

Federal Motor Carrier Safety Administration
Office of Analysis, Research and Technology

Overview of
Technology Division
Studies and Projects

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Michael Johnsen

Chris Flanigan

Jeff Loftus

Quon Kwan



Technology Division Top Projects

1. SmartPark: Real-Time Parking Availability
2. Employer Notification Service: Phase II
3. Enhanced Rear Signaling: Phase II
4. Wireless Roadside Inspection Program: Phase II – Pilot Test
5. Indirect Viewing System Field Test: Phase III
6. On-Board Safety Systems Effectiveness Evaluation

Technology Division Top Projects

7. CVISN Deployment Program – Support for Expanded Capabilities
8. CDL 3rd Party Testing Anti-Fraud Software
9. Integrated Vehicle-Based Safety Systems
10. Onboard Safety Systems Deployment Program
11. Smart Infra-red Inspection System

Technology Division Personnel

- ◆ Michael Johnsen – Acting Division Chief
- ◆ Chris Flanigan – ENS, rear signaling, onboard safety systems
- ◆ Quon Kwan – CVISN grants, truck parking, CDL 3rd Party Testing Anti-Fraud
- ◆ Julie Lane – CVISN, smart roadside, CSA2010 integration
- ◆ Jeff Loftus – Motor carrier efficiency, wireless roadside inspection

Technology Division Webinar Program

- ◆ SmartPark – Quon Kwan
- ◆ Motor Carrier Efficiency Study – Jeff Loftus
- ◆ Employer Notification Service – Chris Flanigan

SmartPark: Real-Time Parking

- ◆ Demonstrate technology for conveying real-time information on parking availability to truckers on the road
- ◆ 2 contractors, 2 different approaches

SmartPark – Purpose

To demonstrate technology for conveying real-time information on parking availability to truckers on the road



SmartPark – 2007 Contract Awards

◆ Foster-Miller

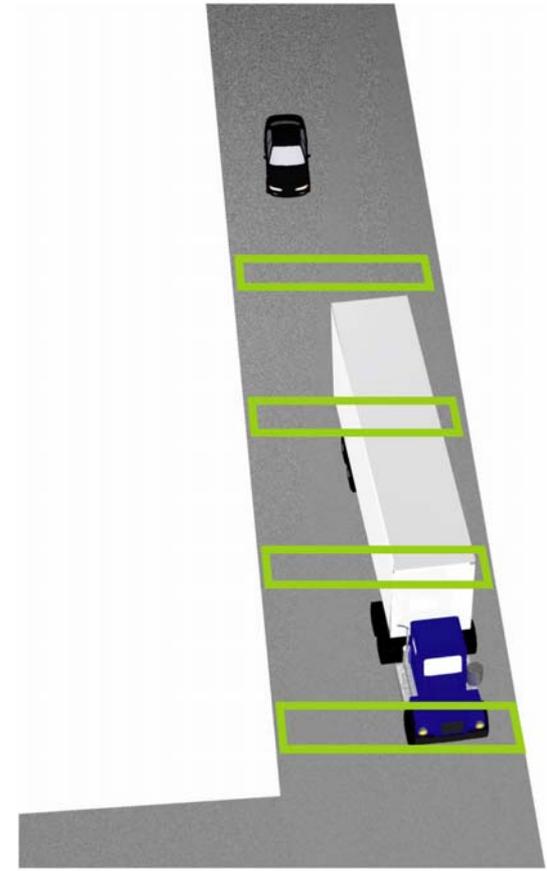
- Imaging technology
- Demonstration Site
 - Charlton (public), westbound, I-90

◆ Vehicle Sense, Inc.

- Magnetometer technology
- Demonstration Sites
 - Mile Marker 9 (public), northbound, I-95
 - Interstate Travel Plaza (private), northbound, US-1

