The Goal

• Real-time maintenance data, vehicle location, vehicle trouble codes, fuel usage, emissions
• Get real-time weather data, CAN bus, on-board vehicle sensors, third-party weather sensors
• Feedback to the driver, treatment recommendations, weather forecasts
Choosing System Components

• Single Board Computer or Mini Systems
  – Found in many AVL systems
  – Similar resources as a desktop computer

• Telematics Platforms
  – Small form factor
  – Purpose built equipment

• Off-the-shelf
Single Board Computers

- Lots of inputs, good for interfacing with spreaders, sensors, etc. Best for heavy duty equipment
- On board storage, good for logging high resolution data
- Reliable, full operating system allows for solid software and long-term operation, easy to attach display
- If there is an existing AVL system, it may be possible to extend, add sensors
- Expensive compared to telematics platforms
- Larger footprint
Telematics Platforms

- Small footprint, can ease installation and maintenance
- Less expensive than full systems
- Few inputs, best for light duty vehicles
- Fewer computing resources, limitations to frequency of data
- May not have data storage
- Larger development costs
Off-the-shelf

- Sometimes available as a package with service
- May ease initial deployment
- May not interface with other equipment
- May come bundled with service contracts
- May have functional limitations
- Data may be proprietary
Data Services

- **Cellular**
  - Cheap
  - Fast
  - Service may be spotty
  - Pay per KB or monthly subscriptions

- **Satellite**
  - Expensive
  - Slow
  - Unreliable at times
  - Pay per KB

- **Packet Radio**
Challenges

• Implementation
  – Few off-the-shelf options
  – Custom development for interfacing with third-party systems (spreaders, sensors, etc.)

• Deployment
  – Custom installations
  – Field testing
  – Data flow, getting real-time data into MDSS or VDT, getting data back to driver
Thank You

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