystem)
emergency_vehicle_response_request	5.1.4 (Emergency Management)	5.3.1 (Emergency Management)
emergency_vehicle_route	5.3.7 (Emergency Management)	5.3.2 (Emergency Management)
emergency_vehicle_route_assignment	5.3.7 (Emergency Management)	5.3.4 (Emergency Management)
emergency_vehicle_route_request	5.3.2 (Emergency Management)	5.3.7 (Emergency Management)
emergency_vehicle_status_data_change	5.3.1 (Emergency Management)	5.3.6 (Emergency Management)
emergency_vehicle_status_data_for_assessment	5.3.6 (Emergency Management)	5.3.4 (Emergency Management)
emergency_vehicle_status_data_for_dispatch	5.3.6 (Emergency Management)	5.3.2 (Emergency Management)
emergency_vehicle_status_data_for_responses	5.3.6 (Emergency Management)	5.3.1 (Emergency Management)
emergency_vehicle_status_data_needed	5.3.4 (Emergency Management)	5.3.6 (Emergency Management)
emergency_vehicle_status_data_request	5.3.1 (Emergency Management)	5.3.6 (Emergency Management)
emergency_vehicle_status_data_update	5.3.4 (Emergency Management)	5.3.6 (Emergency Management)
emergency_vehicle_suggested_route	5.3.2 (Emergency Management)	5.3.5 (Emergency Vehicle Subsystem)
emergency_vehicle_tracking_data	5.3.3 (Emergency Vehicle Subsystem)	5.3.6 (Emergency Management)
emissions_archive_data	1.5.9 (Emissions Management)	8.1 (Archived Data Management Subsystem)
emissions_archive_request	8.1 (Archived Data Management Subsystem)	1.5.9 (Emissions Management)
emissions_archive_status	8.1 (Archived Data Management Subsystem)	1.5.9 (Emissions Management)
environment_sensor_configuration_data	1.1.4.2 (Traffic Management)	1.1.1.3 (Roadway Subsystem)
environment_sensor_data	1.1.1.3 (Roadway Subsystem)	1.1.2.2 (Traffic Management)
environment_sensor_fault_data	1.1.1.3 (Roadway Subsystem)	1.1.1.2 (Traffic Management)
environmental_sensor_status	1.1.1.3 (Roadway Subsystem)	1.1.1.2 (Traffic Management)
event_notice	1.6.1.1 (Roadway Subsystem)	1.6.1.7.2 (Roadway Subsystem)
existing_sensor_static_data	1.1.2.3 (Traffic Management)	1.2.6.1 (Traffic Management)
fada_archive_administration_requests	Archived Data Administrator	8.3 (Archived Data Management Subsystem)
fadu_archive_analysis_request	Archived Data User Systems	8.6 (Archived Data Management Subsystem)
fadu_archive_data_product_request	Archived Data User Systems	8.5 (Archived Data Management Subsystem)
fadu_on_demand_archive_request	Archived Data User Systems	8.7 (Archived Data Management Subsystem)
fare_collection_roadside_violation_information	4.7.2.4 (Remote Traveler Support)	5.4.7 (Transit Management)
fare_collection_vehicle_violation_information	4.6.4 (Transit Vehicle Subsystem)	5.4.5 (Transit Management)
fare_payment_violator_data	7.3.1.5 (Transit Management)	7.3.1.6 (Transit Management)
fare_violation_information	7.3.3 (Transit Management)	5.4.4 (Transit Management)
fault_data	1.1.1.1 (Roadway Subsystem)	1.1.1.4 (Roadway Subsystem)
fbv_brake_servo_response	Basic Vehicle	3.2.3.3 (Vehicle)
fbv_crash_sensor_data	Basic Vehicle	3.3.3 (Vehicle)
fbv_diagnostics_data	Basic Vehicle	3.1.3 (Vehicle)
fbv_driver_safety_status	Basic Vehicle	3.1.3 (Vehicle)
fbv_steering_servo_response	Basic Vehicle	3.2.3.3 (Vehicle)
fbv_throttle_servo_response	Basic Vehicle	3.2.3.3 (Vehicle)
fbv_vehicle_attitude_data	Basic Vehicle	3.1.3 (Vehicle)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
fbv_vehicle_condition	Basic Vehicle	3.2.4 (Vehicle)
fbv_vehicle_headway	Basic Vehicle	3.2.3.5 (Vehicle)
fbv_vehicle_identity	Basic Vehicle	7.1.4 (Vehicle)
fbv_vehicle_identity	Basic Vehicle	7.2.4 (Vehicle)
fbv_vehicle_lane_position	Basic Vehicle	3.2.3.5 (Vehicle)
fbv_vehicle_motion_data	Basic Vehicle	3.1.3 (Vehicle)
fbv_vehicle_on_ahs_lane	Basic Vehicle	3.2.3.5 (Vehicle)
fbv_vehicle_on_ahs_lane	Basic Vehicle	3.2.4 (Vehicle)
fbv_vehicle_proximity_data	Basic Vehicle	3.1.3 (Vehicle)
fbv_vehicle_safety_status	Basic Vehicle	3.1.3 (Vehicle)
fbv_vehicle_security_status	Basic Vehicle	3.1.3 (Vehicle)
fbv_vehicle_speed	Basic Vehicle	3.2.3.5 (Vehicle)
fci_credentials_data_request	CVO Inspector	2.3.5 (Commercial Vehicle Check)
fci_inspection_data_input	CVO Inspector	2.3.3.2 (Commercial Vehicle Check)
fci_pull_in_action	CVO Inspector	2.3.5 (Commercial Vehicle Check)
fci_request_log_report	CVO Inspector	2.3.5 (Commercial Vehicle Check)
fci_safety_data_request	CVO Inspector	2.3.5 (Commercial Vehicle Check)
fci_start_inspection	CVO Inspector	2.3.3.2 (Commercial Vehicle Check)
fcm_c_and_m_archive_data	Construction and Maintenance	8.1 (Archived Data Management Subsystem)
fcm_fault_clearance	Construction and Maintenance	1.2.8.3 (Traffic Management)
fcm_incident_information	Construction and Maintenance	1.3.2.1 (Traffic Management)
fcm_resource_response	Construction and Maintenance	1.3.4.5 (Traffic Management)
fcm_sensor_fault_data	Construction and Maintenance	1.1.1.2 (Traffic Management)
fcv_brake_condition	Commercial Vehicle	2.4.2 (Commercial Vehicle Subsystem)
fcv_cargo_data	Commercial Vehicle	3.3.1 (Commercial Vehicle Subsystem)
fcv_cargo_safety_status	Commercial Vehicle	2.4.2 (Commercial Vehicle Subsystem)
fcv_cargo_safety_status	Commercial Vehicle	3.3.1 (Commercial Vehicle Subsystem)
fcv_distance_travelled	Commercial Vehicle	2.4.2 (Commercial Vehicle Subsystem)
fcv_driver_safety_status	Commercial Vehicle	2.4.2 (Commercial Vehicle Subsystem)
fcv_driver_status	Commercial Vehicle	2.4.2 (Commercial Vehicle Subsystem)
fcv_lock_tag_data	Commercial Vehicle	2.6.4 (Commercial Vehicle Subsystem)
fcv_vehicle_characteristics	Commercial Vehicle	2.3.4 (Commercial Vehicle Check)
fcv_vehicle_safety_status	Commercial Vehicle	2.4.2 (Commercial Vehicle Subsystem)
fcv_weight	Commercial Vehicle	2.4.2 (Commercial Vehicle Subsystem)
fcvd_activity_request	Commercial Vehicle Driver	2.2.3 (Commercial Vehicle Subsystem)
fcvd_carrier_number	Commercial Vehicle Driver	2.6.3 (Commercial Vehicle Subsystem)
fcvd_driver_data_input	Commercial Vehicle Driver	2.4.4 (Commercial Vehicle Subsystem)
fcvd_driver_general_message	Commercial Vehicle Driver	2.4.4 (Commercial Vehicle Subsystem)
fcvd_driver_input_type	Commercial Vehicle Driver	2.4.4 (Commercial Vehicle Subsystem)
fcvd_driver_number	Commercial Vehicle Driver	2.6.3 (Commercial Vehicle Subsystem)
fcvd_enrollment_payment_request	Commercial Vehicle Driver	2.2.3 (Commercial Vehicle Subsystem)
fcvd_enrollment_request	Commercial Vehicle Driver	2.2.3 (Commercial Vehicle Subsystem)
fcvd_other_data_input	Commercial Vehicle Driver	2.2.3 (Commercial Vehicle Subsystem)
fcvd_request_routing_instructions	Commercial Vehicle Driver	2.1.5 (Commercial Vehicle Subsystem)
fcvd_request_tag_data_output	Commercial Vehicle Driver	2.6.3 (Commercial Vehicle Subsystem)
fcvd_route_data	Commercial Vehicle Driver	2.2.3 (Commercial Vehicle Subsystem)
fcvd_route_request	Commercial Vehicle Driver	2.2.3 (Commercial Vehicle Subsystem)
fcvd_trip_identity	Commercial Vehicle Driver	2.6.3 (Commercial Vehicle Subsystem)
fcvd_vehicle_number	Commercial Vehicle Driver	2.6.3 (Commercial Vehicle Subsystem)
fcvm_carrier_number	Commercial Vehicle Manager	2.6.1 (Fleet and Freight Management)
fcvm_driver_number	Commercial Vehicle Manager	2.6.1 (Fleet and Freight Management)
fcvm_enrollment_payment_request	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_enrollment_request	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_other_data_input	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_preclearance_data	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_request_driver_route_instructions	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_request_on_board_vehicle_data	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_request_tag_data_output	Commercial Vehicle Manager	2.6.1 (Fleet and Freight Management)
fcvm_roadside_activity_report_request	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_route_data	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_route_function_request	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_trip_identity	Commercial Vehicle Manager	2.6.1 (Fleet and Freight Management)
fcvm_update_driver_route_instructions	Commercial Vehicle Manager	2.1.3 (Fleet and Freight Management)
fcvm_vehicle_number	Commercial Vehicle Manager	2.6.1 (Fleet and Freight Management)
fcvoir_request_for_information	CVO Information Requestor	2.5.5 (Commercial Vehicle Administration)
fd_activate_vehicle_control	Driver	6.2.5 (Vehicle)
fd_emergency_request	Driver	6.7.1.1 (Vehicle)
fd_guidance_data	Driver	6.7.2.3 (Vehicle)
fd_guidance_map_update_request	Driver	6.7.2.3 (Vehicle)
fd_guidance_request	Driver	6.7.2.3 (Vehicle)
fd_guidance_route_accepted	Driver	6.7.2.3 (Vehicle)

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Data Flow Name	Source	Sink
fd_other_services_parking_request	Driver	7.2.4 (Vehicle)
fd_other_services_toll_request	Driver	7.1.4 (Vehicle)
fd_request_advisory_information	Driver	6.2.5 (Vehicle)
fdmv_cv_violation_state_identity	DMV	5.4.6 (Commercial Vehicle Administration)
fdmv_cv_violation_vehicle_registration	DMV	5.4.6 (Commercial Vehicle Administration)
fdmv_parking_lot_violation_state_identity	DMV	5.4.3 (Parking Management)
fdmv_parking_lot_violation_vehicle_registration	DMV	5.4.3 (Parking Management)
fdmv_toll_violation_state_identity	DMV	5.4.2 (Toll Administration)
fdmv_toll_violation_vehicle_registration	DMV	5.4.2 (Toll Administration)
fdmv_traffic_violation_state_identity	DMV	5.4.1 (Traffic Management)
fdmv_traffic_violation_vehicle_registration	DMV	5.4.1 (Traffic Management)
fe_area_pollutant_levels	Environment	1.5.2 (Emissions Management)
fe_roadside_pollutant_levels	Environment	1.5.6 (Roadway Subsystem)
fea_cv_enforcement_agency_response	Enforcement Agency	2.5.5 (Commercial Vehicle Administration)
feedback_actuator_response	3.2.3.3 (Vehicle)	3.2.3.4.5 (Vehicle)
feedback_actuator_status	3.2.3.3 (Vehicle)	3.2.3.1 (Vehicle)
feedback_change_lane_servo_status	3.2.3.4.4 (Vehicle)	3.2.3.4.5 (Vehicle)
feedback_headway_servo_status	3.2.3.4.2 (Vehicle)	3.2.3.4.5 (Vehicle)
feedback_lane_servo_status	3.2.3.4.3 (Vehicle)	3.2.3.4.5 (Vehicle)
feedback_platoon_status	3.2.3.2 (Vehicle)	3.2.3.1 (Vehicle)
feedback_sensor_status	3.2.3.5 (Vehicle)	3.2.3.1 (Vehicle)
feedback_servo_status	3.2.3.4.5 (Vehicle)	3.2.3.1 (Vehicle)
feedback_speed_servo_status	3.2.3.4.1 (Vehicle)	3.2.3.4.5 (Vehicle)
fep_emergency_dispatch_acknowledge	Emergency Personnel	5.3.5 (Emergency Vehicle Subsystem)
fep_event_information	Event Promoters	1.3.2.1 (Traffic Management)
fep_incident_command_request	Emergency Personnel	5.3.5 (Emergency Vehicle Subsystem)
fep_incident_status	Emergency Personnel	5.3.5 (Emergency Vehicle Subsystem)
fep_planned_event_data	Event Promoters	5.1.1 (Emergency Management)
feso_archive_commands	Emergency System Operator	5.6 (Emergency Management)
feso_emergency_action_log_request	Emergency System Operator	5.2 (Emergency Management)
feso_emergency_allocation_override	Emergency System Operator	5.2 (Emergency Management)
feso_emergency_data_input	Emergency System Operator	5.2 (Emergency Management)
feso_emergency_data_output_request	Emergency System Operator	5.2 (Emergency Management)
feso_emergency_display_update_request	Emergency System Operator	5.2 (Emergency Management)
fets_caller_information	Emergency Telecommunications System	5.1.1 (Emergency Management)
fets_incident_information	Emergency Telecommunications System	5.1.1 (Emergency Management)
ffi_archive_analysis_payment_confirm	Financial Institution	8.6 (Archived Data Management Subsystem)
ffi_archive_payment_confirm	Financial Institution	8.5 (Archived Data Management Subsystem)
ffi_bad_charges_payment_updates	Financial Institution	7.2.1.3 (Parking Management)
ffi_bad_fare_payment_updates	Financial Institution	7.3.1.6 (Transit Management)
ffi_bad_toll_payment_updates	Financial Institution	7.1.1.3 (Toll Administration)
ffi_confirm_charges_payment	Financial Institution	7.2.1.6 (Parking Management)
ffi_confirm_fare_payment	Financial Institution	7.3.1.3 (Transit Management)
ffi_confirm_toll_payment	Financial Institution	7.1.1.9 (Toll Administration)
ffi_cv_payment_confirm	Financial Institution	7.4.1.1 (Commercial Vehicle Administration)
ffi_driver_map_payment_confirm	Financial Institution	7.4.1.3 (Information Service Provider)
ffi_other_services_payment_confirm	Financial Institution	7.4.1.5 (Transit Management)
ffi_registration_payment_confirm	Financial Institution	7.4.1.2 (Information Service Provider)
ffi_traveler_display_payment_confirm	Financial Institution	7.4.1.4 (Information Service Provider)
ffi_traveler_map_payment_confirm	Financial Institution	7.4.1.4 (Information Service Provider)
ffi_traveler_other_services_payments_confirm	Financial Institution	7.4.1.6 (Information Service Provider)
ffi_traveler_rideshare_payment_confirm	Financial Institution	7.4.1.8 (Information Service Provider)
fga_carrier_safety_ratings	Government Administrators	2.5.3 (Commercial Vehicle Administration)
fga_roadside_facility_locations	Government Administrators	2.5.3 (Commercial Vehicle Administration)
fga_tax_and_credential_fees	Government Administrators	2.5.3 (Commercial Vehicle Administration)
fgrs_government_data_report_request	Government Reporting Systems	8.8 (Archived Data Management Subsystem)
fifd_freight_data	Intermodal Freight Depot	2.7 (Fleet and Freight Management)
fifd_intermodal_archive_data	Intermodal Freight Depot	8.1 (Archived Data Management Subsystem)
financial_request	2.5.2 (Commercial Vehicle Administration)	7.4.1.1 (Commercial Vehicle Administration)
financial_response	7.4.1.1 (Commercial Vehicle Administration)	2.5.2 (Commercial Vehicle Administration)
fispo_archive_commands	ISP Operator	6.1.6 (Information Service Provider)
fispo_broadcast_data_parameters_request	ISP Operator	6.2.1.5 (Information Service Provider)
fispo_broadcast_data_parameters_update	ISP Operator	6.2.1.5 (Information Service Provider)
fispo_request_other_routes_selection_map_data_update	ISP Operator	6.6.2.5 (Information Service Provider)
fispo_request_route_selection_map_data_update	ISP Operator	6.6.2.5 (Information Service Provider)
fispo_route_selection_parameters_request	ISP Operator	6.6.2.5 (Information Service Provider)
fispo_route_selection_parameters_update	ISP Operator	6.6.2.5 (Information Service Provider)
fispo_trip_planning_parameters_request	ISP Operator	6.1.4 (Information Service Provider)
fispo_trip_planning_parameters_update	ISP Operator	6.1.4 (Information Service Provider)
fm_emergency_information_request	Media	5.1.3 (Emergency Management)
fm_incident_data_request	Media	1.3.4.3 (Traffic Management)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
fm_incident_details	Media	1.1.4.5 (Information Service Provider)
fm_incident_information	Media	1.3.4.3 (Traffic Management)
fm_incident_information_request	Media	1.1.4.5 (Information Service Provider)
fm_traffic_data_request	Media	1.1.4.3 (Traffic Management)
fm_traffic_information_request	Media	1.1.4.5 (Information Service Provider)
fm_transit_incident_information_request	Media	4.4.1.4 (Transit Management)
fm_transit_schedule_deviations_request	Media	4.1.6 (Transit Management)
fm_transit_vehicle_deviations_request	Media	4.1.8 (Information Service Provider)
fm_traveler_information	Media	6.5.1 (Information Service Provider)
fmmc_crossing_close_duration	Multimodal Crossings	1.1.1.1 (Roadway Subsystem)
fmmc_crossing_close_time	Multimodal Crossings	1.1.1.1 (Roadway Subsystem)
fmmc_crossing_status_for_highways	Multimodal Crossings	1.2.7.5 (Roadway Subsystem)
fmmc_crossing_status_for_roads	Multimodal Crossings	1.2.7.1 (Roadway Subsystem)
fmtsp_air_services	Multimodal Transportation Service Provider	6.1.3 (Information Service Provider)
fmtsp_ferry_services	Multimodal Transportation Service Provider	6.1.3 (Information Service Provider)
fmtsp_multimodal_archive_data	Multimodal Transportation Service Provider	8.1 (Archived Data Management Subsystem)
fmtsp_multimodal_service_confirmation	Multimodal Transportation Service Provider	6.1.3 (Information Service Provider)
fmtsp_rail_services	Multimodal Transportation Service Provider	6.1.3 (Information Service Provider)
fmtsp_transit_service_data	Multimodal Transportation Service Provider	4.2.3.8 (Transit Management)
fmup_demand_display_update	Map Update Provider	1.4.3 (Traffic Management)
fmup_emergency_display_update	Map Update Provider	5.5 (Emergency Management)
fmup_emergency_route_map_update	Map Update Provider	5.3.7 (Emergency Management)
fmup_incident_display_update	Map Update Provider	1.3.4.4 (Traffic Management)
fmup_map_archive_data	Map Update Provider	8.1 (Archived Data Management Subsystem)
fmup_other_routes_map_data	Map Update Provider	6.6.3 (Information Service Provider)
fmup_pollution_display_update	Map Update Provider	1.5.3 (Emissions Management)
fmup_route_selection_map_data	Map Update Provider	6.6.2.4 (Information Service Provider)
fmup_traffic_display_update	Map Update Provider	1.1.4.4 (Traffic Management)
fmup_transit_map_update	Map Update Provider	4.2.3.9 (Transit Management)
fmup_traveler_display_update	Map Update Provider	6.3.4 (Remote Traveler Support)
fmup_traveler_map_update	Map Update Provider	6.8.1.4 (Personal Information Access)
fmup_traveler_map_update_cost	Map Update Provider	6.8.1.4 (Personal Information Access)
fmup_traveler_personal_display_update	Map Update Provider	6.8.3.4 (Personal Information Access)
fmup_traveler_personal_display_update_cost	Map Update Provider	6.8.3.4 (Personal Information Access)
fmup_vehicle_map_update	Map Update Provider	6.7.2.4 (Vehicle)
fmup_vehicle_map_update_cost	Map Update Provider	6.7.2.4 (Vehicle)
foa_archive_coordination_data	Other Archives	8.4 (Archived Data Management Subsystem)
focvas_commit_local_enrollment	Other CVAS	2.5.4 (Commercial Vehicle Administration)
focvas_data_table	Other CVAS	2.5.4 (Commercial Vehicle Administration)
focvas_enrollment_confirmation	Other CVAS	2.5.4 (Commercial Vehicle Administration)
focvas_enrollment_request	Other CVAS	2.5.4 (Commercial Vehicle Administration)
focvas_provide_data	Other CVAS	2.5.4 (Commercial Vehicle Administration)
fods_other_data_source_archive_data	Other Data Sources	8.1 (Archived Data Management Subsystem)
foec_emergency_center_identity	Other EM	5.1.2 (Emergency Management)
foec_incident_details	Other EM	5.1.2 (Emergency Management)
foec_incident_response_coordination	Other EM	5.1.2 (Emergency Management)
foec_mayday_emergency_data	Other EM	5.1.6 (Emergency Management)
foisp_data_supply	Other ISP	6.6.2.3 (Information Service Provider)
foisp_request_data	Other ISP	6.6.2.3 (Information Service Provider)
foisp_traffic_data	Other ISP	6.2.1.1 (Information Service Provider)
foisp_traffic_information_request	Other ISP	6.2.1.1 (Information Service Provider)
foisp_transit_data	Other ISP	6.2.1.3 (Information Service Provider)
foisp_transit_information_request	Other ISP	6.2.1.3 (Information Service Provider)
fop_parking_coordination_data	Other Parking	1.2.5.2 (Parking Management)
fotc_data_request	Other TM	1.1.5 (Traffic Management)
fotc_identity	Other TM	1.1.5 (Traffic Management)
fotc_traffic_control_and_status	Other TM	1.1.5 (Traffic Management)
fotc_transfer_data	Other TM	1.1.5 (Traffic Management)
fotrm_transit_services	Other TRM	4.2.3.7 (Transit Management)
fp_pedestrian_data	Pedestrians	1.1.1.1 (Roadway Subsystem)
fp_pedestrian_images	Pedestrians	1.1.1.1 (Roadway Subsystem)
fpi_commercial_manager_input_credit_identity	Payment Instrument	7.5.4 (Fleet and Freight Management)
fpi_confirm_fare_payment_at_roadside	Payment Instrument	7.3.4 (Remote Traveler Support)
fpi_confirm_fare_payment_on_transit_vehicle	Payment Instrument	7.3.5 (Transit Vehicle Subsystem)
fpi_confirm_payment_at_parking_lot	Payment Instrument	7.2.7 (Vehicle)
fpi_confirm_payment_at_toll_plaza	Payment Instrument	7.1.7 (Vehicle)
fpi_driver_vehicle_input_credit_identity	Payment Instrument	7.5.1 (Vehicle)
fpi_parking_tag_data	Payment Instrument	7.2.7 (Vehicle)
fpi_toll_tag_data	Payment Instrument	7.1.7 (Vehicle)
fpi_transit_roadside_tag_data	Payment Instrument	7.3.4 (Remote Traveler Support)
fpi_transit_user_roadside_input_credit_identity	Payment Instrument	7.5.2 (Remote Traveler Support)

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Data Flow Name	Source	Sink
fpi_transit_user_vehicle_input_credit_identity	Payment Instrument	7.5.1 (Vehicle)
fpi_transit_vehicle_tag_data	Payment Instrument	7.3.5 (Transit Vehicle Subsystem)
fpi_traveler_personal_input_credit_identity	Payment Instrument	7.5.3 (Personal Information Access)
fpi_traveler_roadside_input_credit_identity	Payment Instrument	7.5.5 (Remote Traveler Support)
fpo_archive_commands	Parking Operator	1.2.5.5 (Parking Management)
fpo_confirm_advanced_parking_payment	Parking Operator	7.2.1.8 (Parking Management)
fpo_current_lot_state	Parking Operator	1.2.5.3 (Parking Management)
fpo_lot_occupancy	Parking Operator	1.2.5.3 (Parking Management)
fpo_parking_lot_charge_change_response	Parking Operator	7.2.1.7 (Parking Management)
fpo_parking_lot_data	Parking Operator	7.2.1.7 (Parking Management)
fpo_parking_lot_hours_of_operation	Parking Operator	7.2.1.9 (Parking Management)
fpo_transaction_reports_request	Parking Operator	7.2.1.6 (Parking Management)
fre_environmental_conditions	Roadway Environment	1.1.1.3 (Roadway Subsystem)
fre_physical_conditions	Roadway Environment	1.1.1.1 (Roadway Subsystem)
fre_roadside_data	Roadway Environment	3.1.3 (Vehicle)
freight_cargo_data	2.7 (Fleet and Freight Management)	2.1.1 (Fleet and Freight Management)
fro_incident_notification	Rail Operations	1.6.2.1 (Traffic Management)
fro_maintenance_schedules	Rail Operations	1.6.2.1 (Traffic Management)
fro_train_schedules	Rail Operations	1.6.2.1 (Traffic Management)
From_Intermodal_Freight_Shipper	Intermodal Freight Shipper	2.7 (Fleet and Freight Management)
From_Location_Data_Source	Location Data Source	6.7.2.2 (Vehicle)
From_Location_Data_Source	Location Data Source	6.8.1.3 (Personal Information Access)
From_Other_Vehicle	Other Vehicle	3.2.3.6 (Vehicle)
From_Potential_Obstacles	Potential Obstacles	3.1.3 (Vehicle)
From_Roadway	Roadway	3.1.3 (Vehicle)
From_Roadway	Roadway	3.4 (Vehicle)
From_Vehicle_Characteristics	Vehicle Characteristics	1.5.5 (Roadway Subsystem)
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.3 (Toll Collection)
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.5 (Toll Collection)
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.3 (Parking Management)
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.5 (Parking Management)
fsa_area_image	Secure Area Environment	4.4.1.7 (Remote Traveler Support)
ft_extra_trip_data	Traveler	6.3.3 (Remote Traveler Support)
ft_guidance_data	Traveler	6.8.1.2 (Personal Information Access)
ft_guidance_map_update_request	Traveler	6.8.1.2 (Personal Information Access)
ft_guidance_request	Traveler	6.8.1.2 (Personal Information Access)
ft_guidance_route_accepted	Traveler	6.8.1.2 (Personal Information Access)
ft_personal_emergency_request	Traveler	6.8.2.1 (Personal Information Access)
ft_personal_extra_trip_data	Traveler	6.8.3.3 (Personal Information Access)
ft_personal_map_display_update_request	Traveler	6.8.3.3 (Personal Information Access)
ft_personal_trip_planning_requests	Traveler	6.8.3.3 (Personal Information Access)
ft_remote_emergency_request	Traveler	4.4.1.8 (Remote Traveler Support)
ft_traffic_data	Traffic	1.1.1.1 (Roadway Subsystem)
ft_traffic_images	Traffic	1.1.1.1 (Roadway Subsystem)
ft_traffic_images	Traffic	1.3.1.3 (Roadway Subsystem)
ft_trip_planning_requests	Traveler	6.3.3 (Remote Traveler Support)
ft_vehicle_pollutant_levels	Traffic	1.5.5 (Roadway Subsystem)
fta_archive_commands	Toll Administrator	7.1.1.11 (Toll Administration)
fta_confirm_advanced_toll	Toll Administrator	7.1.1.8 (Toll Administration)
fta_toll_price_changes_response	Toll Administrator	7.1.1.7 (Toll Administration)
fta_toll_price_data	Toll Administrator	7.1.1.7 (Toll Administration)
ftd_emergency_request	Transit Driver	4.4.1.5 (Transit Vehicle Subsystem)
ftd_fare_transaction_mode_set_up	Transit Driver	4.6.4 (Transit Vehicle Subsystem)
ftd_information_updates	Transit Driver	4.5.6 (Transit Management)
ftd_request_batch_mode_data_transfer	Transit Driver	4.6.4 (Transit Vehicle Subsystem)
ftfm_approved_corrections	Transit Fleet Manager	4.1.4 (Transit Management)
ftfm_coordination_data	Transit Fleet Manager	4.4.2 (Transit Management)
ftfm_initiate_service_updates	Transit Fleet Manager	4.2.3.4 (Transit Management)
ftfm_passenger_loading_updates	Transit Fleet Manager	4.2.3.5 (Transit Management)
ftfm_planning_parameters	Transit Fleet Manager	4.2.3.4 (Transit Management)
ftfm_planning_parameters_update_request	Transit Fleet Manager	4.2.3.4 (Transit Management)
ftfm_request_response_parameter_output	Transit Fleet Manager	4.4.3 (Transit Management)
ftfm_request_transit_vehicle_data	Transit Fleet Manager	4.1.5 (Transit Management)
ftfm_response_parameters	Transit Fleet Manager	4.4.3 (Transit Management)
ftfm_technician_information_request	Transit Fleet Manager	4.3.3 (Transit Management)
ftfm_technician_information_updates	Transit Fleet Manager	4.3.3 (Transit Management)
ftfm_transit_display_update_request	Transit Fleet Manager	4.2.3.4 (Transit Management)
ftfm_transit_driver_information_request	Transit Fleet Manager	4.5.7 (Transit Management)
ftfm_transit_driver_information_updates	Transit Fleet Manager	4.5.7 (Transit Management)
ftfm_transit_driver_route_preferences	Transit Fleet Manager	4.5.7 (Transit Management)
ftfm_transit_services_output_request	Transit Fleet Manager	4.2.3.4 (Transit Management)

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Data Flow Name	Source	Sink
ftfm_transit_vehicle_maintenance_information_request	Transit Fleet Manager	4.3.5 (Transit Management)
ftfm_transit_vehicle_maintenance_specs	Transit Fleet Manager	4.3.5 (Transit Management)
ftmp_transit_vehicle_maintenance_updates	Transit Maintenance Personnel	4.3.6 (Transit Management)
fto_local_toll_price_variations	Toll Operator	7.1.1.2 (Toll Collection)
ftop_archive_command	Traffic Operations Personnel	1.1.4.7 (Traffic Management)
ftop_defined_incident_response_data_request	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_defined_incident_response_data_update	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_demand_data_request	Traffic Operations Personnel	1.4.1 (Traffic Management)
ftop_demand_data_update_request	Traffic Operations Personnel	1.4.1 (Traffic Management)
ftop_demand_forecast_request	Traffic Operations Personnel	1.4.1 (Traffic Management)
ftop_demand_policy_activation	Traffic Operations Personnel	1.4.1 (Traffic Management)
ftop_demand_policy_information_request	Traffic Operations Personnel	1.4.1 (Traffic Management)
ftop_demand_policy_updates	Traffic Operations Personnel	1.4.1 (Traffic Management)
ftop_incident_camera_action_request	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_incident_data_amendment	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_incident_information_requests	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_indicator_fault_data_input	Traffic Operations Personnel	1.2.8.4 (Traffic Management)
ftop_indicator_fault_data_request	Traffic Operations Personnel	1.2.8.4 (Traffic Management)
ftop_indicator_fault_data_update	Traffic Operations Personnel	1.2.8.4 (Traffic Management)
ftop_output_possible_defined_reponses	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_pollution_data_information_request	Traffic Operations Personnel	1.5.1 (Emissions Management)
ftop_pollution_parameter_updates	Traffic Operations Personnel	1.5.1 (Emissions Management)
ftop_request_possible_incidents_data	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_resource_request	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_roadway_characteristics	Traffic Operations Personnel	1.2.6.1 (Traffic Management)
ftop_sensor_fault_data_input	Traffic Operations Personnel	1.1.1.2 (Traffic Management)
ftop_static_data	Traffic Operations Personnel	1.2.6.1 (Traffic Management)
ftop_strategy_override	Traffic Operations Personnel	1.2.1 (Traffic Management)
ftop_traffic_data_parameter_updates	Traffic Operations Personnel	1.1.4.2 (Traffic Management)
ftop_traffic_information_requests	Traffic Operations Personnel	1.1.4.2 (Traffic Management)
ftop_update_defined_incident_responses	Traffic Operations Personnel	1.3.4.2 (Traffic Management)
ftop_video_camera_strategy_change	Traffic Operations Personnel	1.2.1 (Traffic Management)
ftop_weather_request_information	Traffic Operations Personnel	1.1.4.2 (Traffic Management)
ftso_archive_commands	Transit System Operators	4.2.4 (Transit Management)
ftso_emergency_request_acknowledge	Transit System Operators	4.4.1.3 (Transit Management)
ftso_fare_updates	Transit System Operators	7.3.1.7 (Transit Management)
ftso_media_parameter_request	Transit System Operators	4.4.1.3 (Transit Management)
ftso_media_parameter_updates	Transit System Operators	4.4.1.3 (Transit Management)
ftso_request_fare_output	Transit System Operators	7.3.1.7 (Transit Management)
ftso_security_action	Transit System Operators	4.4.1.3 (Transit Management)
ftso_video_camera_action_request	Transit System Operators	4.4.1.3 (Transit Management)
ftu_destination_at_roadside	Transit User	4.7.2.5 (Remote Traveler Support)
ftu_destination_on_vehicle	Transit User	6.2.1.6 (Transit Vehicle Subsystem)
ftu_emergency_request	Transit User	4.4.1.2 (Transit Vehicle Subsystem)
ftu_other_services_roadside_request	Transit User	4.7.2.5 (Remote Traveler Support)
ftu_other_services_vehicle_request	Transit User	6.2.1.6 (Transit Vehicle Subsystem)
ftu_request_advisory_information	Transit User	6.2.3 (Transit Vehicle Subsystem)
ftu_transit_information_request	Transit User	4.7.1.1 (Remote Traveler Support)
ftu_transit_user_roadside_image	Transit User	4.7.2.1 (Remote Traveler Support)
ftu_transit_user_roadside_image	Transit User	4.7.2.4 (Remote Traveler Support)
ftu_transit_user_vehicle_image	Transit User	4.6.1 (Transit Vehicle Subsystem)
ftu_transit_user_vehicle_image	Transit User	4.6.4 (Transit Vehicle Subsystem)
ftv_availability	Transit Vehicle	4.2.1.5 (Transit Vehicle Subsystem)
ftv_vehicle_maintenance_data	Transit Vehicle	4.1.9 (Transit Vehicle Subsystem)
ftv_vehicle_trip_data	Transit Vehicle	4.1.1 (Transit Vehicle Subsystem)
fwe_approaching_train_announcement	Wayside Equipment	1.6.3.1 (Roadway Subsystem)
fwe_train_data	Wayside Equipment	1.6.3.1 (Roadway Subsystem)
fwe_wayside_equipment_status	Wayside Equipment	1.6.3.1 (Roadway Subsystem)
fws_current_weather	Weather Service	1.3.2.1 (Traffic Management)
fws_current_weather	Weather Service	1.4.2 (Traffic Management)
fws_current_weather	Weather Service	4.1.6 (Transit Management)
fws_current_weather	Weather Service	5.1.4 (Emergency Management)
fws_current_weather	Weather Service	6.5.1 (Information Service Provider)
fws_current_weather	Weather Service	6.6.1 (Information Service Provider)
fws_current_weather	Weather Service	6.6.2.1 (Information Service Provider)
fws_predicted_weather	Weather Service	1.1.3 (Traffic Management)
fws_predicted_weather	Weather Service	1.3.2.1 (Traffic Management)
fws_predicted_weather	Weather Service	1.4.2 (Traffic Management)
fws_predicted_weather	Weather Service	4.1.6 (Transit Management)
fws_predicted_weather	Weather Service	5.1.4 (Emergency Management)
fws_predicted_weather	Weather Service	6.5.1 (Information Service Provider)

