Year Two Projects

- Aftermarket On-Board Equipment for Cooperative Transportation Systems
  - Prime Contractor – Visteon

- Certification Program for Cooperative Transportation Systems/Connected Vehicles
  - Prime Contractor – OmniAir
Project #1 – Aftermarket On-Board Equipment for Cooperative Transportation Systems

- **Background**
  - The successful deployment of Connected Vehicle applications will depend on the widespread installation of OBE units in fleets for light and heavy vehicles.

- **Goals**
  - Identify requirements for a Dynamic Configurable Multi-Band OBE (e.g., capable of multiple communications technologies)
  - To provide strategic recommendations in fostering the rapid introduction of OBEs.

- **Objectives**
  - Analyze industry’s ability to manufacture dynamic configurable multi-band aftermarket OBE units;
  - Identify actions necessary to reduce consumer cost of aftermarket OBE purchase; and
  - identify actions needed to accelerate installation of aftermarket OBE units in the vehicle fleet.
Task 1: Identify Requirements of a Dynamic Configurable Multi-Band OBE

- Review current materials related to the Connected Vehicle OBE unit; summarize the requirements & specifications of an OBE unit for the Connected Vehicle program

- This task will be the foundation for all subsequent tasks

- It is not intended that a whole new set of requirements be developed but rather combine existing requirements of various communications technologies for a multi-band OBE

- Various communications technologies under the Connected Vehicle program will be identified, including, but not limited to, 5.9 GHz DSRC, cellular, satellite, and Wi-Fi for all vehicle types
Task 2: Analysis of Current Market Readiness

• Analyze (1) devices currently available, and (2) the industry’s capability to produce dynamic configurable multi-band OBE units at affordable prices.

• Task 2.1: Interview Suppliers
  - DSRC, cellular, satellite and Wi-Fi manufacturers/service providers to assess the current market readiness
  - Chipset manufacturers to gain insight into the technology roadmaps that will ultimately shape the market readiness
Task 2: Analysis of Current Market Readiness (Con’t.)

- **Task 2.2: Investigate Available OBE Hardware**
  - Assess any devices (including factory installed OBE unit, retrofit device, aftermarket carry-in device, etc.) that may be modified and/or used as aftermarket OBE units

- **Task 2.3: Market Research**
  - Focus group interviews from metropolitan areas that have heavy traffic conditions such as Los Angeles, San Francisco, Boston, Detroit, Washington, D.C., and New York City
Task 3: Preparation of a Guidance Document to Help Develop a Procurement Document

- This task is based on the results from Task 1 and Task 2
- Develop a procurement document for the actual development of a dynamic configurable multi-band aftermarket OBE

- **Task 3.1: Literature Review**
  - Review existing documentation to develop best in class procurement procedures

- **Task 3.2: Generate Document**
  - A Procurement Guidance Document will be developed
Task 4: Develop Strategy

- An in-depth strategy will be developed that fosters a rapid introduction of aftermarket OBE units to the vehicle fleet.
- It will also address how to garner consumer interest to purchase aftermarket OBE units for their vehicles.

- Task 4.1 Integration Assessment
  - A crucial OBE aspect is how it will interface with the vehicle, if at all.
  - The features and attributes of the OBE will be critical to ensuring that a significant number of people and/or companies will purchase the units for their vehicles.
  - Outside market forces will be examined that may persuade drivers to purchase the OBE units.
Task 4: Develop Strategy (Con’t.)

- **Task 4.2 Literature Review**
  - Examine outside market forces that may affect driver adoption of Connected Vehicle capabilities and technologies.

- **Task 4.3 Generate Report**
  - A Strategy Report will be generated, reviewed, and finalized which addresses the optimal methods for interfacing with the vehicle and what features will attract consumers.
Project #2 – Certification Program for Cooperative Transportation Systems/Connected Vehicles

• **Goal**
  • Develop foundational knowledge to inform PFS members on the certification issues to support the future development of a certification program for hardware and software standards compliance and interoperability

• **Objectives**
  • Review general certification practices
  • Review current activities associated with Connected Vehicle certification
  • Prepare recommended next steps and action items necessary to create a certification procedure
Task 1 – Mapping the Connected Vehicle Certification Landscape

**Objective:**
- To provide a summary view of the interconnected initiatives that comprise the Connected Vehicle Community

**Deliverable:** Interactive Mindomo map

- Organizational Connections
- Subject Matter Connections
- Embedded Content
Task 2 – Overview of the Connected Vehicle Certification System

- **Objective:**
  - Summary view of work efforts and outcomes specific to certification process for the Connected Vehicle program

- **Deliverable:**
  - Summary of foundational elements of relevant certification programs as models for CVCS
    - Overview of CVCS
    - Organizational Design
    - Certification Structure
    - Process
Task 3 – State and Local Needs Assessment

- **Review Federal and State Initiatives**
  - Federal Initiatives
    - Consult OmniAir Members
    - Discussions with US DOT staff
    - Review Existing Documentation
  - State Initiatives
    - Conduct Interviews with Pooled Fund States
    - Conduct Interviews with other Active States

- **Identify State Needs**
  - Develop a Comparison Matrix
  - Identify Gaps and Needs
  - Tag Most Important Gaps
  - Create and Administer the Survey
  - Analyze Survey Results
  - Document Survey Results and Recommendations
Task 4 – Gap Analysis and Recommendations

- Identify Gaps between States
- Identify Gaps between Federal and State
- Create a Survey to Gather State Feedback on Gaps
Affiliated Interoperable Test Beds

Multiple Locations - One Connected System

“In the street – running”
PFS Dynamic Mobility Applications Program

- **Background**
  
  - US DOT has recently identified ten high-priority mobility applications under the Dynamic Mobility Applications (DMA) program for the connected vehicle environment.
  
  - Among the ten identified high-priority applications, three (Intelligent Traffic Signal System, Transit Signal Priority, and Mobile Accessible Pedestrian Signal System) are related to transformative traffic signal operations.
PFS DMA Program

• **Background (con’t.)**
  
  - The AASHTO PFS and USDOT entered into an MOU for USDOT to provide funding to the PFS to advance projects that will support the Dynamic Mobility Applications Program.

  - The PFS will be advertising within the next month a project entitled “Multi-Modal Intelligent Traffic Signal System” in support of the US DOT’s Dynamic Mobility Applications Program.
PFS Multi-Modal Intelligent Traffic Signal System

• **Goal**
  - To conduct foundational analysis and design necessary to fully prepare for a field test/demonstration of a Multi-Modal Intelligent Traffic Signal System

• **Objectives**
  - To develop a concept of operations, systems requirements and system design that services multiple modes of transportation including general vehicles, transit, emergency vehicles, freight fleets and pedestrians; and
  - To prepare for field testing/demonstration of the developed Multi-Modal Intelligent Traffic Signal System.
Benefits to New York State

- AASHTO is a recognized transportation forum that has national credibility and standing
- Provides a useful liaison/coordination role between states and USDOT
- Gives the states a voice/seat at the national Connected Vehicle table
- Exchange ideas and keep abreast of the state and local level Connected Vehicle activities
- Provides/receives USDOT funding for efforts of mutual interest to states and locals
- Some travel is funded, and great folks!
Thank You!

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