2008 Smart Roadside Workshop

I-95 Corridor Coalition, New York State DOT & USDOT

Commercial Vehicle Infrastructure Integration Program

presented to
2008 Smart Roadside Workshop

presented by
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Vehicle Infrastructure Integration (VII)

- Similar to E-Z PASS technology (DSRC)
- 915 MHz ↔ 5.9 GHz (FCC & $$$)
- Extremely high speed, high capacity, low latency, highly secure data transmission
- “Smart vehicles, smart highways”
Vehicle Infrastructure Integration (VII)

- E-Z Pass, Navigation & “ON STAR” and much, much more!
- “Internet” for the highway/transportation system
- Supports any vehicle/roadside communication
- Supports any vehicle to vehicle communication
- System vehicle control possible
We have the opportunity to change the trend WITH VII!
VII Can Enable a Wide Range of Applications!

**Safety & Security Examples**
- Lane/Road Departure
- Road Condition Warning
- Cargo/Container Tracking
- CV Driver ID/Verification
- CV Routing/Geo Fencing
- In-vehicle/signing
- Intersection collision avoidance
- Parking availability
- Overturn warning/control

**Mobility Examples**
- Traffic Probe Data
- Travel Time
- Tolling
- Incident/Accident Info.
- Electronic Payment
- Navigation/Directions
A car speeding toward a red light receives a safety alert. Others are warned that it is suddenly braking.

NO PLANS, initially, to make this work with Trucks or Busses

A disabled car and tow truck transmit hazard warnings to approaching vehicles.
Concept of VII W/ CVII!

OBE – On Board Equipment
RSE – Road Side Equipment

DSRC @ 5.9 GHZ

OBE

Network Management Center

OEMs, Private Companies, Subscription Services, etc.

Private Sector

Public Sector

Green = NYS
Red = Others/TBD
NYSDOT, I-95 & USDOT CVII Program

- Develop/Test CV VII compliant OBE system
- Build upon existing USDOT VII efforts, I-95 NC/NCHP/Volvo Truck Project and FMCSA’s Wireless Vehicle Safety Inspection Project
- Develop/Test VII DSRC
  - CV Driver I.D and Verification (TWIC, Biometrics)
  - Test Wireless Vehicle Safety Inspection Information (brake condition, tire pressure, light status, etc.)
  - CV to Maintenance Vehicles communication
  - Roadside to CV work zone/accident warning w/iCone
CVII Program Requirements

- Complete interoperability!
- Communicate with any VII compliant vehicle or infrastructure
- Non-proprietary system design capable of duplication!
- USDOT’s National VII Initiative utilizing DSRC 802.11p
- Integrate VII communications device w/SAE J1708 commercial vehicle data bus
- Compliant/utilizing the standard message sets SAE J1587, SAE J1939 and SAE 2735
VII Communications Device

- **Road Side Unit/Equipment (RSU/E): Multiband Configurable Networking Unit (MCNU) 5.9 GHz DSRC and WiFi/4.9 GHz**

- **On-Board Units**
  - Lower cost
  - Integrated with CV data buss
  - VII 1609 networking software suite
NYSTA, NYSDOT & I-95
CVII Program Status

- RFP – Released Feb. 26,
- Responses received March 28, 2008
- Committee score/recommendation May, 2008
- Negotiate contract, start Summer, 2008
- I-95, NYSTA, Michigan DOT, Washington DOT, RITA JPO, FMCSA, FHWA and NYS Motor Truck Association
Related VII/CVII Activities

- 2008 ITS World Congress, Javitts Center, Manhattan
- November 16-20, 2008
- Three VII Corridors Being Developed
  - Manhattan Local Streets (NYCDOT/WC)
  - Long Island Expressway (NYSDOT/WC)
  - Spring Valley Corridor (Suffern to Tappan Zee Bridge)
- NYSBA I-95 Funded VII Tolling Project
- RITA RFP Response -$3 Million
Commercial Vehicle Smart Roadside/VII
E-Screening Corridor

Proposed NYSDBA E-Screening Location w/ WIM/VII/Smart Roadside

Proposed NYSDOT E-Screening Location w/ WIM/VII/Smart Roadside

Proposed NYSDOT E-Screening Location w/ WIM/VII/Smart Roadside

Proposed NYSTA E-Screening Location w/ WIM/VII/Smart Roadside

Proposed NYSTA VII/Smart Roadside/Expanded CVISN Corridor
(14 sites in approx. 13 miles)
NYSDOT
Long Island Expressway I-495
VII Test Bed
Expended NYS Commercial Vehicle Smart Roadside/VII E-Screening Corridors
Mainline Automated Check of Driver Identification & Vehicle Safety Information Leading to Improved Screening and Roadside Enforcement

- Real-time wireless communication of driver information (TWIC/biometrics identification and verification) and vehicle based safety data (tire pressure, brake status, seatbelt, etc.)
- Infrastructure to vehicle data (e.g., road weather, work zone locations, speed reduction, accidents, etc.)
??? Questions ???

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