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Data Flow Name	Source	Sink
fws_predicted_weather	Weather Service	6.6.1 (Information Service Provider)
fws_predicted_weather	Weather Service	6.6.2.1 (Information Service Provider)
fws_weather_archive_data	Weather Service	8.1 (Archived Data Management Subsystem)
fypsp_provider_profile_update	Yellow Pages Service Providers	6.5.3 (Information Service Provider)
fypsp_request_provider_registration	Yellow Pages Service Providers	6.5.3 (Information Service Provider)
fypsp_transaction_confirmation	Yellow Pages Service Providers	6.5.2 (Information Service Provider)
fypsp_yellow_pages_data	Yellow Pages Service Providers	6.5.1 (Information Service Provider)
get_charge_payment_violator_image	7.2.1.5 (Parking Management)	7.2.3 (Parking Management)
get_fare_violator_payment_image	7.3.1.5 (Transit Management)	7.3.3 (Transit Management)
get_other_route	6.6.1 (Information Service Provider)	6.6.5 (Information Service Provider)
get_parking_lot_tag_violator_image	7.2.1.1 (Parking Management)	7.2.3 (Parking Management)
get_toll_payment_violator_image	7.1.1.5 (Toll Collection)	7.1.3 (Toll Collection)
get_toll_tag_violator_image	7.1.1.1 (Toll Collection)	7.1.3 (Toll Collection)
get_transit_route	6.6.1 (Information Service Provider)	6.6.4 (Information Service Provider)
get_vehicle_route	6.6.1 (Information Service Provider)	6.6.2.1 (Information Service Provider)
global_schema	8.4 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
government_report_data	8.2 (Archived Data Management Subsystem)	8.8 (Archived Data Management Subsystem)
government_report_data_request	8.8 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
har_data_for_highways	1.2.4.2 (Traffic Management)	1.2.7.5 (Roadway Subsystem)
har_data_for_roads	1.2.4.1 (Traffic Management)	1.2.7.1 (Roadway Subsystem)
har_fault_data_for_highways	1.2.7.5 (Roadway Subsystem)	1.2.7.2 (Roadway Subsystem)
har_fault_data_for_roads	1.2.7.1 (Roadway Subsystem)	1.2.7.2 (Roadway Subsystem)
har_status_for_highways	1.2.7.5 (Roadway Subsystem)	1.2.4.2 (Traffic Management)
har_status_for_roads	1.2.7.1 (Roadway Subsystem)	1.2.4.1 (Traffic Management)
hazard_condition	1.6.1.5 (Roadway Subsystem)	1.6.1.4.1 (Roadway Subsystem)
hazard_condition	1.6.1.5 (Roadway Subsystem)	1.6.1.4.2 (Roadway Subsystem)
hazard_condition	1.6.1.5 (Roadway Subsystem)	1.6.1.4.4 (Roadway Subsystem)
headway	3.2.3.4.5 (Vehicle)	3.2.3.4.2 (Vehicle)
hov_lane_data	1.1.2.4 (Traffic Management)	1.1.2.1 (Traffic Management)
hov_lane_data_input	1.1.1.1 (Roadway Subsystem)	1.1.2.4 (Traffic Management)
hov_lane_violation	1.1.2.4 (Traffic Management)	5.4.1 (Traffic Management)
hov_sensor_data	1.1.1.1 (Roadway Subsystem)	1.1.2.2 (Traffic Management)
hri_advisory	1.6.1.4.1 (Roadway Subsystem)	1.6.1.4.3 (Roadway Subsystem)
hri_alert	1.6.1.4.1 (Roadway Subsystem)	1.6.1.4.3 (Roadway Subsystem)
hri_blockage	1.6.1.6.1 (Roadway Subsystem)	1.6.2.2 (Traffic Management)
hri_closure_data_response	1.6.5.3 (Roadway Subsystem)	1.6.5.1 (Roadway Subsystem)
hri_control_message	1.6.1.7.3 (Roadway Subsystem)	1.6.1.2.1 (Roadway Subsystem)
hri_device_control	1.6.1.2.5 (Roadway Subsystem)	1.2.7.1 (Roadway Subsystem)
hri_device_sense	1.2.7.1 (Roadway Subsystem)	1.6.1.1 (Roadway Subsystem)
hri_device_sense	1.2.7.1 (Roadway Subsystem)	1.6.1.3 (Roadway Subsystem)
hri_guidance_for_beacon_message	1.6.1.4.4 (Roadway Subsystem)	1.2.4.3 (Traffic Management)
hri_guidance_for_dms	1.6.1.4.3 (Roadway Subsystem)	1.2.4.1 (Traffic Management)
hri_hazard	1.6.1.6.1 (Roadway Subsystem)	1.6.1.5 (Roadway Subsystem)
hri_incident_data	1.6.4.1 (Traffic Management)	1.3.1.1 (Traffic Management)
hri_predicted_collision	1.6.1.6.2 (Roadway Subsystem)	1.6.1.6.1 (Roadway Subsystem)
hri_priority_message	1.6.2.2 (Traffic Management)	1.6.2.1 (Traffic Management)
hri_rail_alert	1.6.3.3 (Roadway Subsystem)	1.6.5.2 (Roadway Subsystem)
hri_reporting_data	1.6.3.2 (Roadway Subsystem)	1.6.3.1 (Roadway Subsystem)
hri_sensor_data	1.6.4.2 (Traffic Management)	1.1.2.2 (Traffic Management)
hri_state	1.6.5.2 (Roadway Subsystem)	1.6.5.1 (Roadway Subsystem)
hri_state	1.6.5.2 (Roadway Subsystem)	1.6.5.3 (Roadway Subsystem)
hri_status	1.6.5.1 (Roadway Subsystem)	1.6.1.1 (Roadway Subsystem)
hri_status	1.6.5.1 (Roadway Subsystem)	1.6.2.2 (Traffic Management)
hri_status	1.6.5.1 (Roadway Subsystem)	1.6.3.2 (Roadway Subsystem)
hri_status	1.6.5.1 (Roadway Subsystem)	1.6.4.2 (Traffic Management)
hri_status_for_traffic_demand	1.6.4.2 (Traffic Management)	1.4.2 (Traffic Management)
hri_strategy_override	1.3.3 (Traffic Management)	1.6.4.1 (Traffic Management)
hri_traffic_data	1.6.1.7.2 (Roadway Subsystem)	1.6.4.1 (Traffic Management)
hri_traffic_surveillance	1.6.4.2 (Traffic Management)	1.6.1.1 (Roadway Subsystem)
hri_traffic_surveillance	1.6.4.2 (Traffic Management)	1.6.1.7.2 (Roadway Subsystem)
hsr_control_request	1.6.1.2.1 (Roadway Subsystem)	1.6.1.2.4 (Roadway Subsystem)
hsr_device_control	1.6.1.2.4 (Roadway Subsystem)	1.6.1.2.5 (Roadway Subsystem)
hsr_device_control_state	1.6.1.2.4 (Roadway Subsystem)	1.6.1.2.6 (Roadway Subsystem)
import_administration_request	8.3 (Archived Data Management Subsystem)	8.1 (Archived Data Management Subsystem)
import_administration_status	8.1 (Archived Data Management Subsystem)	8.3 (Archived Data Management Subsystem)
incident_alert	1.3.3 (Traffic Management)	5.1.1 (Emergency Management)
incident_analysis_data	1.1.1.1 (Roadway Subsystem)	1.3.1.1 (Traffic Management)
incident_command_request	5.3.5 (Emergency Vehicle Subsystem)	5.1.4 (Emergency Management)
incident_data_update	1.3.2.2 (Traffic Management)	1.3.2.3 (Traffic Management)
incident_details	5.1.3 (Emergency Management)	1.3.2.2 (Traffic Management)
incident_details_from_media	1.1.4.5 (Information Service Provider)	1.1.4.6 (Information Service Provider)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
incident_details_request	1.3.2.2 (Traffic Management)	5.1.3 (Emergency Management)
incident_information	5.1.3 (Emergency Management)	6.5.1 (Information Service Provider)
incident_information_request	6.5.1 (Information Service Provider)	5.1.3 (Emergency Management)
incident_response_clear	1.3.3 (Traffic Management)	5.1.4 (Emergency Management)
incident_response_status	5.1.4 (Emergency Management)	1.3.2.3 (Traffic Management)
incident_status_data	5.3.5 (Emergency Vehicle Subsystem)	5.1.4 (Emergency Management)
incident_status_update	5.3.5 (Emergency Vehicle Subsystem)	5.3.4 (Emergency Management)
incident_strategy_override	1.3.3 (Traffic Management)	1.2.1 (Traffic Management)
incident_video_for_emergency_services	1.1.4.1 (Traffic Management)	5.1.4 (Emergency Management)
incident_video_image	1.3.1.3 (Roadway Subsystem)	1.3.4.2 (Traffic Management)
incident_video_image_control	1.3.4.2 (Traffic Management)	1.3.1.3 (Roadway Subsystem)
indicator_control_data_for_highways	1.2.4.2 (Traffic Management)	1.2.7.5 (Roadway Subsystem)
indicator_control_data_for_roads	1.2.4.1 (Traffic Management)	1.2.7.1 (Roadway Subsystem)
indicator_control_monitoring_data_for_highways	1.2.4.2 (Traffic Management)	1.2.7.2 (Roadway Subsystem)
indicator_control_monitoring_data_for_roads	1.2.4.1 (Traffic Management)	1.2.7.2 (Roadway Subsystem)
indicator_control_storage_data_for_highways	1.2.4.2 (Traffic Management)	1.1.2.1 (Traffic Management)
indicator_control_storage_data_for_roads	1.2.4.1 (Traffic Management)	1.1.2.1 (Traffic Management)
indicator_current_fault_data	1.2.8.2 (Traffic Management)	1.2.8.4 (Traffic Management)
indicator_current_fault_update	1.2.8.4 (Traffic Management)	1.2.8.2 (Traffic Management)
indicator_data_fault_for_highways	1.2.4.2 (Traffic Management)	1.2.8.1 (Traffic Management)
indicator_data_fault_for_roads	1.2.4.1 (Traffic Management)	1.2.8.1 (Traffic Management)
indicator_fault_clearance_update	1.2.8.3 (Traffic Management)	1.2.8.2 (Traffic Management)
indicator_fault_state	1.2.8.2 (Traffic Management)	1.2.1 (Traffic Management)
indicator_highway_requested_state	1.2.2.1 (Traffic Management)	1.2.4.2 (Traffic Management)
indicator_input_data_from_highways	1.2.7.5 (Roadway Subsystem)	1.2.4.2 (Traffic Management)
indicator_input_data_from_roads	1.2.7.1 (Roadway Subsystem)	1.2.4.1 (Traffic Management)
indicator_input_state_for_highways	1.2.4.2 (Traffic Management)	1.2.1 (Traffic Management)
indicator_input_state_for_roads	1.2.4.1 (Traffic Management)	1.2.1 (Traffic Management)
indicator_input_storage_data_for_highways	1.2.4.2 (Traffic Management)	1.1.2.1 (Traffic Management)
indicator_input_storage_data_for_roads	1.2.4.1 (Traffic Management)	1.1.2.1 (Traffic Management)
indicator_monitoring_suspend	1.2.7.3 (Roadway Subsystem)	1.2.7.2 (Roadway Subsystem)
indicator_new_fault	1.2.8.2 (Traffic Management)	1.2.8.3 (Traffic Management)
indicator_new_fault_data	1.2.8.4 (Traffic Management)	1.2.8.2 (Traffic Management)
indicator_new_fault_update	1.2.8.1 (Traffic Management)	1.2.8.2 (Traffic Management)
indicator_preemption_override_for_highways	1.2.7.3 (Roadway Subsystem)	1.2.7.5 (Roadway Subsystem)
indicator_preemption_override_for_roads	1.2.7.3 (Roadway Subsystem)	1.2.7.1 (Roadway Subsystem)
indicator_response_data_for_highways	1.2.7.5 (Roadway Subsystem)	1.2.7.2 (Roadway Subsystem)
indicator_response_data_for_roads	1.2.7.1 (Roadway Subsystem)	1.2.7.2 (Roadway Subsystem)
indicator_road_requested_state	1.2.2.2 (Traffic Management)	1.2.4.1 (Traffic Management)
indicator_sign_control_data_for_hri	1.2.4.1 (Traffic Management)	1.6.1.1 (Roadway Subsystem)
information_device_fault_status	1.2.7.2 (Roadway Subsystem)	1.2.8.1 (Traffic Management)
information_for_media	1.1.4.6 (Information Service Provider)	1.1.4.5 (Information Service Provider)
intersection_blocked	1.6.1.5 (Roadway Subsystem)	1.6.4.2 (Traffic Management)
intersection_collision_avoidance_data	1.2.7.6 (Roadway Subsystem)	3.1.1 (Vehicle)
intersection_state_data	1.2.7.1 (Roadway Subsystem)	1.2.7.6 (Roadway Subsystem)
lane_deviation	3.2.3.4.5 (Vehicle)	3.2.3.4.3 (Vehicle)
lane_steering_commands	3.2.3.4.3 (Vehicle)	3.2.3.4.5 (Vehicle)
link_and_queue_data	6.6.2.2 (Information Service Provider)	6.7.2.1.3 (Vehicle)
link_data_for_guidance	1.2.6.1 (Traffic Management)	6.6.2.2 (Information Service Provider)
link_data_from_avl	1.1.2.5 (Traffic Management)	1.1.2.1 (Traffic Management)
link_data_from_tags	1.1.2.5 (Traffic Management)	1.1.2.1 (Traffic Management)
link_data_update	1.2.6.1 (Traffic Management)	1.1.2.3 (Traffic Management)
local_control_plan	1.6.1.7.2 (Roadway Subsystem)	1.6.1.6.1 (Roadway Subsystem)
local_decision_support	5.1.4 (Emergency Management)	5.3.5 (Emergency Vehicle Subsystem)
local_schema	8.2 (Archived Data Management Subsystem)	8.4 (Archived Data Management Subsystem)
local_sensor_data_for_highways	1.1.1.1 (Roadway Subsystem)	1.2.7.5 (Roadway Subsystem)
local_sensor_data_for_roads	1.1.1.1 (Roadway Subsystem)	1.2.7.1 (Roadway Subsystem)
local_sensor_data_for_roads	1.1.1.1 (Roadway Subsystem)	1.2.7.6 (Roadway Subsystem)
logged_special_vehicle_route	6.6.2.1 (Information Service Provider)	1.3.2.1 (Traffic Management)
manual_brake_input_detected	3.2.3.4.5 (Vehicle)	3.2.3.4.2 (Vehicle)
manual_input_received	3.2.3.3 (Vehicle)	3.2.3.2 (Vehicle)
manual_steering_input_detected	3.2.3.4.5 (Vehicle)	3.2.3.4.3 (Vehicle)
manual_steering_input_detected	3.2.3.4.5 (Vehicle)	3.2.3.4.4 (Vehicle)
manual_throttle_input_detected	3.2.3.4.5 (Vehicle)	3.2.3.4.1 (Vehicle)
mayday_emergency_data	5.1.6 (Emergency Management)	5.1.1 (Emergency Management)
media_incident_data_updates	1.3.4.3 (Traffic Management)	1.3.2.1 (Traffic Management)
multimodal_crossing_sensor_data	1.1.1.1 (Roadway Subsystem)	1.1.2.2 (Traffic Management)
multimodal_service_confirm	6.1.2 (Information Service Provider)	6.1.3 (Information Service Provider)
multimodal_service_confirmation	6.1.3 (Information Service Provider)	6.1.2 (Information Service Provider)
multimodal_service_data_request	6.1.1 (Information Service Provider)	6.1.3 (Information Service Provider)
multimodal_service_data_response	6.1.3 (Information Service Provider)	6.1.1 (Information Service Provider)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
near_term_status	1.6.1.6.1 (Roadway Subsystem)	1.6.1.3 (Roadway Subsystem)
new_sensor_static_data	1.2.6.1 (Traffic Management)	1.1.2.3 (Traffic Management)
on_demand_archive_request	8.7 (Archived Data Management Subsystem)	8.3 (Archived Data Management Subsystem)
operations_incident_data_updates	1.3.4.2 (Traffic Management)	1.3.2.2 (Traffic Management)
other_archive_data	8.2 (Archived Data Management Subsystem)	8.4 (Archived Data Management Subsystem)
other_archive_data_input	8.4 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
other_archive_data_request	8.2 (Archived Data Management Subsystem)	8.4 (Archived Data Management Subsystem)
other_archive_data_request_input	8.4 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
other_control_data_for_highways	1.1.5 (Traffic Management)	1.2.4.2 (Traffic Management)
other_control_data_for_roads	1.1.5 (Traffic Management)	1.2.4.1 (Traffic Management)
other_current_incidents	1.1.5 (Traffic Management)	1.3.2.5 (Traffic Management)
other_parking_lot_price_data	7.2.1.7 (Parking Management)	1.2.5.2 (Parking Management)
other_parking_lot_price_data_request	1.2.5.2 (Parking Management)	7.2.1.7 (Parking Management)
other_planned_events	1.1.5 (Traffic Management)	1.3.2.4 (Traffic Management)
other_route	6.6.5 (Information Service Provider)	6.6.1 (Information Service Provider)
other_route_segment_data	6.6.2.3 (Information Service Provider)	6.6.2.2 (Information Service Provider)
other_services_roadside_request	4.7.2.5 (Remote Traveler Support)	7.4.1.5 (Transit Management)
other_services_roadside_response	7.4.1.5 (Transit Management)	4.7.2.5 (Remote Traveler Support)
other_services_vehicle_request	6.2.1.6 (Transit Vehicle Subsystem)	7.4.1.5 (Transit Management)
other_services_vehicle_response	7.4.1.5 (Transit Management)	6.2.1.6 (Transit Vehicle Subsystem)
other_status_for_highways	1.2.4.2 (Traffic Management)	1.1.5 (Traffic Management)
other_status_for_roads	1.2.4.1 (Traffic Management)	1.1.5 (Traffic Management)
other_TMC_cv_incidents	1.1.5 (Traffic Management)	1.2.1 (Traffic Management)
other_TMC_emergency_data	1.1.5 (Traffic Management)	1.2.1 (Traffic Management)
other_TMC_strategy_data	1.1.5 (Traffic Management)	1.2.1 (Traffic Management)
other_TRM_service_data	4.2.3.7 (Transit Management)	4.2.3.8 (Transit Management)
override_lane_hold	3.2.3.4.4 (Vehicle)	3.2.3.4.3 (Vehicle)
override_throttle	3.2.3.4.2 (Vehicle)	3.2.3.4.1 (Vehicle)
paratransit_personal_schedule	4.2.1.1 (Transit Management)	6.1.1 (Information Service Provider)
paratransit_request	4.2.1.1 (Transit Management)	4.2.1.3 (Transit Management)
paratransit_requested_services	4.2.1.1 (Transit Management)	4.2.1.4 (Transit Management)
paratransit_route_confirm	6.6.1 (Information Service Provider)	6.1.2 (Information Service Provider)
paratransit_route_request	6.6.1 (Information Service Provider)	6.1.1 (Information Service Provider)
paratransit_route_response	6.1.1 (Information Service Provider)	6.6.1 (Information Service Provider)
paratransit_schedule	4.2.1.3 (Transit Management)	4.2.1.1 (Transit Management)
paratransit_service_confirmation	6.1.2 (Information Service Provider)	4.2.1.1 (Transit Management)
paratransit_service_data_for_archive	4.2.1.1 (Transit Management)	4.2.4 (Transit Management)
paratransit_service_output	4.2.1.4 (Transit Management)	4.2.2 (Transit Management)
paratransit_services_for_transit_drivers	4.2.1.4 (Transit Management)	4.5.5 (Transit Management)
paratransit_transit_driver_instructions	4.2.1.4 (Transit Management)	4.2.1.6 (Transit Vehicle Subsystem)
paratransit_transit_vehicle_availability	4.2.1.5 (Transit Vehicle Subsystem)	4.2.1.2 (Transit Management)
paratransit_trip_request	6.1.1 (Information Service Provider)	4.2.1.1 (Transit Management)
parking_archive_data	1.2.5.5 (Parking Management)	8.1 (Archived Data Management Subsystem)
parking_archive_request	8.1 (Archived Data Management Subsystem)	1.2.5.5 (Parking Management)
parking_archive_status	8.1 (Archived Data Management Subsystem)	1.2.5.5 (Parking Management)
parking_charge_request_for_archive	1.2.5.5 (Parking Management)	7.2.1.7 (Parking Management)
parking_charge_response_for_archive	7.2.1.7 (Parking Management)	1.2.5.5 (Parking Management)
parking_guidance_for_dms	1.2.5.1 (Parking Management)	1.2.4.1 (Traffic Management)
parking_guidance_for_dms	1.2.5.1 (Parking Management)	1.2.4.2 (Traffic Management)
parking_input_data	1.2.5.2 (Parking Management)	1.2.5.1 (Parking Management)
parking_lot_availability	7.2.1.9 (Parking Management)	1.2.5.2 (Parking Management)
parking_lot_availability	7.2.1.9 (Parking Management)	6.1.1 (Information Service Provider)
parking_lot_bookings_confirm	7.2.1.9 (Parking Management)	7.2.1.8 (Parking Management)
parking_lot_bookings_request	7.2.1.8 (Parking Management)	7.2.1.9 (Parking Management)
parking_lot_calculated_occupancy	1.2.5.6 (Parking Management)	1.2.5.1 (Parking Management)
parking_lot_capacity_update	7.2.1.7 (Parking Management)	7.2.1.9 (Parking Management)
parking_lot_capacity_update_confirm	7.2.1.9 (Parking Management)	7.2.1.7 (Parking Management)
parking_lot_charge	7.2.1.2 (Parking Management)	7.2.1.4 (Parking Management)
parking_lot_charge_change_request	1.4.4 (Traffic Management)	7.2.1.7 (Parking Management)
parking_lot_charge_change_response	7.2.1.7 (Parking Management)	1.4.4 (Traffic Management)
parking_lot_charge_details	7.4.2 (Information Service Provider)	1.4.2 (Traffic Management)
parking_lot_charge_direct_details	7.2.1.7 (Parking Management)	1.4.2 (Traffic Management)
parking_lot_charge_direct_request	1.4.2 (Traffic Management)	7.2.1.7 (Parking Management)
parking_lot_charge_request	1.4.2 (Traffic Management)	7.4.2 (Information Service Provider)
parking_lot_current_state	1.2.5.1 (Parking Management)	1.1.2.1 (Traffic Management)
parking_lot_data_for_archive	6.1.1 (Information Service Provider)	6.1.6 (Information Service Provider)
parking_lot_data_request	6.1.1 (Information Service Provider)	7.2.1.9 (Parking Management)
parking_lot_input_data	1.1.2.2 (Traffic Management)	1.2.5.6 (Parking Management)
parking_lot_occupancy	1.2.5.1 (Parking Management)	1.2.5.4 (Parking Management)
parking_lot_operator_input_data	1.2.5.3 (Parking Management)	1.2.5.1 (Parking Management)
parking_lot_operator_output_data	1.2.5.1 (Parking Management)	1.2.5.3 (Parking Management)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
parking_lot_operator_transit_update	1.2.5.4 (Parking Management)	1.2.5.3 (Parking Management)
parking_lot_payment_confirmation	7.2.7 (Vehicle)	7.2.1.5 (Parking Management)
parking_lot_payment_debited	7.2.1.5 (Parking Management)	7.2.7 (Vehicle)
parking_lot_payment_pull_in_message	7.2.1.5 (Parking Management)	7.2.2 (Parking Management)
parking_lot_payment_request	7.2.1.5 (Parking Management)	7.2.7 (Vehicle)
parking_lot_price_data	7.2.1.7 (Parking Management)	7.4.2 (Information Service Provider)
parking_lot_price_data_request	7.4.2 (Information Service Provider)	7.2.1.7 (Parking Management)
parking_lot_reservation_confirm	7.2.1.9 (Parking Management)	6.1.2 (Information Service Provider)
parking_lot_reservation_request	6.1.2 (Information Service Provider)	7.2.1.9 (Parking Management)
parking_lot_state_for_archive	1.2.5.1 (Parking Management)	1.2.5.5 (Parking Management)
parking_lot_tag_data_clear	7.2.1.5 (Parking Management)	7.2.7 (Vehicle)
parking_lot_tag_data_collect	7.2.7 (Vehicle)	7.2.1.1 (Parking Management)
parking_lot_tag_data_input	7.2.7 (Vehicle)	1.1.6 (Roadway Subsystem)
parking_lot_tag_data_needed	1.1.6 (Roadway Subsystem)	7.2.7 (Vehicle)
parking_lot_tag_data_request	7.2.1.1 (Parking Management)	7.2.7 (Vehicle)
parking_lot_tag_data_update	7.2.1.1 (Parking Management)	7.2.7 (Vehicle)
parking_lot_tag_pull_in_message	7.2.1.1 (Parking Management)	7.2.2 (Parking Management)
parking_lot_transit_request	1.2.5.4 (Parking Management)	4.2.3.2 (Transit Management)
parking_lot_transit_response	4.2.3.2 (Transit Management)	1.2.5.4 (Parking Management)
parking_lot_violation_information	7.2.3 (Parking Management)	5.4.3 (Parking Management)
parking_output_data	1.2.5.1 (Parking Management)	1.2.5.2 (Parking Management)
parking_transit_update	1.2.5.4 (Parking Management)	1.2.5.2 (Parking Management)
pedestrian_sensor_data	1.1.1.1 (Roadway Subsystem)	1.1.2.2 (Traffic Management)
planned_event_data	1.3.2.2 (Traffic Management)	1.1.2.1 (Traffic Management)
planned_event_data_for_vehicle_signage	1.3.2.3 (Traffic Management)	1.2.4.3 (Traffic Management)
planned_events	1.3.2.2 (Traffic Management)	1.1.3 (Traffic Management)
planned_events	1.3.2.2 (Traffic Management)	6.2.1.1 (Information Service Provider)
planned_events	1.3.2.2 (Traffic Management)	6.6.1 (Information Service Provider)
planned_events	1.3.2.2 (Traffic Management)	6.6.2.2 (Information Service Provider)
planned_events	1.3.2.2 (Traffic Management)	6.6.5 (Information Service Provider)
planned_events_data	1.3.2.4 (Traffic Management)	1.3.2.3 (Traffic Management)
planned_events_data_output	1.3.2.4 (Traffic Management)	1.3.4.1 (Traffic Management)
planned_events_local_data	1.3.2.4 (Traffic Management)	1.1.5 (Traffic Management)
planned_events_new_data	1.3.2.2 (Traffic Management)	1.3.2.4 (Traffic Management)
platoon_action	3.2.2 (Vehicle)	3.2.3.2 (Vehicle)
platoon_change_lane_servo_override	3.2.3.4.5 (Vehicle)	3.2.3.4.4 (Vehicle)
platoon_following_commands	3.2.3.2 (Vehicle)	3.2.3.4.5 (Vehicle)
platoon_headway_servo_override	3.2.3.4.5 (Vehicle)	3.2.3.4.2 (Vehicle)
platoon_lane_servo_override	3.2.3.4.5 (Vehicle)	3.2.3.4.3 (Vehicle)
platoon_speed_servo_override	3.2.3.4.5 (Vehicle)	3.2.3.4.1 (Vehicle)
platoon_status	3.2.3.2 (Vehicle)	3.2.2 (Vehicle)
platooning_selected	3.2.3.2 (Vehicle)	3.2.3.3 (Vehicle)
pollution_archive_data_log	1.5.7 (Emissions Management)	1.5.9 (Emissions Management)
pollution_incident	1.5.2 (Emissions Management)	1.3.2.1 (Traffic Management)
pollution_reference_data_archive_request	1.5.9 (Emissions Management)	1.5.8 (Emissions Management)
pollution_reference_data_output	1.5.8 (Emissions Management)	1.5.1 (Emissions Management)
pollution_reference_data_request	1.5.1 (Emissions Management)	1.5.8 (Emissions Management)
pollution_reference_data_update	1.5.1 (Emissions Management)	1.5.8 (Emissions Management)
pollution_state_data	1.5.4 (Emissions Management)	1.4.2 (Traffic Management)
pollution_state_data_output	1.5.4 (Emissions Management)	1.5.1 (Emissions Management)
pollution_state_data_output_request	1.5.1 (Emissions Management)	1.5.4 (Emissions Management)
pollution_state_data_request	1.4.2 (Traffic Management)	1.5.4 (Emissions Management)
pollution_state_roadside_collection	1.5.6 (Roadway Subsystem)	1.5.2 (Emissions Management)
pollution_state_static_acceptance_criteria	1.5.8 (Emissions Management)	1.5.2 (Emissions Management)
pollution_state_static_collection	1.5.2 (Emissions Management)	1.5.4 (Emissions Management)
pollution_state_static_log_data	1.5.2 (Emissions Management)	1.5.7 (Emissions Management)
pollution_state_vehicle_acceptance_criteria	1.5.8 (Emissions Management)	1.5.5 (Roadway Subsystem)
pollution_state_vehicle_collection	1.5.5 (Roadway Subsystem)	1.5.4 (Emissions Management)
pollution_state_vehicle_log_data	1.5.5 (Roadway Subsystem)	1.5.7 (Emissions Management)
position_warnings	3.1.1 (Vehicle)	6.2.2 (Vehicle)
possible_defined_responses_data	1.3.7 (Traffic Management)	1.3.5 (Traffic Management)
possible_defined_responses_output	1.3.5 (Traffic Management)	1.3.4.2 (Traffic Management)
possible_defined_responses_output_request	1.3.4.2 (Traffic Management)	1.3.5 (Traffic Management)
possible_detected_incidents	1.3.1.1 (Traffic Management)	1.3.2.1 (Traffic Management)
possible_incident_data_update	1.3.2.1 (Traffic Management)	1.3.2.2 (Traffic Management)
possible_incidents_data_output	1.3.2.2 (Traffic Management)	1.3.4.1 (Traffic Management)
predicted_hri_state	1.6.1.6.1 (Roadway Subsystem)	1.6.1.6.2 (Roadway Subsystem)
prediction_data	1.1.3 (Traffic Management)	1.2.2.1 (Traffic Management)
prediction_data	1.1.3 (Traffic Management)	1.2.2.2 (Traffic Management)
prediction_data	1.1.3 (Traffic Management)	4.1.4 (Transit Management)
prediction_data	1.1.3 (Traffic Management)	6.2.1.1 (Information Service Provider)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
prediction_data	1.1.3 (Traffic Management)	6.6.2.2 (Information Service Provider)
preemption_command	1.6.5.2 (Roadway Subsystem)	1.6.1.7.2 (Roadway Subsystem)
prices	7.4.2 (Information Service Provider)	6.1.1 (Information Service Provider)
probe_data_for_traffic	7.1.1.6 (Toll Administration)	1.1.2.5 (Traffic Management)
processed_cargo_data	3.3.1 (Commercial Vehicle Subsystem)	3.3.3 (Vehicle)
processed_data	1.1.2.2 (Traffic Management)	1.1.2.1 (Traffic Management)
rail_operations_advisories	1.6.2.2 (Traffic Management)	1.6.1.6.1 (Roadway Subsystem)
rail_operations_data	1.6.2.3 (Traffic Management)	1.6.2.2 (Traffic Management)
rail_operations_device_command	1.6.2.1 (Traffic Management)	1.6.1.7.1 (Roadway Subsystem)
rail_operations_device_command	1.6.2.1 (Traffic Management)	1.6.1.7.3 (Roadway Subsystem)
rail_operations_message	1.6.1.6.1 (Roadway Subsystem)	1.6.2.1 (Traffic Management)
rail_operations_priority_data	1.6.2.1 (Traffic Management)	1.6.2.2 (Traffic Management)
rail_operations_query	1.6.2.2 (Traffic Management)	1.6.2.3 (Traffic Management)
rail_operations_update	1.6.2.1 (Traffic Management)	1.6.2.3 (Traffic Management)
rail_schedules_data	1.6.2.3 (Traffic Management)	1.6.4.2 (Traffic Management)
ramp_data	1.1.2.2 (Traffic Management)	1.2.3 (Traffic Management)
ramp_signal_state	1.2.3 (Traffic Management)	1.2.4.2 (Traffic Management)
reclassify_incidents	1.3.4.2 (Traffic Management)	1.3.2.3 (Traffic Management)
remote_video_image_control	5.1.4 (Emergency Management)	1.3.4.2 (Traffic Management)
request_demand_display_update	1.4.1 (Traffic Management)	1.4.3 (Traffic Management)
request_emergency_display_update	5.2 (Emergency Management)	5.5 (Emergency Management)
request_hri_closure_data	1.6.5.1 (Roadway Subsystem)	1.6.5.3 (Roadway Subsystem)
request_incident_map_display_update	1.3.4.2 (Traffic Management)	1.3.4.4 (Traffic Management)
request_incident_media_data	1.3.4.3 (Traffic Management)	1.3.4.1 (Traffic Management)
request_incident_operations_data	1.3.4.2 (Traffic Management)	1.3.4.1 (Traffic Management)
request_local_current_incidents_data	1.1.5 (Traffic Management)	1.3.2.5 (Traffic Management)
request_local_planned_events_data	1.1.5 (Traffic Management)	1.3.2.4 (Traffic Management)
request_other_current_incidents_data	1.3.2.5 (Traffic Management)	1.1.5 (Traffic Management)
request_other_planned_events_data	1.3.2.4 (Traffic Management)	1.1.5 (Traffic Management)
request_other_route_segment_data	6.6.2.2 (Information Service Provider)	6.6.2.3 (Information Service Provider)
request_other_routes_map_update	6.6.2.5 (Information Service Provider)	6.6.3 (Information Service Provider)
request_other_TMC_data	1.2.1 (Traffic Management)	1.1.5 (Traffic Management)
request_planned_events_data	1.3.2.3 (Traffic Management)	1.3.2.4 (Traffic Management)
request_pollution_map_display_update	1.5.1 (Emissions Management)	1.5.3 (Emissions Management)
request_possible_incidents_data	1.3.4.1 (Traffic Management)	1.3.2.2 (Traffic Management)
request_prices	6.1.1 (Information Service Provider)	7.4.2 (Information Service Provider)
request_rail_schedules_data	1.6.4.2 (Traffic Management)	1.6.2.3 (Traffic Management)
request_roadside_fare_payment	4.7.2.4 (Remote Traveler Support)	7.3.1.4 (Transit Management)
request_route_segment_data	6.6.2.1 (Information Service Provider)	6.6.2.2 (Information Service Provider)
request_route_selection_map_update	6.6.2.5 (Information Service Provider)	6.6.2.4 (Information Service Provider)
request_sensor_static_data	1.2.6.1 (Traffic Management)	1.1.2.3 (Traffic Management)
request_traffic_map_display_update	1.1.4.2 (Traffic Management)	1.1.4.4 (Traffic Management)
request_traffic_media_data	1.1.4.3 (Traffic Management)	1.1.4.1 (Traffic Management)
request_traffic_operations_data	1.1.4.2 (Traffic Management)	1.1.4.1 (Traffic Management)
request_transit_map_update	4.2.3.4 (Transit Management)	4.2.3.9 (Transit Management)
request_transit_service_external_data	4.2.3.3 (Transit Management)	4.2.3.8 (Transit Management)
request_transit_service_internal_data	4.2.3.6 (Transit Management)	4.2.3.8 (Transit Management)
request_transit_services_data_for_output	4.2.3.4 (Transit Management)	4.2.3.8 (Transit Management)
request_transit_user_roadside_image	7.3.3 (Transit Management)	4.7.2.1 (Remote Traveler Support)
request_transit_user_vehicle_image	7.3.3 (Transit Management)	4.6.1 (Transit Vehicle Subsystem)
request_vehicle_fare_payment	4.6.4 (Transit Vehicle Subsystem)	7.3.1.4 (Transit Management)
resource_deployment_status	1.3.4.5 (Traffic Management)	5.1.4 (Emergency Management)
resource_request	5.1.4 (Emergency Management)	1.3.4.5 (Traffic Management)
retrieved_archive_data	8.1 (Archived Data Management Subsystem)	8.2 (Archived Data Management Subsystem)
retrieved_incident_media_data	1.3.4.1 (Traffic Management)	1.3.4.3 (Traffic Management)
retrieved_incident_operations_data	1.3.4.1 (Traffic Management)	1.3.4.2 (Traffic Management)
retrieved_traffic_media_data	1.1.4.1 (Traffic Management)	1.1.4.3 (Traffic Management)
retrieved_traffic_operations_data	1.1.4.1 (Traffic Management)	1.1.4.2 (Traffic Management)
reversible_lane_status	1.3.1.1 (Traffic Management)	1.1.2.7 (Traffic Management)
reversible_lane_video_images	1.3.1.3 (Roadway Subsystem)	1.1.2.7 (Traffic Management)
rideshare_confirmation	6.4.4 (Information Service Provider)	6.1.2 (Information Service Provider)
rideshare_confirmation_data	6.4.4 (Information Service Provider)	6.4.2 (Information Service Provider)
rideshare_data_for_archive	6.4.1 (Information Service Provider)	6.1.6 (Information Service Provider)
rideshare_ineligible_status_notification	6.4.1 (Information Service Provider)	6.4.3 (Information Service Provider)
rideshare_payment_confirmation	7.4.1.8 (Information Service Provider)	6.4.4 (Information Service Provider)
rideshare_payment_request	6.4.4 (Information Service Provider)	7.4.1.8 (Information Service Provider)
rideshare_request_from_eligible_traveler	6.4.1 (Information Service Provider)	6.4.2 (Information Service Provider)
rideshare_response	6.4.3 (Information Service Provider)	6.1.1 (Information Service Provider)
rideshare_selection	6.4.2 (Information Service Provider)	6.4.3 (Information Service Provider)
ro_requests	1.6.2.1 (Traffic Management)	1.6.5.1 (Roadway Subsystem)
roadside_archive_control	8.9 (Archived Data Management Subsystem)	1.1.1.4 (Roadway Subsystem)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
roadside_archive_data	1.1.1.4 (Roadway Subsystem)	8.9 (Archived Data Management Subsystem)
roadway_status	1.6.1.1 (Roadway Subsystem)	1.6.5.2 (Roadway Subsystem)
route_guidance_data_for_archive	6.6.2.1 (Information Service Provider)	6.1.6 (Information Service Provider)
route_segment_details_updated	6.6.2.2 (Information Service Provider)	6.6.2.1 (Information Service Provider)
safety_data	3.1.3 (Vehicle)	3.1.2 (Vehicle)
safety_warnings	3.1.2 (Vehicle)	6.2.2 (Vehicle)
secure_area_broadcast_message	4.4.1.1 (Transit Management)	4.4.1.7 (Remote Traveler Support)
secure_area_monitoring_control	4.4.1.1 (Transit Management)	4.4.1.7 (Remote Traveler Support)
secure_area_surveillance_information	4.4.1.7 (Remote Traveler Support)	4.4.1.1 (Transit Management)
select_headway	3.2.3.4.5 (Vehicle)	3.2.3.4.2 (Vehicle)
select_lane_hold	3.2.3.4.5 (Vehicle)	3.2.3.4.3 (Vehicle)
select_speed	3.2.3.4.5 (Vehicle)	3.2.3.4.1 (Vehicle)
selected_highway_control_strategy	1.2.1 (Traffic Management)	1.2.2.1 (Traffic Management)
selected_hri_control_strategy	1.2.1 (Traffic Management)	1.2.2.2 (Traffic Management)
selected_parking_lot_control_strategy	1.2.1 (Traffic Management)	1.2.5.1 (Parking Management)
selected_ramp_control_strategy	1.2.1 (Traffic Management)	1.2.3 (Traffic Management)
selected_road_control_strategy	1.2.1 (Traffic Management)	1.2.2.2 (Traffic Management)
selected_strategy	1.2.1 (Traffic Management)	1.1.2.1 (Traffic Management)
selected_strategy	1.2.1 (Traffic Management)	1.1.3 (Traffic Management)
sensor_configuration_data	1.1.4.2 (Traffic Management)	1.1.1.1 (Roadway Subsystem)
sensor_data	3.2.3.5 (Vehicle)	3.2.3.4.5 (Vehicle)
sensor_data_archive_input	1.1.1.1 (Roadway Subsystem)	1.1.1.4 (Roadway Subsystem)
sensor_data_for_distribution	1.1.4.1 (Traffic Management)	1.1.4.6 (Information Service Provider)
sensor_data_for_reversible_lanes	1.1.1.1 (Roadway Subsystem)	1.1.2.7 (Traffic Management)
sensor_fault_data	1.1.1.1 (Roadway Subsystem)	1.1.1.2 (Traffic Management)
sensor_output_data	1.1.2.2 (Traffic Management)	1.1.2.1 (Traffic Management)
sensor_status	1.1.1.1 (Roadway Subsystem)	1.1.1.4 (Roadway Subsystem)
service_req_and_confirm_for_archive	6.1.5 (Information Service Provider)	6.1.6 (Information Service Provider)
special_vehicle_priority_routing	6.6.2.1 (Information Service Provider)	1.2.1 (Traffic Management)
speed	3.2.3.4.5 (Vehicle)	3.2.3.4.1 (Vehicle)
ssr_control_request	1.6.1.2.1 (Roadway Subsystem)	1.6.1.2.3 (Roadway Subsystem)
ssr_device_control	1.6.1.2.3 (Roadway Subsystem)	1.6.1.2.5 (Roadway Subsystem)
ssr_device_control_state	1.6.1.2.3 (Roadway Subsystem)	1.6.1.2.6 (Roadway Subsystem)
static_data_for_archive	1.2.6.2 (Traffic Management)	1.1.4.7 (Traffic Management)
static_data_for_highway_control	1.2.6.2 (Traffic Management)	1.2.4.2 (Traffic Management)
static_data_for_highways	1.2.6.2 (Traffic Management)	1.2.2.1 (Traffic Management)
static_data_for_parking_lots	1.2.6.2 (Traffic Management)	1.2.5.6 (Parking Management)
static_data_for_ramps	1.2.6.2 (Traffic Management)	1.2.3 (Traffic Management)
static_data_for_road_control	1.2.6.2 (Traffic Management)	1.2.4.1 (Traffic Management)
static_data_for_roads	1.2.6.2 (Traffic Management)	1.2.2.2 (Traffic Management)
static_data_for_strategy	1.2.6.2 (Traffic Management)	1.2.1 (Traffic Management)
static_data_for_vehicle_signage	1.2.6.2 (Traffic Management)	1.2.4.3 (Traffic Management)
static_data_store_updated	1.2.6.1 (Traffic Management)	1.2.6.2 (Traffic Management)
status_data_for_highways	1.1.5 (Traffic Management)	1.2.4.2 (Traffic Management)
status_data_for_roads	1.1.5 (Traffic Management)	1.2.4.1 (Traffic Management)
steering_commands	3.2.3.4.4 (Vehicle)	3.2.3.4.5 (Vehicle)
strategy_data_for_highways	1.1.2.2 (Traffic Management)	1.2.2.1 (Traffic Management)
strategy_data_for_roads	1.1.2.2 (Traffic Management)	1.2.2.2 (Traffic Management)
strategy_preemption	1.6.1.5 (Roadway Subsystem)	1.6.1.7.2 (Roadway Subsystem)
supplied_route	6.6.1 (Information Service Provider)	6.1.1 (Information Service Provider)
supply_incident_static_data	1.2.6.1 (Traffic Management)	1.3.1.2 (Traffic Management)
tada_archive_administration_data	8.3 (Archived Data Management Subsystem)	Archived Data Administrator
tadu_archive_analysis_results	8.6 (Archived Data Management Subsystem)	Archived Data User Systems
tadu_archive_data_product	8.5 (Archived Data Management Subsystem)	Archived Data User Systems
tadu_on_demand_confirmation	8.7 (Archived Data Management Subsystem)	Archived Data User Systems
tbv_change_brake_setting	3.2.3.3 (Vehicle)	Basic Vehicle
tbv_change_direction	3.2.3.3 (Vehicle)	Basic Vehicle
tbv_change_throttle_setting	3.2.3.3 (Vehicle)	Basic Vehicle
tbv_deploy_crash_restraints	3.2.3.3 (Vehicle)	Basic Vehicle
tbv_har_broadcast_for_highways	1.2.7.5 (Roadway Subsystem)	Basic Vehicle
tbv_har_broadcast_for_roads	1.2.7.1 (Roadway Subsystem)	Basic Vehicle
tbv_steer_left	3.2.3.3 (Vehicle)	Basic Vehicle
tbv_steer_right	3.2.3.3 (Vehicle)	Basic Vehicle
tbv_steer_straight	3.2.3.3 (Vehicle)	Basic Vehicle
tbv_vehicle_security_system_commands	3.3.2 (Vehicle)	Basic Vehicle
tci_credentials_data_output	2.3.5 (Commercial Vehicle Check)	CVO Inspector
tci_inspection_report	2.3.3.2 (Commercial Vehicle Check)	CVO Inspector
tci_output_log_report	2.3.5 (Commercial Vehicle Check)	CVO Inspector
tci_pull_in_information	2.3.5 (Commercial Vehicle Check)	CVO Inspector
tci_safety_data_output	2.3.5 (Commercial Vehicle Check)	CVO Inspector
tcm_c_and_m_archive_request	8.1 (Archived Data Management Subsystem)	Construction and Maintenance

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
tcm_c_and_m_archive_status	8.1 (Archived Data Management Subsystem)	Construction and Maintenance
tcm_fault_data	1.2.8.3 (Traffic Management)	Construction and Maintenance
tcm_incident_confirmation	1.3.2.2 (Traffic Management)	Construction and Maintenance
tcm_request_incident_change	1.3.2.2 (Traffic Management)	Construction and Maintenance
tcm_resource_request	1.3.4.5 (Traffic Management)	Construction and Maintenance
tcm_sensor_fault_data	1.1.1.2 (Traffic Management)	Construction and Maintenance
tcv_lock_tag_data_request	2.6.4 (Commercial Vehicle Subsystem)	Commercial Vehicle
tcvd_border_pull_in_output	2.3.1 (Commercial Vehicle Check)	Commercial Vehicle Driver
tcvd_clearance_pull_in_output	2.3.1 (Commercial Vehicle Check)	Commercial Vehicle Driver
tcvd_confirm_data_stored	2.6.3 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_critical_safety_problem	2.4.4 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_data_input_request	2.4.4 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_data_request	2.2.3 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_enrollment_confirmation	2.2.3 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_enrollment_payment_confirmation	2.2.3 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_general_pull_in_output	2.3.1 (Commercial Vehicle Check)	Commercial Vehicle Driver
tcvd_inspection_results	2.3.3.5 (Commercial Vehicle Check)	Commercial Vehicle Driver
tcvd_on_board_pull_in_output	2.3.7 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_other_data_request	2.2.3 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_output_data	2.4.4 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_output_tag_data	2.6.3 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_route_data	2.2.3 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_routing_instructions	2.1.5 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvd_safety_pull_in_output	2.3.1 (Commercial Vehicle Check)	Commercial Vehicle Driver
tcvd_type_input_request	2.4.4 (Commercial Vehicle Subsystem)	Commercial Vehicle Driver
tcvm_confirm_enrollment_data_stored	2.6.1 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_data_input_request	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_driver_route_instructions	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_enrollment_confirmation	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_enrollment_payment_confirmation	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_other_data_request	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_output_tag_data	2.6.1 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_preclearance_results	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_roadside_activity_report	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvm_route_data	2.1.3 (Fleet and Freight Management)	Commercial Vehicle Manager
tcvoir_carrier_or_vehicle_information	2.5.5 (Commercial Vehicle Administration)	CVO Information Requestor
td_advisory_information	6.2.5 (Vehicle)	Driver
td_broadcast_information	6.2.5 (Vehicle)	Driver
td_dms_indication_for_highways	1.2.7.5 (Roadway Subsystem)	Driver
td_dms_indication_for_roads	1.2.7.1 (Roadway Subsystem)	Driver
td_driving_guidance	6.7.2.3 (Vehicle)	Driver
td_guidance_input_request	6.7.2.3 (Vehicle)	Driver
td_guidance_map_update_response	6.7.2.3 (Vehicle)	Driver
td_guidance_route_details	6.7.2.3 (Vehicle)	Driver
td_lane_use_indication_for_highways	1.2.7.5 (Roadway Subsystem)	Driver
td_lane_use_indication_for_roads	1.2.7.1 (Roadway Subsystem)	Driver
td_other_services_parking_response	7.2.4 (Vehicle)	Driver
td_other_services_toll_response	7.1.4 (Vehicle)	Driver
td_parking_lot_payment_confirmed	7.2.2 (Parking Management)	Driver
td_parking_lot_payment_invalid	7.2.2 (Parking Management)	Driver
td_ramp_state_indication	1.2.7.5 (Roadway Subsystem)	Driver
td_signal_indication	1.2.7.1 (Roadway Subsystem)	Driver
td_toll_payment_confirmed	7.1.2 (Toll Collection)	Driver
td_toll_payment_invalid	7.1.2 (Toll Collection)	Driver
tdmv_cv_violation_identity_code	5.4.6 (Commercial Vehicle Administration)	DMV
tdmv_cv_violation_vehicle_license	5.4.6 (Commercial Vehicle Administration)	DMV
tdmv_parking_lot_violation_identity_code	5.4.3 (Parking Management)	DMV
tdmv_parking_lot_violation_vehicle_license	5.4.3 (Parking Management)	DMV
tdmv_toll_violation_identity_code	5.4.2 (Toll Administration)	DMV
tdmv_toll_violation_vehicle_license	5.4.2 (Toll Administration)	DMV
tdmv_traffic_violation_identity_code	5.4.1 (Traffic Management)	DMV
tdmv_traffic_violation_vehicle_license	5.4.1 (Traffic Management)	DMV
tea_cv_request_for_information	2.5.5 (Commercial Vehicle Administration)	Enforcement Agency
tea_cv_violation_data	5.4.6 (Commercial Vehicle Administration)	Enforcement Agency
tea_fare_collection_roadside_violation_data	5.4.7 (Transit Management)	Enforcement Agency
tea_fare_collection_vehicle_violation_data	5.4.5 (Transit Management)	Enforcement Agency
tea_fare_payment_violation_data	5.4.4 (Transit Management)	Enforcement Agency
tea_parking_violation_data	5.4.3 (Parking Management)	Enforcement Agency
tea_toll_violation_data	5.4.2 (Toll Administration)	Enforcement Agency
tea_traffic_violation_data	5.4.1 (Traffic Management)	Enforcement Agency
tep_decision_support	5.3.5 (Emergency Vehicle Subsystem)	Emergency Personnel

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
tep_emergency_dispatch_order	5.3.5 (Emergency Vehicle Subsystem)	Emergency Personnel
tep_event_confirmation	1.3.2.2 (Traffic Management)	Event Promoters
tep_planned_event_confirmation	5.1.1 (Emergency Management)	Event Promoters
teso_archive_status	5.6 (Emergency Management)	Emergency System Operator
teso_emergency_action_log_output	5.2 (Emergency Management)	Emergency System Operator
teso_emergency_data_output	5.2 (Emergency Management)	Emergency System Operator
teso_emergency_vehicle_dispatch_failure	5.2 (Emergency Management)	Emergency System Operator
tets_incident_acknowledge	5.1.3 (Emergency Management)	Emergency Telecommunications System
tfi_archive_analysis_payment_request	8.6 (Archived Data Management Subsystem)	Financial Institution
tfi_archive_payment_request	8.5 (Archived Data Management Subsystem)	Financial Institution
tfi_cv_payment_request	7.4.1.1 (Commercial Vehicle Administration)	Financial Institution
tfi_driver_map_payment_request	7.4.1.3 (Information Service Provider)	Financial Institution
tfi_fare_payment_violator_data	7.3.1.6 (Transit Management)	Financial Institution
tfi_other_services_payment_request	7.4.1.5 (Transit Management)	Financial Institution
tfi_parking_lot_payment_violator_data	7.2.1.3 (Parking Management)	Financial Institution
tfi_registration_payment_request	7.4.1.2 (Information Service Provider)	Financial Institution
tfi_request_charges_payment	7.2.1.6 (Parking Management)	Financial Institution
tfi_request_fare_payment	7.3.1.3 (Transit Management)	Financial Institution
tfi_request_toll_payment	7.1.1.9 (Toll Administration)	Financial Institution
tfi_toll_payment_violator_data	7.1.1.3 (Toll Administration)	Financial Institution
tfi_traveler_display_payment_request	7.4.1.4 (Information Service Provider)	Financial Institution
tfi_traveler_map_payment_request	7.4.1.4 (Information Service Provider)	Financial Institution
tfi_traveler_other_services_payments_request	7.4.1.6 (Information Service Provider)	Financial Institution
tfi_traveler_rideshare_payment_request	7.4.1.8 (Information Service Provider)	Financial Institution
tga_quarterly_reports	2.5.8 (Commercial Vehicle Administration)	Government Administrators
tga_request_fees_updates	2.5.3 (Commercial Vehicle Administration)	Government Administrators
tgrs_government_data_report_input	8.8 (Archived Data Management Subsystem)	Government Reporting Systems
throttle_commands	3.2.3.4.1 (Vehicle)	3.2.3.4.5 (Vehicle)
tifd_freight_request	2.7 (Fleet and Freight Management)	Intermodal Freight Depot
tifd_intermodal_archive_request	8.1 (Archived Data Management Subsystem)	Intermodal Freight Depot
tifd_intermodal_archive_status	8.1 (Archived Data Management Subsystem)	Intermodal Freight Depot
time_to_closing	1.6.1.4.2 (Roadway Subsystem)	1.6.1.4.4 (Roadway Subsystem)
tispo_archive_status	6.1.6 (Information Service Provider)	ISP Operator
tispo_broadcast_data_parameters_output	6.2.1.5 (Information Service Provider)	ISP Operator
tispo_route_selection_parameters	6.6.2.5 (Information Service Provider)	ISP Operator
tispo_trip_planning_parameters	6.1.4 (Information Service Provider)	ISP Operator
tm_emergency_information	5.1.3 (Emergency Management)	Media
tm_incident_data	1.3.4.3 (Traffic Management)	Media
tm_incident_information	1.1.4.5 (Information Service Provider)	Media
tm_pollution_data	1.5.2 (Emissions Management)	Media
tm_traffic_data	1.1.4.3 (Traffic Management)	Media
tm_traffic_information	1.1.4.5 (Information Service Provider)	Media
tm_transit_emergency_information	4.4.1.4 (Transit Management)	Media
tm_transit_incident_information	4.4.1.4 (Transit Management)	Media
tm_transit_schedule_deviations_to_media	4.1.6 (Transit Management)	Media
tm_transit_vehicle_deviations	4.1.8 (Information Service Provider)	Media
tm_traveler_information_request	6.5.1 (Information Service Provider)	Media
tmmc_crossing_clear_at_highways	1.2.7.5 (Roadway Subsystem)	Multimodal Crossings
tmmc_crossing_clear_at_roads	1.2.7.1 (Roadway Subsystem)	Multimodal Crossings
tmmc_highway_equipment_status	1.2.7.5 (Roadway Subsystem)	Multimodal Crossings
tmmc_road_equipment_status	1.2.7.1 (Roadway Subsystem)	Multimodal Crossings
tmmc_stop_alternate_mode_at_highways	1.2.7.5 (Roadway Subsystem)	Multimodal Crossings
tmmc_stop_alternate_mode_at_roads	1.2.7.1 (Roadway Subsystem)	Multimodal Crossings
tms_requests	1.6.4.2 (Traffic Management)	1.6.5.1 (Roadway Subsystem)
tmtsp_air_services_request	6.1.3 (Information Service Provider)	Multimodal Transportation Service Provider
tmtsp_confirm_multimodal_service	6.1.3 (Information Service Provider)	Multimodal Transportation Service Provider
tmtsp_ferry_services_request	6.1.3 (Information Service Provider)	Multimodal Transportation Service Provider
tmtsp_multimodal_archive_request	8.1 (Archived Data Management Subsystem)	Multimodal Transportation Service Provider
tmtsp_multimodal_archive_status	8.1 (Archived Data Management Subsystem)	Multimodal Transportation Service Provider
tmtsp_rail_services_request	6.1.3 (Information Service Provider)	Multimodal Transportation Service Provider
tmtsp_transit_arrival_changes	4.1.2.4 (Transit Management)	Multimodal Transportation Service Provider
tmtsp_transit_arrival_deviations	4.1.7 (Transit Management)	Multimodal Transportation Service Provider
tmtsp_transit_service_data	4.2.3.3 (Transit Management)	Multimodal Transportation Service Provider
tmup_emergency_route_map_request	5.3.7 (Emergency Management)	Map Update Provider
tmup_map_archive_request	8.1 (Archived Data Management Subsystem)	Map Update Provider
tmup_map_archive_status	8.1 (Archived Data Management Subsystem)	Map Update Provider
tmup_map_static_data	1.2.6.2 (Traffic Management)	Map Update Provider
tmup_request_demand_display_update	1.4.3 (Traffic Management)	Map Update Provider
tmup_request_emergency_display_update	5.5 (Emergency Management)	Map Update Provider
tmup_request_incident_display_update	1.3.4.4 (Traffic Management)	Map Update Provider
tmup_request_other_routes_map_update	6.6.3 (Information Service Provider)	Map Update Provider

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
tmup_request_pollution_display_update	1.5.3 (Emissions Management)	Map Update Provider
tmup_request_route_selection_map_update	6.6.2.4 (Information Service Provider)	Map Update Provider
tmup_request_traffic_display_update	1.1.4.4 (Traffic Management)	Map Update Provider
tmup_request_traveler_display_update	6.3.4 (Remote Traveler Support)	Map Update Provider
tmup_request_traveler_personal_display_update	6.8.3.4 (Personal Information Access)	Map Update Provider
tmup_request_traveler_personal_display_update_cost	6.8.3.4 (Personal Information Access)	Map Update Provider
tmup_transit_map_update_request	4.2.3.9 (Transit Management)	Map Update Provider
tmup_traveler_map_update_cost_request	6.8.1.4 (Personal Information Access)	Map Update Provider
tmup_traveler_map_update_request	6.8.1.4 (Personal Information Access)	Map Update Provider
tmup_vehicle_map_update_cost_request	6.7.2.4 (Vehicle)	Map Update Provider
tmup_vehicle_map_update_request	6.7.2.4 (Vehicle)	Map Update Provider
To_Intermodal_Freight_Shipper	2.7 (Fleet and Freight Management)	Intermodal Freight Shipper
To_Other_Vehicle	3.2.3.6 (Vehicle)	Other Vehicle
toa_archive_coordination_data	8.4 (Archived Data Management Subsystem)	Other Archives
tocvas_commit_remote_enrollment	2.5.4 (Commercial Vehicle Administration)	Other CVAS
tocvas_data_table	2.5.4 (Commercial Vehicle Administration)	Other CVAS
tocvas_enrollment_confirmation	2.5.4 (Commercial Vehicle Administration)	Other CVAS
tocvas_enrollment_request	2.5.4 (Commercial Vehicle Administration)	Other CVAS
tocvas_provide_data	2.5.4 (Commercial Vehicle Administration)	Other CVAS
tods_other_data_source_archive_request	8.1 (Archived Data Management Subsystem)	Other Data Sources
tods_other_data_source_archive_status	8.1 (Archived Data Management Subsystem)	Other Data Sources
toec_emergency_center_identity	5.1.2 (Emergency Management)	Other EM
toec_incident_details	5.1.2 (Emergency Management)	Other EM
toec_incident_response_coordination	5.1.2 (Emergency Management)	Other EM
toec_mayday_emergency_data	5.1.6 (Emergency Management)	Other EM
toisp_data_supply	6.6.2.3 (Information Service Provider)	Other ISP
toisp_request_data	6.6.2.3 (Information Service Provider)	Other ISP
toisp_traffic_data_request	6.2.1.1 (Information Service Provider)	Other ISP
toisp_traffic_information	6.2.1.1 (Information Service Provider)	Other ISP
toisp_transit_data_request	6.2.1.3 (Information Service Provider)	Other ISP
toisp_transit_information	6.2.1.3 (Information Service Provider)	Other ISP
toll_archive_data	7.1.1.11 (Toll Administration)	8.1 (Archived Data Management Subsystem)
toll_archive_request	8.1 (Archived Data Management Subsystem)	7.1.1.11 (Toll Administration)
toll_archive_status	8.1 (Archived Data Management Subsystem)	7.1.1.11 (Toll Administration)
toll_bad_payment_check_request	7.1.1.5 (Toll Collection)	7.1.1.3 (Toll Administration)
toll_bad_payment_check_response	7.1.1.3 (Toll Administration)	7.1.1.5 (Toll Collection)
toll_charge	7.1.1.2 (Toll Collection)	7.1.1.4 (Toll Collection)
toll_operational_data	7.1.1.9 (Toll Administration)	7.1.1.11 (Toll Administration)
toll_payment_confirmation	7.1.7 (Vehicle)	7.1.1.5 (Toll Collection)
toll_payment_debited	7.1.1.5 (Toll Collection)	7.1.7 (Vehicle)
toll_payment_pull_in_message	7.1.1.5 (Toll Collection)	7.1.2 (Toll Collection)
toll_payment_request	7.1.1.5 (Toll Collection)	7.1.7 (Vehicle)
toll_payment_violator_data	7.1.1.5 (Toll Collection)	7.1.1.3 (Toll Administration)
toll_price_changes_request	1.4.4 (Traffic Management)	7.1.1.7 (Toll Administration)
toll_price_changes_response	7.1.1.7 (Toll Administration)	1.4.4 (Traffic Management)
toll_price_data	7.1.1.7 (Toll Administration)	7.4.2 (Information Service Provider)
toll_price_data_for_advanced_toll	7.1.1.7 (Toll Administration)	7.1.1.10 (Toll Collection)
toll_price_data_for_vehicle_toll	7.1.1.7 (Toll Administration)	7.1.1.2 (Toll Collection)
toll_price_data_request	7.4.2 (Information Service Provider)	7.1.1.7 (Toll Administration)
toll_price_details	7.4.2 (Information Service Provider)	1.4.2 (Traffic Management)
toll_price_direct_details	7.1.1.7 (Toll Administration)	1.4.2 (Traffic Management)
toll_price_direct_request	1.4.2 (Traffic Management)	7.1.1.7 (Toll Administration)
toll_price_request	1.4.2 (Traffic Management)	7.4.2 (Information Service Provider)
toll_prices_for_archive	7.1.1.7 (Toll Administration)	7.1.1.11 (Toll Administration)
toll_tag_data_clear	7.1.1.5 (Toll Collection)	7.1.7 (Vehicle)
toll_tag_data_collect	7.1.7 (Vehicle)	7.1.1.1 (Toll Collection)
toll_tag_data_input	7.1.7 (Vehicle)	1.1.6 (Roadway Subsystem)
toll_tag_data_needed	1.1.6 (Roadway Subsystem)	7.1.7 (Vehicle)
toll_tag_data_request	7.1.1.1 (Toll Collection)	7.1.7 (Vehicle)
toll_tag_data_update	7.1.1.1 (Toll Collection)	7.1.7 (Vehicle)
toll_tag_problem_message	7.1.1.1 (Toll Collection)	7.1.2 (Toll Collection)
toll_transactions_for_probe_data	7.1.1.9 (Toll Administration)	7.1.1.6 (Toll Administration)
toll_transactions_for_probe_data_request	7.1.1.6 (Toll Administration)	7.1.1.9 (Toll Administration)
toll_violation_information	7.1.3 (Toll Collection)	5.4.2 (Toll Administration)
top_parking_coordination_data	1.2.5.2 (Parking Management)	Other Parking
totc_data_request	1.1.5 (Traffic Management)	Other TM
totc_identity	1.1.5 (Traffic Management)	Other TM
totc_traffic_control_and_status	1.1.5 (Traffic Management)	Other TM
totc_transfer_data	1.1.5 (Traffic Management)	Other TM
totrm_transit_services	4.2.3.7 (Transit Management)	Other TRM
tp_cross_request_received	1.2.7.1 (Roadway Subsystem)	Pedestrians