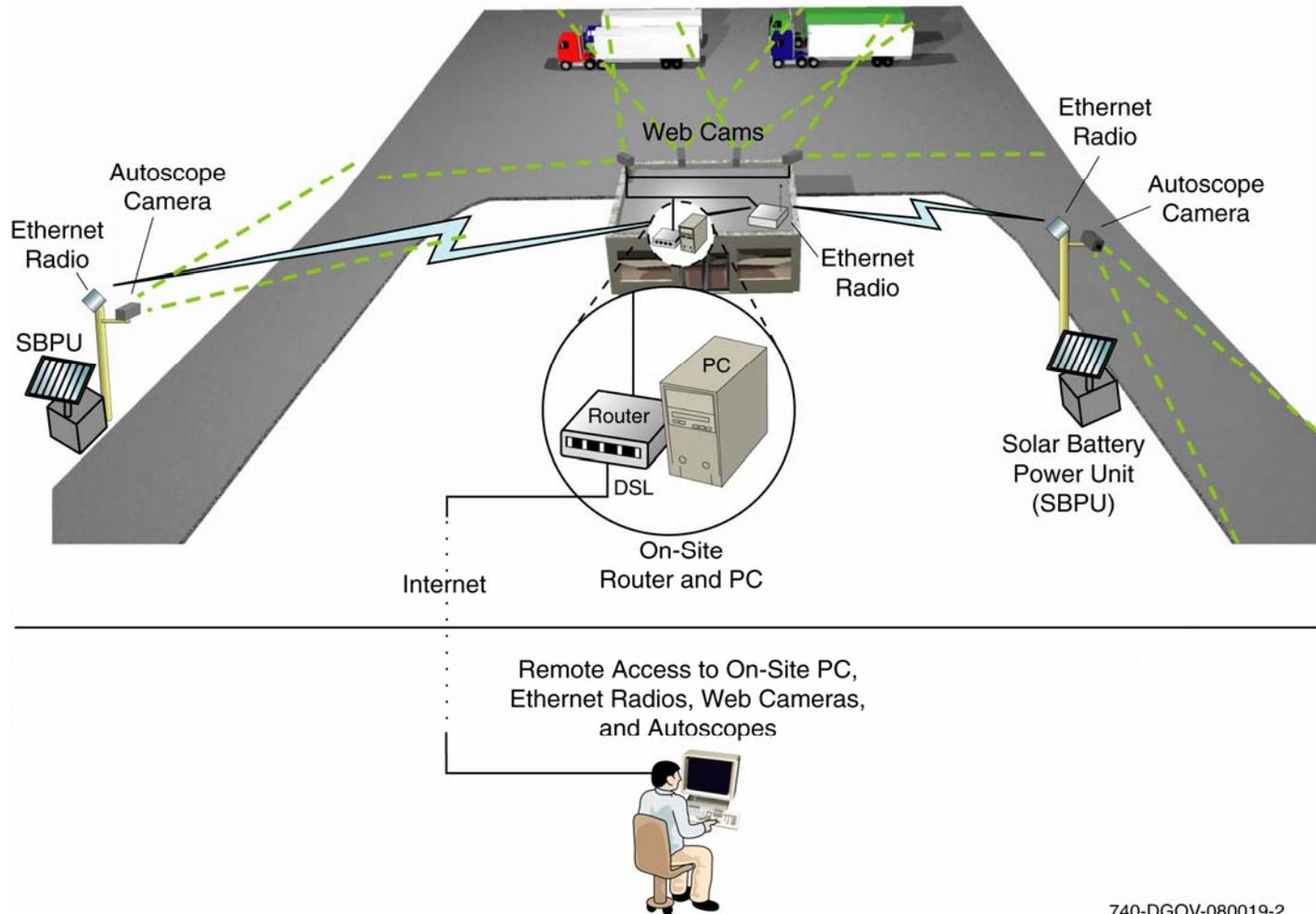
SmartPark – Foster-Miller Approach

- ◆ AutoScope Solo Terra video camera system
- ◆ Multiple trip line algorithm identifies and classifies vehicles by length
- ◆ Software algorithms adjust for variations due to weather, shadows, lighting conditions



