IntelliDrive

Connectivity and the Future of Surface Transportation

Certification Pilot
May 5, 2010

Walton Fehr
US Department of Transportation
ITS Joint Program Office
# Safety Pilot Roadmap

## CY 2010
- Q1: Initial Integrated Safety System Light Vehicle Builds
- Q2: Light Vehicle Driver Clinics & Performance Testing
- Q3: Transit Vehicle Roadeo
- Q4: Heavy Vehicle

## CY 2011
- Q1: Aftermarket Device Development
- Q2: Device Updates
- Q3: Vehicle Updates
- Q4: Model Deployment Ramp-up and Preliminary Testing

## CY 2012
- Q1: Model Deployment Full Scale Testing
- Q2: Model Deployment Assessment
- Q3: V2V Benefits
- Q4: V2V Regulatory Decision Point

## CY 2013
- Q1: Input to Industry standards based upon test results
- Q2: Ray Resendes, Mike Schagrin

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**Evaluation**

- Independent Evaluation of Testing Activities
Certification Pilot Roadmap Draft
(based on rev 13 of safety pilot roadmap and published Sources Sought Notice DTFH61-10-R-00026))

| Spec. Development | | | | | | | | | | | | | | | | | | | | | | | | |
| Issue Device Solicitation | | | | | | | | | | | | | | | | | | | | | | | | |
| Awards | | | | | | | | | | | | | | | | | | | | | | | | |
| 1st Device Procurement | | | | | | | | | | | | | | | | | | | | | | | | |
| 1st Spec. Update | | | | | | | | | | | | | | | | | | | | | | | | |
| Proposal/Device Submission | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop Qualification Tests | | | | | | | | | | | | | | | | | | | | | | | | |
| Auth. to proceed | | | | | | | | | | | | | | | | | | | | | | | | |
| Qualification Test SOW | | | | | | | | | | | | | | | | | | | | | | | | |
| OmniAir proposal including subs | | | | | | | | | | | | | | | | | | | | | | | | |
| Spec. Review | | | | | | | | | | | | | | | | | | | | | | | | |
| Cert. Pilot SOW | | | | | | | | | | | | | | | | | | | | | | | | |
| Cert. Pilot Development | | | | | | | | | | | | | | | | | | | | | | | | |
| QPL Established | | | | | | | | | | | | | | | | | | | | | | | | |
| Update Qualification Tests | | | | | | | | | | | | | | | | | | | | | | | | |
| Certification Pilot | | | | | | | | | | | | | | | | | | | | | | | | |
| 2nd Spec Update | | | | | | | | | | | | | | | | | | | | | | | | |
| Device Procurement for Field Test | | | | | | | | | | | | | | | | | | | | | | | | |
| WC Orlando | | | | | | | | | | | | | | | | | | | | | | | | |
Goal of this Pilot

• Pilot IntelliDrive System management processes at the same time we pilot IntelliDrive technology and applications.

• Have useful tools in place to assist the technology and application pilot.

• Include both the communication medium and the application elements in the pilot. (These would likely have separate certification processes in a full deployment.)
Certification Framework

Tim McGuckin, OmniAir Team

Diagram:

- Scheme Owner
  - Supplies CB with all test methods, test tools to carry out certification
  - Supplies test tools for pre-certification testing

- Device Manufacturer
  - Manufacturer submits Unit Under Test samples, including:
    - Verification of FCC compliance
    - Test API
    - IEEE 802.11 qualified
  - Corrects non-conformities and resubmit according to CBs procedures
  - Notify device manufacturer of failure

- Certification Body
  - Applies for certification including:
    - Required documentation
    - Certification class

- Test Lab
  - Generate Test Report
  - Submit successful summary data sheet

- Accreditation Body
  - Accredits CB to international standards and certification scheme

- Device Manufacturer
  - FCC Type Acceptance
    - Awards certification
    - Lists as certified product on website

Flow Details:

- Basic Standards Conformance
  - Begin Testing
    - Verify interfaces and documentation
    - ASTM 2213 & IEEE 802.11p PHY Layer
    - IEEE 1609.3 and .4 Networking and Multi-channel

- Radio Processing
  - Test for Functions, Registration, and Certificates
  - Future Requirement
  - Heartbeat
  - Higher Level Testing such as fail-safe, secured payment, data encryption, etc.
  - Testing w/ Active Certified Units
  - Reference Unit Testing
  - Throughput Latency
  - RF Antenna Output

- Interoperability
  - Protocol Simulator
  - Testing w/ Active Certified Units
  - Testing w/ Active Certified Units
# Safety Pilot Roadmap (rev 14)

## CY 2010

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- **Initial Integrated Safety System Light Vehicle Builds**

## CY 2011

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- **Light Vehicle Driver Clinics & Performance Testing**
- **Transit Vehicle Roadeo**
- **Heavy Vehicle**

## CY 2012

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- **Device Updates**
- **Vehicle Updates**

- **Model Deployment Ramp-up and Preliminary Testing**
- **Model Deployment Full Scale Testing**

## CY 2013

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- **V2V Benefits Assessment**
- **V2V Regulatory Decision Point**
- **Input to Industry standards based upon test results**

### Evaluation

- **Independent Evaluation of Testing Activities**

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*Ray Resendes, Mike Schagrin*
Task Alignment, Part 1

- Spec Development leads to qualification test development
- Qualification test development is finished in time to be applied to the material from the 1st Device Procurement
- Qualification test is exercised on 1st devices
Task Alignment, Part 2

- Certification management structure is developed
- Qualification test is updated
- Entire process – management and qualification is applied to the 2\textsuperscript{nd} device material