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
tp_cross_road	1.2.7.1 (Roadway Subsystem)	Pedestrians
tp_dms_indication	1.2.7.1 (Roadway Subsystem)	Pedestrians
tpi_debited_commercial_manager_payment	7.5.4 (Fleet and Freight Management)	Payment Instrument
tpi_debited_driver_payment_at_vehicle	7.5.1 (Vehicle)	Payment Instrument
tpi_debited_fare_payment_at_roadside	7.3.4 (Remote Traveler Support)	Payment Instrument
tpi_debited_payment_at_parking_lot	7.2.7 (Vehicle)	Payment Instrument
tpi_debited_payment_at_personal_device	7.5.3 (Personal Information Access)	Payment Instrument
tpi_debited_payment_at_toll_plaza	7.1.7 (Vehicle)	Payment Instrument
tpi_debited_payment_on_transit_vehicle	7.3.5 (Transit Vehicle Subsystem)	Payment Instrument
tpi_debited_transit_user_payment_at_roadside	7.5.2 (Remote Traveler Support)	Payment Instrument
tpi_debited_transit_user_payment_at_vehicle	7.5.1 (Vehicle)	Payment Instrument
tpi_debited_traveler_payment_at_roadside	7.5.5 (Remote Traveler Support)	Payment Instrument
tpi_request_fare_payment_at_roadside	7.3.4 (Remote Traveler Support)	Payment Instrument
tpi_request_fare_payment_on_transit_vehicle	7.3.5 (Transit Vehicle Subsystem)	Payment Instrument
tpi_request_payment_at_parking_lot	7.2.7 (Vehicle)	Payment Instrument
tpi_request_payment_at_toll_plaza	7.1.7 (Vehicle)	Payment Instrument
tpo_archive_status	1.2.5.5 (Parking Management)	Parking Operator
tpo_change_lot_state	1.2.5.3 (Parking Management)	Parking Operator
tpo_parking_lot_charge_change_request	7.2.1.7 (Parking Management)	Parking Operator
tpo_request_advanced_parking_payment	7.2.1.8 (Parking Management)	Parking Operator
tpo_transaction_reports	7.2.1.6 (Parking Management)	Parking Operator
traffic_control_device_status	1.2.7.2 (Roadway Subsystem)	1.2.8.1 (Traffic Management)
traffic_data_advisory_request	6.2.1.1 (Information Service Provider)	1.1.4.6 (Information Service Provider)
traffic_data_demand_request	1.4.2 (Traffic Management)	1.1.4.1 (Traffic Management)
traffic_data_deployment_request	1.1.4.7 (Traffic Management)	1.1.4.1 (Traffic Management)
traffic_data_distribution_request	1.1.4.6 (Information Service Provider)	1.1.4.1 (Traffic Management)
traffic_data_for_advisory_output	1.1.4.6 (Information Service Provider)	6.2.1.1 (Information Service Provider)
traffic_data_for_broadcast_to_kiosks	1.1.4.6 (Information Service Provider)	6.3.2 (Remote Traveler Support)
traffic_data_for_broadcast_to_personal_devices	1.1.4.6 (Information Service Provider)	6.8.3.2 (Personal Information Access)
traffic_data_for_demand	1.1.4.1 (Traffic Management)	1.4.2 (Traffic Management)
traffic_data_for_deployment	1.1.4.1 (Traffic Management)	1.1.4.7 (Traffic Management)
traffic_data_for_distribution	1.1.4.1 (Traffic Management)	1.1.4.6 (Information Service Provider)
traffic_data_for_emergency_services	1.1.4.1 (Traffic Management)	5.1.4 (Emergency Management)
traffic_data_for_guidance	1.1.4.6 (Information Service Provider)	6.6.2.2 (Information Service Provider)
traffic_data_for_kiosks	1.1.4.6 (Information Service Provider)	6.3.2 (Remote Traveler Support)
traffic_data_for_personal_devices	1.1.4.6 (Information Service Provider)	6.8.3.2 (Personal Information Access)
traffic_data_for_ridesharing	1.1.4.6 (Information Service Provider)	6.4.2 (Information Service Provider)
traffic_data_for_signage	1.1.4.1 (Traffic Management)	1.2.4.3 (Traffic Management)
traffic_data_for_transit	1.1.4.1 (Traffic Management)	4.1.2.4 (Transit Management)
traffic_data_for_transit	1.1.4.1 (Traffic Management)	4.1.6 (Transit Management)
traffic_data_for_transit	1.1.4.1 (Traffic Management)	4.2.1.3 (Transit Management)
traffic_data_guidance_request	6.6.2.2 (Information Service Provider)	1.1.4.6 (Information Service Provider)
traffic_data_kiosk_request	6.3.2 (Remote Traveler Support)	1.1.4.6 (Information Service Provider)
traffic_data_kiosk_request_for_archive	1.1.4.6 (Information Service Provider)	6.1.5 (Information Service Provider)
traffic_data_media_parameters	1.1.4.2 (Traffic Management)	1.1.4.3 (Traffic Management)
traffic_data_personal_request	6.8.3.2 (Personal Information Access)	1.1.4.6 (Information Service Provider)
traffic_data_personal_request_for_archive	1.1.4.6 (Information Service Provider)	6.1.5 (Information Service Provider)
traffic_data_ridesharing_request	6.4.2 (Information Service Provider)	1.1.4.6 (Information Service Provider)
traffic_device_control	1.6.1.2.1 (Roadway Subsystem)	1.6.1.2.5 (Roadway Subsystem)
traffic_device_control_state	1.6.1.2.1 (Roadway Subsystem)	1.6.1.2.6 (Roadway Subsystem)
traffic_image_data	1.3.1.3 (Roadway Subsystem)	1.3.1.1 (Traffic Management)
traffic_management_archive_data	1.1.4.7 (Traffic Management)	8.1 (Archived Data Management Subsystem)
traffic_management_archive_request	8.1 (Archived Data Management Subsystem)	1.1.4.7 (Traffic Management)
traffic_management_archive_status	8.1 (Archived Data Management Subsystem)	1.1.4.7 (Traffic Management)
traffic_management_request	1.6.1.7.2 (Roadway Subsystem)	1.6.4.2 (Traffic Management)
traffic_operations_resource_request	1.3.4.2 (Traffic Management)	1.3.4.5 (Traffic Management)
traffic_operations_resource_response	1.3.4.5 (Traffic Management)	1.3.4.2 (Traffic Management)
traffic_sensor_data	1.1.1.1 (Roadway Subsystem)	1.1.2.2 (Traffic Management)
traffic_sensor_status	1.1.1.1 (Roadway Subsystem)	1.1.1.2 (Traffic Management)
traffic_surveillance_data	1.1.2.2 (Traffic Management)	1.6.4.2 (Traffic Management)
traffic_video_image	1.1.1.1 (Roadway Subsystem)	1.1.2.2 (Traffic Management)
traffic_video_image_for_display	1.1.1.1 (Roadway Subsystem)	1.1.4.2 (Traffic Management)
train_message	1.6.1.4.3 (Roadway Subsystem)	1.6.3.2 (Roadway Subsystem)
train_ops_plan	1.6.4.2 (Traffic Management)	1.6.4.1 (Traffic Management)
train_sense_data	1.6.1.1 (Roadway Subsystem)	1.2.7.1 (Roadway Subsystem)
transfer_charges_to_fares	7.2.6 (Information Service Provider)	7.3.2 (Information Service Provider)
transfer_charges_to_tolls	7.2.6 (Information Service Provider)	7.1.6 (Information Service Provider)
transfer_fares_to_charges	7.3.2 (Information Service Provider)	7.2.6 (Information Service Provider)
transfer_fares_to_tolls	7.3.2 (Information Service Provider)	7.1.6 (Information Service Provider)
transfer_tolls_to_charges	7.1.6 (Information Service Provider)	7.2.6 (Information Service Provider)
transfer_tolls_to_fares	7.1.6 (Information Service Provider)	7.3.2 (Information Service Provider)

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Data Flow Name	Source	Sink
transit_advisory_data	6.2.1.6 (Transit Vehicle Subsystem)	6.2.3 (Transit Vehicle Subsystem)
transit_advisory_data_request	6.2.3 (Transit Vehicle Subsystem)	6.2.1.6 (Transit Vehicle Subsystem)
transit_advisory_vehicle_information	6.2.1.6 (Transit Vehicle Subsystem)	4.6.2 (Transit Vehicle Subsystem)
transit_archive_data	4.2.4 (Transit Management)	8.1 (Archived Data Management Subsystem)
transit_archive_request	8.1 (Archived Data Management Subsystem)	4.2.4 (Transit Management)
transit_archive_status	8.1 (Archived Data Management Subsystem)	4.2.4 (Transit Management)
transit_conditions_advisories_request	6.2.1.3 (Information Service Provider)	4.1.8 (Information Service Provider)
transit_conditions_demand_request	1.4.2 (Traffic Management)	4.1.5 (Transit Management)
transit_conditions_guidance_request	6.6.4 (Information Service Provider)	4.1.8 (Information Service Provider)
transit_coordination_data	4.4.2 (Transit Management)	5.1.4 (Emergency Management)
transit_deviation_data_received	4.1.6 (Transit Management)	4.1.8 (Information Service Provider)
transit_deviation_kiosk_request	6.3.2 (Remote Traveler Support)	4.1.8 (Information Service Provider)
transit_deviation_kiosk_request_for_archive	4.1.8 (Information Service Provider)	6.1.5 (Information Service Provider)
transit_deviations_for_broadcast_to_kiosks	4.1.8 (Information Service Provider)	6.3.2 (Remote Traveler Support)
transit_deviations_for_broadcast_to_personal_devices	4.1.8 (Information Service Provider)	6.8.3.2 (Personal Information Access)
transit_deviations_for_kiosks	4.1.8 (Information Service Provider)	6.3.2 (Remote Traveler Support)
transit_deviations_for_personal_devices	4.1.8 (Information Service Provider)	6.8.3.2 (Personal Information Access)
transit_deviations_personal_request	6.8.3.2 (Personal Information Access)	4.1.8 (Information Service Provider)
transit_deviations_personal_request_for_archive	4.1.8 (Information Service Provider)	6.1.5 (Information Service Provider)
transit_driver_availability	4.5.2 (Transit Management)	4.5.8 (Transit Management)
transit_driver_availability_considerations	4.5.8 (Transit Management)	4.5.2 (Transit Management)
transit_driver_availability_data	4.5.2 (Transit Management)	4.5.4 (Transit Management)
transit_driver_consideration_inputs	4.5.6 (Transit Management)	4.5.8 (Transit Management)
transit_driver_consideration_updates	4.5.7 (Transit Management)	4.5.8 (Transit Management)
transit_driver_cost_effectiveness	4.5.3 (Transit Management)	4.5.8 (Transit Management)
transit_driver_cost_effectiveness_considerations	4.5.8 (Transit Management)	4.5.3 (Transit Management)
transit_driver_cost_effectiveness_data	4.5.3 (Transit Management)	4.5.4 (Transit Management)
transit_driver_eligibility	4.5.4 (Transit Management)	4.5.8 (Transit Management)
transit_driver_eligibility_considerations	4.5.8 (Transit Management)	4.5.4 (Transit Management)
transit_driver_eligibility_data	4.5.4 (Transit Management)	4.5.5 (Transit Management)
transit_driver_emergency_acknowledge	4.4.1.2 (Transit Vehicle Subsystem)	4.4.1.5 (Transit Vehicle Subsystem)
transit_driver_emergency_request	4.4.1.5 (Transit Vehicle Subsystem)	4.4.1.2 (Transit Vehicle Subsystem)
transit_driver_info_for_archive	4.5.8 (Transit Management)	4.2.4 (Transit Management)
transit_driver_information_output	4.5.8 (Transit Management)	4.5.7 (Transit Management)
transit_driver_information_output_request	4.5.7 (Transit Management)	4.5.8 (Transit Management)
transit_driver_performance	4.5.1 (Transit Management)	4.5.8 (Transit Management)
transit_driver_performance_considerations	4.5.8 (Transit Management)	4.5.1 (Transit Management)
transit_driver_performance_data	4.5.1 (Transit Management)	4.5.4 (Transit Management)
transit_driver_route_assignment_considerations	4.5.8 (Transit Management)	4.5.5 (Transit Management)
transit_emergency_data	4.4.1.6 (Transit Management)	5.1.1 (Emergency Management)
transit_emergency_data_for_archive	4.4.1.6 (Transit Management)	4.2.4 (Transit Management)
transit_emergency_details	4.4.1.2 (Transit Vehicle Subsystem)	4.4.1.6 (Transit Management)
transit_emergency_information	4.4.1.2 (Transit Vehicle Subsystem)	4.4.2 (Transit Management)
transit_fare_data	7.3.1.7 (Transit Management)	7.4.2 (Information Service Provider)
transit_fare_data_request	7.4.2 (Information Service Provider)	7.3.1.7 (Transit Management)
transit_fare_details	7.4.2 (Information Service Provider)	1.4.2 (Traffic Management)
transit_fare_direct_details	7.3.1.7 (Transit Management)	1.4.2 (Traffic Management)
transit_fare_direct_request	1.4.2 (Traffic Management)	7.3.1.7 (Transit Management)
transit_fare_request	1.4.2 (Traffic Management)	7.4.2 (Information Service Provider)
transit_fare_transactions	7.3.1.3 (Transit Management)	4.2.4 (Transit Management)
transit_highway_overall_priority	4.1.4 (Transit Management)	1.2.2.1 (Traffic Management)
transit_highway_priority_given	1.2.2.1 (Traffic Management)	4.1.4 (Transit Management)
transit_incident_coordination_data	5.1.3 (Emergency Management)	4.4.2 (Transit Management)
transit_incident_data	4.4.1.4 (Transit Management)	6.2.1.3 (Information Service Provider)
transit_incident_details	4.4.1.1 (Transit Management)	5.1.1 (Emergency Management)
transit_incident_info_for_archive	4.4.1.1 (Transit Management)	4.2.4 (Transit Management)
transit_incident_information	4.4.1.1 (Transit Management)	4.4.2 (Transit Management)
transit_information_request	4.1.5 (Transit Management)	4.1.6 (Transit Management)
transit_media_emergency_information	4.4.1.6 (Transit Management)	4.4.1.4 (Transit Management)
transit_media_incident_information	4.4.1.1 (Transit Management)	4.4.1.4 (Transit Management)
transit_operational_data_for_archive	4.2.3.5 (Transit Management)	4.2.4 (Transit Management)
transit_operator_emergency_request	4.4.1.2 (Transit Vehicle Subsystem)	4.4.1.3 (Transit Management)
transit_operator_incident_information	4.4.1.1 (Transit Management)	4.4.1.3 (Transit Management)
transit_operator_request_acknowledge	4.4.1.3 (Transit Management)	4.4.1.2 (Transit Vehicle Subsystem)
transit_operator_security_action	4.4.1.3 (Transit Management)	4.4.1.1 (Transit Management)
transit_probe_data	4.1.5 (Transit Management)	1.1.2.5 (Traffic Management)
transit_ramp_overall_priority	4.1.4 (Transit Management)	1.2.3 (Traffic Management)
transit_ramp_priority_given	1.2.3 (Traffic Management)	4.1.4 (Transit Management)
transit_road_overall_priority	4.1.4 (Transit Management)	1.2.2.2 (Traffic Management)
transit_road_priority_given	1.2.2.2 (Traffic Management)	4.1.4 (Transit Management)
transit_roadside_fare_data	7.3.1.7 (Transit Management)	4.7.2.6 (Remote Traveler Support)

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Data Flow Name	Source	Sink
transit_roadside_fare_payment_confirmation	7.3.4 (Remote Traveler Support)	7.3.1.5 (Transit Management)
transit_roadside_fare_payment_debited	7.3.1.5 (Transit Management)	7.3.4 (Remote Traveler Support)
transit_roadside_fare_payment_request	7.3.1.5 (Transit Management)	7.3.4 (Remote Traveler Support)
transit_roadside_passenger_data	4.7.2.7 (Remote Traveler Support)	4.2.3.5 (Transit Management)
transit_route	6.6.4 (Information Service Provider)	6.6.1 (Information Service Provider)
transit_route_assign_for_archive	4.5.5 (Transit Management)	4.2.4 (Transit Management)
transit_routes_current_data	4.2.2 (Transit Management)	4.2.3.1 (Transit Management)
transit_routes_data	4.2.3.1 (Transit Management)	4.2.3.8 (Transit Management)
transit_routes_request	4.2.3.1 (Transit Management)	4.2.2 (Transit Management)
transit_routes_updates	4.2.3.1 (Transit Management)	4.2.2 (Transit Management)
transit_running_data_for_advisory_output	4.1.8 (Information Service Provider)	6.2.1.3 (Information Service Provider)
transit_running_data_for_advisory_output	4.1.8 (Information Service Provider)	Other ISP
transit_running_data_for_demand	4.1.5 (Transit Management)	1.4.2 (Traffic Management)
transit_running_data_for_guidance	4.1.8 (Information Service Provider)	6.6.4 (Information Service Provider)
transit_schedule_current_data	4.2.2 (Transit Management)	4.2.3.2 (Transit Management)
transit_schedule_data	4.2.3.2 (Transit Management)	4.2.3.8 (Transit Management)
transit_schedule_request	4.2.3.2 (Transit Management)	4.2.2 (Transit Management)
transit_schedule_updates	4.2.3.2 (Transit Management)	4.2.2 (Transit Management)
transit_service_external_data	4.2.3.8 (Transit Management)	4.2.3.3 (Transit Management)
transit_service_internal_data	4.2.3.8 (Transit Management)	4.2.3.6 (Transit Management)
transit_services_advisories_request	6.2.1.3 (Information Service Provider)	4.2.3.3 (Transit Management)
transit_services_changes_request	1.4.4 (Traffic Management)	4.2.3.4 (Transit Management)
transit_services_changes_response	4.2.3.4 (Transit Management)	1.4.4 (Traffic Management)
transit_services_data_for_output	4.2.3.8 (Transit Management)	4.2.3.4 (Transit Management)
transit_services_demand_request	1.4.2 (Traffic Management)	4.2.3.3 (Transit Management)
transit_services_demand_response_request	4.2.1.3 (Transit Management)	4.2.2 (Transit Management)
transit_services_for_advanced_fares	4.2.3.6 (Transit Management)	7.3.1.2 (Transit Management)
transit_services_for_advisory_data	4.2.3.3 (Transit Management)	6.2.1.3 (Information Service Provider)
transit_services_for_corrections	4.2.3.6 (Transit Management)	4.1.2.2 (Transit Vehicle Subsystem)
transit_services_for_demand	4.2.3.3 (Transit Management)	1.4.2 (Traffic Management)
transit_services_for_demand_response	4.2.2 (Transit Management)	4.2.1.3 (Transit Management)
transit_services_for_deployment	4.2.3.3 (Transit Management)	4.2.4 (Transit Management)
transit_services_for_eta	4.2.3.6 (Transit Management)	4.1.2.1 (Transit Vehicle Subsystem)
transit_services_for_eta_request	4.1.2.1 (Transit Vehicle Subsystem)	4.2.3.6 (Transit Management)
transit_services_for_guidance	4.2.3.3 (Transit Management)	6.6.4 (Information Service Provider)
transit_services_for_kiosks	4.2.3.3 (Transit Management)	6.3.2 (Remote Traveler Support)
transit_services_for_other_TRM	4.2.3.8 (Transit Management)	4.2.3.7 (Transit Management)
transit_services_for_personal_devices	4.2.3.3 (Transit Management)	6.8.3.2 (Personal Information Access)
transit_services_for_roadside_fares	4.2.3.6 (Transit Management)	4.7.2.2 (Remote Traveler Support)
transit_services_for_scenarios	4.2.3.6 (Transit Management)	4.1.4 (Transit Management)
transit_services_for_transit_drivers	4.2.3.6 (Transit Management)	4.5.5 (Transit Management)
transit_services_for_travelers	4.2.3.3 (Transit Management)	4.7.1.1 (Remote Traveler Support)
transit_services_for_vehicle_fares	4.2.3.6 (Transit Management)	4.6.2 (Transit Vehicle Subsystem)
transit_services_guidance_request	6.6.4 (Information Service Provider)	4.2.3.3 (Transit Management)
transit_services_kiosk_request	6.3.2 (Remote Traveler Support)	4.2.3.3 (Transit Management)
transit_services_personal_request	6.8.3.2 (Personal Information Access)	4.2.3.3 (Transit Management)
transit_services_travelers_request	4.7.1.1 (Remote Traveler Support)	4.2.3.3 (Transit Management)
transit_technician_info	4.3.3 (Transit Management)	4.2.4 (Transit Management)
transit_technician_work_assignment	4.3.3 (Transit Management)	4.3.4 (Transit Management)
transit_user_advanced_payment_at_roadside	4.7.2.5 (Remote Traveler Support)	7.5.2 (Remote Traveler Support)
transit_user_advanced_payment_on_vehicle	4.6.5 (Transit Vehicle Subsystem)	7.5.1 (Vehicle)
transit_user_advisory_information	6.2.2 (Vehicle)	6.2.3 (Transit Vehicle Subsystem)
transit_user_advisory_information_request	6.2.3 (Transit Vehicle Subsystem)	6.2.2 (Vehicle)
transit_user_payments_transactions	7.4.1.5 (Transit Management)	4.2.4 (Transit Management)
transit_user_roadside_credit_identity	7.5.2 (Remote Traveler Support)	4.7.2.5 (Remote Traveler Support)
transit_user_roadside_fare	4.7.2.3 (Remote Traveler Support)	4.7.2.4 (Remote Traveler Support)
transit_user_roadside_image	4.7.2.1 (Remote Traveler Support)	7.3.3 (Transit Management)
transit_user_roadside_information	4.7.2.5 (Remote Traveler Support)	4.7.2.2 (Remote Traveler Support)
transit_user_roadside_payment_response	4.7.2.4 (Remote Traveler Support)	4.7.2.5 (Remote Traveler Support)
transit_user_roadside_processed_fare_data	4.7.2.4 (Remote Traveler Support)	4.7.2.7 (Remote Traveler Support)
transit_user_roadside_ride	4.7.2.2 (Remote Traveler Support)	4.7.2.3 (Remote Traveler Support)
transit_user_roadside_ride_data	4.7.2.2 (Remote Traveler Support)	4.7.2.7 (Remote Traveler Support)
transit_user_roadside_tag_data	7.3.4 (Remote Traveler Support)	4.7.2.1 (Remote Traveler Support)
transit_user_roadside_tag_identity	4.7.2.1 (Remote Traveler Support)	4.7.2.2 (Remote Traveler Support)
transit_user_roadside_tag_identity	4.7.2.1 (Remote Traveler Support)	4.7.2.4 (Remote Traveler Support)
transit_user_vehicle_credit_identity	7.5.1 (Vehicle)	4.6.5 (Transit Vehicle Subsystem)
transit_user_vehicle_fare	4.6.3 (Transit Vehicle Subsystem)	4.6.4 (Transit Vehicle Subsystem)
transit_user_vehicle_image	4.6.1 (Transit Vehicle Subsystem)	7.3.3 (Transit Management)
transit_user_vehicle_information	4.6.5 (Transit Vehicle Subsystem)	4.6.2 (Transit Vehicle Subsystem)
transit_user_vehicle_payment_response	4.6.4 (Transit Vehicle Subsystem)	4.6.5 (Transit Vehicle Subsystem)
transit_user_vehicle_processed_fare_data	4.6.4 (Transit Vehicle Subsystem)	4.6.7 (Transit Vehicle Subsystem)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
transit_user_vehicle_ride	4.6.2 (Transit Vehicle Subsystem)	4.6.3 (Transit Vehicle Subsystem)
transit_user_vehicle_ride_data	4.6.2 (Transit Vehicle Subsystem)	4.6.7 (Transit Vehicle Subsystem)
transit_user_vehicle_tag_data	7.3.5 (Transit Vehicle Subsystem)	4.6.1 (Transit Vehicle Subsystem)
transit_user_vehicle_tag_identity	4.6.1 (Transit Vehicle Subsystem)	4.6.2 (Transit Vehicle Subsystem)
transit_user_vehicle_tag_identity	4.6.1 (Transit Vehicle Subsystem)	4.6.4 (Transit Vehicle Subsystem)
transit_vehicle_advanced_payment_request	4.6.5 (Transit Vehicle Subsystem)	4.6.8 (Transit Management)
transit_vehicle_advanced_payment_response	4.6.8 (Transit Management)	4.6.5 (Transit Vehicle Subsystem)
transit_vehicle_advisory_eta	4.1.6 (Transit Management)	6.2.3 (Transit Vehicle Subsystem)
transit_vehicle_arrival_conditions	4.1.2.2 (Transit Vehicle Subsystem)	4.1.2.4 (Transit Management)
transit_vehicle_arrival_deviations	4.1.4 (Transit Management)	4.1.7 (Transit Management)
transit_vehicle_arrival_time	4.1.5 (Transit Management)	4.7.1.1 (Remote Traveler Support)
transit_vehicle_arrival_times	4.1.1 (Transit Vehicle Subsystem)	4.1.2.1 (Transit Vehicle Subsystem)
transit_vehicle_availability	4.3.2 (Transit Management)	4.2.3.5 (Transit Management)
transit_vehicle_availability	4.3.2 (Transit Management)	4.5.5 (Transit Management)
transit_vehicle_collected_maintenance_data	4.1.9 (Transit Vehicle Subsystem)	4.1.6 (Transit Management)
transit_vehicle_collected_maintenance_data_request	4.1.6 (Transit Management)	4.1.9 (Transit Vehicle Subsystem)
transit_vehicle_collected_trip_data	4.1.1 (Transit Vehicle Subsystem)	4.1.6 (Transit Management)
transit_vehicle_corrective_instructions	4.1.2.2 (Transit Vehicle Subsystem)	4.1.2.3 (Transit Vehicle Subsystem)
transit_vehicle_data	4.1.5 (Transit Management)	4.2.3.5 (Transit Management)
transit_vehicle_data_for_archive	4.1.5 (Transit Management)	4.2.4 (Transit Management)
transit_vehicle_deviation_data	4.1.2.1 (Transit Vehicle Subsystem)	4.1.2.3 (Transit Vehicle Subsystem)
transit_vehicle_deviation_update	4.1.4 (Transit Management)	4.1.6 (Transit Management)
transit_vehicle_deviations	4.1.2.1 (Transit Vehicle Subsystem)	4.1.2.2 (Transit Vehicle Subsystem)
transit_vehicle_deviations_details	4.1.6 (Transit Management)	4.1.8 (Information Service Provider)
transit_vehicle_deviations_details_request	4.1.8 (Information Service Provider)	4.1.6 (Transit Management)
transit_vehicle_deviations_from_schedule	4.1.2.1 (Transit Vehicle Subsystem)	4.1.4 (Transit Management)
transit_vehicle_eta	4.1.2.1 (Transit Vehicle Subsystem)	4.1.6 (Transit Management)
transit_vehicle_eta_for_advisory	4.1.2.1 (Transit Vehicle Subsystem)	6.2.3 (Transit Vehicle Subsystem)
transit_vehicle_fare_data	7.3.1.7 (Transit Management)	4.6.6 (Transit Vehicle Subsystem)
transit_vehicle_fare_payment_confirmation	7.3.5 (Transit Vehicle Subsystem)	7.3.1.5 (Transit Management)
transit_vehicle_fare_payment_debited	7.3.1.5 (Transit Management)	7.3.5 (Transit Vehicle Subsystem)
transit_vehicle_fare_payment_request	7.3.1.5 (Transit Management)	7.3.5 (Transit Vehicle Subsystem)
transit_vehicle_information	4.1.6 (Transit Management)	4.1.5 (Transit Management)
transit_vehicle_location	4.1.3 (Transit Vehicle Subsystem)	4.2.1.2 (Transit Management)
transit_vehicle_location	4.1.3 (Transit Vehicle Subsystem)	4.4.1.2 (Transit Vehicle Subsystem)
transit_vehicle_location	4.1.3 (Transit Vehicle Subsystem)	4.6.2 (Transit Vehicle Subsystem)
transit_vehicle_location	4.1.3 (Transit Vehicle Subsystem)	4.6.5 (Transit Vehicle Subsystem)
transit_vehicle_location	4.1.3 (Transit Vehicle Subsystem)	6.2.1.6 (Transit Vehicle Subsystem)
transit_vehicle_location_for_deviation	4.1.3 (Transit Vehicle Subsystem)	4.1.4 (Transit Management)
transit_vehicle_location_for_eta	4.1.3 (Transit Vehicle Subsystem)	4.1.2.1 (Transit Vehicle Subsystem)
transit_vehicle_location_for_store	4.1.3 (Transit Vehicle Subsystem)	4.1.6 (Transit Management)
transit_vehicle_maintenance	4.3.1 (Transit Management)	4.3.7 (Transit Management)
transit_vehicle_maintenance_data	4.3.7 (Transit Management)	4.3.5 (Transit Management)
transit_vehicle_maintenance_data_request	4.3.5 (Transit Management)	4.3.7 (Transit Management)
transit_vehicle_maintenance_data_update	4.3.6 (Transit Management)	4.3.7 (Transit Management)
transit_vehicle_maintenance_info	4.3.7 (Transit Management)	4.2.4 (Transit Management)
transit_vehicle_maintenance_information	4.3.1 (Transit Management)	4.3.2 (Transit Management)
transit_vehicle_maintenance_log_data	4.3.4 (Transit Management)	4.3.7 (Transit Management)
transit_vehicle_maintenance_schedule	4.3.2 (Transit Management)	4.3.7 (Transit Management)
transit_vehicle_maintenance_schedule_data	4.3.2 (Transit Management)	4.3.3 (Transit Management)
transit_vehicle_maintenance_specs	4.3.7 (Transit Management)	4.3.1 (Transit Management)
transit_vehicle_maintenance_specs	4.3.7 (Transit Management)	4.3.4 (Transit Management)
transit_vehicle_maintenance_specs_update	4.3.5 (Transit Management)	4.3.7 (Transit Management)
transit_vehicle_maintenance_verification_results	4.3.4 (Transit Management)	4.3.3 (Transit Management)
transit_vehicle_on_board_data	4.1.1 (Transit Vehicle Subsystem)	4.1.3 (Transit Vehicle Subsystem)
transit_vehicle_passenger_data	4.6.7 (Transit Vehicle Subsystem)	4.2.3.5 (Transit Management)
transit_vehicle_preemption_request	4.1.2.2 (Transit Vehicle Subsystem)	4.1.2.5 (Transit Vehicle Subsystem)
transit_vehicle_roadway_preemptions	4.1.2.5 (Transit Vehicle Subsystem)	1.2.7.3 (Roadway Subsystem)
transit_vehicle_schedule_deviation	4.1.2.1 (Transit Vehicle Subsystem)	4.1.6 (Transit Management)
transit_vehicle_status	4.1.5 (Transit Management)	4.3.1 (Transit Management)
transit_vehicle_status	4.1.5 (Transit Management)	4.3.4 (Transit Management)
transit_vehicle_user_data	4.1.6 (Transit Management)	4.7.1.2 (Remote Traveler Support)
traveler_advanced_payments_confirm	7.4.3 (Information Service Provider)	7.4.1.6 (Information Service Provider)
traveler_advanced_payments_request	7.4.1.6 (Information Service Provider)	7.4.3 (Information Service Provider)
traveler_archive_data	6.1.6 (Information Service Provider)	8.1 (Archived Data Management Subsystem)
traveler_archive_request	8.1 (Archived Data Management Subsystem)	6.1.6 (Information Service Provider)
traveler_archive_status	8.1 (Archived Data Management Subsystem)	6.1.6 (Information Service Provider)
traveler_confirm_for_archive	6.1.2 (Information Service Provider)	6.1.5 (Information Service Provider)
traveler_current_condition_request	6.3.1 (Remote Traveler Support)	6.1.1 (Information Service Provider)
traveler_guidance_accepted	6.8.1.2 (Personal Information Access)	6.8.1.1.1 (Personal Information Access)
traveler_guidance_data	6.8.1.2 (Personal Information Access)	6.8.1.1.1 (Personal Information Access)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
traveler_guidance_instructions	6.8.1.1.1 (Personal Information Access)	6.8.1.2 (Personal Information Access)
traveler_guidance_request	6.8.1.2 (Personal Information Access)	6.8.1.1.1 (Personal Information Access)
traveler_guidance_route	6.6.1 (Information Service Provider)	6.8.1.1.2 (Personal Information Access)
traveler_info_payments_transactions	7.4.1.7 (Information Service Provider)	6.1.6 (Information Service Provider)
traveler_information	6.2.1.6 (Transit Vehicle Subsystem)	6.2.3 (Transit Vehicle Subsystem)
traveler_information_request	6.2.3 (Transit Vehicle Subsystem)	6.2.1.6 (Transit Vehicle Subsystem)
traveler_input_request	6.8.1.1.1 (Personal Information Access)	6.8.1.2 (Personal Information Access)
traveler_location_for_autonomous_guidance	6.8.1.3 (Personal Information Access)	6.8.1.1.3 (Personal Information Access)
traveler_location_for_dynamic_guidance	6.8.1.3 (Personal Information Access)	6.8.1.1.2 (Personal Information Access)
traveler_location_for_emergencies	6.8.1.3 (Personal Information Access)	6.8.2.1 (Personal Information Access)
traveler_location_for_information	6.8.1.3 (Personal Information Access)	6.8.1.5 (Personal Information Access)
traveler_location_for_planning	6.8.1.3 (Personal Information Access)	6.8.3.3 (Personal Information Access)
traveler_map_update_payment_request	6.8.1.4 (Personal Information Access)	7.4.1.4 (Information Service Provider)
traveler_map_update_payment_response	7.4.1.4 (Information Service Provider)	6.8.1.4 (Personal Information Access)
traveler_map_update_payments_transactions	7.4.1.4 (Information Service Provider)	7.4.1.7 (Information Service Provider)
traveler_map_update_request	6.8.1.2 (Personal Information Access)	6.8.1.4 (Personal Information Access)
traveler_map_update_response	6.8.1.4 (Personal Information Access)	6.8.1.2 (Personal Information Access)
traveler_other_services_payment_request	6.5.2 (Information Service Provider)	7.4.1.6 (Information Service Provider)
traveler_other_services_payment_result	7.4.1.6 (Information Service Provider)	6.5.2 (Information Service Provider)
traveler_payment_confirmation	6.1.2 (Information Service Provider)	6.3.2 (Remote Traveler Support)
traveler_payment_information	6.3.1 (Remote Traveler Support)	6.1.2 (Information Service Provider)
traveler_payment_information	6.3.1 (Remote Traveler Support)	6.5.2 (Information Service Provider)
traveler_payment_request	6.1.2 (Information Service Provider)	7.4.1.6 (Information Service Provider)
traveler_payment_response	7.4.1.6 (Information Service Provider)	6.1.2 (Information Service Provider)
traveler_personal_credit_identity	7.5.3 (Personal Information Access)	6.8.1.2 (Personal Information Access)
traveler_personal_credit_identity	7.5.3 (Personal Information Access)	6.8.3.3 (Personal Information Access)
traveler_personal_current_condition_request	6.8.3.1 (Personal Information Access)	6.1.1 (Information Service Provider)
traveler_personal_display_map_update_request	6.8.3.3 (Personal Information Access)	6.8.3.4 (Personal Information Access)
traveler_personal_display_map_update_response	6.8.3.4 (Personal Information Access)	6.8.3.3 (Personal Information Access)
traveler_personal_display_update_cost	6.8.3.3 (Personal Information Access)	7.5.3 (Personal Information Access)
traveler_personal_display_update_payment_request	6.8.3.4 (Personal Information Access)	7.4.1.4 (Information Service Provider)
traveler_personal_display_update_payment_response	7.4.1.4 (Information Service Provider)	6.8.3.4 (Personal Information Access)
traveler_personal_emergency_request	6.8.2.1 (Personal Information Access)	6.8.2.2 (Personal Information Access)
traveler_personal_map_update_cost	6.8.1.2 (Personal Information Access)	7.5.3 (Personal Information Access)
traveler_personal_payment_confirmation	6.1.2 (Information Service Provider)	6.8.3.2 (Personal Information Access)
traveler_personal_payment_information	6.8.3.1 (Personal Information Access)	6.1.2 (Information Service Provider)
traveler_personal_payment_information	6.8.3.1 (Personal Information Access)	6.5.2 (Information Service Provider)
traveler_personal_traffic_condition_request	6.8.3.1 (Personal Information Access)	6.8.3.2 (Personal Information Access)
traveler_personal_transaction_confirmation	6.1.2 (Information Service Provider)	6.8.3.2 (Personal Information Access)
traveler_personal_transaction_request	6.8.3.1 (Personal Information Access)	6.5.2 (Information Service Provider)
traveler_personal_transit_condition_request	6.8.3.1 (Personal Information Access)	6.8.3.2 (Personal Information Access)
traveler_personal_trip_confirmation	6.8.3.1 (Personal Information Access)	6.1.2 (Information Service Provider)
traveler_personal_trip_costs	6.8.3.3 (Personal Information Access)	7.5.3 (Personal Information Access)
traveler_personal_trip_information	6.1.1 (Information Service Provider)	6.8.3.2 (Personal Information Access)
traveler_personal_trip_planning_requests	6.8.3.3 (Personal Information Access)	6.8.3.1 (Personal Information Access)
traveler_personal_trip_planning_responses	6.8.3.2 (Personal Information Access)	6.8.3.3 (Personal Information Access)
traveler_personal_trip_request	6.8.3.1 (Personal Information Access)	6.1.1 (Information Service Provider)
traveler_personal_yellow_pages_data	6.5.2 (Information Service Provider)	6.8.3.2 (Personal Information Access)
traveler_personal_yellow_pages_information_request	6.8.3.1 (Personal Information Access)	6.5.2 (Information Service Provider)
traveler_profile_from_vehicle	6.2.2 (Vehicle)	6.2.1.2 (Information Service Provider)
traveler_rideshare_confirmation	6.1.2 (Information Service Provider)	6.4.4 (Information Service Provider)
traveler_rideshare_payments_transactions	7.4.1.8 (Information Service Provider)	7.4.1.7 (Information Service Provider)
traveler_rideshare_request	6.1.1 (Information Service Provider)	6.4.1 (Information Service Provider)
traveler_rideshare_request	6.1.1 (Information Service Provider)	6.4.3 (Information Service Provider)
traveler_rideshare_request_for_archive	6.4.1 (Information Service Provider)	6.1.6 (Information Service Provider)
traveler_roadside_credit_identity	7.5.5 (Remote Traveler Support)	6.3.3 (Remote Traveler Support)
traveler_roadside_trip_costs	6.3.3 (Remote Traveler Support)	7.5.5 (Remote Traveler Support)
traveler_route_accepted	6.8.1.1.1 (Personal Information Access)	6.6.1 (Information Service Provider)
traveler_route_accepted_for_archive	6.6.1 (Information Service Provider)	6.1.5 (Information Service Provider)
traveler_route_request	6.8.1.1.2 (Personal Information Access)	6.6.1 (Information Service Provider)
traveler_route_request_for_archive	6.6.1 (Information Service Provider)	6.1.5 (Information Service Provider)
traveler_traffic_condition_request	6.3.1 (Remote Traveler Support)	6.3.2 (Remote Traveler Support)
traveler_traffic_profile	6.8.3.1 (Personal Information Access)	1.1.4.6 (Information Service Provider)
traveler_transaction_confirmation	6.1.2 (Information Service Provider)	6.3.2 (Remote Traveler Support)
traveler_transaction_request	6.3.1 (Remote Traveler Support)	6.5.2 (Information Service Provider)
traveler_transit_condition_request	6.3.1 (Remote Traveler Support)	6.3.2 (Remote Traveler Support)
traveler_transit_profile	6.8.3.1 (Personal Information Access)	4.1.8 (Information Service Provider)
traveler_trip_and_cond_requests_for_archive	6.1.1 (Information Service Provider)	6.1.5 (Information Service Provider)
traveler_trip_confirmation	6.3.1 (Remote Traveler Support)	6.1.2 (Information Service Provider)
traveler_trip_information	6.1.1 (Information Service Provider)	6.3.2 (Remote Traveler Support)
traveler_trip_payments_transactions	7.4.1.6 (Information Service Provider)	7.4.1.7 (Information Service Provider)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
traveler_trip_planning_requests	6.3.3 (Remote Traveler Support)	6.3.1 (Remote Traveler Support)
traveler_trip_planning_responses	6.3.2 (Remote Traveler Support)	6.3.3 (Remote Traveler Support)
traveler_trip_request	6.3.1 (Remote Traveler Support)	6.1.1 (Information Service Provider)
traveler_yellow_pages_data	6.5.2 (Information Service Provider)	6.3.2 (Remote Traveler Support)
traveler_yellow_pages_information_request	6.3.1 (Remote Traveler Support)	6.5.2 (Information Service Provider)
traveler_yellow_pages_requests_for_archive	6.5.2 (Information Service Provider)	6.1.5 (Information Service Provider)
trip_request	6.1.1 (Information Service Provider)	6.6.1 (Information Service Provider)
trip_request_for_archive	6.6.1 (Information Service Provider)	6.1.6 (Information Service Provider)
tro_equipment_status	1.6.2.1 (Traffic Management)	Rail Operations
tro_event_schedules	1.6.2.1 (Traffic Management)	Rail Operations
tro_incident_notification	1.6.2.1 (Traffic Management)	Rail Operations
tt_emergency_message	6.8.1.5 (Personal Information Access)	Traveler
tt_emergency_response	4.4.1.8 (Remote Traveler Support)	Traveler
tt_extra_trip_data_request	6.3.3 (Remote Traveler Support)	Traveler
tt_guidance	6.8.1.2 (Personal Information Access)	Traveler
tt_guidance_input_request	6.8.1.2 (Personal Information Access)	Traveler
tt_guidance_map_update_response	6.8.1.2 (Personal Information Access)	Traveler
tt_guidance_route_details	6.8.1.2 (Personal Information Access)	Traveler
tt_personal_extra_trip_data_request	6.8.3.3 (Personal Information Access)	Traveler
tt_personal_trip_planning_responses	6.8.3.3 (Personal Information Access)	Traveler
tt_trip_planning_responses	6.3.3 (Remote Traveler Support)	Traveler
tta_archive_status	7.1.1.11 (Toll Administration)	Toll Administrator
tta_request_advanced_toll	7.1.1.8 (Toll Administration)	Toll Administrator
tta_toll_price_changes_request	7.1.1.7 (Toll Administration)	Toll Administrator
tta_transaction_reports	7.1.1.9 (Toll Administration)	Toll Administrator
ttd_batch_mode_data_transfer_status	4.6.4 (Transit Vehicle Subsystem)	Transit Driver
ttd_corrective_instructions	4.1.2.3 (Transit Vehicle Subsystem)	Transit Driver
ttd_emergency_information	4.4.1.5 (Transit Vehicle Subsystem)	Transit Driver
ttd_paratransit_information	4.2.1.6 (Transit Vehicle Subsystem)	Transit Driver
ttd_request_fare_transaction_mode_set_up	4.6.4 (Transit Vehicle Subsystem)	Transit Driver
ttd_route_assignements	4.5.5 (Transit Management)	Transit Driver
ttd_transit_vehicle_schedule_deviations	4.1.2.3 (Transit Vehicle Subsystem)	Transit Driver
ttfm_coordination_request	4.4.2 (Transit Management)	Transit Fleet Manager
ttfm_parameters	4.2.3.4 (Transit Management)	Transit Fleet Manager
ttfm_paratransit_service	4.2.1.4 (Transit Management)	Transit Fleet Manager
ttfm_passenger_loading_error	4.2.3.5 (Transit Management)	Transit Fleet Manager
ttfm_proposed_corrections	4.1.4 (Transit Management)	Transit Fleet Manager
ttfm_response_parameter_output	4.4.3 (Transit Management)	Transit Fleet Manager
ttfm_technician_information	4.3.3 (Transit Management)	Transit Fleet Manager
ttfm_transaction_reports	7.3.1.3 (Transit Management)	Transit Fleet Manager
ttfm_transit_driver_information	4.5.7 (Transit Management)	Transit Fleet Manager
ttfm_transit_services_output	4.2.3.4 (Transit Management)	Transit Fleet Manager
ttfm_transit_vehicle_data	4.1.5 (Transit Management)	Transit Fleet Manager
ttfm_transit_vehicle_maintenance_information	4.3.5 (Transit Management)	Transit Fleet Manager
ttmp_work_schedule	4.3.3 (Transit Management)	Transit Maintenance Personnel
tto_transaction_reports	7.1.1.4 (Toll Collection)	Toll Operator
ttop_archive_status	1.1.4.7 (Traffic Management)	Traffic Operations Personnel
ttop_current_indicator_faults	1.2.8.4 (Traffic Management)	Traffic Operations Personnel
ttop_current_sensor_faults	1.1.1.2 (Traffic Management)	Traffic Operations Personnel
ttop_defined_incident_responses_data	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_demand_data	1.4.1 (Traffic Management)	Traffic Operations Personnel
ttop_demand_forecast_data	1.4.1 (Traffic Management)	Traffic Operations Personnel
ttop_demand_forecast_result	1.4.1 (Traffic Management)	Traffic Operations Personnel
ttop_demand_policy_activation_result	1.4.1 (Traffic Management)	Traffic Operations Personnel
ttop_demand_policy_information	1.4.1 (Traffic Management)	Traffic Operations Personnel
ttop_incident_information_display	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_incident_video_image_output	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_pollution_data_display	1.5.1 (Emissions Management)	Traffic Operations Personnel
ttop_possible_defined_response_output	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_possible_incidents_data	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_resource_response	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_traffic_control_information_display	1.1.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_undefined_response_details	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_video_image_output	1.1.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_weather_information	1.1.4.2 (Traffic Management)	Traffic Operations Personnel
ttop_wrong_way_detection	1.3.4.2 (Traffic Management)	Traffic Operations Personnel
ttso_archive_status	4.2.4 (Transit Management)	Transit System Operators
ttso_emergency_request	4.4.1.3 (Transit Management)	Transit System Operators
ttso_media_parameters	4.4.1.3 (Transit Management)	Transit System Operators
ttso_potential_incidents_alarm	4.4.1.3 (Transit Management)	Transit System Operators
ttso_potential_security_problem	4.4.1.3 (Transit Management)	Transit System Operators

