Weather Data Environment Update

2013 RWM Stakeholder Meeting
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Weather Data Environment (WxDE)

- The WxDE is...
  - A well-organized collection of road and weather condition data
  - Captured and stored at regular intervals from mobile and fixed sources
  - Systematically shared in support of multiple road weather and connected vehicle applications
- The WxDE will operate in coordination with other systems developed under the Real-time Data Capture and Management Program
WxDE Capabilities

- Will provide a data platform to meet the weather-related research needs of Connected Vehicle researchers and application developers
- Builds on data collection, quality checking and presentation concepts from the *Clarus System*
- Builds on the data synthesis capabilities from the Vehicle Data Translator (VDT)
- Integrates with users and data in the Research Data Exchange (RDE)
Building on *Clarus*

- The WxDE will extend the successes of the *Clarus System*
  - Assimilating and providing access to road weather data from across the nation
  - Providing quality checks on the road weather data
  - Primarily supporting USDOT research efforts, but also serving state and local transportation agencies, academic researchers, and meteorological information service providers for research purposes
Building on the VDT

• The WxDE will incorporate the data synthesis capabilities of the VDT
  - Collecting data from vehicular sources of weather-related data
  - Performing quality checks on the collected data
  - Synthesizing weather and road conditions from the vehicle and ancillary data (e.g., radar, satellite, traffic)
Integrating with the RDE

- The WxDE will provide weather data access alongside the RDE’s connected vehicle data stores
  - Collecting and archiving data from a variety of mobile and fixed sources
    - Transportation operations
    - Connected vehicle test beds
  - Compiling metadata to provide context for RDE and WxDE data
  - Providing data access for researchers and application developers
The WxDE Architecture
WxDE Prototype Capabilities

• Build on *Clarus* data management capabilities
  - Re-engineer core processes to accommodate long-term archives, historical meta-data, etc.
  - Integrate *Clarus* data collector services
  - Integrate *Clarus* data quality check operations

• Develop data archiving for historical data and metadata
WxDE Prototype Capabilities

- Enhance *Clarus* user interface
- Integrate and update popular *Clarus* features - data subscriptions, map displays, data queries, etc.
- Enhance data query interface for historical data
- Implement usage statistic tracking
- Implement system administration capabilities
- Implement user management capabilities
Prototype WxDE Home

Prototype Weather Data Environment

Observations By Contributor  Observations By Geospatial Coordinates  View Metadata  View Subscriptions

The Prototype Weather Data Environment is an experimental product and is being used for evaluation and demonstration purposes only. This is provided as a public service.

No warranties on accuracy of data are intended or provided. See link to contributor’s data disclaimer in metadata file contrib.csv.

Federal Highway Administration
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Prototype WxDE Map Interface
Capabilities in Progress

- Transition *Clarus* data sources to the WxDE
- Implement services to manage all access to WxDE data
- Coordinate with RDE developers on design for RDE-WxDE interoperation
- Integrate VDT capabilities
- Enhance user interface
- Improve data source management and monitoring
Stakeholder Involvement

- Subject Matter Experts group was identified early in the project and will be asked to help identify opportunities for WxDE application and enhancement.
- Data contributors are currently limited to those agreeing to provide data to the WxDE...
- And we would like to add any other agencies willing to execute a data sharing agreement.
Schedule

- The prototype WxDE interface is available now at http://rwm.data-env.com/
- New capabilities will continue to be added as they are developed and tested
- Phase I of WxDE development runs through 2013
- Further development phase(s) under consideration
Questions and Discussion