Development of Interface Specifications for Mobile Data Platforms on DOT Vehicles

Tony McClellan - INDOT
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Purpose

- The Clear Roads pooled fund research program (www.clearroads.org), in coordination with the Wisconsin Department of Transportation, seeks to develop communication & data format specifications to support mobile data platforms used by State DOT’s.

- The mobile data platforms could be equipment such as, snow plows, end-loaders, supervisor trucks, paint trucks, herbicide sprayers, trailers, oil distributors & other similar equipment used in roadway maintenance operations.

- Agencies that are considering adding GPS/AVL to support the mobile data platform need a set of specifications that will allow them to purchase a variety of different sensors that all use a common communication protocol & data format.
Results Desired

• DOTs will require the specifications and formats in their purchases
• Vendors use common interface specifications and generic data formats for sensors, controllers, and modems
• DOTs have greater flexibility, not locked in to one vendor, allow for “Plug and Play”
• Encourage competition, hold down costs
Method

- Contract awarded to Thompson Engineering Company
- Have completed surveys with; government agencies, vendors and academics
- In general, acceptance to project goal
- Many issues:
  - One solution to fit all stakeholders
  - Interfacing with existing standards
  - Issues with proprietary software
  - How to promote the standards to the vendor community
Work Flow Chart

- **Literature Search**
  - Qtr 1 Progress Report 9/30/08

- **Interim Conference Call Mtg #1**

- **Survey of Needs**
  - Qtr 2 Progress Report 12/31/08

- **Interim Conference Call Mtg #2**

- **Specifications**
  - Qtr 3 Progress Report 3/31/09

- **Recommendations**

- **Final Report and Face-to-Face Meeting**

- **PowerPoint Presentation and Summary of Results**

- **Implementation Plan**
Project Highlights

- Literature search seek information from other sources and/or leverage previous research to accomplish the project goals
- Survey of Stakeholders provides a forum for government agencies, vendors & manufacturers, & researchers to participate in the discussion
- Several industries have adopted a common set of standards or specifications in order to improve overall interoperability to meet the requirements of collecting relevant information while still taking advantage of a competitive marketplace.
- Create a set of Recommendations & final report for Clear Roads Organization.
Many Types of Information & Sensors
Survey Results – from Responders

- Interoperability & interchangeability are very important
- Focus on operational criteria not technology & design features
- Get as much “buy in” from players in the field as possible
- Keep implementation of the standards in mind from the beginning & throughout this process
Survey Results – from Responders

• Challenge - all responders acknowledged that this would not be “easy” or anticipated that one solution would not fit all stakeholders.

• One stakeholder says “Back this up with deployment & we have power.” This emphasizes the issues surrounding approval & acceptance.

• Interface with existing standards (i.e. SAE, NTCIP, IEEE GPS, & wireless are important considerations
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Summary

• Anticipate project completion: Spring 2010

• Information available at: www.clearroads.org
Questions?