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
ttso_transaction_reports	7.3.1.3 (Transit Management)	Transit System Operators
ttso_transit_fare_output	7.3.1.7 (Transit Management)	Transit System Operators
ttso_video_image_data	4.4.1.3 (Transit Management)	Transit System Operators
ttu_advisory_information	6.2.3 (Transit Vehicle Subsystem)	Transit User
ttu_other_services_roadside_confirmed	4.7.2.5 (Remote Traveler Support)	Transit User
ttu_other_services_vehicle_confirmed	6.2.1.6 (Transit Vehicle Subsystem)	Transit User
ttu_roadside_access_message	4.7.2.4 (Remote Traveler Support)	Transit User
ttu_roadside_payment_confirmed	4.7.2.5 (Remote Traveler Support)	Transit User
ttu_transit_information	4.7.1.1 (Remote Traveler Support)	Transit User
ttu_transit_vehicle_information	4.7.1.2 (Remote Traveler Support)	Transit User
ttu_traveler_information	6.2.3 (Transit Vehicle Subsystem)	Transit User
ttu_vehicle_access_message	4.6.4 (Transit Vehicle Subsystem)	Transit User
ttu_vehicle_payment_confirmed	4.6.5 (Transit Vehicle Subsystem)	Transit User
twe_hri_status	1.6.3.1 (Roadway Subsystem)	Wayside Equipment
twe_stop_highway_indication	1.6.3.1 (Roadway Subsystem)	Wayside Equipment
twe_stop_train_indication	1.6.3.1 (Roadway Subsystem)	Wayside Equipment
tws_weather_archive_request	8.1 (Archived Data Management Subsystem)	Weather Service
tws_weather_archive_status	8.1 (Archived Data Management Subsystem)	Weather Service
typsp_provider_update_confirm	6.5.3 (Information Service Provider)	Yellow Pages Service Providers
typsp_transaction_request	6.5.2 (Information Service Provider)	Yellow Pages Service Providers
typsp_yellow_pages_info_request	6.5.1 (Information Service Provider)	Yellow Pages Service Providers
undefined_incident_response	1.3.3 (Traffic Management)	1.3.4.2 (Traffic Management)
unusual_congestion	1.1.3 (Traffic Management)	1.4.2 (Traffic Management)
unusual_data	1.1.2.2 (Traffic Management)	1.3.1.1 (Traffic Management)
update_routes	4.2.3.4 (Transit Management)	4.2.3.1 (Transit Management)
update_schedules	4.2.3.4 (Transit Management)	4.2.3.2 (Transit Management)
vehicle_action_requests	3.1.1 (Vehicle)	3.2.3.3 (Vehicle)
vehicle_and_driver_safety_status	3.1.2 (Vehicle)	3.2.3.2 (Vehicle)
vehicle_control_data	3.2.3.4.5 (Vehicle)	3.2.3.2 (Vehicle)
vehicle_control_request	6.2.5 (Vehicle)	3.2.1 (Vehicle)
vehicle_control_status	3.2.1 (Vehicle)	6.2.2 (Vehicle)
vehicle_emergency_request	3.3.3 (Vehicle)	3.3.2 (Vehicle)
vehicle_guidance_probe_data	6.7.2.1.2 (Vehicle)	6.6.2.6 (Information Service Provider)
vehicle_guidance_probe_data_for_archive	6.6.2.6 (Information Service Provider)	6.1.6 (Information Service Provider)
vehicle_guidance_route	6.6.2.1 (Information Service Provider)	6.7.2.1.2 (Vehicle)
vehicle_guidance_route_accepted	6.7.2.1.1 (Vehicle)	6.6.2.1 (Information Service Provider)
vehicle_guidance_route_accepted_for_archive	6.6.2.1 (Information Service Provider)	6.1.5 (Information Service Provider)
vehicle_headway_control_data	3.2.3.4.5 (Vehicle)	3.2.3.4.2 (Vehicle)
vehicle_location_for_advisories	6.7.2.2 (Vehicle)	6.2.2 (Vehicle)
vehicle_location_for_autonomous_guidance	6.7.2.2 (Vehicle)	6.7.2.1.3 (Vehicle)
vehicle_location_for_cv	6.7.2.2 (Vehicle)	2.4.5 (Commercial Vehicle Subsystem)
vehicle_location_for_dynamic_guidance	6.7.2.2 (Vehicle)	6.7.2.1.2 (Vehicle)
vehicle_location_for_emergencies	6.7.2.2 (Vehicle)	6.7.1.1 (Vehicle)
vehicle_location_for_emergency_services	6.7.2.2 (Vehicle)	5.3.3 (Emergency Vehicle Subsystem)
vehicle_location_for_incidents	6.7.2.2 (Vehicle)	3.3.3 (Vehicle)
vehicle_location_for_transit	6.7.2.2 (Vehicle)	4.1.3 (Transit Vehicle Subsystem)
vehicle_parking_lot_characteristic_data	7.2.5 (Parking Management)	7.2.1.1 (Parking Management)
vehicle_pollution_alert	1.5.5 (Roadway Subsystem)	5.4.1 (Traffic Management)
vehicle_pollution_message_for_highways	1.5.5 (Roadway Subsystem)	1.2.4.2 (Traffic Management)
vehicle_pollution_message_for_roads	1.5.5 (Roadway Subsystem)	1.2.4.1 (Traffic Management)
vehicle_probe_data_amalgamation	6.6.2.6 (Information Service Provider)	6.6.2.2 (Information Service Provider)
vehicle_route	6.6.2.1 (Information Service Provider)	6.6.1 (Information Service Provider)
vehicle_route_request	6.7.2.1.2 (Vehicle)	6.6.2.1 (Information Service Provider)
vehicle_route_request_for_archive	6.6.2.1 (Information Service Provider)	6.1.5 (Information Service Provider)
vehicle_sign_data	1.2.4.3 (Traffic Management)	1.2.7.4 (Roadway Subsystem)
vehicle_sign_data_for_highways	1.2.4.2 (Traffic Management)	1.2.4.3 (Traffic Management)
vehicle_sign_data_for_roads	1.2.4.1 (Traffic Management)	1.2.4.3 (Traffic Management)
vehicle_sign_data_output_fault	1.2.7.4 (Roadway Subsystem)	1.2.7.2 (Roadway Subsystem)
vehicle_signage_data	1.2.7.4 (Roadway Subsystem)	6.2.2 (Vehicle)
vehicle_smart_probe_data	3.1.3 (Vehicle)	1.1.7 (Roadway Subsystem)
vehicle_smart_probe_data_for_storage	1.1.2.6 (Roadway Subsystem)	1.1.2.1 (Traffic Management)
vehicle_smart_probe_data_indication	1.1.2.6 (Roadway Subsystem)	1.2.7.7 (Roadway Subsystem)
vehicle_smart_probe_data_output	1.2.7.7 (Roadway Subsystem)	6.2.2 (Vehicle)
vehicle_smart_probe_data_output_fault	1.2.7.7 (Roadway Subsystem)	1.2.7.2 (Roadway Subsystem)
vehicle_smart_probe_input_data	1.1.7 (Roadway Subsystem)	1.1.2.6 (Roadway Subsystem)
vehicle_speed_control_data	3.2.3.4.5 (Vehicle)	3.2.3.4.1 (Vehicle)
vehicle_status_details_for_broadcast	3.1.3 (Vehicle)	6.2.2 (Vehicle)
vehicle_status_details_for_driver_security	3.1.3 (Vehicle)	6.7.1.1 (Vehicle)
vehicle_status_details_for_emergencies	3.1.3 (Vehicle)	3.3.3 (Vehicle)
vehicle_status_details_for_emissions	3.1.3 (Vehicle)	1.5.5 (Roadway Subsystem)
vehicle_tag_data	1.1.6 (Roadway Subsystem)	1.1.2.5 (Traffic Management)

Appendix I: Logical Data Flows Traced to Source and Sink

Data Flow Name	Source	Sink
vehicle_tag_for_charges	7.2.1.1 (Parking Management)	7.2.1.2 (Parking Management)
vehicle_tag_for_tolls	7.1.1.1 (Toll Collection)	7.1.1.2 (Toll Collection)
vehicle_toll_characteristic_data	7.1.5 (Toll Collection)	7.1.1.1 (Toll Collection)
vehicle_toll_probe_data	7.1.1.6 (Toll Administration)	6.6.2.6 (Information Service Provider)
vehicle_type_for_charges	7.2.1.1 (Parking Management)	7.2.1.2 (Parking Management)
vehicle_type_for_tolls	7.1.1.1 (Toll Collection)	7.1.1.2 (Toll Collection)
verified_emergency	5.1.1 (Emergency Management)	5.1.2 (Emergency Management)
video_camera_control_strategy	1.2.1 (Traffic Management)	1.3.4.2 (Traffic Management)
vision_data	3.4 (Vehicle)	6.2.2 (Vehicle)
wayside_status	1.6.3.1 (Roadway Subsystem)	1.6.5.2 (Roadway Subsystem)
weather_service_information	1.4.2 (Traffic Management)	1.1.4.2 (Traffic Management)
weather_service_information_request	1.1.4.2 (Traffic Management)	1.4.2 (Traffic Management)
wide_area_pollution_data	1.5.2 (Emissions Management)	1.1.2.1 (Traffic Management)
wrong_way_vehicle_detection	1.1.2.7 (Traffic Management)	1.3.4.2 (Traffic Management)
wrong_way_vehicle_detection	1.1.2.7 (Traffic Management)	5.1.4 (Emergency Management)
yellow_pages_advisory_data	6.2.6 (Information Service Provider)	6.2.2 (Vehicle)
yellow_pages_advisory_requests	6.2.2 (Vehicle)	6.2.6 (Information Service Provider)
yellow_pages_advisory_requests_for_archive	6.2.6 (Information Service Provider)	6.1.5 (Information Service Provider)
yellow_pages_data	6.5.2 (Information Service Provider)	6.2.4 (Information Service Provider)
yellow_pages_data_request	6.2.4 (Information Service Provider)	6.5.2 (Information Service Provider)
yellow_pages_new_data_request	6.5.3 (Information Service Provider)	6.5.1 (Information Service Provider)
yellow_pages_provder_payments_transactions	7.4.1.2 (Information Service Provider)	7.4.1.7 (Information Service Provider)
yellow_pages_reservation_confirmation	6.5.2 (Information Service Provider)	6.2.6 (Information Service Provider)
yellow_pages_reservation_request	6.2.6 (Information Service Provider)	6.5.2 (Information Service Provider)
yellow_pages_service_provider_registration_request	6.5.3 (Information Service Provider)	7.4.1.2 (Information Service Provider)
yellow_pages_service_provider_registration_response	7.4.1.2 (Information Service Provider)	6.5.3 (Information Service Provider)
yellow_pages_update_request	6.5.2 (Information Service Provider)	6.5.1 (Information Service Provider)
yellow_pages_update_response	6.5.1 (Information Service Provider)	6.5.2 (Information Service Provider)

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
advanced_fares_and_charges_request	7.1.4	7.1.6	VS to ISP
advanced_fares_and_charges_response	7.1.6	7.1.4	ISP to VS
advanced_other_charges_confirm	7.2.1.8	7.2.6	PMS to ISP
advanced_other_charges_request	7.2.6	7.2.1.8	ISP to PMS
advanced_other_fares_confirm	7.3.1.1	7.3.2	TRMS to ISP
advanced_other_fares_request	7.3.2	7.3.1.1	ISP to TRMS
advanced_other_tolls_confirm	7.1.1.8	7.1.6	TAS to ISP
advanced_other_tolls_request	7.1.6	7.1.1.8	ISP to TAS
advanced_toll_needed	7.1.1.8	7.1.1.10	TAS to TCS
advanced_toll_transactions	7.1.1.4	7.1.1.9	TCS to TAS
advanced_tolls_and_charges_roadside_confirm	7.3.2	4.7.2.5	ISP to RTS
advanced_tolls_and_charges_roadside_request	4.7.2.5	7.3.2	RTS to ISP
advanced_tolls_and_charges_vehicle_confirm	7.3.2	4.6.8	ISP to TRMS
advanced_tolls_and_charges_vehicle_request	4.6.8	7.3.2	TRMS to ISP
advanced_tolls_and_fares_request	7.2.4	7.2.6	VS to ISP
advanced_tolls_and_fares_response	7.2.6	7.2.4	ISP to VS
advanced_traveler_charges_confirm	7.2.1.8	7.4.3	PMS to ISP
advanced_traveler_charges_request	7.4.3	7.2.1.8	ISP to PMS
advanced_traveler_fares_confirm	7.3.1.1	7.4.3	TRMS to ISP
advanced_traveler_fares_request	7.4.3	7.3.1.1	ISP to TRMS
advanced_traveler_tolls_confirm	7.1.1.8	7.4.3	TAS to ISP
advanced_traveler_tolls_request	7.4.3	7.1.1.8	ISP to TAS
advisory_data	6.2.1.2	6.2.2	ISP to VS
advisory_data_request	6.2.2	6.2.1.2	VS to ISP
ahs_check_response	3.2.5	3.2.2	RS to VS
ahs_checking_details	3.2.6	3.2.7	RS to TMS
ahs_control_data_changes	3.2.7	3.2.6	TMS to RS
ahs_route_data	3.2.2	3.2.6	VS to RS
ahs_vehicle_condition	3.2.2	3.2.5	VS to RS
approved_corrective_plan	4.1.4	4.1.2.2	TRMS to TRVS
bad_tag_list_request	4.6.4	7.3.1.5	TRVS to TRMS
bad_tag_list_update	7.3.1.5	4.6.4	TRMS to TRVS
broadcast_data	6.2.1.4	6.2.2	ISP to VS
cargo_data_request	3.3.3	3.3.1	VS to CVS
cf_driver_route_instructions	2.1.6	2.1.5	FMS to CVS
cf_driver_route_instructions_request	2.1.5	2.1.6	CVS to FMS
cf_enrollment_information	2.5.1	2.1.1	CVAS to FMS
cf_enrollment_payment_confirmation	2.5.1	2.1.1	CVAS to FMS
cf_enrollment_payment_request	2.1.1	2.5.1	FMS to CVAS
cf_enrollment_request	2.1.1	2.5.1	FMS to CVAS
cf_hazmat_request	5.1.4	2.1.1	EM to FMS
cf_hazmat_route_information	2.1.1	5.1.1	FMS to EM
cf_hazmat_vehicle_information	2.1.1	5.1.4	FMS to EM
cf_on_board_vehicle_data	2.4.5	2.1.4	CVS to FMS
cf_periodic_activity_report	2.5.8	2.1.1	CVAS to FMS
cf_request_activity_report	2.1.1	2.5.8	FMS to CVAS
cf_request_on_board_vehicle_data	2.1.4	2.4.5	FMS to CVS
cf_roadside_activity_report	2.5.8	2.1.1	CVAS to FMS
cf_route	6.6.1	2.1.1	ISP to FMS
cf_route_request	2.1.1	6.6.1	FMS to ISP
cf_tag_data_store_output	2.6.5	2.6.1	CVS to FMS
cf_tag_data_store_request	2.6.1	2.6.5	FMS to CVS
cf_tag_data_store_write	2.6.1	2.6.5	FMS to CVS
cf_tax_audit_data	2.1.1	2.5.1	FMS to CVAS
confirm_advanced_tolls_payment	7.1.1.5	7.1.1.8	TCS to TAS
confirm_roadside_fare_payment	7.3.1.5	4.7.2.4	TRMS to RTS
confirm_vehicle_fare_payment	7.3.1.5	4.6.4	TRMS to TRVS
current_highway_network_state	1.2.2.1	6.6.2.2	TMS to ISP
current_other_routes_use	6.6.5	1.4.2	ISP to TMS
current_road_network_state	1.2.2.2	6.6.2.2	TMS to ISP
current_road_network_use	6.6.2.2	1.1.2.1	ISP to TMS
current_road_network_use	6.6.2.2	1.2.1	ISP to TMS

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
current_road_network_use	6.6.2.2	1.3.1.1	ISP to TMS
current_toll_transactions	7.1.1.5	7.1.1.9	TCS to TAS
current_traffic_pollution_data	1.5.2	1.1.4.6	EMMS to ISP
current_transit_routes_use	6.6.4	1.4.2	ISP to TMS
cv_archive_data	2.5.9	8.1	CVAS to ADMS
cv_archive_request	8.1	2.5.9	ADMS to CVAS
cv_archive_status	8.1	2.5.9	ADMS to CVAS
cv_border_daily_log	2.3.6	2.5.8	CVCS to CVAS
cv_border_database_update	2.5.6	2.3.8	CVAS to CVCS
cv_credentials_database_update	2.5.6	2.3.2.1	CVAS to CVCS
cv_credentials_information_request	2.3.2.1	2.5.6	CVCS to CVAS
cv_credentials_information_response	2.5.6	2.3.2.1	CVAS to CVCS
cv_driver_credit_identity	7.5.1	2.2.3	VS to CVS
cv_driver_enrollment_cost	2.2.3	7.5.1	CVS to VS
cv_driver_enrollment_information	2.2.1	2.2.3	FMS to CVS
cv_driver_enrollment_payment_confirmation	2.2.1	2.2.3	FMS to CVS
cv_driver_enrollment_payment_request	2.2.3	2.2.1	CVS to FMS
cv_driver_enrollment_request	2.2.3	2.2.1	CVS to FMS
cv_driver_route_data	2.2.1	2.2.3	FMS to CVS
cv_driver_route_request	2.2.3	2.2.1	CVS to FMS
cv_driver_storage_request	2.2.3	2.2.1	CVS to FMS
cv_electronic_clearance_data	2.6.2	2.3.4	CVS to CVCS
cv_enrollment_information	2.5.1	2.2.1	CVAS to FMS
cv_enrollment_payment_confirmation	2.5.1	2.2.1	CVAS to FMS
cv_enrollment_payment_request	2.2.1	2.5.1	FMS to CVAS
cv_enrollment_request	2.2.1	2.5.1	FMS to CVAS
cv_inspection_data_output	2.3.3.1	2.4.1	CVCS to CVS
cv_on_board_border_record	2.3.8	2.6.2	CVCS to CVS
cv_on_board_data	2.4.1	2.3.3.1	CVS to CVCS
cv_on_board_pull_in_output	2.3.1	2.3.7	CVCS to CVS
cv_on_board_screening_record	2.3.2.2	2.6.2	CVCS to CVS
cv_request_electronic_clearance_data	2.3.4	2.6.2	CVCS to CVS
cv_request_on_board_data	2.3.3.1	2.4.1	CVCS to CVS
cv_roadside_daily_log	2.3.6	2.5.8	CVCS to CVAS
cv_route	6.6.1	2.2.1	ISP to FMS
cv_route_request	2.2.1	6.6.1	FMS to ISP
cv_safety_database_update	2.5.6	2.3.3.3	CVAS to CVCS
cv_safety_information_request	2.3.3.3	2.5.6	CVCS to CVAS
cv_safety_information_response	2.5.6	2.3.3.3	CVAS to CVCS
cv_static_route_data	2.2.2	2.2.1	CVS to FMS
cv_static_route_request	2.2.1	2.2.2	FMS to CVS
cv_update_safety_problems_list	2.3.3.5	2.5.8	CVCS to CVAS
dms_data_for_highways	1.2.4.2	1.2.7.5	TMS to RS
dms_data_for_roads	1.2.4.1	1.2.7.1	TMS to RS
dms_status_for_highways	1.2.7.5	1.2.4.2	RS to TMS
dms_status_for_roads	1.2.7.1	1.2.4.1	RS to TMS
driver_map_update_payment_request	6.7.2.4	7.4.1.3	VS to ISP
driver_map_update_payment_response	7.4.1.3	6.7.2.4	ISP to VS
em_archive_data	5.6	8.1	EM to ADMS
em_archive_request	8.1	5.6	ADMS to EM
em_archive_status	8.1	5.6	ADMS to EM
emergency_acknowledge_transit_details	4.4.1.1	4.4.1.8	TRMS to RTS
emergency_data_request	5.1.3	3.3.2	EM to VS
emergency_request_driver_acknowledge	5.1.3	6.7.1.2	EM to VS
emergency_request_driver_details	6.7.1.2	5.1.6	VS to EM
emergency_request_personal_traveler_acknowledge	5.1.3	6.8.2.2	EM to PIAS
emergency_request_personal_traveler_details	6.8.2.2	5.1.1	PIAS to EM
emergency_request_transit_details	4.4.1.8	4.4.1.1	RTS to TRMS
emergency_request_traveler_acknowledge	5.1.3	4.4.1.8	EM to RTS
emergency_request_traveler_details	4.4.1.8	5.1.1	RTS to EM
emergency_request_vehicle_acknowledge	5.1.3	3.3.2	EM to VS
emergency_request_vehicle_details	3.3.2	5.1.6	VS to EM
emergency_traffic_control_request	5.3.2	1.2.1	EM to TMS
emergency_traffic_control_response	1.2.1	5.3.2	TMS to EM
emergency_vehicle_dispatch_request	5.3.2	5.3.5	EM to EVS
emergency_vehicle_dispatch_response	5.3.5	5.3.2	EVS to EM

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
emergency_vehicle_preemptions	5.3.3	1.2.7.3	EVS to RS
emergency_vehicle_suggested_route	5.3.2	5.3.5	EM to EVS
emergency_vehicle_tracking_data	5.3.3	5.3.6	EVS to EM
emissions_archive_data	1.5.9	8.1	EMMS to ADMS
emissions_archive_request	8.1	1.5.9	ADMS to EMMS
emissions_archive_status	8.1	1.5.9	ADMS to EMMS
environment_sensor_configuration_data	1.1.4.2	1.1.1.3	TMS to RS
environment_sensor_data	1.1.1.3	1.1.2.2	RS to TMS
environment_sensor_fault_data	1.1.1.3	1.1.1.2	RS to TMS
environmental_sensor_status	1.1.1.3	1.1.1.2	RS to TMS
fada_archive_administration_requests	Archived Data Administrator	8.3	Archived Data Administrator to ADMS
fadu_archive_analysis_request	Archived Data User Systems	8.6	Archived Data User Systems to ADMS
fadu_archive_data_product_request	Archived Data User Systems	8.5	Archived Data User Systems to ADMS
fadu_on_demand_archive_request	Archived Data User Systems	8.7	Archived Data User Systems to ADMS
fare_collection_roadside_violation_information	4.7.2.4	5.4.7	RTS to TRMS
fare_collection_vehicle_violation_information	4.6.4	5.4.5	TRVS to TRMS
fbv_brake_servo_response	Basic Vehicle	3.2.3.3	Basic Vehicle to VS
fbv_crash_sensor_data	Basic Vehicle	3.3.3	Basic Vehicle to VS
fbv_diagnostics_data	Basic Vehicle	3.1.3	Basic Vehicle to VS
fbv_driver_safety_status	Basic Vehicle	3.1.3	Basic Vehicle to VS
fbv_steering_servo_response	Basic Vehicle	3.2.3.3	Basic Vehicle to VS
fbv_throttle_servo_response	Basic Vehicle	3.2.3.3	Basic Vehicle to VS
fbv_vehicle_attitude_data	Basic Vehicle	3.1.3	Basic Vehicle to VS
fbv_vehicle_condition	Basic Vehicle	3.2.4	Basic Vehicle to VS
fbv_vehicle_headway	Basic Vehicle	3.2.3.5	Basic Vehicle to VS
fbv_vehicle_identity	Basic Vehicle	7.1.4	Basic Vehicle to VS
fbv_vehicle_identity	Basic Vehicle	7.2.4	Basic Vehicle to VS
fbv_vehicle_lane_position	Basic Vehicle	3.2.3.5	Basic Vehicle to VS
fbv_vehicle_motion_data	Basic Vehicle	3.1.3	Basic Vehicle to VS
fbv_vehicle_on_ahs_lane	Basic Vehicle	3.2.3.5	Basic Vehicle to VS
fbv_vehicle_on_ahs_lane	Basic Vehicle	3.2.4	Basic Vehicle to VS
fbv_vehicle_proximity_data	Basic Vehicle	3.1.3	Basic Vehicle to VS
fbv_vehicle_safety_status	Basic Vehicle	3.1.3	Basic Vehicle to VS
fbv_vehicle_security_status	Basic Vehicle	3.1.3	Basic Vehicle to VS
fbv_vehicle_speed	Basic Vehicle	3.2.3.5	Basic Vehicle to VS
fci_credentials_data_request	CVO Inspector	2.3.5	CVO Inspector to CVCS
fci_inspection_data_input	CVO Inspector	2.3.3.2	CVO Inspector to CVCS
fci_pull_in_action	CVO Inspector	2.3.5	CVO Inspector to CVCS
fci_request_log_report	CVO Inspector	2.3.5	CVO Inspector to CVCS
fci_safety_data_request	CVO Inspector	2.3.5	CVO Inspector to CVCS
fci_start_inspection	CVO Inspector	2.3.3.2	CVO Inspector to CVCS
fcm_c_and_m_archive_data	Construction and Maintenance	8.1	Construction and Maintenance to ADMS
fcm_fault_clearance	Construction and Maintenance	1.2.8.3	Construction and Maintenance to TMS
fcm_incident_information	Construction and Maintenance	1.3.2.1	Construction and Maintenance to TMS
fcm_resource_response	Construction and Maintenance	1.3.4.5	Construction and Maintenance to TMS
fcm_sensor_fault_data	Construction and Maintenance	1.1.1.2	Construction and Maintenance to TMS
fcv_brake_condition	Commercial Vehicle	2.4.2	Commercial Vehicle to CVS
fcv_cargo_data	Commercial Vehicle	3.3.1	Commercial Vehicle to CVS
fcv_cargo_safety_status	Commercial Vehicle	2.4.2	Commercial Vehicle to CVS
fcv_cargo_safety_status	Commercial Vehicle	3.3.1	Commercial Vehicle to CVS
fcv_distance_travelled	Commercial Vehicle	2.4.2	Commercial Vehicle to CVS
fcv_driver_safety_status	Commercial Vehicle	2.4.2	Commercial Vehicle to CVS
fcv_driver_status	Commercial Vehicle	2.4.2	Commercial Vehicle to CVS
fcv_lock_tag_data	Commercial Vehicle	2.6.4	Commercial Vehicle to CVS
fcv_vehicle_characteristics	Commercial Vehicle	2.3.4	Commercial Vehicle to CVCS
fcv_vehicle_safety_status	Commercial Vehicle	2.4.2	Commercial Vehicle to CVS
fcv_weight	Commercial Vehicle	2.4.2	Commercial Vehicle to CVS
fcvd_activity_request	Commercial Vehicle Driver	2.2.3	Commercial Vehicle Driver to CVS
fcvd_carrier_number	Commercial Vehicle Driver	2.6.3	Commercial Vehicle Driver to CVS
fcvd_driver_data_input	Commercial Vehicle Driver	2.4.4	Commercial Vehicle Driver to CVS
fcvd_driver_general_message	Commercial Vehicle Driver	2.4.4	Commercial Vehicle Driver to CVS
fcvd_driver_input_type	Commercial Vehicle Driver	2.4.4	Commercial Vehicle Driver to CVS
fcvd_driver_number	Commercial Vehicle Driver	2.6.3	Commercial Vehicle Driver to CVS
fcvd_enrollment_payment_request	Commercial Vehicle Driver	2.2.3	Commercial Vehicle Driver to CVS
fcvd_enrollment_request	Commercial Vehicle Driver	2.2.3	Commercial Vehicle Driver to CVS
fcvd_other_data_input	Commercial Vehicle Driver	2.2.3	Commercial Vehicle Driver to CVS
fcvd_request_routing_instructions	Commercial Vehicle Driver	2.1.5	Commercial Vehicle Driver to CVS

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
fcvd_request_tag_data_output	Commercial Vehicle Driver	2.6.3	Commercial Vehicle Driver to CVS
fcvd_route_data	Commercial Vehicle Driver	2.2.3	Commercial Vehicle Driver to CVS
fcvd_route_request	Commercial Vehicle Driver	2.2.3	Commercial Vehicle Driver to CVS
fcvd_trip_identity	Commercial Vehicle Driver	2.6.3	Commercial Vehicle Driver to CVS
fcvd_vehicle_number	Commercial Vehicle Driver	2.6.3	Commercial Vehicle Driver to CVS
fcvm_carrier_number	Commercial Vehicle Manager	2.6.1	Commercial Vehicle Manager to FMS
fcvm_driver_number	Commercial Vehicle Manager	2.6.1	Commercial Vehicle Manager to FMS
fcvm_enrollment_payment_request	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_enrollment_request	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_other_data_input	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_preclearance_data	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_request_driver_route_instructions	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_request_on_board_vehicle_data	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_request_tag_data_output	Commercial Vehicle Manager	2.6.1	Commercial Vehicle Manager to FMS
fcvm_roadside_activity_report_request	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_route_data	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_route_function_request	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_trip_identity	Commercial Vehicle Manager	2.6.1	Commercial Vehicle Manager to FMS
fcvm_update_driver_route_instructions	Commercial Vehicle Manager	2.1.3	Commercial Vehicle Manager to FMS
fcvm_vehicle_number	Commercial Vehicle Manager	2.6.1	Commercial Vehicle Manager to FMS
fcvoir_request_for_information	CVO Information Requestor	2.5.5	CVO Information Requestor to CVAS
fd_activate_vehicle_control	Driver	6.2.5	Driver to VS
fd_emergency_request	Driver	6.7.1.1	Driver to VS
fd_guidance_data	Driver	6.7.2.3	Driver to VS
fd_guidance_map_update_request	Driver	6.7.2.3	Driver to VS
fd_guidance_request	Driver	6.7.2.3	Driver to VS
fd_guidance_route_accepted	Driver	6.7.2.3	Driver to VS
fd_other_services_parking_request	Driver	7.2.4	Driver to VS
fd_other_services_toll_request	Driver	7.1.4	Driver to VS
fd_request_advisory_information	Driver	6.2.5	Driver to VS
fdmv_cv_violation_state_identity	DMV	5.4.6	DMV to CVAS
fdmv_cv_violation_vehicle_registration	DMV	5.4.6	DMV to CVAS
fdmv_parking_lot_violation_state_identity	DMV	5.4.3	DMV to PMS
fdmv_parking_lot_violation_vehicle_registration	DMV	5.4.3	DMV to PMS
fdmv_toll_violation_state_identity	DMV	5.4.2	DMV to TAS
fdmv_toll_violation_vehicle_registration	DMV	5.4.2	DMV to TAS
fdmv_traffic_violation_state_identity	DMV	5.4.1	DMV to TMS
fdmv_traffic_violation_vehicle_registration	DMV	5.4.1	DMV to TMS
fe_area_pollutant_levels	Environment	1.5.2	Environment to EMMS
fe_roadside_pollutant_levels	Environment	1.5.6	Environment to RS
fea_cv_enforcement_agency_response	Enforcement Agency	2.5.5	Enforcement Agency to CVAS
fep_emergency_dispatch_acknowledge	Emergency Personnel	5.3.5	Emergency Personnel to EVS
fep_event_information	Event Promoters	1.3.2.1	Event Promoters to TMS
fep_incident_command_request	Emergency Personnel	5.3.5	Emergency Personnel to EVS
fep_incident_status	Emergency Personnel	5.3.5	Emergency Personnel to EVS
fep_planned_event_data	Event Promoters	5.1.1	Event Promoters to EM
feso_archive_commands	Emergency System Operator	5.6	Emergency System Operator to EM
feso_emergency_action_log_request	Emergency System Operator	5.2	Emergency System Operator to EM
feso_emergency_allocation_override	Emergency System Operator	5.2	Emergency System Operator to EM
feso_emergency_data_input	Emergency System Operator	5.2	Emergency System Operator to EM
feso_emergency_data_output_request	Emergency System Operator	5.2	Emergency System Operator to EM
feso_emergency_display_update_request	Emergency System Operator	5.2	Emergency System Operator to EM
fets_caller_information	Emergency Telecommunications System	5.1.1	Emergency Telecommunications System to EM
fets_incident_information	Emergency Telecommunications System	5.1.1	Emergency Telecommunications System to EM
ffi_archive_analysis_payment_confirm	Financial Institution	8.6	Financial Institution to ADMS
ffi_archive_payment_confirm	Financial Institution	8.5	Financial Institution to ADMS
ffi_bad_charges_payment_updates	Financial Institution	7.2.1.3	Financial Institution to PMS
ffi_bad_fare_payment_updates	Financial Institution	7.3.1.6	Financial Institution to TRMS
ffi_bad_toll_payment_updates	Financial Institution	7.1.1.3	Financial Institution to TAS
ffi_confirm_charges_payment	Financial Institution	7.2.1.6	Financial Institution to PMS
ffi_confirm_fare_payment	Financial Institution	7.3.1.3	Financial Institution to TRMS
ffi_confirm_toll_payment	Financial Institution	7.1.1.9	Financial Institution to TAS
ffi_cv_payment_confirm	Financial Institution	7.4.1.1	Financial Institution to CVAS
ffi_driver_map_payment_confirm	Financial Institution	7.4.1.3	Financial Institution to ISP

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
ffi_other_services_payment_confirm	Financial Institution	7.4.1.5	Financial Institution to TRMS
ffi_registration_payment_confirm	Financial Institution	7.4.1.2	Financial Institution to ISP
ffi_traveler_display_payment_confirm	Financial Institution	7.4.1.4	Financial Institution to ISP
ffi_traveler_map_payment_confirm	Financial Institution	7.4.1.4	Financial Institution to ISP
ffi_traveler_other_services_payments_confirm	Financial Institution	7.4.1.6	Financial Institution to ISP
ffi_traveler_rideshare_payment_confirm	Financial Institution	7.4.1.8	Financial Institution to ISP
fga_carrier_safety_ratings	Government Administrators	2.5.3	Government Administrators to CVAS
fga_roadside_facility_locations	Government Administrators	2.5.3	Government Administrators to CVAS
fga_tax_and_credential_fees	Government Administrators	2.5.3	Government Administrators to CVAS
fgrs_government_data_report_request	Government Reporting Systems	8.8	Government Reporting Systems to ADMS
fifd_freight_data	Intermodal Freight Depot	2.7	Intermodal Freight Depot to FMS
fifd_intermodal_archive_data	Intermodal Freight Depot	8.1	Intermodal Freight Depot to ADMS
fispo_archive_commands	ISP Operator	6.1.6	ISP Operator to ISP
fispo_broadcast_data_parameters_request	ISP Operator	6.2.1.5	ISP Operator to ISP
fispo_broadcast_data_parameters_update	ISP Operator	6.2.1.5	ISP Operator to ISP
fispo_request_other_routes_selection_map_data_update	ISP Operator	6.6.2.5	ISP Operator to ISP
fispo_request_route_selection_map_data_update	ISP Operator	6.6.2.5	ISP Operator to ISP
fispo_route_selection_parameters_request	ISP Operator	6.6.2.5	ISP Operator to ISP
fispo_route_selection_parameters_update	ISP Operator	6.6.2.5	ISP Operator to ISP
fispo_trip_planning_parameters_request	ISP Operator	6.1.4	ISP Operator to ISP
fispo_trip_planning_parameters_update	ISP Operator	6.1.4	ISP Operator to ISP
fm_emergency_information_request	Media	5.1.3	Media to EM
fm_incident_data_request	Media	1.3.4.3	Media to TMS
fm_incident_details	Media	1.1.4.5	Media to ISP
fm_incident_information	Media	1.3.4.3	Media to TMS
fm_incident_information_request	Media	1.1.4.5	Media to ISP
fm_traffic_data_request	Media	1.1.4.3	Media to TMS
fm_traffic_information_request	Media	1.1.4.5	Media to ISP
fm_transit_incident_information_request	Media	4.4.1.4	Media to TRMS
fm_transit_schedule_deviations_request	Media	4.1.6	Media to TRMS
fm_transit_vehicle_deviations_request	Media	4.1.8	Media to ISP
fm_traveler_information	Media	6.5.1	Media to ISP
fmmc_crossing_close_duration	Multimodal Crossings	1.1.1.1	Multimodal Crossings to RS
fmmc_crossing_close_time	Multimodal Crossings	1.1.1.1	Multimodal Crossings to RS
fmmc_crossing_status_for_highways	Multimodal Crossings	1.2.7.5	Multimodal Crossings to RS
fmmc_crossing_status_for_roads	Multimodal Crossings	1.2.7.1	Multimodal Crossings to RS
fmtsp_air_services	Multimodal Transportation Service Provider	6.1.3	Multimodal Transportation Service Provider to ISP
fmtsp_ferry_services	Multimodal Transportation Service Provider	6.1.3	Multimodal Transportation Service Provider to ISP
fmtsp_multimodal_archive_data	Multimodal Transportation Service Provider	8.1	Multimodal Transportation Service Provider to ADMS
fmtsp_multimodal_service_confirmation	Multimodal Transportation Service Provider	6.1.3	Multimodal Transportation Service Provider to ISP
fmtsp_rail_services	Multimodal Transportation Service Provider	6.1.3	Multimodal Transportation Service Provider to ISP
fmtsp_transit_service_data	Multimodal Transportation Service Provider	4.2.3.8	Multimodal Transportation Service Provider to TRMS
fmup_demand_display_update	Map Update Provider	1.4.3	Map Update Provider to TMS
fmup_emergency_display_update	Map Update Provider	5.5	Map Update Provider to EM
fmup_emergency_route_map_update	Map Update Provider	5.3.7	Map Update Provider to EM
fmup_incident_display_update	Map Update Provider	1.3.4.4	Map Update Provider to TMS
fmup_map_archive_data	Map Update Provider	8.1	Map Update Provider to ADMS
fmup_other_routes_map_data	Map Update Provider	6.6.3	Map Update Provider to ISP
fmup_pollution_display_update	Map Update Provider	1.5.3	Map Update Provider to EMMS
fmup_route_selection_map_data	Map Update Provider	6.6.2.4	Map Update Provider to ISP
fmup_traffic_display_update	Map Update Provider	1.1.4.4	Map Update Provider to TMS
fmup_transit_map_update	Map Update Provider	4.2.3.9	Map Update Provider to TRMS
fmup_traveler_display_update	Map Update Provider	6.3.4	Map Update Provider to RTS
fmup_traveler_map_update	Map Update Provider	6.8.1.4	Map Update Provider to PIAS
fmup_traveler_map_update_cost	Map Update Provider	6.8.1.4	Map Update Provider to PIAS
fmup_traveler_personal_display_update	Map Update Provider	6.8.3.4	Map Update Provider to PIAS
fmup_traveler_personal_display_update_cost	Map Update Provider	6.8.3.4	Map Update Provider to PIAS
fmup_vehicle_map_update	Map Update Provider	6.7.2.4	Map Update Provider to VS

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
fmup_vehicle_map_update_cost	Map Update Provider	6.7.2.4	Map Update Provider to VS
foa_archive_coordination_data	Other Archives	8.4	Other Archives to ADMS
focvas_commit_local_enrollment	Other CVAS	2.5.4	Other CVAS to CVAS
focvas_data_table	Other CVAS	2.5.4	Other CVAS to CVAS
focvas_enrollment_confirmation	Other CVAS	2.5.4	Other CVAS to CVAS
focvas_enrollment_request	Other CVAS	2.5.4	Other CVAS to CVAS
focvas_provide_data	Other CVAS	2.5.4	Other CVAS to CVAS
fods_other_data_source_archive_data	Other Data Sources	8.1	Other Data Sources to ADMS
foec_emergency_center_identity	Other EM	5.1.2	Other EM to EM
foec_incident_details	Other EM	5.1.2	Other EM to EM
foec_incident_response_coordination	Other EM	5.1.2	Other EM to EM
foec_mayday_emergency_data	Other EM	5.1.6	Other EM to EM
foisp_data_supply	Other ISP	6.6.2.3	Other ISP to ISP
foisp_request_data	Other ISP	6.6.2.3	Other ISP to ISP
foisp_traffic_data	Other ISP	6.2.1.1	Other ISP to ISP
foisp_traffic_information_request	Other ISP	6.2.1.1	Other ISP to ISP
foisp_transit_data	Other ISP	6.2.1.3	Other ISP to ISP
foisp_transit_information_request	Other ISP	6.2.1.3	Other ISP to ISP
fop_parking_coordination_data	Other Parking	1.2.5.2	Other Parking to PMS
fotc_data_request	Other TM	1.1.5	Other TM to TMS
fotc_identity	Other TM	1.1.5	Other TM to TMS
fotc_traffic_control_and_status	Other TM	1.1.5	Other TM to TMS
fotc_transfer_data	Other TM	1.1.5	Other TM to TMS
fotrm_transit_services	Other TRM	4.2.3.7	Other TRM to TRMS
fp_pedestrian_data	Pedestrians	1.1.1.1	Pedestrians to RS
fp_pedestrian_images	Pedestrians	1.1.1.1	Pedestrians to RS
fpi_commercial_manager_input_credit_identity	Payment Instrument	7.5.4	Payment Instrument to FMS
fpi_confirm_fare_payment_at_roadside	Payment Instrument	7.3.4	Payment Instrument to RTS
fpi_confirm_fare_payment_on_transit_vehicle	Payment Instrument	7.3.5	Payment Instrument to TRVS
fpi_confirm_payment_at_parking_lot	Payment Instrument	7.2.7	Payment Instrument to VS
fpi_confirm_payment_at_toll_plaza	Payment Instrument	7.1.7	Payment Instrument to VS
fpi_driver_vehicle_input_credit_identity	Payment Instrument	7.5.1	Payment Instrument to VS
fpi_parking_tag_data	Payment Instrument	7.2.7	Payment Instrument to VS
fpi_toll_tag_data	Payment Instrument	7.1.7	Payment Instrument to VS
fpi_transit_roadside_tag_data	Payment Instrument	7.3.4	Payment Instrument to RTS
fpi_transit_user_roadside_input_credit_identity	Payment Instrument	7.5.2	Payment Instrument to RTS
fpi_transit_user_vehicle_input_credit_identity	Payment Instrument	7.5.1	Payment Instrument to VS
fpi_transit_vehicle_tag_data	Payment Instrument	7.3.5	Payment Instrument to TRVS
fpi_traveler_personal_input_credit_identity	Payment Instrument	7.5.3	Payment Instrument to PIAS
fpi_traveler_roadside_input_credit_identity	Payment Instrument	7.5.5	Payment Instrument to RTS
fpo_archive_commands	Parking Operator	1.2.5.5	Parking Operator to PMS
fpo_confirm_advanced_parking_payment	Parking Operator	7.2.1.8	Parking Operator to PMS
fpo_current_lot_state	Parking Operator	1.2.5.3	Parking Operator to PMS
fpo_lot_occupancy	Parking Operator	1.2.5.3	Parking Operator to PMS
fpo_parking_lot_charge_change_response	Parking Operator	7.2.1.7	Parking Operator to PMS
fpo_parking_lot_data	Parking Operator	7.2.1.7	Parking Operator to PMS
fpo_parking_lot_hours_of_operation	Parking Operator	7.2.1.9	Parking Operator to PMS
fpo_transaction_reports_request	Parking Operator	7.2.1.6	Parking Operator to PMS
fre_environmental_conditions	Roadway Environment	1.1.1.3	Roadway Environment to RS
fre_physical_conditions	Roadway Environment	1.1.1.1	Roadway Environment to RS
fre_roadside_data	Roadway Environment	3.1.3	Roadway Environment to VS
fro_incident_notification	Rail Operations	1.6.2.1	Rail Operations to TMS
fro_maintenance_schedules	Rail Operations	1.6.2.1	Rail Operations to TMS
fro_train_schedules	Rail Operations	1.6.2.1	Rail Operations to TMS
From_Intermodal_Freight_Shipper	Intermodal Freight Shipper	2.7	Intermodal Freight Shipper to FMS
From_Location_Data_Source	Location Data Source	6.8.1.3	Location Data Source to VS
From_Location_Data_Source	Location Data Source	6.7.2.2	Location Data Source to VS
From_Location_Data_Source	Location Data Source	6.8.1.3	Location Data Source to PIAS
From_Location_Data_Source	Location Data Source	6.7.2.2	Location Data Source to PIAS
From_Other_Vehicle	Other Vehicle	3.2.3.6	Other Vehicle to VS
From_Potential_Obstacles	Potential Obstacles	3.1.3	Potential Obstacles to VS
From_Roadway	Roadway	3.1.3	Roadway to VS
From_Roadway	Roadway	3.4	Roadway to VS

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.3	Vehicle Characteristics to TCS
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.5	Vehicle Characteristics to TCS
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.5	Vehicle Characteristics to TCS
From_Vehicle_Characteristics	Vehicle Characteristics	1.5.5	Vehicle Characteristics to TCS
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.5	Vehicle Characteristics to RS
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.3	Vehicle Characteristics to RS
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.5	Vehicle Characteristics to RS
From_Vehicle_Characteristics	Vehicle Characteristics	1.5.5	Vehicle Characteristics to RS
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.5	Vehicle Characteristics to PMS
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.3	Vehicle Characteristics to PMS
From_Vehicle_Characteristics	Vehicle Characteristics	7.2.3	Vehicle Characteristics to TCS
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.5	Vehicle Characteristics to PMS
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.3	Vehicle Characteristics to PMS
From_Vehicle_Characteristics	Vehicle Characteristics	1.5.5	Vehicle Characteristics to PMS
From_Vehicle_Characteristics	Vehicle Characteristics	7.1.3	Vehicle Characteristics to RS
fsa_area_image	Secure Area Environment	4.4.1.7	Secure Area Environment to RTS
ft_extra_trip_data	Traveler	6.3.3	Traveler to RTS
ft_guidance_data	Traveler	6.8.1.2	Traveler to PIAS
ft_guidance_map_update_request	Traveler	6.8.1.2	Traveler to PIAS
ft_guidance_request	Traveler	6.8.1.2	Traveler to PIAS
ft_guidance_route_accepted	Traveler	6.8.1.2	Traveler to PIAS
ft_personal_emergency_request	Traveler	6.8.2.1	Traveler to PIAS
ft_personal_extra_trip_data	Traveler	6.8.3.3	Traveler to PIAS
ft_personal_map_display_update_request	Traveler	6.8.3.3	Traveler to PIAS
ft_personal_trip_planning_requests	Traveler	6.8.3.3	Traveler to PIAS
ft_remote_emergency_request	Traveler	4.4.1.8	Traveler to RTS
ft_traffic_data	Traffic	1.1.1.1	Traffic to RS
ft_traffic_images	Traffic	1.1.1.1	Traffic to RS
ft_traffic_images	Traffic	1.3.1.3	Traffic to RS
ft_trip_planning_requests	Traveler	6.3.3	Traveler to RTS
ft_vehicle_pollutant_levels	Traffic	1.5.5	Traffic to RS
fta_archive_commands	Toll Administrator	7.1.1.11	Toll Administrator to TAS
fta_confirm_advanced_toll	Toll Administrator	7.1.1.8	Toll Administrator to TAS
fta_toll_price_changes_response	Toll Administrator	7.1.1.7	Toll Administrator to TAS
fta_toll_price_data	Toll Administrator	7.1.1.7	Toll Administrator to TAS
ftd_emergency_request	Transit Driver	4.4.1.5	Transit Driver to TRVS
ftd_fare_transaction_mode_set_up	Transit Driver	4.6.4	Transit Driver to TRVS
ftd_information_updates	Transit Driver	4.5.6	Transit Driver to TRMS
ftd_request_batch_mode_data_transfer	Transit Driver	4.6.4	Transit Driver to TRVS
ftfm_approved_corrections	Transit Fleet Manager	4.1.4	Transit Fleet Manager to TRMS
ftfm_coordination_data	Transit Fleet Manager	4.4.2	Transit Fleet Manager to TRMS
ftfm_initiate_service_updates	Transit Fleet Manager	4.2.3.4	Transit Fleet Manager to TRMS
ftfm_passenger_loading_updates	Transit Fleet Manager	4.2.3.5	Transit Fleet Manager to TRMS
ftfm_planning_parameters	Transit Fleet Manager	4.2.3.4	Transit Fleet Manager to TRMS
ftfm_planning_parameters_update_request	Transit Fleet Manager	4.2.3.4	Transit Fleet Manager to TRMS
ftfm_request_response_parameter_output	Transit Fleet Manager	4.4.3	Transit Fleet Manager to TRMS
ftfm_request_transit_vehicle_data	Transit Fleet Manager	4.1.5	Transit Fleet Manager to TRMS
ftfm_response_parameters	Transit Fleet Manager	4.4.3	Transit Fleet Manager to TRMS
ftfm_technician_information_request	Transit Fleet Manager	4.3.3	Transit Fleet Manager to TRMS
ftfm_technician_information_updates	Transit Fleet Manager	4.3.3	Transit Fleet Manager to TRMS
ftfm_transit_display_update_request	Transit Fleet Manager	4.2.3.4	Transit Fleet Manager to TRMS
ftfm_transit_driver_information_request	Transit Fleet Manager	4.5.7	Transit Fleet Manager to TRMS
ftfm_transit_driver_information_updates	Transit Fleet Manager	4.5.7	Transit Fleet Manager to TRMS
ftfm_transit_driver_route_preferences	Transit Fleet Manager	4.5.7	Transit Fleet Manager to TRMS
ftfm_transit_services_output_request	Transit Fleet Manager	4.2.3.4	Transit Fleet Manager to TRMS
ftfm_transit_vehicle_maintenance_information_request	Transit Fleet Manager	4.3.5	Transit Fleet Manager to TRMS
ftfm_transit_vehicle_maintenance_specs	Transit Fleet Manager	4.3.5	Transit Fleet Manager to TRMS
ftmp_transit_vehicle_maintenance_updates	Transit Maintenance Personnel	4.3.6	Transit Maintenance Personnel to TRMS
fto_local_toll_price_variations	Toll Operator	7.1.1.2	Toll Operator to TCS
ftop_archive_command	Traffic Operations Personnel	1.1.4.7	Traffic Operations Personnel to TMS
ftop_defined_incident_response_data_request	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_defined_incident_response_data_update	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_demand_data_request	Traffic Operations Personnel	1.4.1	Traffic Operations Personnel to TMS
ftop_demand_data_update_request	Traffic Operations Personnel	1.4.1	Traffic Operations Personnel to TMS