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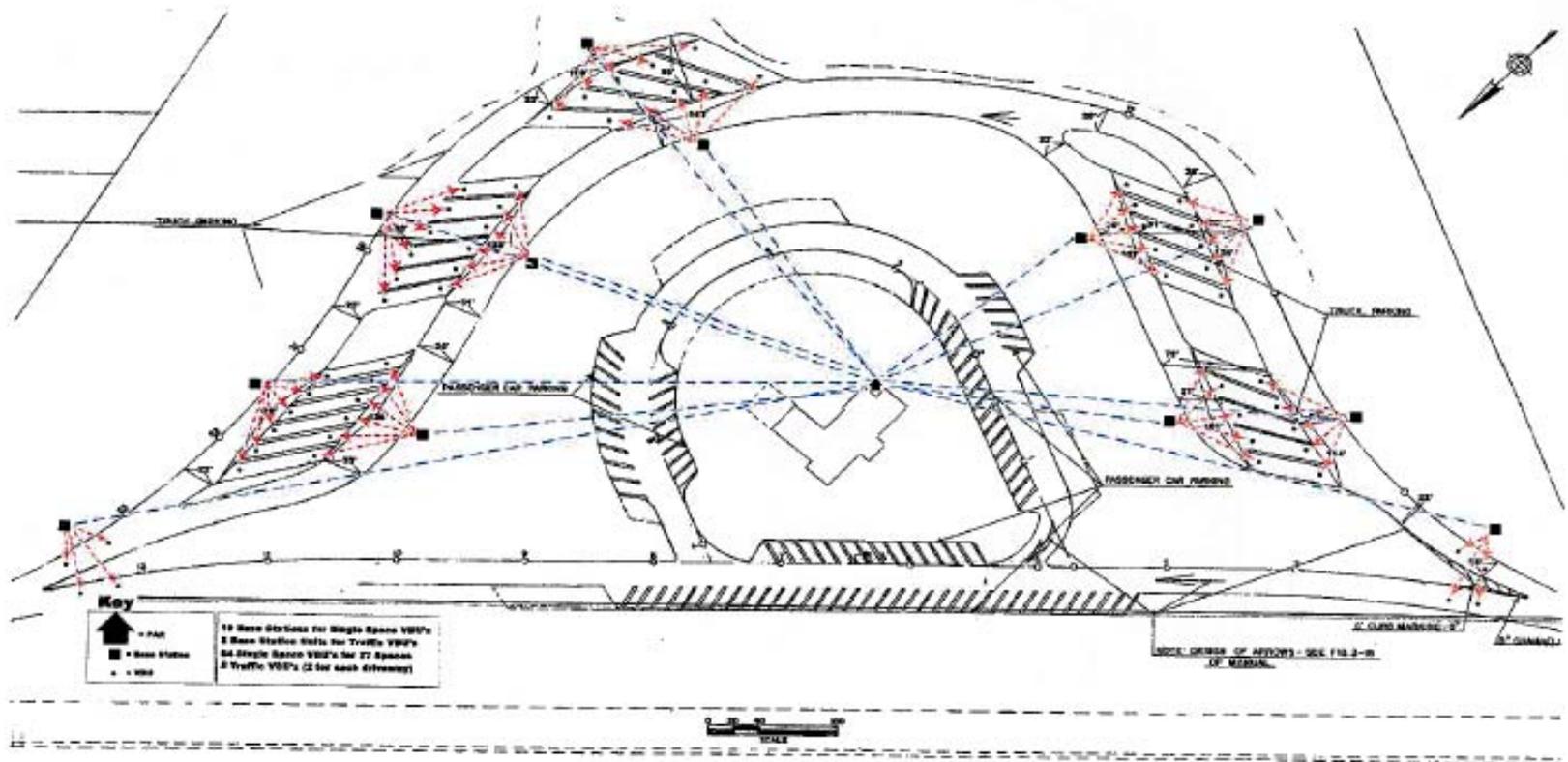
SmartPark – Foster-Miller Approach



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SmartPark – Vehicle Sense Approach

Communications Diagram for MM9



Motor Carrier Efficiency Study (Sec. 5503)

- ◆ Conduct a study to:
 1. Identify freight inefficiencies
 2. Evaluate the safety & productivity benefits of wireless technologies
 3. Conduct, as appropriate, field tests
- ◆ Program Elements
 - Fuel monitoring and management systems
 - Radio frequency identification technology
 - Electronic manifest systems
 - Cargo theft prevention
 - Roadside inspection systems



MCES: Phase I Study Results

- ◆ Priority inefficiencies
 - Waiting time for unloading
 - Waiting time for border crossings
 - Congestion delays
 - Empty miles
 - Hours of Service
 - Fuel waste due to excessive speed
 - Lack of backhaul
 - Poor routing

MCES: Phase II – Current Activities

- ◆ **Wireless Drayage Updating**
 - Integrated wireless solution for drayage motor carriers
 - Wireless load notification and selection
 - Truck-specific congestion avoidance
 - Wireless facility queuing notification and management (Virtual Queueing)
 - Addresses:
 - Time loading/unloading
 - Empty miles
 - Congestion delays
 - Safety risks associated with bobtails
 - Part of USDOT-led Cross-Town Improvement Program

Partners: FHWA (lead), Kansas City Smartport, Mid-America Regional Council, Motor Carriers (Greer Transportation, Mid-Cities Transportation), Railroads (Union Pacific, Burlington Northern Santa Fe, Norfolk Southern, Kansas City Southern)

Employer Notification Service

- ◆ FMCSA research indicates that truck and bus drivers with past convictions are statistically more likely to be involved in future crashes
- ◆ Employers are not always notified about these convictions and are unable to take immediate and appropriate corrective action with drivers
- ◆ FMCSA requires:
 - carriers to check driver history annually
 - drivers to report CDL status changes within 30 days and suspensions within one day

ENS: Addressing the Problem

- ◆ Employer notification programs:
 - Done on a State level and offered by private companies
 - Proactively notify a carrier about the driving record of its drivers
 - Allow the carrier to have real time updates of its drivers' CDL status
 - Streamlines a carrier's ability to oversee its drivers

ENS: National Deployment Scenarios

- ◆ Federally-administered
- ◆ Third-party, market-based approach

Contact Information

- ◆ Michael Johnsen – Michael.Johnsen@dot.gov
- ◆ Chris Flanigan – Chris.Flanigan@dot.gov
- ◆ Quon Kwan – Quon.Kwan@dot.gov
- ◆ Julie Lane – Julie.Lane@dot.gov
- ◆ Jeff Loftus – Jeff.Loftus@dot.gov