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
ftop_demand_forecast_request	Traffic Operations Personnel	1.4.1	Traffic Operations Personnel to TMS
ftop_demand_policy_activation	Traffic Operations Personnel	1.4.1	Traffic Operations Personnel to TMS
ftop_demand_policy_information_request	Traffic Operations Personnel	1.4.1	Traffic Operations Personnel to TMS
ftop_demand_policy_updates	Traffic Operations Personnel	1.4.1	Traffic Operations Personnel to TMS
ftop_incident_camera_action_request	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_incident_data_amendment	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_incident_information_requests	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_indicator_fault_data_input	Traffic Operations Personnel	1.2.8.4	Traffic Operations Personnel to TMS
ftop_indicator_fault_data_request	Traffic Operations Personnel	1.2.8.4	Traffic Operations Personnel to TMS
ftop_indicator_fault_data_update	Traffic Operations Personnel	1.2.8.4	Traffic Operations Personnel to TMS
ftop_output_possible_defined_reponses	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_pollution_data_information_request	Traffic Operations Personnel	1.5.1	Traffic Operations Personnel to EMMS
ftop_pollution_parameter_updates	Traffic Operations Personnel	1.5.1	Traffic Operations Personnel to EMMS
ftop_request_possible_incidents_data	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_resource_request	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_roadway_characteristics	Traffic Operations Personnel	1.2.6.1	Traffic Operations Personnel to TMS
ftop_sensor_fault_data_input	Traffic Operations Personnel	1.1.1.2	Traffic Operations Personnel to TMS
ftop_static_data	Traffic Operations Personnel	1.2.6.1	Traffic Operations Personnel to TMS
ftop_strategy_override	Traffic Operations Personnel	1.2.1	Traffic Operations Personnel to TMS
ftop_traffic_data_parameter_updates	Traffic Operations Personnel	1.1.4.2	Traffic Operations Personnel to TMS
ftop_traffic_information_requests	Traffic Operations Personnel	1.1.4.2	Traffic Operations Personnel to TMS
ftop_update_defined_incident_responses	Traffic Operations Personnel	1.3.4.2	Traffic Operations Personnel to TMS
ftop_video_camera_strategy_change	Traffic Operations Personnel	1.2.1	Traffic Operations Personnel to TMS
ftop_weather_request_information	Traffic Operations Personnel	1.1.4.2	Traffic Operations Personnel to TMS
ftso_archive_commands	Transit System Operators	4.2.4	Transit System Operators to TRMS
ftso_emergency_request_acknowledge	Transit System Operators	4.4.1.3	Transit System Operators to TRMS
ftso_fare_updates	Transit System Operators	7.3.1.7	Transit System Operators to TRMS
ftso_media_parameter_request	Transit System Operators	4.4.1.3	Transit System Operators to TRMS
ftso_media_parameter_updates	Transit System Operators	4.4.1.3	Transit System Operators to TRMS
ftso_request_fare_output	Transit System Operators	7.3.1.7	Transit System Operators to TRMS
ftso_security_action	Transit System Operators	4.4.1.3	Transit System Operators to TRMS
ftso_video_camera_action_request	Transit System Operators	4.4.1.3	Transit System Operators to TRMS
ftu_destination_at_roadside	Transit User	4.7.2.5	Transit User to RTS
ftu_destination_on_vehicle	Transit User	6.2.1.6	Transit User to TRVS
ftu_emergency_request	Transit User	4.4.1.2	Transit User to TRVS
ftu_other_services_roadside_request	Transit User	4.7.2.5	Transit User to RTS
ftu_other_services_vehicle_request	Transit User	6.2.1.6	Transit User to TRVS
ftu_request_advisory_information	Transit User	6.2.3	Transit User to TRVS
ftu_transit_information_request	Transit User	4.7.1.1	Transit User to RTS
ftu_transit_user_roadside_image	Transit User	4.7.2.1	Transit User to RTS
ftu_transit_user_roadside_image	Transit User	4.7.2.4	Transit User to RTS
ftu_transit_user_vehicle_image	Transit User	4.6.1	Transit User to TRVS
ftu_transit_user_vehicle_image	Transit User	4.6.4	Transit User to TRVS
ftv_availability	Transit Vehicle	4.2.1.5	Transit Vehicle to TRVS
ftv_vehicle_maintenance_data	Transit Vehicle	4.1.9	Transit Vehicle to TRVS
ftv_vehicle_trip_data	Transit Vehicle	4.1.1	Transit Vehicle to TRVS
fwe_approaching_train_announcement	Wayside Equipment	1.6.3.1	Wayside Equipment to RS
fwe_train_data	Wayside Equipment	1.6.3.1	Wayside Equipment to RS
fwe_wayside_equipment_status	Wayside Equipment	1.6.3.1	Wayside Equipment to RS
fws_current_weather	Weather Service	6.6.2.1	Weather Service to TMS
fws_current_weather	Weather Service	6.6.2.1	Weather Service to TRMS
fws_current_weather	Weather Service	6.6.1	Weather Service to TRMS
fws_current_weather	Weather Service	6.5.1	Weather Service to TRMS
fws_current_weather	Weather Service	5.1.4	Weather Service to TRMS
fws_current_weather	Weather Service	4.1.6	Weather Service to TRMS
fws_current_weather	Weather Service	1.3.2.1	Weather Service to EM
fws_current_weather	Weather Service	1.3.2.1	Weather Service to TRMS
fws_current_weather	Weather Service	6.6.1	Weather Service to TMS
fws_current_weather	Weather Service	6.5.1	Weather Service to TMS
fws_current_weather	Weather Service	5.1.4	Weather Service to TMS
fws_current_weather	Weather Service	4.1.6	Weather Service to TMS
fws_current_weather	Weather Service	1.4.2	Weather Service to TMS
fws_current_weather	Weather Service	1.3.2.1	Weather Service to TMS
fws_current_weather	Weather Service	5.1.4	Weather Service to EM
fws_current_weather	Weather Service	1.4.2	Weather Service to TRMS
fws_current_weather	Weather Service	6.6.2.1	Weather Service to ISP
fws_current_weather	Weather Service	4.1.6	Weather Service to EM
fws_current_weather	Weather Service	6.5.1	Weather Service to EM
fws_current_weather	Weather Service	6.6.1	Weather Service to EM

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
fws_current_weather	Weather Service	6.6.2.1	Weather Service to EM
fws_current_weather	Weather Service	1.3.2.1	Weather Service to ISP
fws_current_weather	Weather Service	1.4.2	Weather Service to ISP
fws_current_weather	Weather Service	4.1.6	Weather Service to ISP
fws_current_weather	Weather Service	5.1.4	Weather Service to ISP
fws_current_weather	Weather Service	6.5.1	Weather Service to ISP
fws_current_weather	Weather Service	6.6.1	Weather Service to ISP
fws_current_weather	Weather Service	1.4.2	Weather Service to EM
fws_predicted_weather	Weather Service	1.1.3	Weather Service to EM
fws_predicted_weather	Weather Service	1.1.3	Weather Service to TRMS
fws_predicted_weather	Weather Service	1.4.2	Weather Service to TMS
fws_predicted_weather	Weather Service	4.1.6	Weather Service to TMS
fws_predicted_weather	Weather Service	5.1.4	Weather Service to TMS
fws_predicted_weather	Weather Service	6.5.1	Weather Service to TMS
fws_predicted_weather	Weather Service	6.6.1	Weather Service to TMS
fws_predicted_weather	Weather Service	6.6.2.1	Weather Service to TMS
fws_predicted_weather	Weather Service	1.3.2.1	Weather Service to TRMS
fws_predicted_weather	Weather Service	1.4.2	Weather Service to TRMS
fws_predicted_weather	Weather Service	4.1.6	Weather Service to TRMS
fws_predicted_weather	Weather Service	5.1.4	Weather Service to TRMS
fws_predicted_weather	Weather Service	6.5.1	Weather Service to TRMS
fws_predicted_weather	Weather Service	6.6.1	Weather Service to TRMS
fws_predicted_weather	Weather Service	1.3.2.1	Weather Service to TMS
fws_predicted_weather	Weather Service	6.6.2.1	Weather Service to TRMS
fws_predicted_weather	Weather Service	1.3.2.1	Weather Service to ISP
fws_predicted_weather	Weather Service	1.1.3	Weather Service to TMS
fws_predicted_weather	Weather Service	1.3.2.1	Weather Service to EM
fws_predicted_weather	Weather Service	4.1.6	Weather Service to EM
fws_predicted_weather	Weather Service	5.1.4	Weather Service to EM
fws_predicted_weather	Weather Service	6.5.1	Weather Service to EM
fws_predicted_weather	Weather Service	6.6.1	Weather Service to EM
fws_predicted_weather	Weather Service	1.4.2	Weather Service to EM
fws_predicted_weather	Weather Service	1.1.3	Weather Service to ISP
fws_predicted_weather	Weather Service	1.4.2	Weather Service to ISP
fws_predicted_weather	Weather Service	4.1.6	Weather Service to ISP
fws_predicted_weather	Weather Service	5.1.4	Weather Service to ISP
fws_predicted_weather	Weather Service	6.5.1	Weather Service to ISP
fws_predicted_weather	Weather Service	6.6.1	Weather Service to ISP
fws_predicted_weather	Weather Service	6.6.2.1	Weather Service to ISP
fws_predicted_weather	Weather Service	6.6.2.1	Weather Service to EM
fws_weather_archive_data	Weather Service	8.1	Weather Service to ADMS
fypsp_provider_profile_update	Yellow Pages Service Providers	6.5.3	Yellow Pages Service Providers to ISP
fypsp_request_provider_registration	Yellow Pages Service Providers	6.5.3	Yellow Pages Service Providers to ISP
fypsp_transaction_confirmation	Yellow Pages Service Providers	6.5.2	Yellow Pages Service Providers to ISP
fypsp_yellow_pages_data	Yellow Pages Service Providers	6.5.1	Yellow Pages Service Providers to ISP
har_data_for_highways	1.2.4.2	1.2.7.5	TMS to RS
har_data_for_roads	1.2.4.1	1.2.7.1	TMS to RS
har_status_for_highways	1.2.7.5	1.2.4.2	RS to TMS
har_status_for_roads	1.2.7.1	1.2.4.1	RS to TMS
hov_lane_data_input	1.1.1.1	1.1.2.4	RS to TMS
hov_sensor_data	1.1.1.1	1.1.2.2	RS to TMS
hri_blockage	1.6.1.6.1	1.6.2.2	RS to TMS
hri_guidance_for_beacon_message	1.6.1.4.4	1.2.4.3	RS to TMS
hri_guidance_for_dms	1.6.1.4.3	1.2.4.1	RS to TMS
hri_status	1.6.5.1	1.6.3.2	RS to TMS
hri_status	1.6.5.1	1.6.4.2	RS to TMS
hri_status	1.6.5.1	1.6.2.2	RS to TMS
hri_status	1.6.5.1	1.6.1.1	RS to TMS
hri_traffic_data	1.6.1.7.2	1.6.4.1	RS to TMS
hri_traffic_surveillance	1.6.4.2	1.6.1.1	TMS to RS
hri_traffic_surveillance	1.6.4.2	1.6.1.7.2	TMS to RS
incident_alert	1.3.3	5.1.1	TMS to EM
incident_analysis_data	1.1.1.1	1.3.1.1	RS to TMS
incident_command_request	5.3.5	5.1.4	EVS to EM
incident_details	5.1.3	1.3.2.2	EM to TMS
incident_details_request	1.3.2.2	5.1.3	TMS to EM
incident_information	5.1.3	6.5.1	EM to ISP
incident_information_request	6.5.1	5.1.3	ISP to EM
incident_response_clear	1.3.3	5.1.4	TMS to EM

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
incident_response_status	5.1.4	1.3.2.3	EM to TMS
incident_status_data	5.3.5	5.1.4	EVS to EM
incident_status_update	5.3.5	5.3.4	EVS to EM
incident_video_for_emergency_services	1.1.4.1	5.1.4	TMS to EM
incident_video_image	1.3.1.3	1.3.4.2	RS to TMS
incident_video_image_control	1.3.4.2	1.3.1.3	TMS to RS
indicator_control_data_for_highways	1.2.4.2	1.2.7.5	TMS to RS
indicator_control_data_for_roads	1.2.4.1	1.2.7.1	TMS to RS
indicator_control_monitoring_data_for_highways	1.2.4.2	1.2.7.2	TMS to RS
indicator_control_monitoring_data_for_roads	1.2.4.1	1.2.7.2	TMS to RS
indicator_input_data_from_highways	1.2.7.5	1.2.4.2	RS to TMS
indicator_input_data_from_roads	1.2.7.1	1.2.4.1	RS to TMS
indicator_sign_control_data_for_hri	1.2.4.1	1.6.1.1	TMS to RS
information_device_fault_status	1.2.7.2	1.2.8.1	RS to TMS
intersection_blocked	1.6.1.5	1.6.4.2	RS to TMS
intersection_collision_avoidance_data	1.2.7.6	3.1.1	RS to VS
link_and_queue_data	6.6.2.2	6.7.2.1.3	ISP to VS
link_data_for_guidance	1.2.6.1	6.6.2.2	TMS to ISP
local_decision_support	5.1.4	5.3.5	EM to EVS
logged_special_vehicle_route	6.6.2.1	1.3.2.1	ISP to TMS
multimodal_crossing_sensor_data	1.1.1.1	1.1.2.2	RS to TMS
other_services_roadside_request	4.7.2.5	7.4.1.5	RTS to TRMS
other_services_roadside_response	7.4.1.5	4.7.2.5	TRMS to RTS
other_services_vehicle_request	6.2.1.6	7.4.1.5	TRVS to TRMS
other_services_vehicle_response	7.4.1.5	6.2.1.6	TRMS to TRVS
paratransit_personal_schedule	4.2.1.1	6.1.1	TRMS to ISP
paratransit_service_confirmation	6.1.2	4.2.1.1	ISP to TRMS
paratransit_transit_driver_instructions	4.2.1.4	4.2.1.6	TRMS to TRVS
paratransit_transit_vehicle_availability	4.2.1.5	4.2.1.2	TRVS to TRMS
paratransit_trip_request	6.1.1	4.2.1.1	ISP to TRMS
parking_archive_data	1.2.5.5	8.1	PMS to ADMS
parking_archive_request	8.1	1.2.5.5	ADMS to PMS
parking_archive_status	8.1	1.2.5.5	ADMS to PMS
parking_guidance_for_dms	1.2.5.1	1.2.4.2	PMS to TMS
parking_guidance_for_dms	1.2.5.1	1.2.4.1	PMS to TMS
parking_lot_availability	7.2.1.9	1.2.5.2	PMS to ISP
parking_lot_availability	7.2.1.9	6.1.1	PMS to ISP
parking_lot_charge_change_request	1.4.4	7.2.1.7	TMS to PMS
parking_lot_charge_change_response	7.2.1.7	1.4.4	PMS to TMS
parking_lot_charge_details	7.4.2	1.4.2	ISP to TMS
parking_lot_charge_direct_details	7.2.1.7	1.4.2	PMS to TMS
parking_lot_charge_direct_request	1.4.2	7.2.1.7	TMS to PMS
parking_lot_charge_request	1.4.2	7.4.2	TMS to ISP
parking_lot_current_state	1.2.5.1	1.1.2.1	PMS to TMS
parking_lot_data_request	6.1.1	7.2.1.9	ISP to PMS
parking_lot_input_data	1.1.2.2	1.2.5.6	TMS to PMS
parking_lot_payment_confirmation	7.2.7	7.2.1.5	VS to PMS
parking_lot_payment_debited	7.2.1.5	7.2.7	PMS to VS
parking_lot_payment_request	7.2.1.5	7.2.7	PMS to VS
parking_lot_price_data	7.2.1.7	7.4.2	PMS to ISP
parking_lot_price_data_request	7.4.2	7.2.1.7	ISP to PMS
parking_lot_reservation_confirm	7.2.1.9	6.1.2	PMS to ISP
parking_lot_reservation_request	6.1.2	7.2.1.9	ISP to PMS
parking_lot_tag_data_clear	7.2.1.5	7.2.7	PMS to VS
parking_lot_tag_data_collect	7.2.7	7.2.1.1	VS to PMS
parking_lot_tag_data_input	7.2.7	1.1.6	VS to RS
parking_lot_tag_data_needed	1.1.6	7.2.7	RS to VS
parking_lot_tag_data_request	7.2.1.1	7.2.7	PMS to VS
parking_lot_tag_data_update	7.2.1.1	7.2.7	PMS to VS
parking_lot_transit_request	1.2.5.4	4.2.3.2	PMS to TRMS
parking_lot_transit_response	4.2.3.2	1.2.5.4	TRMS to PMS
pedestrian_sensor_data	1.1.1.1	1.1.2.2	RS to TMS
planned_events	1.3.2.2	6.2.1.1	TMS to ISP
planned_events	1.3.2.2	6.6.1	TMS to ISP
planned_events	1.3.2.2	6.6.2.2	TMS to ISP
planned_events	1.3.2.2	6.6.5	TMS to ISP
planned_events	1.3.2.2	1.1.3	TMS to ISP

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
pollution_incident	1.5.2	1.3.2.1	EMMS to TMS
pollution_state_data	1.5.4	1.4.2	EMMS to TMS
pollution_state_data_request	1.4.2	1.5.4	TMS to EMMS
pollution_state_roadside_collection	1.5.6	1.5.2	RS to EMMS
pollution_state_vehicle_acceptance_criteria	1.5.8	1.5.5	EMMS to RS
pollution_state_vehicle_collection	1.5.5	1.5.4	RS to EMMS
pollution_state_vehicle_log_data	1.5.5	1.5.7	RS to EMMS
prediction_data	1.1.3	6.6.2.2	TMS to ISP
prediction_data	1.1.3	6.6.2.2	TMS to TRMS
prediction_data	1.1.3	6.2.1.1	TMS to TRMS
prediction_data	1.1.3	4.1.4	TMS to TRMS
prediction_data	1.1.3	1.2.2.1	TMS to TRMS
prediction_data	1.1.3	6.2.1.1	TMS to ISP
prediction_data	1.1.3	4.1.4	TMS to ISP
prediction_data	1.1.3	1.2.2.2	TMS to ISP
prediction_data	1.1.3	1.2.2.1	TMS to ISP
prediction_data	1.1.3	1.2.2.2	TMS to TRMS
probe_data_for_traffic	7.1.1.6	1.1.2.5	TAS to TMS
processed_cargo_data	3.3.1	3.3.3	CVS to VS
rail_operations_advisories	1.6.2.2	1.6.1.6.1	TMS to RS
rail_operations_device_command	1.6.2.1	1.6.1.7.3	TMS to RS
rail_operations_device_command	1.6.2.1	1.6.1.7.1	TMS to RS
rail_operations_message	1.6.1.6.1	1.6.2.1	RS to TMS
remote_video_image_control	5.1.4	1.3.4.2	EM to TMS
request_roadside_fare_payment	4.7.2.4	7.3.1.4	RTS to TRMS
request_transit_user_roadside_image	7.3.3	4.7.2.1	TRMS to RTS
request_transit_user_vehicle_image	7.3.3	4.6.1	TRMS to TRVS
request_vehicle_fare_payment	4.6.4	7.3.1.4	TRVS to TRMS
resource_deployment_status	1.3.4.5	5.1.4	TMS to EM
resource_request	5.1.4	1.3.4.5	EM to TMS
reversible_lane_video_images	1.3.1.3	1.1.2.7	RS to TMS
ro_requests	1.6.2.1	1.6.5.1	TMS to RS
roadside_archive_control	8.9	1.1.1.4	ADMS to RS
roadside_archive_data	1.1.1.4	8.9	RS to ADMS
secure_area_broadcast_message	4.4.1.1	4.4.1.7	TRMS to RTS
secure_area_monitoring_control	4.4.1.1	4.4.1.7	TRMS to RTS
secure_area_surveillance_information	4.4.1.7	4.4.1.1	RTS to TRMS
selected_parking_lot_control_strategy	1.2.1	1.2.5.1	TMS to PMS
sensor_configuration_data	1.1.4.2	1.1.1.1	TMS to RS
sensor_data_for_distribution	1.1.4.1	1.1.4.6	TMS to ISP
sensor_data_for_reversible_lanes	1.1.1.1	1.1.2.7	RS to TMS
sensor_fault_data	1.1.1.1	1.1.1.2	RS to TMS
special_vehicle_priority_routing	6.6.2.1	1.2.1	ISP to TMS
static_data_for_parking_lots	1.2.6.2	1.2.5.6	TMS to PMS
tada_archive_administration_data	8.3	Archived Data Administrator	ADMS to Archived Data Administrator
tadu_archive_analysis_results	8.6	Archived Data User Systems	ADMS to Archived Data User Systems
tadu_archive_data_product	8.5	Archived Data User Systems	ADMS to Archived Data User Systems
tadu_on_demand_confirmation	8.7	Archived Data User Systems	ADMS to Archived Data User Systems
tbv_change_brake_setting	3.2.3.3	Basic Vehicle	VS to Basic Vehicle
tbv_change_direction	3.2.3.3	Basic Vehicle	VS to Basic Vehicle
tbv_change_throttle_setting	3.2.3.3	Basic Vehicle	VS to Basic Vehicle
tbv_deploy_crash_restraints	3.2.3.3	Basic Vehicle	VS to Basic Vehicle
tbv_har_broadcast_for_highways	1.2.7.5	Basic Vehicle	RS to Basic Vehicle
tbv_har_broadcast_for_roads	1.2.7.1	Basic Vehicle	RS to Basic Vehicle
tbv_steer_left	3.2.3.3	Basic Vehicle	VS to Basic Vehicle
tbv_steer_right	3.2.3.3	Basic Vehicle	VS to Basic Vehicle
tbv_steer_straight	3.2.3.3	Basic Vehicle	VS to Basic Vehicle
tbv_vehicle_security_system_commands	3.3.2	Basic Vehicle	VS to Basic Vehicle
tci_credentials_data_output	2.3.5	CVO Inspector	CVCS to CVO Inspector
tci_inspection_report	2.3.3.2	CVO Inspector	CVCS to CVO Inspector
tci_output_log_report	2.3.5	CVO Inspector	CVCS to CVO Inspector
tci_pull_in_information	2.3.5	CVO Inspector	CVCS to CVO Inspector
tci_safety_data_output	2.3.5	CVO Inspector	CVCS to CVO Inspector
tcm_c_and_m_archive_request	8.1	Construction and Maintenance	ADMS to Construction and Maintenance
tcm_c_and_m_archive_status	8.1	Construction and Maintenance	ADMS to Construction and Maintenance
tcm_fault_data	1.2.8.3	Construction and Maintenance	TMS to Construction and Maintenance
tcm_incident_confirmation	1.3.2.2	Construction and Maintenance	TMS to Construction and Maintenance
tcm_request_incident_change	1.3.2.2	Construction and Maintenance	TMS to Construction and Maintenance

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
tcm_resource_request	1.3.4.5	Construction and Maintenance	TMS to Construction and Maintenance
tcm_sensor_fault_data	1.1.1.2	Construction and Maintenance	TMS to Construction and Maintenance
tcv_lock_tag_data_request	2.6.4	Commercial Vehicle	CVS to Commercial Vehicle
tcvd_border_pull_in_output	2.3.1	Commercial Vehicle Driver	CVCS to Commercial Vehicle Driver
tcvd_clearance_pull_in_output	2.3.1	Commercial Vehicle Driver	CVCS to Commercial Vehicle Driver
tcvd_confirm_data_stored	2.6.3	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_critical_safety_problem	2.4.4	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_data_input_request	2.4.4	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_data_request	2.2.3	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_enrollment_confirmation	2.2.3	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_enrollment_payment_confirmation	2.2.3	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_general_pull_in_output	2.3.1	Commercial Vehicle Driver	CVCS to Commercial Vehicle Driver
tcvd_inspection_results	2.3.3.5	Commercial Vehicle Driver	CVCS to Commercial Vehicle Driver
tcvd_on_board_pull_in_output	2.3.7	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_other_data_request	2.2.3	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_output_data	2.4.4	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_output_tag_data	2.6.3	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_route_data	2.2.3	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_routing_instructions	2.1.5	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvd_safety_pull_in_output	2.3.1	Commercial Vehicle Driver	CVCS to Commercial Vehicle Driver
tcvd_type_input_request	2.4.4	Commercial Vehicle Driver	CVS to Commercial Vehicle Driver
tcvm_confirm_enrollment_data_stored	2.6.1	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_data_input_request	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_driver_route_instructions	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_enrollment_confirmation	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_enrollment_payment_confirmation	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_other_data_request	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_output_tag_data	2.6.1	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_preclearance_results	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_roadside_activity_report	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvm_route_data	2.1.3	Commercial Vehicle Manager	FMS to Commercial Vehicle Manager
tcvoir_carrier_or_vehicle_information	2.5.5	CVO Information Requestor	CVAS to CVO Information Requestor
td_advisory_information	6.2.5	Driver	VS to Driver
td_broadcast_information	6.2.5	Driver	VS to Driver
td_dms_indication_for_highways	1.2.7.5	Driver	RS to Driver
td_dms_indication_for_roads	1.2.7.1	Driver	RS to Driver
td_driving_guidance	6.7.2.3	Driver	VS to Driver
td_guidance_input_request	6.7.2.3	Driver	VS to Driver
td_guidance_map_update_response	6.7.2.3	Driver	VS to Driver
td_guidance_route_details	6.7.2.3	Driver	VS to Driver
td_lane_use_indication_for_highways	1.2.7.5	Driver	RS to Driver
td_lane_use_indication_for_roads	1.2.7.1	Driver	RS to Driver
td_other_services_parking_response	7.2.4	Driver	VS to Driver
td_other_services_toll_response	7.1.4	Driver	VS to Driver
td_parking_lot_payment_confirmed	7.2.2	Driver	PMS to Driver
td_parking_lot_payment_invalid	7.2.2	Driver	PMS to Driver
td_ramp_state_indication	1.2.7.5	Driver	RS to Driver
td_signal_indication	1.2.7.1	Driver	RS to Driver
td_toll_payment_confirmed	7.1.2	Driver	TCS to Driver
td_toll_payment_invalid	7.1.2	Driver	TCS to Driver
tdmv_cv_violation_identity_code	5.4.6	DMV	CVAS to DMV
tdmv_cv_violation_vehicle_license	5.4.6	DMV	CVAS to DMV
tdmv_parking_lot_violation_identity_code	5.4.3	DMV	PMS to DMV
tdmv_parking_lot_violation_vehicle_license	5.4.3	DMV	PMS to DMV
tdmv_toll_violation_identity_code	5.4.2	DMV	TAS to DMV
tdmv_toll_violation_vehicle_license	5.4.2	DMV	TAS to DMV
tdmv_traffic_violation_identity_code	5.4.1	DMV	TMS to DMV
tdmv_traffic_violation_vehicle_license	5.4.1	DMV	TMS to DMV
tea_cv_request_for_information	2.5.5	Enforcement Agency	CVAS to Enforcement Agency
tea_cv_violation_data	5.4.6	Enforcement Agency	CVAS to Enforcement Agency
tea_fare_collection_roadside_violation_data	5.4.7	Enforcement Agency	TRMS to Enforcement Agency
tea_fare_collection_vehicle_violation_data	5.4.5	Enforcement Agency	TRMS to Enforcement Agency
tea_fare_payment_violation_data	5.4.4	Enforcement Agency	TRMS to Enforcement Agency
tea_parking_violation_data	5.4.3	Enforcement Agency	PMS to Enforcement Agency
tea_toll_violation_data	5.4.2	Enforcement Agency	TAS to Enforcement Agency

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
tea_traffic_violation_data	5.4.1	Enforcement Agency	TMS to Enforcement Agency
tep_decision_support	5.3.5	Emergency Personnel	EVS to Emergency Personnel
tep_emergency_dispatch_order	5.3.5	Emergency Personnel	EVS to Emergency Personnel
tep_event_confirmation	1.3.2.2	Event Promoters	TMS to Event Promoters
tep_planned_event_confirmation	5.1.1	Event Promoters	EM to Event Promoters
teso_archive_status	5.6	Emergency System Operator	EM to Emergency System Operator
teso_emergency_action_log_output	5.2	Emergency System Operator	EM to Emergency System Operator
teso_emergency_data_output	5.2	Emergency System Operator	EM to Emergency System Operator
teso_emergency_vehicle_dispatch_failure	5.2	Emergency System Operator	EM to Emergency System Operator
tets_incident_acknowledge	5.1.3	Emergency Telecommunications System	EM to Emergency Telecommunications System
tfi_archive_analysis_payment_request	8.6	Financial Institution	ADMS to Financial Institution
tfi_archive_payment_request	8.5	Financial Institution	ADMS to Financial Institution
tfi_cv_payment_request	7.4.1.1	Financial Institution	CVAS to Financial Institution
tfi_driver_map_payment_request	7.4.1.3	Financial Institution	ISP to Financial Institution
tfi_fare_payment_violator_data	7.3.1.6	Financial Institution	TRMS to Financial Institution
tfi_other_services_payment_request	7.4.1.5	Financial Institution	TRMS to Financial Institution
tfi_parking_lot_payment_violator_data	7.2.1.3	Financial Institution	PMS to Financial Institution
tfi_registration_payment_request	7.4.1.2	Financial Institution	ISP to Financial Institution
tfi_request_charges_payment	7.2.1.6	Financial Institution	PMS to Financial Institution
tfi_request_fare_payment	7.3.1.3	Financial Institution	TRMS to Financial Institution
tfi_request_toll_payment	7.1.1.9	Financial Institution	TAS to Financial Institution
tfi_toll_payment_violator_data	7.1.1.3	Financial Institution	TAS to Financial Institution
tfi_traveler_display_payment_request	7.4.1.4	Financial Institution	ISP to Financial Institution
tfi_traveler_map_payment_request	7.4.1.4	Financial Institution	ISP to Financial Institution
tfi_traveler_other_services_payments_request	7.4.1.6	Financial Institution	ISP to Financial Institution
tfi_traveler_rideshare_payment_request	7.4.1.8	Financial Institution	ISP to Financial Institution
tga_quarterly_reports	2.5.8	Government Administrators	CVAS to Government Administrators
tga_request_fees_updates	2.5.3	Government Administrators	CVAS to Government Administrators
tgrs_government_data_report_input	8.8	Government Reporting Systems	ADMS to Government Reporting Systems
tifd_freight_request	2.7	Intermodal Freight Depot	FMS to Intermodal Freight Depot
tifd_intermodal_archive_request	8.1	Intermodal Freight Depot	ADMS to Intermodal Freight Depot
tifd_intermodal_archive_status	8.1	Intermodal Freight Depot	ADMS to Intermodal Freight Depot
tispo_archive_status	6.1.6	ISP Operator	ISP to ISP Operator
tispo_broadcast_data_parameters_output	6.2.1.5	ISP Operator	ISP to ISP Operator
tispo_route_selection_parameters	6.6.2.5	ISP Operator	ISP to ISP Operator
tispo_trip_planning_parameters	6.1.4	ISP Operator	ISP to ISP Operator
tm_emergency_information	5.1.3	Media	EM to Media
tm_incident_data	1.3.4.3	Media	TMS to Media
tm_incident_information	1.1.4.5	Media	ISP to Media
tm_pollution_data	1.5.2	Media	EMMS to Media
tm_traffic_data	1.1.4.3	Media	TMS to Media
tm_traffic_information	1.1.4.5	Media	ISP to Media
tm_transit_emergency_information	4.4.1.4	Media	TRMS to Media
tm_transit_incident_information	4.4.1.4	Media	TRMS to Media
tm_transit_schedule_deviations_to_media	4.1.6	Media	TRMS to Media
tm_transit_vehicle_deviations	4.1.8	Media	ISP to Media
tm_traveler_information_request	6.5.1	Media	ISP to Media
tmmc_crossing_clear_at_highways	1.2.7.5	Multimodal Crossings	RS to Multimodal Crossings
tmmc_crossing_clear_at_roads	1.2.7.1	Multimodal Crossings	RS to Multimodal Crossings
tmmc_highway_equipment_status	1.2.7.5	Multimodal Crossings	RS to Multimodal Crossings
tmmc_road_equipment_status	1.2.7.1	Multimodal Crossings	RS to Multimodal Crossings
tmmc_stop_alternate_mode_at_highways	1.2.7.5	Multimodal Crossings	RS to Multimodal Crossings
tmmc_stop_alternate_mode_at_roads	1.2.7.1	Multimodal Crossings	RS to Multimodal Crossings
tms_requests	1.6.4.2	1.6.5.1	TMS to RS
tmtsp_air_services_request	6.1.3	Multimodal Transportation Service Provider	ISP to Multimodal Transportation Service Provider
tmtsp_confirm_multimodal_service	6.1.3	Multimodal Transportation Service Provider	ISP to Multimodal Transportation Service Provider
tmtsp_ferry_services_request	6.1.3	Multimodal Transportation Service Provider	ISP to Multimodal Transportation Service Provider
tmtsp_multimodal_archive_request	8.1	Multimodal Transportation Service Provider	ADMS to Multimodal Transportation Service Provider
tmtsp_multimodal_archive_status	8.1	Multimodal Transportation Service Provider	ADMS to Multimodal Transportation Service Provider
tmtsp_rail_services_request	6.1.3	Multimodal Transportation Service Provider	ISP to Multimodal Transportation Service Provider

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
tmtsp_transit_arrival_changes	4.1.2.4	Multimodal Transportation Service Provider	TRMS to Multimodal Transportation Service Provider
tmtsp_transit_arrival_deviations	4.1.7	Multimodal Transportation Service Provider	TRMS to Multimodal Transportation Service Provider
tmtsp_transit_service_data	4.2.3.3	Multimodal Transportation Service Provider	TRMS to Multimodal Transportation Service Provider
tmup_emergency_route_map_request	5.3.7	Map Update Provider	EM to Map Update Provider
tmup_map_archive_request	8.1	Map Update Provider	ADMS to Map Update Provider
tmup_map_archive_status	8.1	Map Update Provider	ADMS to Map Update Provider
tmup_map_static_data	1.2.6.2	Map Update Provider	TMS to Map Update Provider
tmup_request_demand_display_update	1.4.3	Map Update Provider	TMS to Map Update Provider
tmup_request_emergency_display_update	5.5	Map Update Provider	EM to Map Update Provider
tmup_request_incident_display_update	1.3.4.4	Map Update Provider	TMS to Map Update Provider
tmup_request_other_routes_map_update	6.6.3	Map Update Provider	ISP to Map Update Provider
tmup_request_pollution_display_update	1.5.3	Map Update Provider	EMMS to Map Update Provider
tmup_request_route_selection_map_update	6.6.2.4	Map Update Provider	ISP to Map Update Provider
tmup_request_traffic_display_update	1.1.4.4	Map Update Provider	TMS to Map Update Provider
tmup_request_traveler_display_update	6.3.4	Map Update Provider	RTS to Map Update Provider
tmup_request_traveler_personal_display_update	6.8.3.4	Map Update Provider	PIAS to Map Update Provider
tmup_request_traveler_personal_display_update_cost	6.8.3.4	Map Update Provider	PIAS to Map Update Provider
tmup_transit_map_update_request	4.2.3.9	Map Update Provider	TRMS to Map Update Provider
tmup_traveler_map_update_cost_request	6.8.1.4	Map Update Provider	PIAS to Map Update Provider
tmup_traveler_map_update_request	6.8.1.4	Map Update Provider	PIAS to Map Update Provider
tmup_vehicle_map_update_cost_request	6.7.2.4	Map Update Provider	VS to Map Update Provider
tmup_vehicle_map_update_request	6.7.2.4	Map Update Provider	VS to Map Update Provider
To_Intermodal_Freight_Shipper	2.7	Intermodal Freight Shipper	FMS to Intermodal Freight Shipper
To_Other_Vehicle	3.2.3.6	Other Vehicle	VS to Other Vehicle
toa_archive_coordination_data	8.4	Other Archives	ADMS to Other Archives
tocvas_commit_remote_enrollment	2.5.4	Other CVAS	CVAS to Other CVAS
tocvas_data_table	2.5.4	Other CVAS	CVAS to Other CVAS
tocvas_enrollment_confirmation	2.5.4	Other CVAS	CVAS to Other CVAS
tocvas_enrollment_request	2.5.4	Other CVAS	CVAS to Other CVAS
tocvas_provide_data	2.5.4	Other CVAS	CVAS to Other CVAS
tods_other_data_source_archive_request	8.1	Other Data Sources	ADMS to Other Data Sources
tods_other_data_source_archive_status	8.1	Other Data Sources	ADMS to Other Data Sources
toec_emergency_center_identity	5.1.2	Other EM	EM to Other EM
toec_incident_details	5.1.2	Other EM	EM to Other EM
toec_incident_response_coordination	5.1.2	Other EM	EM to Other EM
toec_mayday_emergency_data	5.1.6	Other EM	EM to Other EM
toisp_data_supply	6.6.2.3	Other ISP	ISP to Other ISP
toisp_request_data	6.6.2.3	Other ISP	ISP to Other ISP
toisp_traffic_data_request	6.2.1.1	Other ISP	ISP to Other ISP
toisp_traffic_information	6.2.1.1	Other ISP	ISP to Other ISP
toisp_transit_data_request	6.2.1.3	Other ISP	ISP to Other ISP
toisp_transit_information	6.2.1.3	Other ISP	ISP to Other ISP
toll_archive_data	7.1.1.11	8.1	TAS to ADMS
toll_archive_request	8.1	7.1.1.11	ADMS to TAS
toll_archive_status	8.1	7.1.1.11	ADMS to TAS
toll_bad_payment_check_request	7.1.1.5	7.1.1.3	TCS to TAS
toll_bad_payment_check_response	7.1.1.3	7.1.1.5	TAS to TCS
toll_payment_confirmation	7.1.7	7.1.1.5	VS to TCS
toll_payment_debited	7.1.1.5	7.1.7	TCS to VS
toll_payment_request	7.1.1.5	7.1.7	TCS to VS
toll_payment_violator_data	7.1.1.5	7.1.1.3	TCS to TAS
toll_price_changes_request	1.4.4	7.1.1.7	TMS to TAS
toll_price_changes_response	7.1.1.7	1.4.4	TAS to TMS
toll_price_data	7.1.1.7	7.4.2	TAS to ISP
toll_price_data_for_advanced_toll	7.1.1.7	7.1.1.10	TAS to TCS
toll_price_data_for_vehicle_toll	7.1.1.7	7.1.1.2	TAS to TCS
toll_price_data_request	7.4.2	7.1.1.7	ISP to TAS
toll_price_details	7.4.2	1.4.2	ISP to TMS
toll_price_direct_details	7.1.1.7	1.4.2	TAS to TMS
toll_price_direct_request	1.4.2	7.1.1.7	TMS to TAS
toll_price_request	1.4.2	7.4.2	TMS to ISP
toll_tag_data_clear	7.1.1.5	7.1.7	TCS to VS
toll_tag_data_collect	7.1.7	7.1.1.1	VS to TCS

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
toll_tag_data_input	7.1.7	1.1.6	VS to RS
toll_tag_data_needed	1.1.6	7.1.7	RS to VS
toll_tag_data_request	7.1.1.1	7.1.7	TCS to VS
toll_tag_data_update	7.1.1.1	7.1.7	TCS to VS
toll_violation_information	7.1.3	5.4.2	TCS to TAS
top_parking_coordination_data	1.2.5.2	Other Parking	PMS to Other Parking
totc_data_request	1.1.5	Other TM	TMS to Other TM
totc_identity	1.1.5	Other TM	TMS to Other TM
totc_traffic_control_and_status	1.1.5	Other TM	TMS to Other TM
totc_transfer_data	1.1.5	Other TM	TMS to Other TM
totrm_transit_services	4.2.3.7	Other TRM	TRMS to Other TRM
tp_cross_request_received	1.2.7.1	Pedestrians	RS to Pedestrians
tp_cross_road	1.2.7.1	Pedestrians	RS to Pedestrians
tp_dms_indication	1.2.7.1	Pedestrians	RS to Pedestrians
tpi_debited_commercial_manager_payment	7.5.4	Payment Instrument	FMS to Payment Instrument
tpi_debited_driver_payment_at_vehicle	7.5.1	Payment Instrument	VS to Payment Instrument
tpi_debited_fare_payment_at_roadside	7.3.4	Payment Instrument	RTS to Payment Instrument
tpi_debited_payment_at_parking_lot	7.2.7	Payment Instrument	VS to Payment Instrument
tpi_debited_payment_at_personal_device	7.5.3	Payment Instrument	PIAS to Payment Instrument
tpi_debited_payment_at_toll_plaza	7.1.7	Payment Instrument	VS to Payment Instrument
tpi_debited_payment_on_transit_vehicle	7.3.5	Payment Instrument	TRVS to Payment Instrument
tpi_debited_transit_user_payment_at_roadside	7.5.2	Payment Instrument	RTS to Payment Instrument
tpi_debited_transit_user_payment_at_vehicle	7.5.1	Payment Instrument	VS to Payment Instrument
tpi_debited_traveler_payment_at_roadside	7.5.5	Payment Instrument	RTS to Payment Instrument
tpi_request_fare_payment_at_roadside	7.3.4	Payment Instrument	RTS to Payment Instrument
tpi_request_fare_payment_on_transit_vehicle	7.3.5	Payment Instrument	TRVS to Payment Instrument
tpi_request_payment_at_parking_lot	7.2.7	Payment Instrument	VS to Payment Instrument
tpi_request_payment_at_toll_plaza	7.1.7	Payment Instrument	VS to Payment Instrument
tpo_archive_status	1.2.5.5	Parking Operator	PMS to Parking Operator
tpo_change_lot_state	1.2.5.3	Parking Operator	PMS to Parking Operator
tpo_parking_lot_charge_change_request	7.2.1.7	Parking Operator	PMS to Parking Operator
tpo_request_advanced_parking_payment	7.2.1.8	Parking Operator	PMS to Parking Operator
tpo_transaction_reports	7.2.1.6	Parking Operator	PMS to Parking Operator
traffic_control_device_status	1.2.7.2	1.2.8.1	RS to TMS
traffic_data_distribution_request	1.1.4.6	1.1.4.1	ISP to TMS
traffic_data_for_broadcast_to_kiosks	1.1.4.6	6.3.2	ISP to RTS
traffic_data_for_broadcast_to_personal_devices	1.1.4.6	6.8.3.2	ISP to PIAS
traffic_data_for_distribution	1.1.4.1	1.1.4.6	TMS to ISP
traffic_data_for_emergency_services	1.1.4.1	5.1.4	TMS to EM
traffic_data_for_kiosks	1.1.4.6	6.3.2	ISP to RTS
traffic_data_for_personal_devices	1.1.4.6	6.8.3.2	ISP to PIAS
traffic_data_for_transit	1.1.4.1	4.1.2.4	TMS to TRMS
traffic_data_for_transit	1.1.4.1	4.1.6	TMS to TRMS
traffic_data_for_transit	1.1.4.1	4.2.1.3	TMS to TRMS
traffic_data_kiosk_request	6.3.2	1.1.4.6	RTS to ISP
traffic_data_personal_request	6.8.3.2	1.1.4.6	PIAS to ISP
traffic_image_data	1.3.1.3	1.3.1.1	RS to TMS
traffic_management_archive_data	1.1.4.7	8.1	TMS to ADMS
traffic_management_archive_request	8.1	1.1.4.7	ADMS to TMS
traffic_management_archive_status	8.1	1.1.4.7	ADMS to TMS
traffic_management_request	1.6.1.7.2	1.6.4.2	RS to TMS
traffic_sensor_data	1.1.1.1	1.1.2.2	RS to TMS
traffic_sensor_status	1.1.1.1	1.1.1.2	RS to TMS
traffic_video_image	1.1.1.1	1.1.2.2	RS to TMS
traffic_video_image_for_display	1.1.1.1	1.1.4.2	RS to TMS
transit_archive_data	4.2.4	8.1	TRMS to ADMS
transit_archive_request	8.1	4.2.4	ADMS to TRMS
transit_archive_status	8.1	4.2.4	ADMS to TRMS
transit_conditions_demand_request	1.4.2	4.1.5	TMS to TRMS
transit_coordination_data	4.4.2	5.1.4	TRMS to EM
transit_deviation_data_received	4.1.6	4.1.8	TRMS to ISP
transit_deviation_kiosk_request	6.3.2	4.1.8	RTS to ISP

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
transit_deviations_for_broadcast_to_kiosks	4.1.8	6.3.2	ISP to RTS
transit_deviations_for_broadcast_to_personal_devices	4.1.8	6.8.3.2	ISP to PIAS
transit_deviations_for_kiosks	4.1.8	6.3.2	ISP to RTS
transit_deviations_for_personal_devices	4.1.8	6.8.3.2	ISP to PIAS
transit_deviations_personal_request	6.8.3.2	4.1.8	PIAS to ISP
transit_emergency_data	4.4.1.6	5.1.1	TRMS to EM
transit_emergency_details	4.4.1.2	4.4.1.6	TRVS to TRMS
transit_emergency_information	4.4.1.2	4.4.2	TRVS to TRMS
transit_fare_data	7.3.1.7	7.4.2	TRMS to ISP
transit_fare_data_request	7.4.2	7.3.1.7	ISP to TRMS
transit_fare_details	7.4.2	1.4.2	ISP to TMS
transit_fare_direct_details	7.3.1.7	1.4.2	TRMS to TMS
transit_fare_direct_request	1.4.2	7.3.1.7	TMS to TRMS
transit_fare_request	1.4.2	7.4.2	TMS to ISP
transit_highway_overall_priority	4.1.4	1.2.2.1	TRMS to TMS
transit_highway_priority_given	1.2.2.1	4.1.4	TMS to TRMS
transit_incident_coordination_data	5.1.3	4.4.2	EM to TRMS
transit_incident_data	4.4.1.4	6.2.1.3	TRMS to ISP
transit_incident_details	4.4.1.1	5.1.1	TRMS to EM
transit_operator_emergency_request	4.4.1.2	4.4.1.3	TRVS to TRMS
transit_operator_request_acknowledge	4.4.1.3	4.4.1.2	TRMS to TRVS
transit_probe_data	4.1.5	1.1.2.5	TRMS to TMS
transit_ramp_overall_priority	4.1.4	1.2.3	TRMS to TMS
transit_ramp_priority_given	1.2.3	4.1.4	TMS to TRMS
transit_road_overall_priority	4.1.4	1.2.2.2	TRMS to TMS
transit_road_priority_given	1.2.2.2	4.1.4	TMS to TRMS
transit_roadside_fare_data	7.3.1.7	4.7.2.6	TRMS to RTS
transit_roadside_fare_payment_confirmation	7.3.4	7.3.1.5	RTS to TRMS
transit_roadside_fare_payment_debited	7.3.1.5	7.3.4	TRMS to RTS
transit_roadside_fare_payment_request	7.3.1.5	7.3.4	TRMS to RTS
transit_roadside_passenger_data	4.7.2.7	4.2.3.5	RTS to TRMS
transit_running_data_for_advisory_output	4.1.8	Other ISP	ISP to Other ISP
transit_running_data_for_advisory_output	4.1.8	6.2.1.3	ISP to Other ISP
transit_running_data_for_demand	4.1.5	1.4.2	TRMS to TMS
transit_services_advisories_request	6.2.1.3	4.2.3.3	ISP to TRMS
transit_services_changes_request	1.4.4	4.2.3.4	TMS to TRMS
transit_services_changes_response	4.2.3.4	1.4.4	TRMS to TMS
transit_services_demand_request	1.4.2	4.2.3.3	TMS to TRMS
transit_services_for_advisory_data	4.2.3.3	6.2.1.3	TRMS to ISP
transit_services_for_corrections	4.2.3.6	4.1.2.2	TRMS to TRVS
transit_services_for_demand	4.2.3.3	1.4.2	TRMS to TMS
transit_services_for_eta	4.2.3.6	4.1.2.1	TRMS to TRVS
transit_services_for_eta_request	4.1.2.1	4.2.3.6	TRVS to TRMS
transit_services_for_guidance	4.2.3.3	6.6.4	TRMS to ISP
transit_services_for_kiosks	4.2.3.3	6.3.2	TRMS to RTS
transit_services_for_personal_devices	4.2.3.3	6.8.3.2	TRMS to PIAS
transit_services_for_roadside_fares	4.2.3.6	4.7.2.2	TRMS to RTS
transit_services_for_travelers	4.2.3.3	4.7.1.1	TRMS to RTS
transit_services_for_vehicle_fares	4.2.3.6	4.6.2	TRMS to TRVS
transit_services_guidance_request	6.6.4	4.2.3.3	ISP to TRMS
transit_services_kiosk_request	6.3.2	4.2.3.3	RTS to TRMS
transit_services_personal_request	6.8.3.2	4.2.3.3	PIAS to TRMS
transit_services_travelers_request	4.7.1.1	4.2.3.3	RTS to TRMS
transit_user_advanced_payment_on_vehicle	4.6.5	7.5.1	TRVS to VS
transit_user_advisory_information	6.2.2	6.2.3	VS to TRVS
transit_user_advisory_information_request	6.2.3	6.2.2	TRVS to VS
transit_user_roadside_image	4.7.2.1	7.3.3	RTS to TRMS
transit_user_vehicle_credit_identity	7.5.1	4.6.5	VS to TRVS
transit_user_vehicle_image	4.6.1	7.3.3	TRVS to TRMS
transit_vehicle_advanced_payment_request	4.6.5	4.6.8	TRVS to TRMS

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
transit_vehicle_advanced_payment_response	4.6.8	4.6.5	TRMS to TRVS
transit_vehicle_advisory_eta	4.1.6	6.2.3	TRMS to TRVS
transit_vehicle_arrival_conditions	4.1.2.2	4.1.2.4	TRVS to TRMS
transit_vehicle_arrival_time	4.1.5	4.7.1.1	TRMS to RTS
transit_vehicle_collected_maintenance_data	4.1.9	4.1.6	TRVS to TRMS
transit_vehicle_collected_maintenance_data_request	4.1.6	4.1.9	TRMS to TRVS
transit_vehicle_collected_trip_data	4.1.1	4.1.6	TRVS to TRMS
transit_vehicle_deviations_details	4.1.6	4.1.8	TRMS to ISP
transit_vehicle_deviations_details_request	4.1.8	4.1.6	ISP to TRMS
transit_vehicle_deviations_from_schedule	4.1.2.1	4.1.4	TRVS to TRMS
transit_vehicle_eta	4.1.2.1	4.1.6	TRVS to TRMS
transit_vehicle_fare_data	7.3.1.7	4.6.6	TRMS to TRVS
transit_vehicle_fare_payment_confirmation	7.3.5	7.3.1.5	TRVS to TRMS
transit_vehicle_fare_payment_debited	7.3.1.5	7.3.5	TRMS to TRVS
transit_vehicle_fare_payment_request	7.3.1.5	7.3.5	TRMS to TRVS
transit_vehicle_location	4.1.3	4.6.2	TRVS to TRMS
transit_vehicle_location	4.1.3	4.6.5	TRVS to TRMS
transit_vehicle_location	4.1.3	4.2.1.2	TRVS to TRMS
transit_vehicle_location	4.1.3	6.2.1.6	TRVS to TRMS
transit_vehicle_location	4.1.3	4.4.1.2	TRVS to TRMS
transit_vehicle_location_for_deviation	4.1.3	4.1.4	TRVS to TRMS
transit_vehicle_location_for_store	4.1.3	4.1.6	TRVS to TRMS
transit_vehicle_passenger_data	4.6.7	4.2.3.5	TRVS to TRMS
transit_vehicle_roadway_preemptions	4.1.2.5	1.2.7.3	TRVS to RS
transit_vehicle_schedule_deviation	4.1.2.1	4.1.6	TRVS to TRMS
transit_vehicle_user_data	4.1.6	4.7.1.2	TRMS to RTS
traveler_archive_data	6.1.6	8.1	ISP to ADMS
traveler_archive_request	8.1	6.1.6	ADMS to ISP
traveler_archive_status	8.1	6.1.6	ADMS to ISP
traveler_current_condition_request	6.3.1	6.1.1	RTS to ISP
traveler_guidance_route	6.6.1	6.8.1.1.2	ISP to PIAS
traveler_map_update_payment_request	6.8.1.4	7.4.1.4	PIAS to ISP
traveler_map_update_payment_response	7.4.1.4	6.8.1.4	ISP to PIAS
traveler_payment_confirmation	6.1.2	6.3.2	ISP to RTS
traveler_payment_information	6.3.1	6.1.2	RTS to ISP
traveler_payment_information	6.3.1	6.5.2	RTS to ISP
traveler_personal_current_condition_request	6.8.3.1	6.1.1	PIAS to ISP
traveler_personal_display_update_payment_request	6.8.3.4	7.4.1.4	PIAS to ISP
traveler_personal_display_update_payment_response	7.4.1.4	6.8.3.4	ISP to PIAS
traveler_personal_payment_confirmation	6.1.2	6.8.3.2	ISP to PIAS
traveler_personal_payment_information	6.8.3.1	6.1.2	PIAS to ISP
traveler_personal_payment_information	6.8.3.1	6.5.2	PIAS to ISP
traveler_personal_transaction_confirmation	6.1.2	6.8.3.2	ISP to PIAS
traveler_personal_transaction_request	6.8.3.1	6.5.2	PIAS to ISP
traveler_personal_trip_confirmation	6.8.3.1	6.1.2	PIAS to ISP
traveler_personal_trip_information	6.1.1	6.8.3.2	ISP to PIAS
traveler_personal_trip_request	6.8.3.1	6.1.1	PIAS to ISP
traveler_personal_yellow_pages_data	6.5.2	6.8.3.2	ISP to PIAS
traveler_personal_yellow_pages_information_request	6.8.3.1	6.5.2	PIAS to ISP
traveler_profile_from_vehicle	6.2.2	6.2.1.2	VS to ISP
traveler_route_accepted	6.8.1.1.1	6.6.1	PIAS to ISP
traveler_route_request	6.8.1.1.2	6.6.1	PIAS to ISP
traveler_traffic_profile	6.8.3.1	1.1.4.6	PIAS to ISP
traveler_transaction_confirmation	6.1.2	6.3.2	ISP to RTS
traveler_transaction_request	6.3.1	6.5.2	RTS to ISP
traveler_transit_profile	6.8.3.1	4.1.8	PIAS to ISP
traveler_trip_confirmation	6.3.1	6.1.2	RTS to ISP
traveler_trip_information	6.1.1	6.3.2	ISP to RTS
traveler_trip_request	6.3.1	6.1.1	RTS to ISP

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
traveler_yellow_pages_data	6.5.2	6.3.2	ISP to RTS
traveler_yellow_pages_information_request	6.3.1	6.5.2	RTS to ISP
tro_equipment_status	1.6.2.1	Rail Operations	TMS to Rail Operations
tro_event_schedules	1.6.2.1	Rail Operations	TMS to Rail Operations
tro_incident_notification	1.6.2.1	Rail Operations	TMS to Rail Operations
tt_emergency_message	6.8.1.5	Traveler	PIAS to Traveler
tt_emergency_response	4.4.1.8	Traveler	RTS to Traveler
tt_extra_trip_data_request	6.3.3	Traveler	RTS to Traveler
tt_guidance	6.8.1.2	Traveler	PIAS to Traveler
tt_guidance_input_request	6.8.1.2	Traveler	PIAS to Traveler
tt_guidance_map_update_response	6.8.1.2	Traveler	PIAS to Traveler
tt_guidance_route_details	6.8.1.2	Traveler	PIAS to Traveler
tt_personal_extra_trip_data_request	6.8.3.3	Traveler	PIAS to Traveler
tt_personal_trip_planning_responses	6.8.3.3	Traveler	PIAS to Traveler
tt_trip_planning_responses	6.3.3	Traveler	RTS to Traveler
tta_archive_status	7.1.1.11	Toll Administrator	TAS to Toll Administrator
tta_request_advanced_toll	7.1.1.8	Toll Administrator	TAS to Toll Administrator
tta_toll_price_changes_request	7.1.1.7	Toll Administrator	TAS to Toll Administrator
tta_transaction_reports	7.1.1.9	Toll Administrator	TAS to Toll Administrator
ttd_batch_mode_data_transfer_status	4.6.4	Transit Driver	TRVS to Transit Driver
ttd_corrective_instructions	4.1.2.3	Transit Driver	TRVS to Transit Driver
ttd_emergency_information	4.4.1.5	Transit Driver	TRVS to Transit Driver
ttd_paratransit_information	4.2.1.6	Transit Driver	TRVS to Transit Driver
ttd_request_fare_transaction_mode_set_up	4.6.4	Transit Driver	TRVS to Transit Driver
ttd_route_assignements	4.5.5	Transit Driver	TRMS to Transit Driver
ttd_transit_vehicle_schedule_deviations	4.1.2.3	Transit Driver	TRVS to Transit Driver
ttfm_coordination_request	4.4.2	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_parameters	4.2.3.4	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_paratransit_service	4.2.1.4	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_passenger_loading_error	4.2.3.5	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_proposed_corrections	4.1.4	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_response_parameter_output	4.4.3	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_technician_information	4.3.3	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_transaction_reports	7.3.1.3	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_transit_driver_information	4.5.7	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_transit_services_output	4.2.3.4	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_transit_vehicle_data	4.1.5	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttfm_transit_vehicle_maintenance_information	4.3.5	Transit Fleet Manager	TRMS to Transit Fleet Manager
ttmp_work_schedule	4.3.3	Transit Maintenance Personnel	TRMS to Transit Maintenance Personnel
tto_transaction_reports	7.1.1.4	Toll Operator	TCS to Toll Operator
ttop_archive_status	1.1.4.7	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_current_indicator_faults	1.2.8.4	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_current_sensor_faults	1.1.1.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_defined_incident_responses_data	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_demand_data	1.4.1	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_demand_forecast_data	1.4.1	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_demand_forecast_result	1.4.1	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_demand_policy_activation_result	1.4.1	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_demand_policy_information	1.4.1	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_incident_information_display	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_incident_video_image_output	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_pollution_data_display	1.5.1	Traffic Operations Personnel	EMMS to Traffic Operations Personnel
ttop_possible_defined_response_output	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_possible_incidents_data	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_resource_response	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_traffic_control_information_display	1.1.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_undefined_response_details	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_video_image_output	1.1.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_weather_information	1.1.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttop_wrong_way_detection	1.3.4.2	Traffic Operations Personnel	TMS to Traffic Operations Personnel
ttso_archive_status	4.2.4	Transit System Operators	TRMS to Transit System Operators
ttso_emergency_request	4.4.1.3	Transit System Operators	TRMS to Transit System Operators
ttso_media_parameters	4.4.1.3	Transit System Operators	TRMS to Transit System Operators
ttso_potential_incidents_alarm	4.4.1.3	Transit System Operators	TRMS to Transit System Operators
ttso_potential_security_problem	4.4.1.3	Transit System Operators	TRMS to Transit System Operators
ttso_transaction_reports	7.3.1.3	Transit System Operators	TRMS to Transit System Operators

Appendix J: Logical Data Flows Traced to Physical Channels

Logical Architecture			Physical Architecture
Data Flow Name	**Source Node**	**Sink Node**	**Physical Channel**
ttso_transit_fare_output	7.3.1.7	Transit System Operators	TRMS to Transit System Operators
ttso_video_image_data	4.4.1.3	Transit System Operators	TRMS to Transit System Operators
ttu_advisory_information	6.2.3	Transit User	TRVS to Transit User
ttu_other_services_roadside_confirmed	4.7.2.5	Transit User	RTS to Transit User
ttu_other_services_vehicle_confirmed	6.2.1.6	Transit User	TRVS to Transit User
ttu_roadside_access_message	4.7.2.4	Transit User	RTS to Transit User
ttu_roadside_payment_confirmed	4.7.2.5	Transit User	RTS to Transit User
ttu_transit_information	4.7.1.1	Transit User	RTS to Transit User
ttu_transit_vehicle_information	4.7.1.2	Transit User	RTS to Transit User
ttu_traveler_information	6.2.3	Transit User	TRVS to Transit User
ttu_vehicle_access_message	4.6.4	Transit User	TRVS to Transit User
ttu_vehicle_payment_confirmed	4.6.5	Transit User	TRVS to Transit User
twe_hri_status	1.6.3.1	Wayside Equipment	RS to Wayside Equipment
twe_stop_highway_indication	1.6.3.1	Wayside Equipment	RS to Wayside Equipment
twe_stop_train_indication	1.6.3.1	Wayside Equipment	RS to Wayside Equipment
tws_weather_archive_request	8.1	Weather Service	ADMS to Weather Service
tws_weather_archive_status	8.1	Weather Service	ADMS to Weather Service
typsp_provider_update_confirm	6.5.3	Yellow Pages Service Providers	ISP to Yellow Pages Service Providers
typsp_transaction_request	6.5.2	Yellow Pages Service Providers	ISP to Yellow Pages Service Providers
typsp_yellow_pages_info_request	6.5.1	Yellow Pages Service Providers	ISP to Yellow Pages Service Providers
vehicle_guidance_probe_data	6.7.2.1.2	6.6.2.6	VS to ISP
vehicle_guidance_route	6.6.2.1	6.7.2.1.2	ISP to VS
vehicle_guidance_route_accepted	6.7.2.1.1	6.6.2.1	VS to ISP
vehicle_location_for_cv	6.7.2.2	2.4.5	VS to CVS
vehicle_location_for_emergency_services	6.7.2.2	5.3.3	VS to EVS
vehicle_location_for_transit	6.7.2.2	4.1.3	VS to TRVS
vehicle_pollution_alert	1.5.5	5.4.1	RS to TMS
vehicle_pollution_message_for_highways	1.5.5	1.2.4.2	RS to TMS
vehicle_pollution_message_for_roads	1.5.5	1.2.4.1	RS to TMS
vehicle_route_request	6.7.2.1.2	6.6.2.1	VS to ISP
vehicle_sign_data	1.2.4.3	1.2.7.4	TMS to RS
vehicle_signage_data	1.2.7.4	6.2.2	RS to VS
vehicle_smart_probe_data	3.1.3	1.1.7	VS to RS
vehicle_smart_probe_data_for_storage	1.1.2.6	1.1.2.1	RS to TMS
vehicle_smart_probe_data_output	1.2.7.7	6.2.2	RS to VS
vehicle_status_details_for_emissions	3.1.3	1.5.5	VS to RS
vehicle_tag_data	1.1.6	1.1.2.5	RS to TMS
vehicle_toll_probe_data	7.1.1.6	6.6.2.6	TAS to ISP
wide_area_pollution_data	1.5.2	1.1.2.1	EMMS to TMS
wrong_way_vehicle_detection	1.1.2.7	1.3.4.2	TMS to EM
wrong_way_vehicle_detection	1.1.2.7	5.1.4	TMS to EM
yellow_pages_advisory_data	6.2.6	6.2.2	ISP to VS
yellow_pages_advisory_requests	6.2.2	6.2.6	VS to ISP

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
ADMS to Archived Data Administrator		
8.3	tada_archive_administration_data	Archived Data Administrator
ADMS to Archived Data User Systems		
8.6	tadu_archive_analysis_results	Archived Data User Systems
8.5	tadu_archive_data_product	Archived Data User Systems
8.7	tadu_on_demand_confirmation	Archived Data User Systems
ADMS to Construction and Maintenance		
8.1	tcm_c_and_m_archive_request	Construction and Maintenance
8.1	tcm_c_and_m_archive_status	Construction and Maintenance
ADMS to CVAS		
8.1	cv_archive_request	2.5.9
8.1	cv_archive_status	2.5.9
ADMS to EM		
8.1	em_archive_request	5.6
8.1	em_archive_status	5.6
ADMS to EMMS		
8.1	emissions_archive_request	1.5.9
8.1	emissions_archive_status	1.5.9
ADMS to Financial Institution		
8.6	tfi_archive_analysis_payment_request	Financial Institution
8.5	tfi_archive_payment_request	Financial Institution
ADMS to Government Reporting Systems		
8.8	tgrs_government_data_report_input	Government Reporting Systems
ADMS to Intermodal Freight Depot		
8.1	tifd_intermodal_archive_request	Intermodal Freight Depot
8.1	tifd_intermodal_archive_status	Intermodal Freight Depot
ADMS to ISP		
8.1	traveler_archive_request	6.1.6
8.1	traveler_archive_status	6.1.6
ADMS to Map Update Provider		
8.1	tmup_map_archive_request	Map Update Provider
8.1	tmup_map_archive_status	Map Update Provider
ADMS to Multimodal Transportation Service Provider		
8.1	tmtsp_multimodal_archive_request	Multimodal Transportation Service
8.1	tmtsp_multimodal_archive_status	Multimodal Transportation Service
ADMS to Other Archives		
8.4	toa_archive_coordination_data	Other Archives
ADMS to Other Data Sources		
8.1	tods_other_data_source_archive_request	Other Data Sources
8.1	tods_other_data_source_archive_status	Other Data Sources
ADMS to PMS		
8.1	parking_archive_request	1.2.5.5
8.1	parking_archive_status	1.2.5.5
ADMS to RS		
8.9	roadside_archive_control	1.1.1.4
ADMS to TAS		
8.1	toll_archive_request	7.1.1.11
8.1	toll_archive_status	7.1.1.11
ADMS to TMS		
8.1	traffic_management_archive_request	1.1.4.7
8.1	traffic_management_archive_status	1.1.4.7
ADMS to TRMS		
8.1	transit_archive_request	4.2.4
8.1	transit_archive_status	4.2.4
ADMS to Weather Service		
8.1	tws_weather_archive_request	Weather Service
8.1	tws_weather_archive_status	Weather Service
Archived Data Administrator to ADMS		
Archived Data Administrator	fada_archive_administration_requests	8.3
Archived Data User Systems to ADMS		
Archived Data User Systems	fadu_archive_analysis_request	8.6
Archived Data User Systems	fadu_archive_data_product_request	8.5

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
Archived Data User Systems	fadu_on_demand_archive_request	8.7
Basic Vehicle to VS		
Basic Vehicle	fbv_brake_servo_response	3.2.3.3
Basic Vehicle	fbv_crash_sensor_data	3.3.3
Basic Vehicle	fbv_diagnostics_data	3.1.3
Basic Vehicle	fbv_driver_safety_status	3.1.3
Basic Vehicle	fbv_steering_servo_response	3.2.3.3
Basic Vehicle	fbv_throttle_servo_response	3.2.3.3
Basic Vehicle	fbv_vehicle_attitude_data	3.1.3
Basic Vehicle	fbv_vehicle_condition	3.2.4
Basic Vehicle	fbv_vehicle_headway	3.2.3.5
Basic Vehicle	fbv_vehicle_identity	7.1.4
Basic Vehicle	fbv_vehicle_lane_position	3.2.3.5
Basic Vehicle	fbv_vehicle_motion_data	3.1.3
Basic Vehicle	fbv_vehicle_on_ahs_lane	3.2.3.5
Basic Vehicle	fbv_vehicle_proximity_data	3.1.3
Basic Vehicle	fbv_vehicle_safety_status	3.1.3
Basic Vehicle	fbv_vehicle_security_status	3.1.3
Basic Vehicle	fbv_vehicle_speed	3.2.3.5
Commercial Vehicle Driver to CVS		
Commercial Vehicle Driver	fcvd_activity_request	2.2.3
Commercial Vehicle Driver	fcvd_carrier_number	2.6.3
Commercial Vehicle Driver	fcvd_driver_data_input	2.4.4
Commercial Vehicle Driver	fcvd_driver_general_message	2.4.4
Commercial Vehicle Driver	fcvd_driver_input_type	2.4.4
Commercial Vehicle Driver	fcvd_driver_number	2.6.3
Commercial Vehicle Driver	fcvd_enrollment_payment_request	2.2.3
Commercial Vehicle Driver	fcvd_enrollment_request	2.2.3
Commercial Vehicle Driver	fcvd_other_data_input	2.2.3
Commercial Vehicle Driver	fcvd_request_routing_instructions	2.1.5
Commercial Vehicle Driver	fcvd_request_tag_data_output	2.6.3
Commercial Vehicle Driver	fcvd_route_data	2.2.3
Commercial Vehicle Driver	fcvd_route_request	2.2.3
Commercial Vehicle Driver	fcvd_trip_identity	2.6.3
Commercial Vehicle Driver	fcvd_vehicle_number	2.6.3
Commercial Vehicle Manager to FMS		
Commercial Vehicle Manager	fcvm_carrier_number	2.6.1
Commercial Vehicle Manager	fcvm_driver_number	2.6.1
Commercial Vehicle Manager	fcvm_enrollment_payment_request	2.1.3
Commercial Vehicle Manager	fcvm_enrollment_request	2.1.3
Commercial Vehicle Manager	fcvm_other_data_input	2.1.3
Commercial Vehicle Manager	fcvm_preclearance_data	2.1.3
Commercial Vehicle Manager	fcvm_request_driver_route_instructions	2.1.3
Commercial Vehicle Manager	fcvm_request_on_board_vehicle_data	2.1.3
Commercial Vehicle Manager	fcvm_request_tag_data_output	2.6.1
Commercial Vehicle Manager	fcvm_roadside_activity_report_request	2.1.3
Commercial Vehicle Manager	fcvm_route_data	2.1.3
Commercial Vehicle Manager	fcvm_route_function_request	2.1.3
Commercial Vehicle Manager	fcvm_trip_identity	2.6.1
Commercial Vehicle Manager	fcvm_update_driver_route_instructions	2.1.3
Commercial Vehicle Manager	fcvm_vehicle_number	2.6.1
Commercial Vehicle to CVCS		
Commercial Vehicle	fcv_vehicle_characteristics	2.3.4
Commercial Vehicle to CVS		
Commercial Vehicle	fcv_brake_condition	2.4.2
Commercial Vehicle	fcv_cargo_data	3.3.1
Commercial Vehicle	fcv_cargo_safety_status	2.4.2
Commercial Vehicle	fcv_distance_travelled	2.4.2
Commercial Vehicle	fcv_driver_safety_status	2.4.2
Commercial Vehicle	fcv_driver_status	2.4.2
Commercial Vehicle	fcv_lock_tag_data	2.6.4
Commercial Vehicle	fcv_vehicle_safety_status	2.4.2
Commercial Vehicle	fcv_weight	2.4.2
Construction and Maintenance to ADMS		
Construction and Maintenance	fcm_c_and_m_archive_data	8.1
Construction and Maintenance to TMS		

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
Construction and Maintenance	fcm_fault_clearance	1.2.8.3
Construction and Maintenance	fcm_incident_information	1.3.2.1
Construction and Maintenance	fcm_resource_response	1.3.4.5
Construction and Maintenance	fcm_sensor_fault_data	1.1.1.2
CVAS to ADMS		
2.5.9	cv_archive_data	8.1
CVAS to CVCS		
2.5.6	cv_border_database_update	2.3.8
2.5.6	cv_credentials_database_update	2.3.2.1
2.5.6	cv_credentials_information_response	2.3.2.1
2.5.6	cv_safety_database_update	2.3.3.3
2.5.6	cv_safety_information_response	2.3.3.3
CVAS to CVO Information Requestor		
2.5.5	tcvoir_carrier_or_vehicle_information	CVO Information Requestor
CVAS to DMV		
5.4.6	tdmv_cv_violation_identity_code	DMV
5.4.6	tdmv_cv_violation_vehicle_license	DMV
CVAS to Enforcement Agency		
2.5.5	tea_cv_request_for_information	Enforcement Agency
5.4.6	tea_cv_violation_data	Enforcement Agency
CVAS to Financial Institution		
7.4.1.1	tfi_cv_payment_request	Financial Institution
CVAS to FMS		
2.5.1	cf_enrollment_information	2.1.1
2.5.1	cf_enrollment_payment_confirmation	2.1.1
2.5.8	cf_periodic_activity_report	2.1.1
2.5.8	cf_roadside_activity_report	2.1.1
2.5.1	cv_enrollment_information	2.2.1
2.5.1	cv_enrollment_payment_confirmation	2.2.1
CVAS to Government Administrators		
2.5.8	tga_quarterly_reports	Government Administrators
2.5.3	tga_request_fees_updates	Government Administrators
CVAS to Other CVAS		
2.5.4	tocvas_commit_remote_enrollment	Other CVAS
2.5.4	tocvas_data_table	Other CVAS
2.5.4	tocvas_enrollment_confirmation	Other CVAS
2.5.4	tocvas_enrollment_request	Other CVAS
2.5.4	tocvas_provide_data	Other CVAS
CVCS to Commercial Vehicle Driver		
2.3.1	tcvd_border_pull_in_output	Commercial Vehicle Driver
2.3.1	tcvd_clearance_pull_in_output	Commercial Vehicle Driver
2.3.1	tcvd_general_pull_in_output	Commercial Vehicle Driver
2.3.3.5	tcvd_inspection_results	Commercial Vehicle Driver
2.3.1	tcvd_safety_pull_in_output	Commercial Vehicle Driver
CVCS to CVAS		
2.3.6	cv_border_daily_log	2.5.8
2.3.2.1	cv_credentials_information_request	2.5.6
2.3.6	cv_roadside_daily_log	2.5.8
2.3.3.3	cv_safety_information_request	2.5.6
2.3.3.5	cv_update_safety_problems_list	2.5.8
CVCS to CVO Inspector		
2.3.5	tci_credentials_data_output	CVO Inspector
2.3.3.2	tci_inspection_report	CVO Inspector
2.3.5	tci_output_log_report	CVO Inspector
2.3.5	tci_pull_in_information	CVO Inspector
2.3.5	tci_safety_data_output	CVO Inspector
CVCS to CVS		
2.3.3.1	cv_inspection_data_output	2.4.1
2.3.8	cv_on_board_border_record	2.6.2
2.3.1	cv_on_board_pull_in_output	2.3.7
2.3.2.2	cv_on_board_screening_record	2.6.2
2.3.4	cv_request_electronic_clearance_data	2.6.2
2.3.3.1	cv_request_on_board_data	2.4.1
CVO Information Requestor to CVAS		
CVO Information Requestor	fcvoir_request_for_information	2.5.5
CVO Inspector to CVCS		

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
CVO Inspector	fci_credentials_data_request	2.3.5
CVO Inspector	fci_inspection_data_input	2.3.3.2
CVO Inspector	fci_pull_in_action	2.3.5
CVO Inspector	fci_request_log_report	2.3.5
CVO Inspector	fci_safety_data_request	2.3.5
CVO Inspector	fci_start_inspection	2.3.3.2
CVS to Commercial Vehicle		
2.6.4	tcv_lock_tag_data_request	Commercial Vehicle
CVS to Commercial Vehicle Driver		
2.6.3	tcvd_confirm_data_stored	Commercial Vehicle Driver
2.4.4	tcvd_critical_safety_problem	Commercial Vehicle Driver
2.4.4	tcvd_data_input_request	Commercial Vehicle Driver
2.2.3	tcvd_data_request	Commercial Vehicle Driver
2.2.3	tcvd_enrollment_confirmation	Commercial Vehicle Driver
2.2.3	tcvd_enrollment_payment_confirmation	Commercial Vehicle Driver
2.3.7	tcvd_on_board_pull_in_output	Commercial Vehicle Driver
2.2.3	tcvd_other_data_request	Commercial Vehicle Driver
2.4.4	tcvd_output_data	Commercial Vehicle Driver
2.6.3	tcvd_output_tag_data	Commercial Vehicle Driver
2.2.3	tcvd_route_data	Commercial Vehicle Driver
2.1.5	tcvd_routing_instructions	Commercial Vehicle Driver
2.4.4	tcvd_type_input_request	Commercial Vehicle Driver
CVS to CVCS		
2.6.2	cv_electronic_clearance_data	2.3.4
2.4.1	cv_on_board_data	2.3.3.1
CVS to FMS		
2.1.5	cf_driver_route_instructions_request	2.1.6
2.4.5	cf_on_board_vehicle_data	2.1.4
2.6.5	cf_tag_data_store_output	2.6.1
2.2.3	cv_driver_enrollment_payment_request	2.2.1
2.2.3	cv_driver_enrollment_request	2.2.1
2.2.3	cv_driver_route_request	2.2.1
2.2.3	cv_driver_storage_request	2.2.1
2.2.2	cv_static_route_data	2.2.1
CVS to VS		
2.2.3	cv_driver_enrollment_cost	7.5.1
3.3.1	processed_cargo_data	3.3.3
DMV to CVAS		
DMV	fdmv_cv_violation_state_identity	5.4.6
DMV	fdmv_cv_violation_vehicle_registration	5.4.6
DMV to PMS		
DMV	fdmv_parking_lot_violation_state_identity	5.4.3
DMV	fdmv_parking_lot_violation_vehicle_registration	5.4.3
DMV to TAS		
DMV	fdmv_toll_violation_state_identity	5.4.2
DMV	fdmv_toll_violation_vehicle_registration	5.4.2
DMV to TMS		
DMV	fdmv_traffic_violation_state_identity	5.4.1
DMV	fdmv_traffic_violation_vehicle_registration	5.4.1
Driver to VS		
Driver	fd_activate_vehicle_control	6.2.5
Driver	fd_emergency_request	6.7.1.1
Driver	fd_guidance_data	6.7.2.3
Driver	fd_guidance_map_update_request	6.7.2.3
Driver	fd_guidance_request	6.7.2.3
Driver	fd_guidance_route_accepted	6.7.2.3
Driver	fd_other_services_parking_request	7.2.4
Driver	fd_other_services_toll_request	7.1.4
Driver	fd_request_advisory_information	6.2.5
EM to ADMS		
5.6	em_archive_data	8.1
EM to Emergency System Operator		
5.6	teso_archive_status	Emergency System Operator
5.2	teso_emergency_action_log_output	Emergency System Operator
5.2	teso_emergency_data_output	Emergency System Operator
5.2	teso_emergency_vehicle_dispatch_failure	Emergency System Operator

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
EM to Emergency Telecommunications System		
5.1.3	tets_incident_acknowledge	Emergency Telecommunications
EM to Event Promoters		
5.1.1	tep_planned_event_confirmation	Event Promoters
EM to EVS		
5.3.2	emergency_vehicle_dispatch_request	5.3.5
5.3.2	emergency_vehicle_suggested_route	5.3.5
5.1.4	local_decision_support	5.3.5
EM to FMS		
5.1.4	cf_hazmat_request	2.1.1
EM to ISP		
5.1.3	incident_information	6.5.1
EM to Map Update Provider		
5.3.7	tmup_emergency_route_map_request	Map Update Provider
5.5	tmup_request_emergency_display_update	Map Update Provider
EM to Media		
5.1.3	tm_emergency_information	Media
EM to Other EM		
5.1.2	toec_emergency_center_identity	Other EM
5.1.2	toec_incident_details	Other EM
5.1.2	toec_incident_response_coordination	Other EM
5.1.6	toec_mayday_emergency_data	Other EM
EM to PIAS		
5.1.3	emergency_request_personal_traveler_acknowledge	6.8.2.2
EM to RTS		
5.1.3	emergency_request_traveler_acknowledge	4.4.1.8
EM to TMS		
5.3.2	emergency_traffic_control_request	1.2.1
5.1.3	incident_details	1.3.2.2
5.1.4	incident_response_status	1.3.2.3
5.1.4	remote_video_image_control	1.3.4.2
5.1.4	resource_request	1.3.4.5
EM to TRMS		
5.1.3	transit_incident_coordination_data	4.4.2
EM to VS		
5.1.3	emergency_data_request	3.3.2
5.1.3	emergency_request_driver_acknowledge	6.7.1.2
5.1.3	emergency_request_vehicle_acknowledge	3.3.2
Emergency Personnel to EVS		
Emergency Personnel	fep_emergency_dispatch_acknowledge	5.3.5
Emergency Personnel	fep_incident_command_request	5.3.5
Emergency Personnel	fep_incident_status	5.3.5
Emergency System Operator to EM		
Emergency System Operator	feso_archive_commands	5.6
Emergency System Operator	feso_emergency_action_log_request	5.2
Emergency System Operator	feso_emergency_allocation_override	5.2
Emergency System Operator	feso_emergency_data_input	5.2
Emergency System Operator	feso_emergency_data_output_request	5.2
Emergency System Operator	feso_emergency_display_update_request	5.2
Emergency Telecommunications System to EM		
Emergency Telecommunications	fets_caller_information	5.1.1
Emergency Telecommunications	fets_incident_information	5.1.1
EMMS to ADMS		
1.5.9	emissions_archive_data	8.1
EMMS to ISP		
1.5.2	current_traffic_pollution_data	1.1.4.6
EMMS to Map Update Provider		
1.5.3	tmup_request_pollution_display_update	Map Update Provider
EMMS to Media		
1.5.2	tm_pollution_data	Media
EMMS to RS		
1.5.8	pollution_state_vehicle_acceptance_criteria	1.5.5
EMMS to TMS		
1.5.2	pollution_incident	1.3.2.1
1.5.4	pollution_state_data	1.4.2
1.5.2	wide_area_pollution_data	1.1.2.1

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
EMMS to Traffic Operations Personnel		
1.5.1	ttop_pollution_data_display	Traffic Operations Personnel
Enforcement Agency to CVAS		
Enforcement Agency	fea_cv_enforcement_agency_response	2.5.5
Environment to EMMS		
Environment	fe_area_pollutant_levels	1.5.2
Environment to RS		
Environment	fe_roadside_pollutant_levels	1.5.6
Event Promoters to EM		
Event Promoters	fep_planned_event_data	5.1.1
Event Promoters to TMS		
Event Promoters	fep_event_information	1.3.2.1
EVS to EM		
5.3.5	emergency_vehicle_dispatch_response	5.3.2
5.3.3	emergency_vehicle_tracking_data	5.3.6
5.3.5	incident_command_request	5.1.4
5.3.5	incident_status_data	5.1.4
5.3.5	incident_status_update	5.3.4
EVS to Emergency Personnel		
5.3.5	tep_decision_support	Emergency Personnel
5.3.5	tep_emergency_dispatch_order	Emergency Personnel
EVS to RS		
5.3.3	emergency_vehicle_preemptions	1.2.7.3
Financial Institution to ADMS		
Financial Institution	ffi_archive_analysis_payment_confirm	8.6
Financial Institution	ffi_archive_payment_confirm	8.5
Financial Institution to CVAS		
Financial Institution	ffi_cv_payment_confirm	7.4.1.1
Financial Institution to ISP		
Financial Institution	ffi_driver_map_payment_confirm	7.4.1.3
Financial Institution	ffi_registration_payment_confirm	7.4.1.2
Financial Institution	ffi_traveler_display_payment_confirm	7.4.1.4
Financial Institution	ffi_traveler_map_payment_confirm	7.4.1.4
Financial Institution	ffi_traveler_other_services_payments_confirm	7.4.1.6
Financial Institution	ffi_traveler_rideshare_payment_confirm	7.4.1.8
Financial Institution to PMS		
Financial Institution	ffi_bad_charges_payment_updates	7.2.1.3
Financial Institution	ffi_confirm_charges_payment	7.2.1.6
Financial Institution to TAS		
Financial Institution	ffi_bad_toll_payment_updates	7.1.1.3
Financial Institution	ffi_confirm_toll_payment	7.1.1.9
Financial Institution to TRMS		
Financial Institution	ffi_bad_fare_payment_updates	7.3.1.6
Financial Institution	ffi_confirm_fare_payment	7.3.1.3
Financial Institution	ffi_other_services_payment_confirm	7.4.1.5
FMS to Commercial Vehicle Manager		
2.6.1	tcvm_confirm_enrollment_data_stored	Commercial Vehicle Manager
2.1.3	tcvm_data_input_request	Commercial Vehicle Manager
2.1.3	tcvm_driver_route_instructions	Commercial Vehicle Manager
2.1.3	tcvm_enrollment_confirmation	Commercial Vehicle Manager
2.1.3	tcvm_enrollment_payment_confirmation	Commercial Vehicle Manager
2.1.3	tcvm_other_data_request	Commercial Vehicle Manager
2.6.1	tcvm_output_tag_data	Commercial Vehicle Manager
2.1.3	tcvm_preclearance_results	Commercial Vehicle Manager
2.1.3	tcvm_roadside_activity_report	Commercial Vehicle Manager
2.1.3	tcvm_route_data	Commercial Vehicle Manager
FMS to CVAS		
2.1.1	cf_enrollment_payment_request	2.5.1
2.1.1	cf_enrollment_request	2.5.1
2.1.1	cf_request_activity_report	2.5.8
2.1.1	cf_tax_audit_data	2.5.1
2.2.1	cv_enrollment_payment_request	2.5.1
2.2.1	cv_enrollment_request	2.5.1
FMS to CVS		
2.1.6	cf_driver_route_instructions	2.1.5
2.1.4	cf_request_on_board_vehicle_data	2.4.5

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Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
2.6.1	cf_tag_data_store_request	2.6.5
2.6.1	cf_tag_data_store_write	2.6.5
2.2.1	cv_driver_enrollment_information	2.2.3
2.2.1	cv_driver_enrollment_payment_confirmation	2.2.3
2.2.1	cv_driver_route_data	2.2.3
2.2.1	cv_static_route_request	2.2.2
FMS to EM		
2.1.1	cf_hazmat_route_information	5.1.1
2.1.1	cf_hazmat_vehicle_information	5.1.4
FMS to Intermodal Freight Depot		
2.7	tifd_freight_request	Intermodal Freight Depot
FMS to Intermodal Freight Shipper		
2.7	To_Intermodal_Freight_Shipper	Intermodal Freight Shipper
FMS to ISP		
2.1.1	cf_route_request	6.6.1
2.2.1	cv_route_request	6.6.1
FMS to Payment Instrument		
7.5.4	tpi_debited_commercial_manager_payment	Payment Instrument
Government Administrators to CVAS		
Government Administrators	fga_carrier_safety_ratings	2.5.3
Government Administrators	fga_roadside_facility_locations	2.5.3
Government Administrators	fga_tax_and_credential_fees	2.5.3
Government Reporting Systems to ADMS		
Government Reporting Systems	fgrs_government_data_report_request	8.8
Intermodal Freight Depot to ADMS		
Intermodal Freight Depot	fifd_intermodal_archive_data	8.1
Intermodal Freight Depot to FMS		
Intermodal Freight Depot	fifd_freight_data	2.7
Intermodal Freight Shipper to FMS		
Intermodal Freight Shipper	From_Intermodal_Freight_Shipper	2.7
ISP Operator to ISP		
ISP Operator	fispo_archive_commands	6.1.6
ISP Operator	fispo_broadcast_data_parameters_request	6.2.1.5
ISP Operator	fispo_broadcast_data_parameters_update	6.2.1.5
ISP Operator	fispo_request_other_routes_selection_map_data_update	6.6.2.5
ISP Operator	fispo_request_route_selection_map_data_update	6.6.2.5
ISP Operator	fispo_route_selection_parameters_request	6.6.2.5
ISP Operator	fispo_route_selection_parameters_update	6.6.2.5
ISP Operator	fispo_trip_planning_parameters_request	6.1.4
ISP Operator	fispo_trip_planning_parameters_update	6.1.4
ISP to ADMS		
6.1.6	traveler_archive_data	8.1
ISP to EM		
6.5.1	incident_information_request	5.1.3
ISP to Financial Institution		
7.4.1.3	tfi_driver_map_payment_request	Financial Institution
7.4.1.2	tfi_registration_payment_request	Financial Institution
7.4.1.4	tfi_traveler_display_payment_request	Financial Institution
7.4.1.4	tfi_traveler_map_payment_request	Financial Institution
7.4.1.6	tfi_traveler_other_services_payments_request	Financial Institution
7.4.1.8	tfi_traveler_rideshare_payment_request	Financial Institution
ISP to FMS		
6.6.1	cf_route	2.1.1
6.6.1	cv_route	2.2.1
ISP to ISP Operator		
6.1.6	tispo_archive_status	ISP Operator
6.2.1.5	tispo_broadcast_data_parameters_output	ISP Operator
6.6.2.5	tispo_route_selection_parameters	ISP Operator
6.1.4	tispo_trip_planning_parameters	ISP Operator
ISP to Map Update Provider		
6.6.3	tmup_request_other_routes_map_update	Map Update Provider
6.6.2.4	tmup_request_route_selection_map_update	Map Update Provider
ISP to Media		
1.1.4.5	tm_incident_information	Media
1.1.4.5	tm_traffic_information	Media
4.1.8	tm_transit_vehicle_deviations	Media

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
6.5.1	tm_traveler_information_request	Media
ISP to Multimodal Transportation Service Provider		
6.1.3	tmtsp_air_services_request	Multimodal Transportation Service
6.1.3	tmtsp_confirm_multimodal_service	Multimodal Transportation Service
6.1.3	tmtsp_ferry_services_request	Multimodal Transportation Service
6.1.3	tmtsp_rail_services_request	Multimodal Transportation Service
ISP to Other ISP		
6.6.2.3	toisp_data_supply	Other ISP
6.6.2.3	toisp_request_data	Other ISP
6.2.1.1	toisp_traffic_data_request	Other ISP
6.2.1.1	toisp_traffic_information	Other ISP
6.2.1.3	toisp_transit_data_request	Other ISP
6.2.1.3	toisp_transit_information	Other ISP
4.1.8	transit_running_data_for_advisory_output	6.2.1.3
ISP to PIAS		
1.1.4.6	traffic_data_for_broadcast_to_personal_devices	6.8.3.2
1.1.4.6	traffic_data_for_personal_devices	6.8.3.2
4.1.8	transit_deviations_for_broadcast_to_personal_devices	6.8.3.2
4.1.8	transit_deviations_for_personal_devices	6.8.3.2
6.6.1	traveler_guidance_route	6.8.1.1.2
7.4.1.4	traveler_map_update_payment_response	6.8.1.4
7.4.1.4	traveler_personal_display_update_payment_response	6.8.3.4
6.1.2	traveler_personal_payment_confirmation	6.8.3.2
6.1.2	traveler_personal_transaction_confirmation	6.8.3.2
6.1.1	traveler_personal_trip_information	6.8.3.2
6.5.2	traveler_personal_yellow_pages_data	6.8.3.2
ISP to PMS		
7.2.6	advanced_other_charges_request	7.2.1.8
7.4.3	advanced_traveler_charges_request	7.2.1.8
6.1.1	parking_lot_data_request	7.2.1.9
7.4.2	parking_lot_price_data_request	7.2.1.7
6.1.2	parking_lot_reservation_request	7.2.1.9
ISP to RTS		
7.3.2	advanced_tolls_and_charges_roadside_confirm	4.7.2.5
1.1.4.6	traffic_data_for_broadcast_to_kiosks	6.3.2
1.1.4.6	traffic_data_for_kiosks	6.3.2
4.1.8	transit_deviations_for_broadcast_to_kiosks	6.3.2
4.1.8	transit_deviations_for_kiosks	6.3.2
6.1.2	traveler_payment_confirmation	6.3.2
6.1.2	traveler_transaction_confirmation	6.3.2
6.1.1	traveler_trip_information	6.3.2
6.5.2	traveler_yellow_pages_data	6.3.2
ISP to TAS		
7.1.6	advanced_other_tolls_request	7.1.1.8
7.4.3	advanced_traveler_tolls_request	7.1.1.8
7.4.2	toll_price_data_request	7.1.1.7
ISP to TMS		
6.6.5	current_other_routes_use	1.4.2
6.6.2.2	current_road_network_use	1.1.2.1
6.6.4	current_transit_routes_use	1.4.2
6.6.2.1	logged_special_vehicle_route	1.3.2.1
7.4.2	parking_lot_charge_details	1.4.2
6.6.2.1	special_vehicle_priority_routing	1.2.1
7.4.2	toll_price_details	1.4.2
1.1.4.6	traffic_data_distribution_request	1.1.4.1
7.4.2	transit_fare_details	1.4.2
ISP to TRMS		
7.3.2	advanced_other_fares_request	7.3.1.1
7.3.2	advanced_tolls_and_charges_vehicle_confirm	4.6.8
7.4.3	advanced_traveler_fares_request	7.3.1.1
6.1.2	paratransit_service_confirmation	4.2.1.1
6.1.1	paratransit_trip_request	4.2.1.1
7.4.2	transit_fare_data_request	7.3.1.7
6.2.1.3	transit_services_advisories_request	4.2.3.3
6.6.4	transit_services_guidance_request	4.2.3.3
4.1.8	transit_vehicle_deviations_details_request	4.1.6

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
ISP to VS		
7.1.6	advanced_fares_and_charges_response	7.1.4
7.2.6	advanced_tolls_and_fares_response	7.2.4
6.2.1.2	advisory_data	6.2.2
6.2.1.4	broadcast_data	6.2.2
7.4.1.3	driver_map_update_payment_response	6.7.2.4
6.6.2.2	link_and_queue_data	6.7.2.1.3
6.6.2.1	vehicle_guidance_route	6.7.2.1.2
6.2.6	yellow_pages_advisory_data	6.2.2
ISP to Yellow Pages Service Providers		
6.5.3	typsp_provider_update_confirm	Yellow Pages Service Providers
6.5.2	typsp_transaction_request	Yellow Pages Service Providers
6.5.1	typsp_yellow_pages_info_request	Yellow Pages Service Providers
Location Data Source to PIAS		
Location Data Source	From_Location_Data_Source	6.7.2.2
Location Data Source to VS		
Location Data Source	From_Location_Data_Source	6.7.2.2
Map Update Provider to ADMS		
Map Update Provider	fmup_map_archive_data	8.1
Map Update Provider to EM		
Map Update Provider	fmup_emergency_display_update	5.5
Map Update Provider	fmup_emergency_route_map_update	5.3.7
Map Update Provider to EMMS		
Map Update Provider	fmup_pollution_display_update	1.5.3
Map Update Provider to ISP		
Map Update Provider	fmup_other_routes_map_data	6.6.3
Map Update Provider	fmup_route_selection_map_data	6.6.2.4
Map Update Provider to PIAS		
Map Update Provider	fmup_traveler_map_update	6.8.1.4
Map Update Provider	fmup_traveler_map_update_cost	6.8.1.4
Map Update Provider	fmup_traveler_personal_display_update	6.8.3.4
Map Update Provider	fmup_traveler_personal_display_update_cost	6.8.3.4
Map Update Provider to RTS		
Map Update Provider	fmup_traveler_display_update	6.3.4
Map Update Provider to TMS		
Map Update Provider	fmup_demand_display_update	1.4.3
Map Update Provider	fmup_incident_display_update	1.3.4.4
Map Update Provider	fmup_traffic_display_update	1.1.4.4
Map Update Provider to TRMS		
Map Update Provider	fmup_transit_map_update	4.2.3.9
Map Update Provider to VS		
Map Update Provider	fmup_vehicle_map_update	6.7.2.4
Map Update Provider	fmup_vehicle_map_update_cost	6.7.2.4
Media to EM		
Media	fm_emergency_information_request	5.1.3
Media to ISP		
Media	fm_incident_details	1.1.4.5
Media	fm_incident_information_request	1.1.4.5
Media	fm_traffic_information_request	1.1.4.5
Media	fm_transit_vehicle_deviations_request	4.1.8
Media	fm_traveler_information	6.5.1
Media to TMS		
Media	fm_incident_data_request	1.3.4.3
Media	fm_incident_information	1.3.4.3
Media	fm_traffic_data_request	1.1.4.3
Media to TRMS		
Media	fm_transit_incident_information_request	4.4.1.4
Media	fm_transit_schedule_deviations_request	4.1.6
Multimodal Crossings to RS		
Multimodal Crossings	fmmc_crossing_close_duration	1.1.1.1
Multimodal Crossings	fmmc_crossing_close_time	1.1.1.1
Multimodal Crossings	fmmc_crossing_status_for_highways	1.2.7.5
Multimodal Crossings	fmmc_crossing_status_for_roads	1.2.7.1
Multimodal Transportation Service Provider to ADMS		
Multimodal Transportation Service	fmtsp_multimodal_archive_data	8.1
Multimodal Transportation Service Provider to ISP		

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Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
Multimodal Transportation Service	fmtsp_air_services	6.1.3
Multimodal Transportation Service	fmtsp_ferry_services	6.1.3
Multimodal Transportation Service	fmtsp_multimodal_service_confirmation	6.1.3
Multimodal Transportation Service	fmtsp_rail_services	6.1.3
Multimodal Transportation Service Provider to TRMS		
Multimodal Transportation Service	fmtsp_transit_service_data	4.2.3.8
Other Archives to ADMS		
Other Archives	foa_archive_coordination_data	8.4
Other CVAS to CVAS		
Other CVAS	focvas_commit_local_enrollment	2.5.4
Other CVAS	focvas_data_table	2.5.4
Other CVAS	focvas_enrollment_confirmation	2.5.4
Other CVAS	focvas_enrollment_request	2.5.4
Other CVAS	focvas_provide_data	2.5.4
Other Data Sources to ADMS		
Other Data Sources	fods_other_data_source_archive_data	8.1
Other EM to EM		
Other EM	foec_emergency_center_identity	5.1.2
Other EM	foec_incident_details	5.1.2
Other EM	foec_incident_response_coordination	5.1.2
Other EM	foec_mayday_emergency_data	5.1.6
Other ISP to ISP		
Other ISP	foisp_data_supply	6.6.2.3
Other ISP	foisp_request_data	6.6.2.3
Other ISP	foisp_traffic_data	6.2.1.1
Other ISP	foisp_traffic_information_request	6.2.1.1
Other ISP	foisp_transit_data	6.2.1.3
Other ISP	foisp_transit_information_request	6.2.1.3
Other Parking to PMS		
Other Parking	fop_parking_coordination_data	1.2.5.2
Other TM to TMS		
Other TM	fotc_data_request	1.1.5
Other TM	fotc_identity	1.1.5
Other TM	fotc_traffic_control_and_status	1.1.5
Other TM	fotc_transfer_data	1.1.5
Other TRM to TRMS		
Other TRM	fotrm_transit_services	4.2.3.7
Other Vehicle to VS		
Other Vehicle	From_Other_Vehicle	3.2.3.6
Parking Operator to PMS		
Parking Operator	fpo_archive_commands	1.2.5.5
Parking Operator	fpo_confirm_advanced_parking_payment	7.2.1.8
Parking Operator	fpo_current_lot_state	1.2.5.3
Parking Operator	fpo_lot_occupancy	1.2.5.3
Parking Operator	fpo_parking_lot_charge_change_response	7.2.1.7
Parking Operator	fpo_parking_lot_data	7.2.1.7
Parking Operator	fpo_parking_lot_hours_of_operation	7.2.1.9
Parking Operator	fpo_transaction_reports_request	7.2.1.6
Payment Instrument to FMS		
Payment Instrument	fpi_commercial_manager_input_credit_identity	7.5.4
Payment Instrument to PIAS		
Payment Instrument	fpi_traveler_personal_input_credit_identity	7.5.3
Payment Instrument to RTS		
Payment Instrument	fpi_confirm_fare_payment_at_roadside	7.3.4
Payment Instrument	fpi_transit_roadside_tag_data	7.3.4
Payment Instrument	fpi_transit_user_roadside_input_credit_identity	7.5.2
Payment Instrument	fpi_traveler_roadside_input_credit_identity	7.5.5
Payment Instrument to TRVS		
Payment Instrument	fpi_confirm_fare_payment_on_transit_vehicle	7.3.5
Payment Instrument	fpi_transit_vehicle_tag_data	7.3.5
Payment Instrument to VS		
Payment Instrument	fpi_confirm_payment_at_parking_lot	7.2.7
Payment Instrument	fpi_confirm_payment_at_toll_plaza	7.1.7
Payment Instrument	fpi_driver_vehicle_input_credit_identity	7.5.1
Payment Instrument	fpi_parking_tag_data	7.2.7
Payment Instrument	fpi_toll_tag_data	7.1.7

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Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
Payment Instrument	fpi_transit_user_vehicle_input_credit_identity	7.5.1
Pedestrians to RS		
Pedestrians	fp_pedestrian_data	1.1.1.1
Pedestrians	fp_pedestrian_images	1.1.1.1
PIAS to EM		
6.8.2.2	emergency_request_personal_traveler_details	5.1.1
PIAS to ISP		
6.8.3.2	traffic_data_personal_request	1.1.4.6
6.8.3.2	transit_deviations_personal_request	4.1.8
6.8.1.4	traveler_map_update_payment_request	7.4.1.4
6.8.3.1	traveler_personal_current_condition_request	6.1.1
6.8.3.4	traveler_personal_display_update_payment_request	7.4.1.4
6.8.3.1	traveler_personal_payment_information	6.1.2
6.8.3.1	traveler_personal_transaction_request	6.5.2
6.8.3.1	traveler_personal_trip_confirmation	6.1.2
6.8.3.1	traveler_personal_trip_request	6.1.1
6.8.3.1	traveler_personal_yellow_pages_information_request	6.5.2
6.8.1.1.1	traveler_route_accepted	6.6.1
6.8.1.1.2	traveler_route_request	6.6.1
6.8.3.1	traveler_traffic_profile	1.1.4.6
6.8.3.1	traveler_transit_profile	4.1.8
PIAS to Map Update Provider		
6.8.3.4	tmup_request_traveler_personal_display_update	Map Update Provider
6.8.3.4	tmup_request_traveler_personal_display_update_cost	Map Update Provider
6.8.1.4	tmup_traveler_map_update_cost_request	Map Update Provider
6.8.1.4	tmup_traveler_map_update_request	Map Update Provider
PIAS to Payment Instrument		
7.5.3	tpi_debited_payment_at_personal_device	Payment Instrument
PIAS to Traveler		
6.8.1.5	tt_emergency_message	Traveler
6.8.1.2	tt_guidance	Traveler
6.8.1.2	tt_guidance_input_request	Traveler
6.8.1.2	tt_guidance_map_update_response	Traveler
6.8.1.2	tt_guidance_route_details	Traveler
6.8.3.3	tt_personal_extra_trip_data_request	Traveler
6.8.3.3	tt_personal_trip_planning_responses	Traveler
PIAS to TRMS		
6.8.3.2	transit_services_personal_request	4.2.3.3
PMS to ADMS		
1.2.5.5	parking_archive_data	8.1
PMS to DMV		
5.4.3	tdmv_parking_lot_violation_identity_code	DMV
5.4.3	tdmv_parking_lot_violation_vehicle_license	DMV
PMS to Driver		
7.2.2	td_parking_lot_payment_confirmed	Driver
7.2.2	td_parking_lot_payment_invalid	Driver
PMS to Enforcement Agency		
5.4.3	tea_parking_violation_data	Enforcement Agency
PMS to Financial Institution		
7.2.1.3	tfi_parking_lot_payment_violator_data	Financial Institution
7.2.1.6	tfi_request_charges_payment	Financial Institution
PMS to ISP		
7.2.1.8	advanced_other_charges_confirm	7.2.6
7.2.1.8	advanced_traveler_charges_confirm	7.4.3
7.2.1.9	parking_lot_availability	1.2.5.2
7.2.1.7	parking_lot_price_data	7.4.2
7.2.1.9	parking_lot_reservation_confirm	6.1.2
PMS to Other Parking		
1.2.5.2	top_parking_coordination_data	Other Parking
PMS to Parking Operator		
1.2.5.5	tpo_archive_status	Parking Operator
1.2.5.3	tpo_change_lot_state	Parking Operator
7.2.1.7	tpo_parking_lot_charge_change_request	Parking Operator
7.2.1.8	tpo_request_advanced_parking_payment	Parking Operator
7.2.1.6	tpo_transaction_reports	Parking Operator

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Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
PMS to TMS		
1.2.5.1	parking_guidance_for_dms	1.2.4.1
7.2.1.7	parking_lot_charge_change_response	1.4.4
7.2.1.7	parking_lot_charge_direct_details	1.4.2
1.2.5.1	parking_lot_current_state	1.1.2.1
PMS to TRMS		
1.2.5.4	parking_lot_transit_request	4.2.3.2
PMS to VS		
7.2.1.5	parking_lot_payment_debited	7.2.7
7.2.1.5	parking_lot_payment_request	7.2.7
7.2.1.5	parking_lot_tag_data_clear	7.2.7
7.2.1.1	parking_lot_tag_data_request	7.2.7
7.2.1.1	parking_lot_tag_data_update	7.2.7
Potential Obstacles to VS		
Potential Obstacles	From_Potential_Obstacles	3.1.3
Rail Operations to TMS		
Rail Operations	fro_incident_notification	1.6.2.1
Rail Operations	fro_maintenance_schedules	1.6.2.1
Rail Operations	fro_train_schedules	1.6.2.1
Roadway Environment to RS		
Roadway Environment	fre_environmental_conditions	1.1.1.3
Roadway Environment	fre_physical_conditions	1.1.1.1
Roadway Environment to VS		
Roadway Environment	fre_roadside_data	3.1.3
Roadway to VS		
Roadway	From_Roadway	3.1.3
RS to ADMS		
1.1.1.4	roadside_archive_data	8.9
RS to Basic Vehicle		
1.2.7.5	tbv_har_broadcast_for_highways	Basic Vehicle
1.2.7.1	tbv_har_broadcast_for_roads	Basic Vehicle
RS to Driver		
1.2.7.5	td_dms_indication_for_highways	Driver
1.2.7.1	td_dms_indication_for_roads	Driver
1.2.7.5	td_lane_use_indication_for_highways	Driver
1.2.7.1	td_lane_use_indication_for_roads	Driver
1.2.7.5	td_ramp_state_indication	Driver
1.2.7.1	td_signal_indication	Driver
RS to EMMS		
1.5.6	pollution_state_roadside_collection	1.5.2
1.5.5	pollution_state_vehicle_collection	1.5.4
1.5.5	pollution_state_vehicle_log_data	1.5.7
RS to Multimodal Crossings		
1.2.7.5	tmmc_crossing_clear_at_highways	Multimodal Crossings
1.2.7.1	tmmc_crossing_clear_at_roads	Multimodal Crossings
1.2.7.5	tmmc_highway_equipment_status	Multimodal Crossings
1.2.7.1	tmmc_road_equipment_status	Multimodal Crossings
1.2.7.5	tmmc_stop_alternate_mode_at_highways	Multimodal Crossings
1.2.7.1	tmmc_stop_alternate_mode_at_roads	Multimodal Crossings
RS to Pedestrians		
1.2.7.1	tp_cross_request_received	Pedestrians
1.2.7.1	tp_cross_road	Pedestrians
1.2.7.1	tp_dms_indication	Pedestrians
RS to TMS		
3.2.6	ahs_checking_details	3.2.7
1.2.7.5	dms_status_for_highways	1.2.4.2
1.2.7.1	dms_status_for_roads	1.2.4.1
1.1.1.3	environment_sensor_data	1.1.2.2
1.1.1.3	environment_sensor_fault_data	1.1.1.2
1.1.1.3	environmental_sensor_status	1.1.1.2
1.2.7.5	har_status_for_highways	1.2.4.2
1.2.7.1	har_status_for_roads	1.2.4.1
1.1.1.1	hov_lane_data_input	1.1.2.4
1.1.1.1	hov_sensor_data	1.1.2.2
1.6.1.6.1	hri_blockage	1.6.2.2
1.6.1.4.4	hri_guidance_for_beacon_message	1.2.4.3

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Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
1.6.1.4.3	hri_guidance_for_dms	1.2.4.1
1.6.5.1	hri_status	1.6.1.1
1.6.1.7.2	hri_traffic_data	1.6.4.1
1.1.1.1	incident_analysis_data	1.3.1.1
1.3.1.3	incident_video_image	1.3.4.2
1.2.7.5	indicator_input_data_from_highways	1.2.4.2
1.2.7.1	indicator_input_data_from_roads	1.2.4.1
1.2.7.2	information_device_fault_status	1.2.8.1
1.6.1.5	intersection_blocked	1.6.4.2
1.1.1.1	multimodal_crossing_sensor_data	1.1.2.2
1.1.1.1	pedestrian_sensor_data	1.1.2.2
1.6.1.6.1	rail_operations_message	1.6.2.1
1.3.1.3	reversible_lane_video_images	1.1.2.7
1.1.1.1	sensor_data_for_reversible_lanes	1.1.2.7
1.1.1.1	sensor_fault_data	1.1.1.2
1.2.7.2	traffic_control_device_status	1.2.8.1
1.3.1.3	traffic_image_data	1.3.1.1
1.6.1.7.2	traffic_management_request	1.6.4.2
1.1.1.1	traffic_sensor_data	1.1.2.2
1.1.1.1	traffic_sensor_status	1.1.1.2
1.1.1.1	traffic_video_image	1.1.2.2
1.1.1.1	traffic_video_image_for_display	1.1.4.2
1.5.5	vehicle_pollution_alert	5.4.1
1.5.5	vehicle_pollution_message_for_highways	1.2.4.2
1.5.5	vehicle_pollution_message_for_roads	1.2.4.1
1.1.2.6	vehicle_smart_probe_data_for_storage	1.1.2.1
1.1.6	vehicle_tag_data	1.1.2.5
RS to VS		
3.2.5	ahs_check_response	3.2.2
1.2.7.6	intersection_collision_avoidance_data	3.1.1
1.1.6	parking_lot_tag_data_needed	7.2.7
1.1.6	toll_tag_data_needed	7.1.7
1.2.7.4	vehicle_signage_data	6.2.2
1.2.7.7	vehicle_smart_probe_data_output	6.2.2
RS to Wayside Equipment		
1.6.3.1	twe_hri_status	Wayside Equipment
1.6.3.1	twe_stop_highway_indication	Wayside Equipment
1.6.3.1	twe_stop_train_indication	Wayside Equipment
RTS to EM		
4.4.1.8	emergency_request_traveler_details	5.1.1
RTS to ISP		
4.7.2.5	advanced_tolls_and_charges_roadside_request	7.3.2
6.3.2	traffic_data_kiosk_request	1.1.4.6
6.3.2	transit_deviation_kiosk_request	4.1.8
6.3.1	traveler_current_condition_request	6.1.1
6.3.1	traveler_payment_information	6.1.2
6.3.1	traveler_transaction_request	6.5.2
6.3.1	traveler_trip_confirmation	6.1.2
6.3.1	traveler_trip_request	6.1.1
6.3.1	traveler_yellow_pages_information_request	6.5.2
RTS to Map Update Provider		
6.3.4	tmup_request_traveler_display_update	Map Update Provider
RTS to Payment Instrument		
7.3.4	tpi_debited_fare_payment_at_roadside	Payment Instrument
7.5.2	tpi_debited_transit_user_payment_at_roadside	Payment Instrument
7.5.5	tpi_debited_traveler_payment_at_roadside	Payment Instrument
7.3.4	tpi_request_fare_payment_at_roadside	Payment Instrument
RTS to Transit User		
4.7.2.5	ttu_other_services_roadside_confirmed	Transit User
4.7.2.4	ttu_roadside_access_message	Transit User
4.7.2.5	ttu_roadside_payment_confirmed	Transit User
4.7.1.1	ttu_transit_information	Transit User
4.7.1.2	ttu_transit_vehicle_information	Transit User
RTS to Traveler		
4.4.1.8	tt_emergency_response	Traveler
6.3.3	tt_extra_trip_data_request	Traveler

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
6.3.3	tt_trip_planning_responses	Traveler
RTS to TRMS		
4.4.1.8	emergency_request_transit_details	4.4.1.1
4.7.2.4	fare_collection_roadside_violation_information	5.4.7
4.7.2.5	other_services_roadside_request	7.4.1.5
4.7.2.4	request_roadside_fare_payment	7.3.1.4
4.4.1.7	secure_area_surveillance_information	4.4.1.1
7.3.4	transit_roadside_fare_payment_confirmation	7.3.1.5
4.7.2.7	transit_roadside_passenger_data	4.2.3.5
6.3.2	transit_services_kiosk_request	4.2.3.3
4.7.1.1	transit_services_travelers_request	4.2.3.3
4.7.2.1	transit_user_roadside_image	7.3.3
Secure Area Environment to RTS		
Secure Area Environment	fsa_area_image	4.4.1.7
TAS to ADMS		
7.1.1.11	toll_archive_data	8.1
TAS to DMV		
5.4.2	tdmv_toll_violation_identity_code	DMV
5.4.2	tdmv_toll_violation_vehicle_license	DMV
TAS to Enforcement Agency		
5.4.2	tea_toll_violation_data	Enforcement Agency
TAS to Financial Institution		
7.1.1.9	tfi_request_toll_payment	Financial Institution
7.1.1.3	tfi_toll_payment_violator_data	Financial Institution
TAS to ISP		
7.1.1.8	advanced_other_tolls_confirm	7.1.6
7.1.1.8	advanced_traveler_tolls_confirm	7.4.3
7.1.1.7	toll_price_data	7.4.2
7.1.1.6	vehicle_toll_probe_data	6.6.2.6
TAS to TCS		
7.1.1.8	advanced_toll_needed	7.1.1.10
7.1.1.3	toll_bad_payment_check_response	7.1.1.5
7.1.1.7	toll_price_data_for_advanced_toll	7.1.1.10
7.1.1.7	toll_price_data_for_vehicle_toll	7.1.1.2
TAS to TMS		
7.1.1.6	probe_data_for_traffic	1.1.2.5
7.1.1.7	toll_price_changes_response	1.4.4
7.1.1.7	toll_price_direct_details	1.4.2
TAS to Toll Administrator		
7.1.1.11	tta_archive_status	Toll Administrator
7.1.1.8	tta_request_advanced_toll	Toll Administrator
7.1.1.7	tta_toll_price_changes_request	Toll Administrator
7.1.1.9	tta_transaction_reports	Toll Administrator
TCS to Driver		
7.1.2	td_toll_payment_confirmed	Driver
7.1.2	td_toll_payment_invalid	Driver
TCS to TAS		
7.1.1.4	advanced_toll_transactions	7.1.1.9
7.1.1.5	confirm_advanced_tolls_payment	7.1.1.8
7.1.1.5	current_toll_transactions	7.1.1.9
7.1.1.5	toll_bad_payment_check_request	7.1.1.3
7.1.1.5	toll_payment_violator_data	7.1.1.3
7.1.3	toll_violation_information	5.4.2
TCS to Toll Operator		
7.1.1.4	tto_transaction_reports	Toll Operator
TCS to VS		
7.1.1.5	toll_payment_debited	7.1.7
7.1.1.5	toll_payment_request	7.1.7
7.1.1.5	toll_tag_data_clear	7.1.7
7.1.1.1	toll_tag_data_request	7.1.7
7.1.1.1	toll_tag_data_update	7.1.7
TMS to ADMS		
1.1.4.7	traffic_management_archive_data	8.1
TMS to Construction and Maintenance		
1.2.8.3	tcm_fault_data	Construction and Maintenance
1.3.2.2	tcm_incident_confirmation	Construction and Maintenance

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
1.3.2.2	tcm_request_incident_change	Construction and Maintenance
1.3.4.5	tcm_resource_request	Construction and Maintenance
1.1.1.2	tcm_sensor_fault_data	Construction and Maintenance
TMS to DMV		
5.4.1	tdmv_traffic_violation_identity_code	DMV
5.4.1	tdmv_traffic_violation_vehicle_license	DMV
TMS to EM		
1.2.1	emergency_traffic_control_response	5.3.2
1.3.3	incident_alert	5.1.1
1.3.2.2	incident_details_request	5.1.3
1.3.3	incident_response_clear	5.1.4
1.1.4.1	incident_video_for_emergency_services	5.1.4
1.3.4.5	resource_deployment_status	5.1.4
1.1.4.1	traffic_data_for_emergency_services	5.1.4
1.1.2.7	wrong_way_vehicle_detection	1.3.4.2
TMS to EMMS		
1.4.2	pollution_state_data_request	1.5.4
TMS to Enforcement Agency		
5.4.1	tea_traffic_violation_data	Enforcement Agency
TMS to Event Promoters		
1.3.2.2	tep_event_confirmation	Event Promoters
TMS to ISP		
1.2.2.1	current_highway_network_state	6.6.2.2
1.2.2.2	current_road_network_state	6.6.2.2
1.2.6.1	link_data_for_guidance	6.6.2.2
1.4.2	parking_lot_charge_request	7.4.2
1.3.2.2	planned_events	1.1.3
1.1.3	prediction_data	1.2.2.1
1.1.4.1	sensor_data_for_distribution	1.1.4.6
1.4.2	toll_price_request	7.4.2
1.1.4.1	traffic_data_for_distribution	1.1.4.6
1.4.2	transit_fare_request	7.4.2
TMS to Map Update Provider		
1.2.6.2	tmup_map_static_data	Map Update Provider
1.4.3	tmup_request_demand_display_update	Map Update Provider
1.3.4.4	tmup_request_incident_display_update	Map Update Provider
1.1.4.4	tmup_request_traffic_display_update	Map Update Provider
TMS to Media		
1.3.4.3	tm_incident_data	Media
1.1.4.3	tm_traffic_data	Media
TMS to Other TM		
1.1.5	totc_data_request	Other TM
1.1.5	totc_identity	Other TM
1.1.5	totc_traffic_control_and_status	Other TM
1.1.5	totc_transfer_data	Other TM
TMS to PMS		
1.4.4	parking_lot_charge_change_request	7.2.1.7
1.4.2	parking_lot_charge_direct_request	7.2.1.7
1.1.2.2	parking_lot_input_data	1.2.5.6
1.2.1	selected_parking_lot_control_strategy	1.2.5.1
1.2.6.2	static_data_for_parking_lots	1.2.5.6
TMS to Rail Operations		
1.6.2.1	tro_equipment_status	Rail Operations
1.6.2.1	tro_event_schedules	Rail Operations
1.6.2.1	tro_incident_notification	Rail Operations
TMS to RS		
3.2.7	ahs_control_data_changes	3.2.6
1.2.4.2	dms_data_for_highways	1.2.7.5
1.2.4.1	dms_data_for_roads	1.2.7.1
1.1.4.2	environment_sensor_configuration_data	1.1.1.3
1.2.4.2	har_data_for_highways	1.2.7.5
1.2.4.1	har_data_for_roads	1.2.7.1
1.6.4.2	hri_traffic_surveillance	1.6.1.1
1.3.4.2	incident_video_image_control	1.3.1.3
1.2.4.2	indicator_control_data_for_highways	1.2.7.5
1.2.4.1	indicator_control_data_for_roads	1.2.7.1

Appendix K: Physical Channels Traced to Logical Data Flows

Logical Source	Logical Data Flow Name	Logical Sink
Physical Channel		
1.2.4.2	indicator_control_monitoring_data_for_highways	1.2.7.2
1.2.4.1	indicator_control_monitoring_data_for_roads	1.2.7.2
1.2.4.1	indicator_sign_control_data_for_hri	1.6.1.1
1.6.2.2	rail_operations_advisories	1.6.1.6.1
1.6.2.1	rail_operations_device_command	1.6.1.7.1
1.6.2.1	ro_requests	1.6.5.1
1.1.4.2	sensor_configuration_data	1.1.1.1
1.6.4.2	tms_requests	1.6.5.1
1.2.4.3	vehicle_sign_data	1.2.7.4
TMS to TAS		
1.4.4	toll_price_changes_request	7.1.1.7
1.4.2	toll_price_direct_request	7.1.1.7
TMS to Traffic Operations Personnel		
1.1.4.7	ttop_archive_status	Traffic Operations Personnel
1.2.8.4	ttop_current_indicator_faults	Traffic Operations Personnel
1.1.1.2	ttop_current_sensor_faults	Traffic Operations Personnel
1.3.4.2	ttop_defined_incident_responses_data	Traffic Operations Personnel
1.4.1	ttop_demand_data	Traffic Operations Personnel
1.4.1	ttop_demand_forecast_data	Traffic Operations Personnel
1.4.1	ttop_demand_forecast_result	Traffic Operations Personnel
1.4.1	ttop_demand_policy_activation_result	Traffic Operations Personnel
1.4.1	ttop_demand_policy_information	Traffic Operations Personnel
1.3.4.2	ttop_incident_information_display	Traffic Operations Personnel
1.3.4.2	ttop_incident_video_image_output	Traffic Operations Personnel
1.3.4.2	ttop_possible_defined_response_output	Traffic Operations Personnel
1.3.4.2	ttop_possible_incidents_data	Traffic Operations Personnel
1.3.4.2	ttop_resource_response	Traffic Operations Personnel
1.1.4.2	ttop_traffic_control_information_display	Traffic Operations Personnel
1.3.4.2	ttop_undefined_response_details	Traffic Operations Personnel
1.1.4.2	ttop_video_image_output	Traffic Operations Personnel
1.1.4.2	ttop_weather_information	Traffic Operations Personnel
1.3.4.2	ttop_wrong_way_detection	Traffic Operations Personnel
TMS to TRMS		
1.1.3	prediction_data	1.2.2.1
1.1.4.1	traffic_data_for_transit	4.1.2.4
1.4.2	transit_conditions_demand_request	4.1.5
1.4.2	transit_fare_direct_request	7.3.1.7
1.2.2.1	transit_highway_priority_given	4.1.4
1.2.3	transit_ramp_priority_given	4.1.4
1.2.2.2	transit_road_priority_given	4.1.4
1.4.4	transit_services_changes_request	4.2.3.4
1.4.2	transit_services_demand_request	4.2.3.3
Toll Administrator to TAS		
Toll Administrator	fta_archive_commands	7.1.1.11
Toll Administrator	fta_confirm_advanced_toll	7.1.1.8
Toll Administrator	fta_toll_price_changes_response	7.1.1.7
Toll Administrator	fta_toll_price_data	7.1.1.7
Toll Operator to TCS		
Toll Operator	fto_local_toll_price_variations	7.1.1.2
Traffic Operations Personnel to EMMS		
Traffic Operations Personnel	ftop_pollution_data_information_request	1.5.1
Traffic Operations Personnel	ftop_pollution_parameter_updates	1.5.1
Traffic Operations Personnel to TMS		
Traffic Operations Personnel	ftop_archive_command	1.1.4.7
Traffic Operations Personnel	ftop_defined_incident_response_data_request	1.3.4.2
Traffic Operations Personnel	ftop_defined_incident_response_data_update	1.3.4.2
Traffic Operations Personnel	ftop_demand_data_request	1.4.1
Traffic Operations Personnel	ftop_demand_data_update_request	1.4.1
Traffic Operations Personnel	ftop_demand_forecast_request	1.4.1
Traffic Operations Personnel	ftop_demand_policy_activation	1.4.1
Traffic Operations Personnel	ftop_demand_policy_information_request	1.4.1
Traffic Operations Personnel	ftop_demand_policy_updates	1.4.1
Traffic Operations Personnel	ftop_incident_camera_action_request	1.3.4.2
Traffic Operations Personnel	ftop_incident_data_amendment	1.3.4.2
Traffic Operations Personnel	ftop_incident_information_requests	1.3.4.2
Traffic Operations Personnel	ftop_indicator_fault_data_input	1.2.8.4

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Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
Traffic Operations Personnel	ftop_indicator_fault_data_request	1.2.8.4
Traffic Operations Personnel	ftop_indicator_fault_data_update	1.2.8.4
Traffic Operations Personnel	ftop_output_possible_defined_reponses	1.3.4.2
Traffic Operations Personnel	ftop_request_possible_incidents_data	1.3.4.2
Traffic Operations Personnel	ftop_resource_request	1.3.4.2
Traffic Operations Personnel	ftop_roadway_characteristics	1.2.6.1
Traffic Operations Personnel	ftop_sensor_fault_data_input	1.1.1.2
Traffic Operations Personnel	ftop_static_data	1.2.6.1
Traffic Operations Personnel	ftop_strategy_override	1.2.1
Traffic Operations Personnel	ftop_traffic_data_parameter_updates	1.1.4.2
Traffic Operations Personnel	ftop_traffic_information_requests	1.1.4.2
Traffic Operations Personnel	ftop_update_defined_incident_responses	1.3.4.2
Traffic Operations Personnel	ftop_video_camera_strategy_change	1.2.1
Traffic Operations Personnel	ftop_weather_request_information	1.1.4.2
Traffic to RS		
Traffic	ft_traffic_data	1.1.1.1
Traffic	ft_traffic_images	1.1.1.1
Traffic	ft_vehicle_pollutant_levels	1.5.5
Transit Driver to TRMS		
Transit Driver	ftd_information_updates	4.5.6
Transit Driver to TRVS		
Transit Driver	ftd_emergency_request	4.4.1.5
Transit Driver	ftd_fare_transaction_mode_set_up	4.6.4
Transit Driver	ftd_request_batch_mode_data_transfer	4.6.4
Transit Fleet Manager to TRMS		
Transit Fleet Manager	ftfm_approved_corrections	4.1.4
Transit Fleet Manager	ftfm_coordination_data	4.4.2
Transit Fleet Manager	ftfm_initiate_service_updates	4.2.3.4
Transit Fleet Manager	ftfm_passenger_loading_updates	4.2.3.5
Transit Fleet Manager	ftfm_planning_parameters	4.2.3.4
Transit Fleet Manager	ftfm_planning_parameters_update_request	4.2.3.4
Transit Fleet Manager	ftfm_request_response_parameter_output	4.4.3
Transit Fleet Manager	ftfm_request_transit_vehicle_data	4.1.5
Transit Fleet Manager	ftfm_response_parameters	4.4.3
Transit Fleet Manager	ftfm_technician_information_request	4.3.3
Transit Fleet Manager	ftfm_technician_information_updates	4.3.3
Transit Fleet Manager	ftfm_transit_display_update_request	4.2.3.4
Transit Fleet Manager	ftfm_transit_driver_information_request	4.5.7
Transit Fleet Manager	ftfm_transit_driver_information_updates	4.5.7
Transit Fleet Manager	ftfm_transit_driver_route_preferences	4.5.7
Transit Fleet Manager	ftfm_transit_services_output_request	4.2.3.4
Transit Fleet Manager	ftfm_transit_vehicle_maintenance_information_request	4.3.5
Transit Fleet Manager	ftfm_transit_vehicle_maintenance_specs	4.3.5
Transit Maintenance Personnel to TRMS		
Transit Maintenance Personnel	ftmp_transit_vehicle_maintenance_updates	4.3.6
Transit System Operators to TRMS		
Transit System Operators	ftso_archive_commands	4.2.4
Transit System Operators	ftso_emergency_request_acknowledge	4.4.1.3
Transit System Operators	ftso_fare_updates	7.3.1.7
Transit System Operators	ftso_media_parameter_request	4.4.1.3
Transit System Operators	ftso_media_parameter_updates	4.4.1.3
Transit System Operators	ftso_request_fare_output	7.3.1.7
Transit System Operators	ftso_security_action	4.4.1.3
Transit System Operators	ftso_video_camera_action_request	4.4.1.3
Transit User to RTS		
Transit User	ftu_destination_at_roadside	4.7.2.5
Transit User	ftu_other_services_roadside_request	4.7.2.5
Transit User	ftu_transit_information_request	4.7.1.1
Transit User	ftu_transit_user_roadside_image	4.7.2.1
Transit User to TRVS		
Transit User	ftu_destination_on_vehicle	6.2.1.6
Transit User	ftu_emergency_request	4.4.1.2
Transit User	ftu_other_services_vehicle_request	6.2.1.6
Transit User	ftu_request_advisory_information	6.2.3
Transit User	ftu_transit_user_vehicle_image	4.6.1

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
Transit Vehicle to TRVS		
Transit Vehicle	ftv_availability	4.2.1.5
Transit Vehicle	ftv_vehicle_maintenance_data	4.1.9
Transit Vehicle	ftv_vehicle_trip_data	4.1.1
Traveler to PIAS		
Traveler	ft_guidance_data	6.8.1.2
Traveler	ft_guidance_map_update_request	6.8.1.2
Traveler	ft_guidance_request	6.8.1.2
Traveler	ft_guidance_route_accepted	6.8.1.2
Traveler	ft_personal_emergency_request	6.8.2.1
Traveler	ft_personal_extra_trip_data	6.8.3.3
Traveler	ft_personal_map_display_update_request	6.8.3.3
Traveler	ft_personal_trip_planning_requests	6.8.3.3
Traveler to RTS		
Traveler	ft_extra_trip_data	6.3.3
Traveler	ft_remote_emergency_request	4.4.1.8
Traveler	ft_trip_planning_requests	6.3.3
TRMS to ADMS		
4.2.4	transit_archive_data	8.1
TRMS to EM		
4.4.2	transit_coordination_data	5.1.4
4.4.1.6	transit_emergency_data	5.1.1
4.4.1.1	transit_incident_details	5.1.1
TRMS to Enforcement Agency		
5.4.7	tea_fare_collection_roadside_violation_data	Enforcement Agency
5.4.5	tea_fare_collection_vehicle_violation_data	Enforcement Agency
5.4.4	tea_fare_payment_violation_data	Enforcement Agency
TRMS to Financial Institution		
7.3.1.6	tfi_fare_payment_violator_data	Financial Institution
7.4.1.5	tfi_other_services_payment_request	Financial Institution
7.3.1.3	tfi_request_fare_payment	Financial Institution
TRMS to ISP		
7.3.1.1	advanced_other_fares_confirm	7.3.2
4.6.8	advanced_tolls_and_charges_vehicle_request	7.3.2
7.3.1.1	advanced_traveler_fares_confirm	7.4.3
4.2.1.1	paratransit_personal_schedule	6.1.1
4.1.6	transit_deviation_data_received	4.1.8
7.3.1.7	transit_fare_data	7.4.2
4.4.1.4	transit_incident_data	6.2.1.3
4.2.3.3	transit_services_for_advisory_data	6.2.1.3
4.2.3.3	transit_services_for_guidance	6.6.4
4.1.6	transit_vehicle_deviations_details	4.1.8
TRMS to Map Update Provider		
4.2.3.9	tmup_transit_map_update_request	Map Update Provider
TRMS to Media		
4.4.1.4	tm_transit_emergency_information	Media
4.4.1.4	tm_transit_incident_information	Media
4.1.6	tm_transit_schedule_deviations_to_media	Media
TRMS to Multimodal Transportation Service Provider		
4.1.2.4	tmtsp_transit_arrival_changes	Multimodal Transportation Service
4.1.7	tmtsp_transit_arrival_deviations	Multimodal Transportation Service
4.2.3.3	tmtsp_transit_service_data	Multimodal Transportation Service
TRMS to Other TRM		
4.2.3.7	totrm_transit_services	Other TRM
TRMS to PIAS		
4.2.3.3	transit_services_for_personal_devices	6.8.3.2
TRMS to PMS		
4.2.3.2	parking_lot_transit_response	1.2.5.4
TRMS to RTS		
7.3.1.5	confirm_roadside_fare_payment	4.7.2.4
4.4.1.1	emergency_acknowledge_transit_details	4.4.1.8
7.4.1.5	other_services_roadside_response	4.7.2.5
7.3.3	request_transit_user_roadside_image	4.7.2.1
4.4.1.1	secure_area_broadcast_message	4.4.1.7
4.4.1.1	secure_area_monitoring_control	4.4.1.7
7.3.1.7	transit_roadside_fare_data	4.7.2.6

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Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
7.3.1.5	transit_roadside_fare_payment_debited	7.3.4
7.3.1.5	transit_roadside_fare_payment_request	7.3.4
4.2.3.3	transit_services_for_kiosks	6.3.2
4.2.3.6	transit_services_for_roadside_fares	4.7.2.2
4.2.3.3	transit_services_for_travelers	4.7.1.1
4.1.5	transit_vehicle_arrival_time	4.7.1.1
4.1.6	transit_vehicle_user_data	4.7.1.2
TRMS to TMS		
7.3.1.7	transit_fare_direct_details	1.4.2
4.1.4	transit_highway_overall_priority	1.2.2.1
4.1.5	transit_probe_data	1.1.2.5
4.1.4	transit_ramp_overall_priority	1.2.3
4.1.4	transit_road_overall_priority	1.2.2.2
4.1.5	transit_running_data_for_demand	1.4.2
4.2.3.4	transit_services_changes_response	1.4.4
4.2.3.3	transit_services_for_demand	1.4.2
TRMS to Transit Driver		
4.5.5	ttd_route_assignements	Transit Driver
TRMS to Transit Fleet Manager		
4.4.2	ttfm_coordination_request	Transit Fleet Manager
4.2.3.4	ttfm_parameters	Transit Fleet Manager
4.2.1.4	ttfm_paratransit_service	Transit Fleet Manager
4.2.3.5	ttfm_passenger_loading_error	Transit Fleet Manager
4.1.4	ttfm_proposed_corrections	Transit Fleet Manager
4.4.3	ttfm_response_parameter_output	Transit Fleet Manager
4.3.3	ttfm_technician_information	Transit Fleet Manager
7.3.1.3	ttfm_transaction_reports	Transit Fleet Manager
4.5.7	ttfm_transit_driver_information	Transit Fleet Manager
4.2.3.4	ttfm_transit_services_output	Transit Fleet Manager
4.1.5	ttfm_transit_vehicle_data	Transit Fleet Manager
4.3.5	ttfm_transit_vehicle_maintenance_information	Transit Fleet Manager
TRMS to Transit Maintenance Personnel		
4.3.3	ttmp_work_schedule	Transit Maintenance Personnel
TRMS to Transit System Operators		
4.2.4	ttso_archive_status	Transit System Operators
4.4.1.3	ttso_emergency_request	Transit System Operators
4.4.1.3	ttso_media_parameters	Transit System Operators
4.4.1.3	ttso_potential_incidents_alarm	Transit System Operators
4.4.1.3	ttso_potential_security_problem	Transit System Operators
7.3.1.3	ttso_transaction_reports	Transit System Operators
7.3.1.7	ttso_transit_fare_output	Transit System Operators
4.4.1.3	ttso_video_image_data	Transit System Operators
TRMS to TRVS		
4.1.4	approved_corrective_plan	4.1.2.2
7.3.1.5	bad_tag_list_update	4.6.4
7.3.1.5	confirm_vehicle_fare_payment	4.6.4
7.4.1.5	other_services_vehicle_response	6.2.1.6
4.2.1.4	paratransit_transit_driver_instructions	4.2.1.6
7.3.3	request_transit_user_vehicle_image	4.6.1
4.4.1.3	transit_operator_request_acknowledge	4.4.1.2
4.2.3.6	transit_services_for_corrections	4.1.2.2
4.2.3.6	transit_services_for_eta	4.1.2.1
4.2.3.6	transit_services_for_vehicle_fares	4.6.2
4.6.8	transit_vehicle_advanced_payment_response	4.6.5
4.1.6	transit_vehicle_advisory_eta	6.2.3
4.1.6	transit_vehicle_collected_maintenance_data_request	4.1.9
7.3.1.7	transit_vehicle_fare_data	4.6.6
7.3.1.5	transit_vehicle_fare_payment_debited	7.3.5
7.3.1.5	transit_vehicle_fare_payment_request	7.3.5
TRVS to Payment Instrument		
7.3.5	tpi_debited_payment_on_transit_vehicle	Payment Instrument
7.3.5	tpi_request_fare_payment_on_transit_vehicle	Payment Instrument
TRVS to RS		
4.1.2.5	transit_vehicle_roadway_preemptions	1.2.7.3
TRVS to Transit Driver		
4.6.4	ttd_batch_mode_data_transfer_status	Transit Driver

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel

Logical Source	Logical Data Flow Name	Logical Sink
4.1.2.3	ttd_corrective_instructions	Transit Driver
4.4.1.5	ttd_emergency_information	Transit Driver
4.2.1.6	ttd_paratransit_information	Transit Driver
4.6.4	ttd_request_fare_transaction_mode_set_up	Transit Driver
4.1.2.3	ttd_transit_vehicle_schedule_deviations	Transit Driver
TRVS to Transit User		
6.2.3	ttu_advisory_information	Transit User
6.2.1.6	ttu_other_services_vehicle_confirmed	Transit User
6.2.3	ttu_traveler_information	Transit User
4.6.4	ttu_vehicle_access_message	Transit User
4.6.5	ttu_vehicle_payment_confirmed	Transit User
TRVS to TRMS		
4.6.4	bad_tag_list_request	7.3.1.5
4.6.4	fare_collection_vehicle_violation_information	5.4.5
6.2.1.6	other_services_vehicle_request	7.4.1.5
4.2.1.5	paratransit_transit_vehicle_availability	4.2.1.2
4.6.4	request_vehicle_fare_payment	7.3.1.4
4.4.1.2	transit_emergency_details	4.4.1.6
4.4.1.2	transit_emergency_information	4.4.2
4.4.1.2	transit_operator_emergency_request	4.4.1.3
4.1.2.1	transit_services_for_eta_request	4.2.3.6
4.6.1	transit_user_vehicle_image	7.3.3
4.6.5	transit_vehicle_advanced_payment_request	4.6.8
4.1.2.2	transit_vehicle_arrival_conditions	4.1.2.4
4.1.9	transit_vehicle_collected_maintenance_data	4.1.6
4.1.1	transit_vehicle_collected_trip_data	4.1.6
4.1.2.1	transit_vehicle_deviations_from_schedule	4.1.4
4.1.2.1	transit_vehicle_eta	4.1.6
7.3.5	transit_vehicle_fare_payment_confirmation	7.3.1.5
4.1.3	transit_vehicle_location	4.2.1.2
4.1.3	transit_vehicle_location_for_deviation	4.1.4
4.1.3	transit_vehicle_location_for_store	4.1.6
4.6.7	transit_vehicle_passenger_data	4.2.3.5
4.1.2.1	transit_vehicle_schedule_deviation	4.1.6
TRVS to VS		
4.6.5	transit_user_advanced_payment_on_vehicle	7.5.1
6.2.3	transit_user_advisory_information_request	6.2.2
Vehicle Characteristics to PMS		
Vehicle Characteristics	From_Vehicle_Characteristics	1.5.5
Vehicle Characteristics to RS		
Vehicle Characteristics	From_Vehicle_Characteristics	1.5.5
Vehicle Characteristics to TCS		
Vehicle Characteristics	From_Vehicle_Characteristics	1.5.5
VS to Basic Vehicle		
3.2.3.3	tbv_change_brake_setting	Basic Vehicle
3.2.3.3	tbv_change_direction	Basic Vehicle
3.2.3.3	tbv_change_throttle_setting	Basic Vehicle
3.2.3.3	tbv_deploy_crash_restraints	Basic Vehicle
3.2.3.3	tbv_steer_left	Basic Vehicle
3.2.3.3	tbv_steer_right	Basic Vehicle
3.2.3.3	tbv_steer_straight	Basic Vehicle
3.3.2	tbv_vehicle_security_system_commands	Basic Vehicle
VS to CVS		
3.3.3	cargo_data_request	3.3.1
7.5.1	cv_driver_credit_identity	2.2.3
6.7.2.2	vehicle_location_for_cv	2.4.5
VS to Driver		
6.2.5	td_advisory_information	Driver
6.2.5	td_broadcast_information	Driver
6.7.2.3	td_driving_guidance	Driver
6.7.2.3	td_guidance_input_request	Driver
6.7.2.3	td_guidance_map_update_response	Driver
6.7.2.3	td_guidance_route_details	Driver
7.2.4	td_other_services_parking_response	Driver
7.1.4	td_other_services_toll_response	Driver

Appendix K: Physical Channels Traced to Logical Data Flows

Physical Channel Logical Source	Logical Data Flow Name	Logical Sink
VS to EM		
6.7.1.2	emergency_request_driver_details	5.1.6
3.3.2	emergency_request_vehicle_details	5.1.6
VS to EVS		
6.7.2.2	vehicle_location_for_emergency_services	5.3.3
VS to ISP		
7.1.4	advanced_fares_and_charges_request	7.1.6
7.2.4	advanced_tolls_and_fares_request	7.2.6
6.2.2	advisory_data_request	6.2.1.2
6.7.2.4	driver_map_update_payment_request	7.4.1.3
6.2.2	traveler_profile_from_vehicle	6.2.1.2
6.7.2.1.2	vehicle_guidance_probe_data	6.6.2.6
6.7.2.1.1	vehicle_guidance_route_accepted	6.6.2.1
6.7.2.1.2	vehicle_route_request	6.6.2.1
6.2.2	yellow_pages_advisory_requests	6.2.6
VS to Map Update Provider		
6.7.2.4	tmup_vehicle_map_update_cost_request	Map Update Provider
6.7.2.4	tmup_vehicle_map_update_request	Map Update Provider
VS to Other Vehicle		
3.2.3.6	To_Other_Vehicle	Other Vehicle
VS to Payment Instrument		
7.5.1	tpi_debited_driver_payment_at_vehicle	Payment Instrument
7.2.7	tpi_debited_payment_at_parking_lot	Payment Instrument
7.1.7	tpi_debited_payment_at_toll_plaza	Payment Instrument
7.5.1	tpi_debited_transit_user_payment_at_vehicle	Payment Instrument
7.2.7	tpi_request_payment_at_parking_lot	Payment Instrument
7.1.7	tpi_request_payment_at_toll_plaza	Payment Instrument
VS to PMS		
7.2.7	parking_lot_payment_confirmation	7.2.1.5
7.2.7	parking_lot_tag_data_collect	7.2.1.1
VS to RS		
3.2.2	ahs_route_data	3.2.6
3.2.2	ahs_vehicle_condition	3.2.5
7.2.7	parking_lot_tag_data_input	1.1.6
7.1.7	toll_tag_data_input	1.1.6
3.1.3	vehicle_smart_probe_data	1.1.7
3.1.3	vehicle_status_details_for_emissions	1.5.5
VS to TCS		
7.1.7	toll_payment_confirmation	7.1.1.5
7.1.7	toll_tag_data_collect	7.1.1.1
VS to TRVS		
6.2.2	transit_user_advisory_information	6.2.3
7.5.1	transit_user_vehicle_credit_identity	4.6.5
6.7.2.2	vehicle_location_for_transit	4.1.3
Wayside Equipment to RS		
Wayside Equipment	fwe_approaching_train_announcement	1.6.3.1
Wayside Equipment	fwe_train_data	1.6.3.1
Wayside Equipment	fwe_wayside_equipment_status	1.6.3.1
Weather Service to ADMS		
Weather Service	fws_weather_archive_data	8.1
Weather Service to EM		
Weather Service	fws_current_weather	1.3.2.1
Weather Service	fws_predicted_weather	1.1.3
Weather Service to ISP		
Weather Service	fws_current_weather	1.3.2.1
Weather Service	fws_predicted_weather	1.1.3
Weather Service to TMS		
Weather Service	fws_current_weather	1.3.2.1
Weather Service	fws_predicted_weather	1.1.3
Weather Service to TRMS		
Weather Service	fws_current_weather	1.3.2.1
Weather Service	fws_predicted_weather	1.1.3
Yellow Pages Service Providers to ISP		
Yellow Pages Service Providers	fypsp_provider_profile_update	6.5.3
Yellow Pages Service Providers	fypsp_request_provider_registration	6.5.3
Yellow Pages Service Providers	fypsp_transaction_confirmation	6.5.2
Yellow Pages Service Providers	fypsp_yellow_pages_data	6.5.1

Appendix L: Architecture Flows Traced to Logical Flows

Subsystem Level Interconnection, Architectural Flow(s) and Component Logical Flows

Archived Data Administrator to Archived Data Management Subsystem
archive management requests
fada_archive_administration_requests
Archived Data Management Subsystem to Archived Data Administrator
archive management data
tada_archive_administration_data
Archived Data Management Subsystem to Archived Data User Systems
archive analysis results
tadu_archive_analysis_results
archive request confirmation
tadu_on_demand_confirmation
archived data products
tadu_archive_data_product
Archived Data Management Subsystem to Commercial Vehicle Administration
archive requests
cv_archive_request
archive status
cv_archive_status
Archived Data Management Subsystem to Construction and Maintenance
archive requests
tcm_c_and_m_archive_request
archive status
tcm_c_and_m_archive_status
Archived Data Management Subsystem to Emergency Management
archive requests
em_archive_request
archive status
em_archive_status
Archived Data Management Subsystem to Emissions Management
archive requests
emissions_archive_request
archive status
emissions_archive_status
Archived Data Management Subsystem to Financial Institution
payment request
tfi_archive_payment_request
tfi_archive_analysis_payment_request
Archived Data Management Subsystem to Government Reporting Systems
government reporting system data
tgrs_government_data_report_input
Archived Data Management Subsystem to Information Service Provider
archive requests
traveler_archive_request
archive status
traveler_archive_status
Archived Data Management Subsystem to Intermodal Freight Depot
archive requests
tifd_intermodal_archive_request
archive status
tifd_intermodal_archive_status
Archived Data Management Subsystem to Map Update Provider
map update request
tmup_map_archive_request
tmup_map_archive_status
Archived Data Management Subsystem to Multimodal Transportation Service Provider
archive requests
tmtsp_multimodal_archive_request
archive status
tmtsp_multimodal_archive_status
Archived Data Management Subsystem to Other Archives
archive coordination
toa_archive_coordination_data
Archived Data Management Subsystem to Other Data Sources

archive requests
tods_other_data_source_archive_request
archive status
tods_other_data_source_archive_status

Archived Data Management Subsystem to Parking Management
archive requests
parking_archive_request
archive status
parking_archive_status

Archived Data Management Subsystem to Roadway Subsystem
sensor and surveillance control
roadside_archive_control

Archived Data Management Subsystem to Toll Administration
archive requests
toll_archive_request
archive status
toll_archive_status

Archived Data Management Subsystem to Traffic Management
archive requests
traffic_management_archive_request
archive status
traffic_management_archive_status

Archived Data Management Subsystem to Transit Management
archive requests
transit_archive_request
archive status
transit_archive_status

Archived Data Management Subsystem to Weather Service
archive requests
tws_weather_archive_request
archive status
tws_weather_archive_status

Archived Data User Systems to Archived Data Management Subsystem
archive analysis requests
fadu_archive_analysis_request
fadu_on_demand_archive_request
archived data product requests
fadu_archive_data_product_request

Basic Vehicle to Vehicle
basic vehicle measures
fbv_vehicle_safety_status
fbv_vehicle_headway
fbv_vehicle_security_status
fbv_vehicle_proximity_data
fbv_vehicle_on_ahs_lane
fbv_vehicle_motion_data
fbv_vehicle_lane_position
fbv_vehicle_identity
fbv_crash_sensor_data
fbv_vehicle_condition
fbv_vehicle_speed
fbv_brake_servo_response
fbv_diagnostics_data
fbv_driver_safety_status
fbv_steering_servo_response
fbv_throttle_servo_response
fbv_vehicle_attitude_data

Commercial Vehicle Administration to Archived Data Management Subsystem
commercial vehicle archive data
cv_archive_data

Commercial Vehicle Administration to Commercial Vehicle Check
credentials information
cv_credentials_information_response
CVO database update
cv_credentials_database_update
cv_safety_database_update
international border crossing data
cv_border_database_update

safety information
cv_safety_information_response
Commercial Vehicle Administration to CVO Information Requestor
credentials and safety information response
tcvoir_carrier_or_vehicle_information
Commercial Vehicle Administration to DMV
license request
tdmv_cv_violation_vehicle_license
tdmv_cv_violation_identity_code
Commercial Vehicle Administration to Enforcement Agency
request for information on violators
tea_cv_request_for_information
violation notification
tea_cv_violation_data
Commercial Vehicle Administration to Financial Institution
payment request
tfi_cv_payment_request
Commercial Vehicle Administration to Fleet and Freight Management
activity reports
cf_periodic_activity_report
compliance review report
cf_roadside_activity_report
electronic credentials
cv_enrollment_payment_confirmation
cf_enrollment_payment_confirmation
cf_enrollment_information
cv_enrollment_information
Commercial Vehicle Administration to Government Administrators
tax-credentials-fees request
tga_request_fees_updates
tga_quarterly_reports
Commercial Vehicle Administration to Other CVAS
credentials and safety information request
tocvas_enrollment_confirmation
tocvas_commit_remote_enrollment
tocvas_enrollment_request
CVAS information exchange
tocvas_data_table
tocvas_provide_data
Commercial Vehicle Check to Commercial Vehicle Administration
citation data
cv_update_safety_problems_list
credentials information request
cv_credentials_information_request
international border crossing data update
cv_border_daily_log
roadside log update
cv_roadside_daily_log
safety information request
cv_safety_information_request
Commercial Vehicle Check to Commercial Vehicle Driver
CVO Pull in message
tcvd_inspection_results
tcvd_border_pull_in_output
tcvd_general_pull_in_output
tcvd_safety_pull_in_output
tcvd_clearance_pull_in_output
Commercial Vehicle Check to Commercial Vehicle Subsystem
border clearance event record
cv_on_board_border_record
clearance event record
cv_on_board_screening_record
electronic clearance request
cv_request_electronic_clearance_data
lock tag data request
cv_request_electronic_clearance_data
on-board safety request
cv_request_on_board_data

pass/pull-in
cv_on_board_pull_in_output
safety inspection record
cv_inspection_data_output
screening request
cv_request_electronic_clearance_data

Commercial Vehicle Check to CVO Inspector
CVO inspector information
tci_credentials_data_output
tci_inspection_report
tci_output_log_report
tci_pull_in_information
tci_safety_data_output

Commercial Vehicle Driver to Commercial Vehicle Subsystem
CVO driver initialization
fcvd_driver_general_message
fcvd_activity_request
fcvd_driver_data_input
fcvd_vehicle_number
fcvd_driver_input_type
fcvd_driver_number
fcvd_carrier_number
fcvd_enrollment_request
fcvd_other_data_input
fcvd_request_routing_instructions
fcvd_request_tag_data_output
fcvd_route_data
fcvd_enrollment_payment_request
fcvd_trip_identity
fcvd_route_request

Commercial Vehicle Manager to Fleet and Freight Management
fleet manager inquiry
fcvm_request_tag_data_output
fcvm_enrollment_request
fcvm_enrollment_payment_request
fcvm_request_driver_route_instructions
fcvm_preclearance_data
fcvm_roadside_activity_report_request
fcvm_route_data
fcvm_route_function_request
fcvm_trip_identity
fcvm_update_driver_route_instructions
fcvm_vehicle_number
fcvm_other_data_input
fcvm_carrier_number
fcvm_driver_number
fcvm_request_on_board_vehicle_data

Commercial Vehicle Subsystem to Commercial Vehicle
lock tag data request
tcv_lock_tag_data_request

Commercial Vehicle Subsystem to Commercial Vehicle Check
electronic clearance data
cv_electronic_clearance_data
lock tag data
cv_electronic_clearance_data
on board safety data
cv_on_board_data
screening data
cv_electronic_clearance_data

Commercial Vehicle Subsystem to Commercial Vehicle Driver
alerts, messages
tcvd_route_data
tcvd_on_board_pull_in_output
tcvd_critical_safety_problem
tcvd_data_request
CVO Pull in message
tcvd_type_input_request
log information

tcvd_enrollment_payment_confirmation
tcvd_confirm_data_stored
tcvd_enrollment_confirmation
tcvd_other_data_request
tcvd_output_data
tcvd_output_tag_data
tcvd_routing_instructions
tcvd_data_input_request

Commercial Vehicle Subsystem to Fleet and Freight Management

driver and vehicle information

cv_driver_route_request
cv_driver_storage_request
cv_driver_enrollment_payment_request
cf_driver_route_instructions_request
cv_static_route_data
cv_driver_enrollment_request

on board vehicle data

cf_tag_data_store_output
cf_on_board_vehicle_data

Commercial Vehicle Subsystem to Vehicle

commercial vehicle data

processed_cargo_data
cv_driver_enrollment_cost

Commercial Vehicle to Commercial Vehicle Check

CVO weight and presence

fcv_vehicle_characteristics

Commercial Vehicle to Commercial Vehicle Subsystem

commercial vehicle measures

fcv_lock_tag_data
fcv_brake_condition
fcv_vehicle_safety_status
fcv_driver_status
fcv_driver_safety_status
fcv_distance_travelled
fcv_cargo_safety_status
fcv_cargo_data
fcv_weight

Construction and Maintenance to Archived Data Management Subsystem

construction and maintenance archive data

fcm_c_and_m_archive_data

Construction and Maintenance to Traffic Management

equipment maintenance status

fcm_fault_clearance
fcm_sensor_fault_data

maintenance resource response

fcm_resource_response

work zone status

fcm_incident_information

CVO Information Requestor to Commercial Vehicle Administration

credentials and safety information request

fcvoir_request_for_information

CVO Inspector to Commercial Vehicle Check

CVC override mode

fci_pull_in_action

CVO inspector input

fci_safety_data_request
fci_start_inspection
fci_inspection_data_input
fci_credentials_data_request
fci_request_log_report

DMV to Commercial Vehicle Administration

registration

fdmv_cv_violation_state_identity
fdmv_cv_violation_vehicle_registration

DMV to Parking Management

registration

fdmv_parking_lot_violation_state_identity
fdmv_parking_lot_violation_vehicle_registration

Appendix L: Architecture Flows Traced to Logical Data Flows

Subsystem Level Interconnection, Architectural Flow(s) and Component Logical Flows

DMV to Toll Administration
- ***registration***
  - fdmv_toll_violation_state_identity
  - fdmv_toll_violation_vehicle_registration

DMV to Traffic Management
- ***registration***
  - fdmv_traffic_violation_state_identity
  - fdmv_traffic_violation_vehicle_registration

Driver to Vehicle
- ***driver inputs***
  - fd_guidance_map_update_request
  - fd_guidance_route_accepted
  - fd_guidance_data
  - fd_activate_vehicle_control
  - fd_request_advisory_information
- ***request for service***
  - fd_emergency_request
  - fd_guidance_request
  - fd_other_services_parking_request
  - fd_other_services_toll_request

Emergency Management to Archived Data Management Subsystem
- ***emergency archive data***
  - em_archive_data

Emergency Management to Emergency System Operator
- ***emergency operations status***
  - teso_emergency_vehicle_dispatch_failure
  - teso_emergency_data_output
  - teso_emergency_action_log_output
  - teso_archive_status

Emergency Management to Emergency Telecommunications System
- ***incident notification response***
  - tets_incident_acknowledge

Emergency Management to Emergency Vehicle Subsystem
- ***emergency dispatch requests***
  - emergency_vehicle_dispatch_request
- ***incident command information***
  - local_decision_support
- ***suggested route***
  - emergency_vehicle_suggested_route

Emergency Management to Event Promoters
- ***event confirmation***
  - tep_planned_event_confirmation

Emergency Management to Fleet and Freight Management
- ***Hazmat information request***
  - cf_hazmat_request

Emergency Management to Information Service Provider
- ***incident information***
  - incident_information

Emergency Management to Map Update Provider
- ***map update request***
  - tmup_request_emergency_display_update
  - tmup_emergency_route_map_request

Emergency Management to Media
- ***incident information for media***
  - tm_emergency_information

Emergency Management to Other EM
- ***incident report***
  - toec_mayday_emergency_data
  - toec_incident_details
  - toec_emergency_center_identity
- ***incident response coordination***
  - toec_incident_response_coordination

Emergency Management to Personal Information Access
- ***emergency acknowledge***
  - emergency_request_personal_traveler_acknowledge

Emergency Management to Remote Traveler Support
- ***emergency acknowledge***
  - emergency_request_traveler_acknowledge

Appendix L: Architecture Flows Traced to Logical Data Flows

Subsystem Level Interconnection, Architectural Flow(s) and Component Logical Flows

Emergency Management to Traffic Management
- ***emergency traffic control request***
  - emergency_traffic_control_request
- ***incident information***
  - incident_details
- ***incident response status***
  - incident_response_status
- ***remote surveillance control***
  - remote_video_image_control
- ***resource request***
  - resource_request

Emergency Management to Transit Management
- ***transit emergency coordination data***
  - transit_incident_coordination_data

Emergency Management to Vehicle
- ***emergency acknowledge***
  - emergency_request_vehicle_acknowledge
  - emergency_data_request
  - emergency_request_driver_acknowledge
- ***emergency data request***
  - emergency_data_request

Emergency Personnel to Emergency Vehicle Subsystem
- ***emergency personnel inputs***
  - fep_emergency_dispatch_acknowledge
  - fep_incident_command_request
  - fep_incident_status

Emergency System Operator to Emergency Management
- ***emergency operations request***
  - feso_emergency_data_input
  - feso_emergency_data_output_request
  - feso_emergency_allocation_override
  - feso_emergency_action_log_request
  - feso_archive_commands
  - feso_emergency_display_update_request

Emergency Telecommunications System to Emergency Management
- ***incident notification***
  - fets_caller_information
  - fets_incident_information

Emergency Vehicle Subsystem to Emergency Management
- ***emergency dispatch response***
  - emergency_vehicle_dispatch_response
- ***emergency vehicle tracking data***
  - emergency_vehicle_tracking_data
- ***incident command request***
  - incident_command_request
- ***incident status***
  - incident_status_update
  - incident_status_data

Emergency Vehicle Subsystem to Emergency Personnel
- ***dispatch information***
  - tep_emergency_dispatch_order
- ***incident command information presentation***
  - tep_decision_support

Emergency Vehicle Subsystem to Roadway Subsystem
- ***local signal preemption request***
  - emergency_vehicle_preemptions

Emissions Management to Archived Data Management Subsystem
- ***emissions archive data***
  - emissions_archive_data

Emissions Management to Information Service Provider
- ***air quality information***
  - current_traffic_pollution_data

Emissions Management to Map Update Provider
- ***map update request***
  - tmup_request_pollution_display_update

Emissions Management to Media
- ***air quality information***
  - tm_pollution_data

Appendix L: Architecture Flows Traced to Logical Data Flows

Subsystem Level Interconnection, Architectural Flow(s) and Component Logical Flows

Emissions Management to Roadway Subsystem
- ***vehicle pollution criteria***
  - pollution_state_vehicle_acceptance_criteria

Emissions Management to Traffic Management
- ***widearea statistical pollution information***
  - pollution_incident
  - pollution_state_data
  - wide_area_pollution_data

Emissions Management to Traffic Operations Personnel
- ***pollution data display***
  - ttop_pollution_data_display

Enforcement Agency to Commercial Vehicle Administration
- ***information on violators***
  - fea_cv_enforcement_agency_response

Environment to Emissions Management
- ***pollutant levels***
  - fe_area_pollutant_levels

Environment to Roadway Subsystem
- ***pollutant levels***
  - fe_roadside_pollutant_levels

Event Promoters to Emergency Management
- ***event plans***
  - fep_planned_event_data

Event Promoters to Traffic Management
- ***event plans***
  - fep_event_information

Financial Institution to Archived Data Management Subsystem
- ***transaction status***
  - ffi_archive_analysis_payment_confirm
  - ffi_archive_payment_confirm

Financial Institution to Commercial Vehicle Administration
- ***transaction status***
  - ffi_cv_payment_confirm

Financial Institution to Information Service Provider
- ***transaction status***
  - ffi_registration_payment_confirm
  - ffi_traveler_rideshare_payment_confirm
  - ffi_traveler_other_services_payments_confirm
  - ffi_traveler_display_payment_confirm
  - ffi_driver_map_payment_confirm
  - ffi_traveler_map_payment_confirm

Financial Institution to Parking Management
- ***transaction status***
  - ffi_bad_charges_payment_updates
  - ffi_confirm_charges_payment

Financial Institution to Toll Administration
- ***transaction status***
  - ffi_confirm_toll_payment
  - ffi_bad_toll_payment_updates

Financial Institution to Transit Management
- ***transaction status***
  - ffi_bad_fare_payment_updates
  - ffi_confirm_fare_payment
  - ffi_other_services_payment_confirm

Fleet and Freight Management to Commercial Vehicle Administration
- ***credential application***
  - cf_enrollment_request
  - cv_enrollment_request
- ***information request***
  - cf_request_activity_report
- ***tax filing, audit data***
  - cf_tax_audit_data
  - cv_enrollment_payment_request
  - cf_enrollment_payment_request

Fleet and Freight Management to Commercial Vehicle Manager
- ***fleet status***
  - tcvm_roadside_activity_report
  - tcvm_preclearance_results

tcvm_confirm_enrollment_data_stored
tcvm_other_data_request
tcvm_enrollment_payment_confirmation
tcvm_data_input_request
tcvm_driver_route_instructions
tcvm_enrollment_confirmation
tcvm_route_data
tcvm_output_tag_data

Fleet and Freight Management to Commercial Vehicle Subsystem

fleet to driver update

cv_driver_enrollment_payment_confirmation
cv_driver_route_data
cv_driver_enrollment_information
cf_tag_data_store_write
cf_tag_data_store_request
cf_request_on_board_vehicle_data
cf_driver_route_instructions
cv_static_route_request

Fleet and Freight Management to Emergency Management

Hazmat information

cf_hazmat_route_information
cf_hazmat_vehicle_information

Fleet and Freight Management to Information Service Provider

route request

cf_route_request
cv_route_request

Fleet and Freight Management to Intermodal Freight Depot

intermod CVO coord

tifd_freight_request

Fleet and Freight Management to Intermodal Freight Shipper

intermod CVO coord

To_Intermodal_Freight_Shipper

Fleet and Freight Management to Payment Instrument

request for payment

tpi_debited_commercial_manager_payment

Government Administrators to Commercial Vehicle Administration

regulations

fga_carrier_safety_ratings
fga_roadside_facility_locations
fga_tax_and_credential_fees

Government Reporting Systems to Archived Data Management Subsystem

government reporting data receipt

fgrs_government_data_report_request

Information Service Provider to Archived Data Management Subsystem

traveler archive data

traveler_archive_data

Information Service Provider to Emergency Management

incident information request

incident_information_request

Information Service Provider to Financial Institution

payment request

tfi_traveler_rideshare_payment_request
tfi_driver_map_payment_request
tfi_registration_payment_request
tfi_traveler_display_payment_request
tfi_traveler_map_payment_request
tfi_traveler_other_services_payments_request

Information Service Provider to Fleet and Freight Management

route plan

cv_route
cf_route

Information Service Provider to ISP Operator

ISP operating parameters

tispo_archive_status
tispo_broadcast_data_parameters_output
tispo_route_selection_parameters
tispo_trip_planning_parameters

Information Service Provider to Map Update Provider

map update request
tmup_request_other_routes_map_update
tmup_request_route_selection_map_update

Information Service Provider to Media

traveler information for media
tm_incident_information
tm_traffic_information
tm_transit_vehicle_deviations
tm_traveler_information_request

Information Service Provider to Multimodal Transportation Service Provider

multimodal information request
tmtsp_rail_services_request
tmtsp_ferry_services_request
tmtsp_air_services_request
tmtsp_confirm_multimodal_service

Information Service Provider to Other ISP

ISP coordination
toisp_traffic_data_request
toisp_request_data
toisp_traffic_information
toisp_transit_data_request
toisp_transit_information
transit_running_data_for_advisory_output
toisp_data_supply

Information Service Provider to Parking Management

parking lot data request
advanced_other_charges_request
advanced_traveler_charges_request
parking_lot_data_request
parking_lot_price_data_request

parking reservations request
parking_lot_reservation_request

Information Service Provider to Personal Information Access

broadcast information
transit_deviations_for_broadcast_to_personal_devices
traffic_data_for_broadcast_to_personal_devices

traveler information
traveler_personal_payment_confirmation
traffic_data_for_personal_devices
transit_deviations_for_personal_devices
traveler_map_update_payment_response
traveler_personal_display_update_payment_response
traveler_personal_transaction_confirmation

trip plan
traveler_guidance_route
traveler_personal_trip_information

yellow pages information
traveler_personal_yellow_pages_data

Information Service Provider to Remote Traveler Support

broadcast information
transit_deviations_for_broadcast_to_kiosks
traffic_data_for_broadcast_to_kiosks

traveler information
traveler_transaction_confirmation
advanced_tolls_and_charges_roadside_confirm
traffic_data_for_kiosks
traveler_payment_confirmation
transit_deviations_for_kiosks

trip plan
traveler_trip_information

yellow pages information
traveler_yellow_pages_data

Information Service Provider to Toll Administration

toll data request
advanced_traveler_tolls_request
toll_price_data_request
advanced_other_tolls_request

Information Service Provider to Traffic Management

fare and price information
toll_price_details
transit_fare_details
parking_lot_charge_details
logged special vehicle route
special_vehicle_priority_routing
logged_special_vehicle_route
request for traffic information
traffic_data_distribution_request
road network use
current_road_network_use
current_other_routes_use
current_transit_routes_use

Information Service Provider to Transit Management
demand responsive transit request
paratransit_trip_request
selected routes
paratransit_service_confirmation
advanced_tolls_and_charges_vehicle_confirm
transit information request
advanced_traveler_fares_request
transit_services_guidance_request
transit_fare_data_request
transit_vehicle_deviations_details_request
advanced_other_fares_request
transit_services_advisories_request

Information Service Provider to Vehicle
broadcast information
link_and_queue_data
broadcast_data
traveler information
link_and_queue_data
driver_map_update_payment_response
advisory_data
advanced_tolls_and_fares_response
advanced_fares_and_charges_response
trip plan
vehicle_guidance_route
yellow pages information
yellow_pages_advisory_data

Information Service Provider to Yellow Pages Service Providers
provider profile confirm
typsp_provider_update_confirm
travel service request
typsp_transaction_request
typsp_yellow_pages_info_request

Intermodal Freight Depot to Archived Data Management Subsystem
intermodal freight archive data
fifd_intermodal_archive_data

Intermodal Freight Depot to Fleet and Freight Management
intermod CVO coord
fifd_freight_data

Intermodal Freight Shipper to Fleet and Freight Management
intermod CVO coord
From_Intermodal_Freight_Shipper

ISP Operator to Information Service Provider
ISP operating parameter updates
fispo_request_route_selection_map_data_update
fispo_route_selection_parameters_request
fispo_route_selection_parameters_update
fispo_trip_planning_parameters_update
fispo_broadcast_data_parameters_update
fispo_broadcast_data_parameters_request
fispo_archive_commands
fispo_trip_planning_parameters_request
fispo_request_other_routes_selection_map_data_update

Location Data Source to Personal Information Access
position fix

From_Location_Data_Source

Location Data Source to Vehicle

position fix

From_Location_Data_Source

Map Update Provider to Archived Data Management Subsystem

map updates

fmup_map_archive_data

Map Update Provider to Emergency Management

map updates

fmup_emergency_display_update
fmup_emergency_route_map_update

Map Update Provider to Emissions Management

map updates

fmup_pollution_display_update

Map Update Provider to Information Service Provider

map updates

fmup_other_routes_map_data
fmup_route_selection_map_data

Map Update Provider to Personal Information Access

map updates

fmup_traveler_map_update_cost
fmup_traveler_personal_display_update
fmup_traveler_map_update
fmup_traveler_personal_display_update_cost

Map Update Provider to Remote Traveler Support

map updates

fmup_traveler_display_update

Map Update Provider to Traffic Management

map updates

fmup_traffic_display_update
fmup_incident_display_update
fmup_demand_display_update

Map Update Provider to Transit Management

map updates

fmup_transit_map_update

Map Update Provider to Vehicle

map updates

fmup_vehicle_map_update
fmup_vehicle_map_update_cost

Media to Emergency Management

media information request

fm_emergency_information_request

Media to Information Service Provider

external reports

fm_traveler_information
fm_incident_details

media information request

fm_incident_information_request
fm_traffic_information_request
fm_transit_vehicle_deviations_request

Media to Traffic Management

external reports

fm_incident_information

media information request

fm_traffic_data_request
fm_incident_data_request

Media to Transit Management

media information request

fm_transit_incident_information_request
fm_transit_schedule_deviations_request

Multimodal Crossings to Roadway Subsystem

multimodal crossing status

fmmc_crossing_close_duration
fmmc_crossing_status_for_roads
fmmc_crossing_status_for_highways
fmmc_crossing_close_time

Multimodal Transportation Service Provider to Archived Data Management Subsystem

multimodal archive data

fmtsp_multimodal_archive_data

Multimodal Transportation Service Provider to Information Service Provider

multimodal information

fmtsp_air_services
fmtsp_ferry_services
fmtsp_multimodal_service_confirmation
fmtsp_rail_services

Multimodal Transportation Service Provider to Transit Management

transit multimodal information

fmtsp_transit_service_data

Other Archives to Archived Data Management Subsystem

archive coordination

foa_archive_coordination_data

Other CVAS to Commercial Vehicle Administration

credentials and safety information response

focvas_enrollment_confirmation
focvas_enrollment_request
focvas_commit_local_enrollment

CVAS information exchange

focvas_data_table
focvas_provide_data

Other Data Sources to Archived Data Management Subsystem

other data source archive data

fods_other_data_source_archive_data

Other EM to Emergency Management

incident report

foec_incident_details
foec_mayday_emergency_data
foec_emergency_center_identity

incident response coordination

foec_incident_response_coordination

Other ISP to Information Service Provider

ISP coordination

foisp_data_supply
foisp_request_data
foisp_traffic_data
foisp_traffic_information_request
foisp_transit_data
foisp_transit_information_request

Other Parking to Parking Management

parking coordination

fop_parking_coordination_data

Other TM to Traffic Management

traffic control coordination

fotc_identity
fotc_traffic_control_and_status

traffic information coordination

fotc_data_request
fotc_identity
fotc_transfer_data

Other TRM to Transit Management

TRMS coord

fotrm_transit_services

Other Vehicle to Vehicle

vehicle to vehicle coordination

From_Other_Vehicle

Parking Management to Archived Data Management Subsystem

parking archive data

parking_archive_data

Parking Management to DMV

license request

tdmv_parking_lot_violation_vehicle_license
tdmv_parking_lot_violation_identity_code

Parking Management to Driver

roadside transaction status

td_parking_lot_payment_confirmed
td_parking_lot_payment_invalid

Parking Management to Enforcement Agency

violation notification
tea_parking_violation_data
Parking Management to Financial Institution
payment request
tfi_request_charges_payment
tfi_parking_lot_payment_violator_data
Parking Management to Information Service Provider
parking information
parking_lot_availability
parking_lot_price_data
parking lot reservation confirmation
advanced_other_charges_confirm
advanced_traveler_charges_confirm
parking_lot_reservation_confirm
Parking Management to Other Parking
parking coordination
top_parking_coordination_data
Parking Management to Parking Operator
parking status
tpo_change_lot_state
tpo_transaction_reports
tpo_parking_lot_charge_change_request
tpo_archive_status
tpo_request_advanced_parking_payment
Parking Management to Traffic Management
parking availability
parking_lot_current_state
parking_guidance_for_dms
parking demand management response
parking_lot_charge_direct_details
parking_lot_charge_change_response
Parking Management to Transit Management
transit parking coordination
parking_lot_transit_request
Parking Management to Vehicle
request tag data
parking_lot_payment_request
parking_lot_tag_data_request
tag update
parking_lot_tag_data_clear
parking_lot_payment_debited
parking_lot_tag_data_update
Parking Operator to Parking Management
parking operator inputs
fpo_parking_lot_charge_change_response
fpo_parking_lot_data
fpo_lot_occupancy
fpo_current_lot_state
fpo_confirm_advanced_parking_payment
fpo_archive_commands
fpo_parking_lot_hours_of_operation
request for performance data
fpo_transaction_reports_request
Payment Instrument to Fleet and Freight Management
payment
fpi_commercial_manager_input_credit_identity
Payment Instrument to Personal Information Access
payment
fpi_traveler_personal_input_credit_identity
Payment Instrument to Remote Traveler Support
Payment
fpi_transit_roadside_tag_data
fpi_traveler_roadside_input_credit_identity
fpi_transit_user_roadside_input_credit_identity
fpi_confirm_fare_payment_at_roadside
Payment Instrument to Transit Vehicle Subsystem
payment
fpi_transit_vehicle_tag_data

fpi_confirm_fare_payment_on_transit_vehicle

Payment Instrument to Vehicle

payment

fpi_parking_tag_data
fpi_toll_tag_data
fpi_confirm_payment_at_toll_plaza
fpi_confirm_payment_at_parking_lot
fpi_transit_user_vehicle_input_credit_identity
fpi_driver_vehicle_input_credit_identity

Pedestrians to Roadway Subsystem

crossing call

fp_pedestrian_data
fp_pedestrian_images

Personal Information Access to Emergency Management

emergency notification

emergency_request_personal_traveler_details

Personal Information Access to Information Service Provider

traveler profile

traveler_transit_profile
traveler_traffic_profile

traveler request

traveler_personal_current_condition_request
traffic_data_personal_request
transit_deviations_personal_request
traveler_map_update_payment_request
traveler_personal_display_update_payment_request

trip confirmation

traveler_personal_trip_confirmation
traveler_route_accepted
traveler_personal_payment_information

trip request

traveler_personal_trip_request
traveler_route_request

yellow pages request

traveler_personal_transaction_request
traveler_personal_yellow_pages_information_request

Personal Information Access to Map Update Provider

map update request

tmup_request_traveler_personal_display_update
tmup_request_traveler_personal_display_update_cost
tmup_traveler_map_update_cost_request
tmup_traveler_map_update_request

Personal Information Access to Payment Instrument

request for payment

tpi_debited_payment_at_personal_device

Personal Information Access to Transit Management

transit information user request

transit_services_personal_request

Personal Information Access to Traveler

traveler interface updates

tt_guidance
tt_guidance_input_request
tt_guidance_map_update_response
tt_guidance_route_details
tt_personal_trip_planning_responses
tt_personal_extra_trip_data_request
tt_emergency_message

Potential Obstacles to Vehicle

physical presence

From_Potential_Obstacles

Rail Operations to Traffic Management

railroad advisories

fro_incident_notification

railroad schedules

fro_maintenance_schedules
fro_train_schedules

Remote Traveler Support to Emergency Management

emergency notification

emergency_request_traveler_details

Remote Traveler Support to Information Service Provider

traveler request

advanced_tolls_and_charges_roadside_request
traffic_data_kiosk_request
traveler_yellow_pages_information_request
traveler_transaction_request
traveler_payment_information
transit_deviation_kiosk_request
traveler_current_condition_request

trip confirmation

traveler_trip_confirmation

trip request

traveler_trip_request

yellow pages request

traveler_yellow_pages_information_request

Remote Traveler Support to Map Update Provider

map update request

tmup_request_traveler_display_update

Remote Traveler Support to Payment Instrument

request for payment

tpi_debited_transit_user_payment_at_roadside
tpi_debited_traveler_payment_at_roadside
tpi_request_fare_payment_at_roadside
tpi_debited_fare_payment_at_roadside

Remote Traveler Support to Transit Management

emergency notification

transit_user_roadside_image
emergency_request_transit_details

secure area surveillance data

secure_area_surveillance_information

transit fare payment requests

transit_roadside_passenger_data
transit_roadside_fare_payment_confirmation
request_roadside_fare_payment
fare_collection_roadside_violation_information

transit information user request

transit_services_kiosk_request
other_services_roadside_request
transit_services_travelers_request

Remote Traveler Support to Transit User

transit user fare status

ttu_roadside_access_message
ttu_roadside_payment_confirmed

transit user outputs

ttu_other_services_roadside_confirmed
ttu_transit_vehicle_information
ttu_transit_information

Remote Traveler Support to Traveler

traveler interface updates

tt_trip_planning_responses
tt_emergency_response
tt_extra_trip_data_request

Roadway Environment to Roadway Subsystem

weather conditions

fre_environmental_conditions
fre_physical_conditions

Roadway Environment to Vehicle

weather conditions

fre_roadside_data

Roadway Subsystem to Archived Data Management Subsystem

roadside archive data

roadside_archive_data

Roadway Subsystem to Basic Vehicle

broadcast advisories

tbv_har_broadcast_for_highways
tbv_har_broadcast_for_roads

Roadway Subsystem to Driver

driver information
td_lane_use_indication_for_roads
td_ramp_state_indication
td_lane_use_indication_for_highways
td_dms_indication_for_roads
td_dms_indication_for_highways
td_signal_indication

Roadway Subsystem to Emissions Management
pollution data
pollution_state_vehicle_log_data
pollution_state_roadside_collection
pollution_state_vehicle_collection

Roadway Subsystem to Multimodal Crossings
highway control status
tmmc_crossing_clear_at_roads
tmmc_stop_alternate_mode_at_roads
tmmc_stop_alternate_mode_at_highways
tmmc_road_equipment_status
tmmc_highway_equipment_status
tmmc_crossing_clear_at_highways

Roadway Subsystem to Pedestrians
crossing permission
tp_dms_indication
tp_cross_request_received
tp_cross_road

Roadway Subsystem to Traffic Management
AHS status
ahs_checking_details
emissions data
vehicle_pollution_alert
vehicle_pollution_message_for_highways
vehicle_pollution_message_for_roads
environmental conditions
environment_sensor_data
environmental_sensor_status
fault reports
traffic_sensor_status
traffic_control_device_status
sensor_fault_data
environment_sensor_fault_data
freeway control status
indicator_input_data_from_highways
hov data
hov_lane_data_input
hov_sensor_data
hri status
hri_traffic_data
rail_operations_message
hri_status
hri_guidance_for_dms
hri_guidance_for_beacon_message
traffic_management_request
incident data
incident_analysis_data
incident_video_image
intersection blockage notification
hri_blockage
intersection_blocked
request for right-of-way
indicator_input_data_from_roads
pedestrian_sensor_data
multimodal_crossing_sensor_data
reversible lane status
reversible_lane_video_images
sensor_data_for_reversible_lanes
roadway information system status
information_device_fault_status
har_status_for_roads

dms_status_for_highways
dms_status_for_roads
har_status_for_highways
signal control status
indicator_input_data_from_roads
traffic flow
traffic_sensor_data
traffic_image_data
traffic images
traffic_video_image_for_display
traffic_video_image
vehicle probe data
vehicle_smart_probe_data_for_storage
vehicle_tag_data

Roadway Subsystem to Vehicle
AHS control data
ahs_check_response
intersection status
intersection_collision_avoidance_data
request tag data
toll_tag_data_needed
parking_lot_tag_data_needed
vehicle signage data
vehicle_signage_data
vehicle_smart_probe_data_output

Roadway Subsystem to Wayside Equipment
hri operational status
twe_hri_status
intersection blockage notification
twe_stop_highway_indication
twe_stop_train_indication

Roadway to Vehicle
roadway characteristics
From_Roadway

Secure Area Environment to Remote Traveler Support
secure area characteristics
fsa_area_image

Toll Administration to Archived Data Management Subsystem
toll archive data
toll_archive_data

Toll Administration to DMV
license request
tdmv_toll_violation_identity_code
tdmv_toll_violation_vehicle_license

Toll Administration to Enforcement Agency
violation notification
tea_toll_violation_data

Toll Administration to Financial Institution
payment request
tfi_request_toll_payment
tfi_toll_payment_violator_data

Toll Administration to Information Service Provider
probe data
vehicle_toll_probe_data
toll data
advanced_other_tolls_confirm
advanced_traveler_tolls_confirm
toll_price_data

Toll Administration to Toll Administrator
toll revenues and summary reports
tta_request_advanced_toll
tta_archive_status
tta_transaction_reports
tta_toll_price_changes_request

Toll Administration to Toll Collection
toll instructions
toll_price_data_for_advanced_toll
toll_price_data_for_vehicle_toll

advanced_toll_needed
toll_bad_payment_check_response

Toll Administration to Traffic Management

probe data

probe_data_for_traffic

toll demand management response

toll_price_direct_details
toll_price_changes_response

Toll Administrator to Toll Administration

toll administration requests

fta_confirm_advanced_toll
fta_toll_price_changes_response
fta_archive_commands
fta_toll_price_data

Toll Collection to Driver

roadside transaction status

td_toll_payment_confirmed
td_toll_payment_invalid

Toll Collection to Toll Administration

toll transactions

toll_payment_violator_data
advanced_toll_transactions
toll_violation_information
toll_bad_payment_check_request
current_toll_transactions
confirm_advanced_tolls_payment

Toll Collection to Toll Operator

toll transaction reports

tto_transaction_reports

Toll Collection to Vehicle

request tag data

toll_payment_request
toll_tag_data_request

tag update

toll_tag_data_update
toll_tag_data_clear
toll_payment_debited

Toll Operator to Toll Collection

toll operator requests

fto_local_toll_price_variations

Traffic Management to Archived Data Management Subsystem

traffic archive data

traffic_management_archive_data

Traffic Management to Construction and Maintenance

closure coordination

tcm_request_incident_change
tcm_incident_confirmation

maintenance resource request

tcm_resource_request

traffic equipment status

tcm_fault_data
tcm_sensor_fault_data

Traffic Management to DMV

license request

tdmv_traffic_violation_vehicle_license
tdmv_traffic_violation_identity_code

Traffic Management to Emergency Management

current network conditions

incident_video_for_emergency_services
traffic_data_for_emergency_services

emergency traffic control response

emergency_traffic_control_response

incident information

wrong_way_vehicle_detection
incident_response_clear
incident_alert

incident information request

incident_details_request

resource deployment status
resource_deployment_status
Traffic Management to Emissions Management
pollution state data request
pollution_state_data_request
Traffic Management to Enforcement Agency
violation notification
tea_traffic_violation_data
Traffic Management to Event Promoters
event confirmation
tep_event_confirmation
Traffic Management to Information Service Provider
request fare and price information
transit_fare_request
toll_price_request
parking_lot_charge_request
traffic information
traffic_data_for_distribution
current_highway_network_state
current_road_network_state
link_data_for_guidance
planned_events
sensor_data_for_distribution
prediction_data
Traffic Management to Map Update Provider
map update request
tmup_request_demand_display_update
tmup_request_traffic_display_update
tmup_request_incident_display_update
tmup_map_static_data
Traffic Management to Media
traffic information for media
tm_traffic_data
tm_incident_data
Traffic Management to Other TM
traffic control coordination
totc_identity
totc_traffic_control_and_status
traffic information coordination
totc_transfer_data
totc_identity
totc_data_request
Traffic Management to Parking Management
parking demand management request
parking_lot_charge_change_request
parking_lot_charge_direct_request
parking instructions
selected_parking_lot_control_strategy
static_data_for_parking_lots
parking_lot_input_data
Traffic Management to Rail Operations
hri advisories
tro_equipment_status
tro_event_schedules
tro_incident_notification
Traffic Management to Roadway Subsystem
AHS control information
ahs_control_data_changes
freeway control data
indicator_control_data_for_highways
indicator_control_monitoring_data_for_highways
hri control data
hri_traffic_surveillance
indicator_sign_control_data_for_hri
rail_operations_device_command
rail_operations_advisories
hri request
tms_requests

ro_requests
roadway information system data
dms_data_for_roads
har_data_for_highways
har_data_for_roads
vehicle_sign_data
dms_data_for_highways
sensor and surveillance control
incident_video_image_control
sensor_configuration_data
environment_sensor_configuration_data
signal control data
indicator_control_data_for_roads
indicator_control_monitoring_data_for_roads

Traffic Management to Toll Administration
toll demand management request
toll_price_direct_request
toll_price_changes_request

Traffic Management to Traffic Operations Personnel
traffic operator data
ttop_archive_status
ttop_demand_policy_activation_result
ttop_current_indicator_faults
ttop_defined_incident_responses_data
ttop_demand_forecast_result
ttop_demand_data
ttop_demand_forecast_data
ttop_incident_information_display
ttop_current_sensor_faults
ttop_incident_video_image_output
ttop_demand_policy_information
ttop_wrong_way_detection
ttop_weather_information
ttop_video_image_output
ttop_resource_response
ttop_possible_incidents_data
ttop_traffic_control_information_display
ttop_undefined_response_details
ttop_possible_defined_response_output

Traffic Management to Transit Management
request transit information
transit_fare_direct_request
transit_conditions_demand_request
transit_services_demand_request
traffic control priority status
transit_road_priority_given
transit_ramp_priority_given
transit_highway_priority_given
traffic information for transit
prediction_data
traffic_data_for_transit
transit demand management request
transit_services_changes_request

Traffic Operations Personnel to Emissions Management
pollution data parameters
ftop_pollution_data_information_request
ftop_pollution_parameter_updates

Traffic Operations Personnel to Traffic Management
traffic operator inputs
ftop_indicator_fault_data_request
ftop_video_camera_strategy_change
ftop_update_defined_incident_responses
ftop_traffic_information_requests
ftop_strategy_override
ftop_static_data
ftop_sensor_fault_data_input
ftop_roadway_characteristics
ftop_resource_request

ftop_request_possible_incidents_data
ftop_output_possible_defined_reponses
ftop_demand_policy_updates
ftop_indicator_fault_data_update
ftop_weather_request_information
ftop_traffic_data_parameter_updates
ftop_incident_data_amendment
ftop_incident_information_requests
ftop_incident_camera_action_request
ftop_demand_policy_information_request
ftop_demand_policy_activation
ftop_demand_forecast_request
ftop_demand_data_update_request
ftop_demand_data_request
ftop_defined_incident_response_data_update
ftop_defined_incident_response_data_request
ftop_archive_command
ftop_indicator_fault_data_input

Traffic to Roadway Subsystem

traffic characteristics

ft_traffic_data
ft_traffic_images
ft_vehicle_pollutant_levels

Transit Driver to Transit Management

transit driver availability

ftd_information_updates

Transit Driver to Transit Vehicle Subsystem

transit driver inputs

ftd_emergency_request
ftd_fare_transaction_mode_set_up
ftd_request_batch_mode_data_transfer

Transit Fleet Manager to Transit Management

transit fleet manager inputs

ftfm_coordination_data
ftfm_technician_information_updates
ftfm_transit_vehicle_maintenance_specs
ftfm_transit_vehicle_maintenance_information_request
ftfm_transit_services_output_request
ftfm_transit_driver_route_preferences
ftfm_transit_driver_information_updates
ftfm_transit_driver_information_request
ftfm_transit_display_update_request
ftfm_technician_information_request
ftfm_response_parameters
ftfm_request_transit_vehicle_data
ftfm_request_response_parameter_output
ftfm_planning_parameters_update_request
ftfm_planning_parameters
ftfm_initiate_service_updates
ftfm_approved_corrections
ftfm_passenger_loading_updates

Transit Maintenance Personnel to Transit Management

maintenance status

ftmp_transit_vehicle_maintenance_updates

Transit Management to Archived Data Management Subsystem

transit archive data

transit_archive_data

Transit Management to Emergency Management

transit emergency data

transit_incident_details
transit_emergency_data
transit_coordination_data

Transit Management to Enforcement Agency

violation notification

tea_fare_payment_violation_data
tea_fare_collection_roadside_violation_data
tea_fare_collection_vehicle_violation_data

Transit Management to Financial Institution

payment request
tfi_fare_payment_violator_data
tfi_other_services_payment_request
tfi_request_fare_payment

Transit Management to Information Service Provider
demand responsive transit plan
paratransit_personal_schedule
transit and fare schedules
transit_services_for_advisory_data
transit_vehicle_deviations_details
transit_fare_data
transit_deviation_data_received
transit_services_for_guidance
transit incident information
transit_incident_data
transit request confirmation
advanced_other_fares_confirm
advanced_tolls_and_charges_vehicle_request
advanced_traveler_fares_confirm

Transit Management to Map Update Provider
map update request
tmup_transit_map_update_request

Transit Management to Media
transit incidents for media
tm_transit_emergency_information
tm_transit_incident_information
transit information for media
tm_transit_schedule_deviations_to_media

Transit Management to Multimodal Transportation Service Provider
transit multimodal information
tmtsp_transit_service_data
tmtsp_transit_arrival_changes
tmtsp_transit_arrival_deviations

Transit Management to Other TRM
TRMS coord
totrm_transit_services

Transit Management to Parking Management
transit parking lot response
parking_lot_transit_response

Transit Management to Personal Information Access
personal transit information
transit_services_for_personal_devices

Transit Management to Remote Traveler Support
emergency acknowledge
emergency_acknowledge_transit_details
request_transit_user_roadside_image
secure area monitoring support
secure_area_broadcast_message
secure_area_monitoring_control
transit fare payment responses
confirm_roadside_fare_payment
transit_roadside_fare_data
transit_roadside_fare_payment_debited
transit_roadside_fare_payment_request
transit_services_for_roadside_fares
transit traveler information
other_services_roadside_response
transit_services_for_kiosks
transit_services_for_travelers
transit_vehicle_arrival_time
transit_vehicle_user_data

Transit Management to Traffic Management
traffic control priority request
transit_road_overall_priority
transit_ramp_overall_priority
transit_highway_overall_priority
transit demand management response
transit_services_changes_response

transit system data
transit_services_for_demand
transit_fare_direct_details
transit_probe_data
transit_running_data_for_demand

Transit Management to Transit Driver
route assignment
ttd_route_assignements

Transit Management to Transit Fleet Manager
transit operations planning data
ttfm_response_parameter_output
ttfm_transit_vehicle_maintenance_information
ttfm_transit_vehicle_data
ttfm_transit_services_output
ttfm_transit_driver_information
ttfm_technician_information
ttfm_proposed_corrections
ttfm_passenger_loading_error
ttfm_paratransit_service
ttfm_parameters
ttfm_coordination_request
ttfm_transaction_reports

Transit Management to Transit Maintenance Personnel
transit work schedule
ttmp_work_schedule

Transit Management to Transit System Operators
transit operator display
ttso_transaction_reports
ttso_transit_fare_output
ttso_potential_incidents_alarm
ttso_media_parameters
ttso_emergency_request
ttso_archive_status
ttso_potential_security_problem
ttso_video_image_data

Transit Management to Transit Vehicle Subsystem
bad tag list
bad_tag_list_update
driver instructions
approved_corrective_plan
paratransit_transit_driver_instructions
transit_services_for_corrections
transit_services_for_eta
emergency acknowledge
request_transit_user_vehicle_image
transit_operator_request_acknowledge
fare management information
transit_vehicle_advanced_payment_response
confirm_vehicle_fare_payment
transit_services_for_vehicle_fares
transit_vehicle_fare_data
transit_vehicle_fare_payment_debited
transit_vehicle_fare_payment_request
request for vehicle measures
transit_vehicle_collected_maintenance_data_request
transit schedule information
transit_vehicle_advisory_eta
transit traveler information
other_services_vehicle_response

Transit System Operators to Transit Management
transit operator management data
ftso_request_fare_output
ftso_media_parameter_updates
ftso_security_action
ftso_media_parameter_request
ftso_fare_updates
ftso_emergency_request_acknowledge
ftso_archive_commands

ftso_video_camera_action_request

Transit User to Remote Traveler Support

transit user inputs

ftu_transit_user_roadside_image
ftu_transit_information_request
ftu_other_services_roadside_request
ftu_destination_at_roadside

Transit User to Transit Vehicle Subsystem

emergency request

ftu_emergency_request

transit user inputs

ftu_other_services_vehicle_request
ftu_request_advisory_information
ftu_destination_on_vehicle
ftu_transit_user_vehicle_image

Transit Vehicle Subsystem to Payment Instrument

request for payment

tpi_debited_payment_on_transit_vehicle
tpi_request_fare_payment_on_transit_vehicle

Transit Vehicle Subsystem to Roadway Subsystem

local signal priority request

transit_vehicle_roadway_preemptions

Transit Vehicle Subsystem to Transit Driver

transit driver display

ttd_request_fare_transaction_mode_set_up
ttd_transit_vehicle_schedule_deviations
ttd_batch_mode_data_transfer_status
ttd_paratransit_information
ttd_emergency_information
ttd_corrective_instructions

Transit Vehicle Subsystem to Transit Management

emergency notification

transit_operator_emergency_request
transit_emergency_details
transit_emergency_information

fare and payment status

transit_user_vehicle_image
transit_vehicle_advanced_payment_request
request_vehicle_fare_payment
fare_collection_vehicle_violation_information
transit_vehicle_fare_payment_confirmation

request for bad tag list

bad_tag_list_request

transit traveler request

transit_services_for_eta_request
other_services_vehicle_request

transit vehicle conditions

transit_vehicle_collected_maintenance_data

transit vehicle location data

transit_vehicle_location_for_store
transit_vehicle_location
transit_vehicle_collected_trip_data

transit vehicle passenger and use data

paratransit_transit_vehicle_availability
transit_vehicle_passenger_data

transit vehicle schedule performance

transit_vehicle_arrival_conditions
transit_vehicle_deviations_from_schedule
transit_vehicle_eta
transit_vehicle_schedule_deviation
transit_vehicle_location_for_deviation

Transit Vehicle Subsystem to Transit User

transit user fare status

ttu_vehicle_payment_confirmed

transit user outputs

ttu_advisory_information
ttu_other_services_vehicle_confirmed
ttu_traveler_information

ttu_vehicle_access_message

Transit Vehicle Subsystem to Vehicle

traveler advisory request

transit_user_advanced_payment_on_vehicle
transit_user_advisory_information_request

Transit Vehicle to Transit Vehicle Subsystem

transit vehicle measures

ftv_availability
ftv_vehicle_trip_data
ftv_vehicle_maintenance_data

Traveler to Personal Information Access

traveler inputs

ft_personal_extra_trip_data
ft_personal_map_display_update_request
ft_personal_emergency_request
ft_guidance_route_accepted
ft_guidance_map_update_request
ft_guidance_data
ft_guidance_request
ft_personal_trip_planning_requests

Traveler to Remote Traveler Support

traveler inputs

ft_extra_trip_data
ft_remote_emergency_request
ft_trip_planning_requests

Vehicle Characteristics to Parking Management

vehicle characteristics

From_Vehicle_Characteristics

Vehicle Characteristics to Roadway Subsystem

vehicle characteristics

From_Vehicle_Characteristics

Vehicle Characteristics to Toll Collection

vehicle characteristics

From_Vehicle_Characteristics

Vehicle to Basic Vehicle

vehicle control

tbv_change_direction
tbv_change_throttle_setting
tbv_deploy_crash_restraints
tbv_steer_left
tbv_steer_right
tbv_steer_straight
tbv_change_brake_setting
tbv_vehicle_security_system_commands

Vehicle to Commercial Vehicle Subsystem

commercial vehicle data request

cargo_data_request
cv_driver_credit_identity

vehicle location

vehicle_location_for_cv

Vehicle to Driver

driver updates

td_guidance_input_request
td_guidance_map_update_response
td_driving_guidance
td_broadcast_information
td_advisory_information
td_guidance_route_details

in-vehicle transaction status

td_other_services_parking_response
td_other_services_toll_response

Vehicle to Emergency Management

emergency notification

emergency_request_vehicle_details
emergency_request_driver_details

Vehicle to Emergency Vehicle Subsystem

vehicle location

vehicle_location_for_emergency_services

Appendix L: Architecture Flows Traced to Logical Data Flows

Subsystem Level Interconnection, Architectural Flow(s) and Component Logical Flows

Vehicle to Information Service Provider
- ***traveler profile***
  - traveler_profile_from_vehicle
- ***traveler request***
  - driver_map_update_payment_request
  - advanced_fares_and_charges_request
  - advanced_tolls_and_fares_request
  - advisory_data_request
- ***trip confirmation***
  - vehicle_guidance_route_accepted
- ***trip request***
  - vehicle_route_request
- ***vehicle probe data***
  - vehicle_guidance_probe_data
- ***yellow pages request***
  - yellow_pages_advisory_requests

Vehicle to Map Update Provider
- ***map update request***
  - tmup_vehicle_map_update_request
  - tmup_vehicle_map_update_cost_request

Vehicle to Other Vehicle
- ***vehicle to vehicle coordination***
  - To_Other_Vehicle

Vehicle to Parking Management
- ***tag data***
  - parking_lot_tag_data_collect
  - parking_lot_payment_confirmation

Vehicle to Payment Instrument
- ***request for payment***
  - tpi_debited_driver_payment_at_vehicle
  - tpi_debited_payment_at_parking_lot
  - tpi_debited_payment_at_toll_plaza
  - tpi_debited_transit_user_payment_at_vehicle
  - tpi_request_payment_at_parking_lot
  - tpi_request_payment_at_toll_plaza

Vehicle to Roadway Subsystem
- ***AHS vehicle data***
  - ahs_vehicle_condition
  - ahs_route_data
- ***vehicle probe data***
  - parking_lot_tag_data_input
  - toll_tag_data_input
  - vehicle_smart_probe_data
  - vehicle_status_details_for_emissions

Vehicle to Toll Collection
- ***tag data***
  - toll_tag_data_collect
  - toll_payment_confirmation

Vehicle to Transit Vehicle Subsystem
- ***vehicle location***
  - transit_user_advisory_information
  - vehicle_location_for_transit
  - transit_user_vehicle_credit_identity

Wayside Equipment to Roadway Subsystem
- ***arriving train information***
  - fwe_train_data
- ***track status***
  - fwe_approaching_train_announcement
  - fwe_wayside_equipment_status

Weather Service to Archived Data Management Subsystem
- ***weather information***
  - fws_weather_archive_data

Weather Service to Emergency Management
- ***weather information***
  - fws_predicted_weather
  - fws_current_weather

Weather Service to Information Service Provider
- ***weather information***

fws_current_weather
fws_predicted_weather

Weather Service to Traffic Management

weather information

fws_predicted_weather
fws_current_weather

Weather Service to Transit Management

weather information

fws_predicted_weather
fws_current_weather

Yellow Pages Service Providers to Information Service Provider

provider profile data

fypsp_provider_profile_update
fypsp_request_provider_registration

travel service info

fypsp_yellow_pages_data
fypsp_transaction_confirmation