ITS Connected Vehicle Program

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One Version of Connected Vehicles…

The Connected Vehicle Environment

- **Uses wireless communications**
  - **Dedicated Short-Range Communications (DSRC) technology using FCC-dedicated spectrum that is essential for safety applications**
  - **Other communications types for non-safety applications**

The Connected Vehicle Environment

Crash Prevention

- **Uses wireless communications**
  - **Dedicated Short-Range Communications (DSRC) technology using FCC-dedicated spectrum that is essential for safety applications**
  - **Other communications types for non-safety applications**

The Connected Vehicle Environment

Improved Mobility

- **Uses wireless communications**
    - **Dedicated Short-Range Communications (DSRC) technology using FCC-dedicated spectrum that is essential for safety applications**
    - **Other communications types for non-safety applications**

The Connected Vehicle Environment

Environmental Sustainability

- **Uses wireless communications**
  - **Dedicated Short-Range Communications (DSRC) technology using FCC-dedicated spectrum that is essential for safety applications**
  - **Other communications types for non-safety applications**

The Connected Vehicle Environment

Enabling Environment for New Services

- Uses wireless communications
  - Dedicated Short-Range Communications (DSRC) technology using FCC-dedicated spectrum that is essential for safety applications
  - Other communications types for non-safety applications

Moving from Crash Worthiness to Crash Prevention

- **Greater situational awareness**
  - Your vehicle can "see" nearby vehicles and knows roadway conditions you can't see
  - Full 360 degree awareness
- **Reduce or even eliminate crashes thru:**
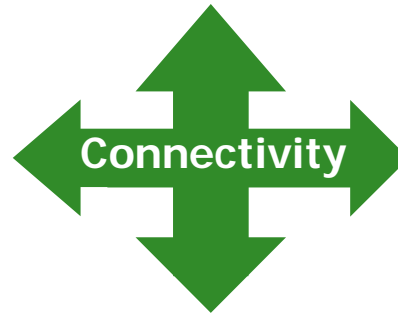 - Driver Advisories
  - Driver Warnings
  - Vehicle Control

Connected vehicles have the potential to address over 80% of vehicle crash scenarios involving unimpaired drivers

Multimodal and Connected Environment

Drivers/Operators

Vehicles and Fleets

Infrastructure

Connectivity

Wireless Devices

Connected Vehicle Safety Program Partners and Contractors

Key Program Objectives

- 2013 Decision on Vehicle Communications for Safety (light vehicles)

- 2014 Decision on Vehicle Communications for Safety (heavy vehicles)

- 2015 Infrastructure Implementation Guidance

2013 & 2014 Decisions → Based on Data!

- **Vehicle-to-Vehicle Research**
  - Interoperability among all vehicles
  - Evaluation of advanced applications
  - DVI effectiveness/acceptance
  - Benefits assessment
- **Safety Pilot**
  - User acceptance
  - Benefits data
  - Accelerate in-vehicle safety technology
- **Policy Elements**
  - Communications security
  - Device certification
  - Governance
  - Risk, liability, and intellectual property
- **Human Factors Research**
  - Driver-vehicle interface guidelines
  - Applies to integrated systems and to be extended to nomadic devices
- **Defined over-the-air interface standards**
 - Data, communications, performance

2015 Infrastructure Guidance

- Accelerate enabling technology
  - V2I Reference Implementation
- Applications development, test, and evaluation
  - Regional Pilots
  - Benefits assessment
- Infrastructure planning and policy
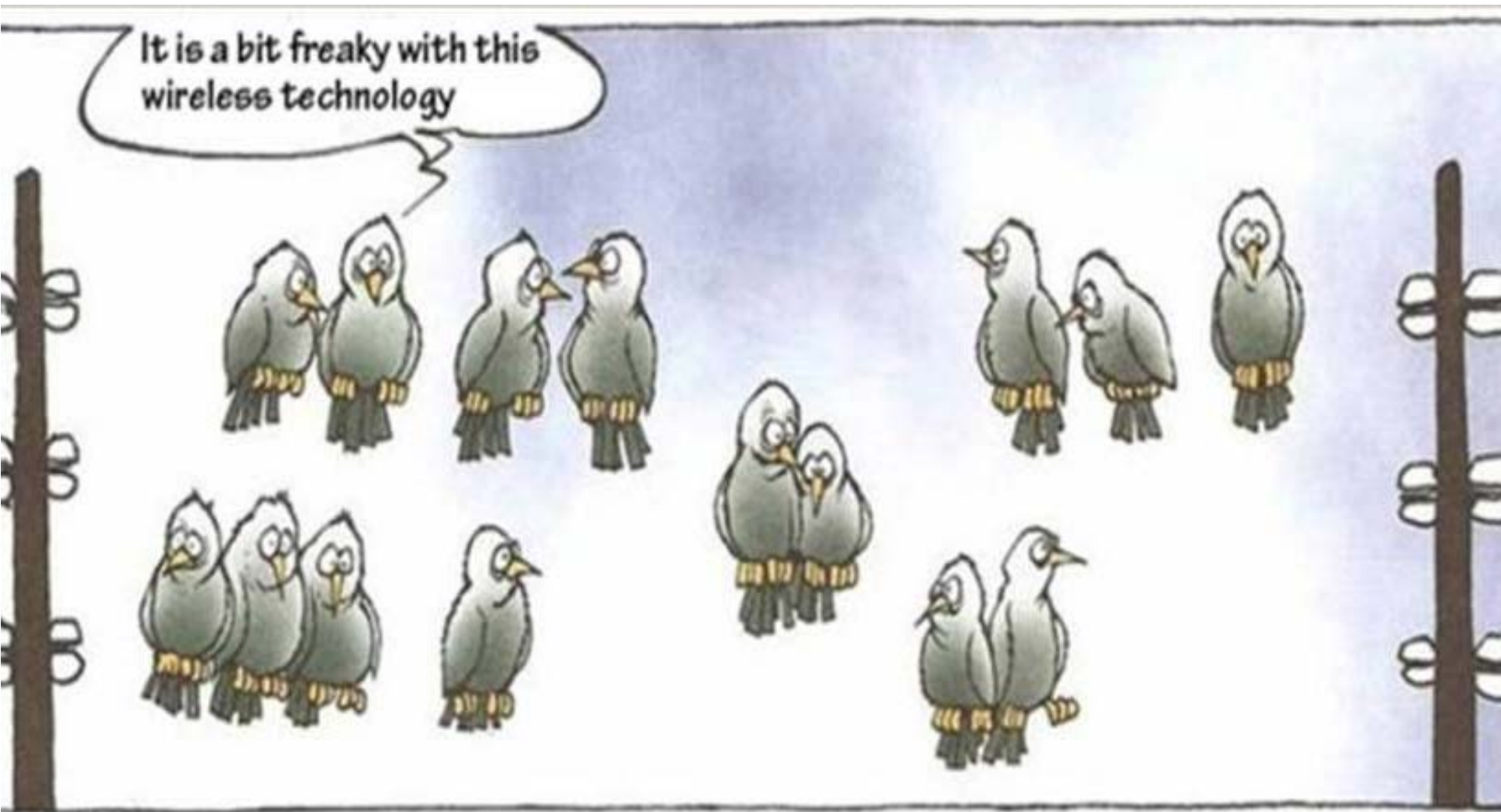 - Policy Recommendations
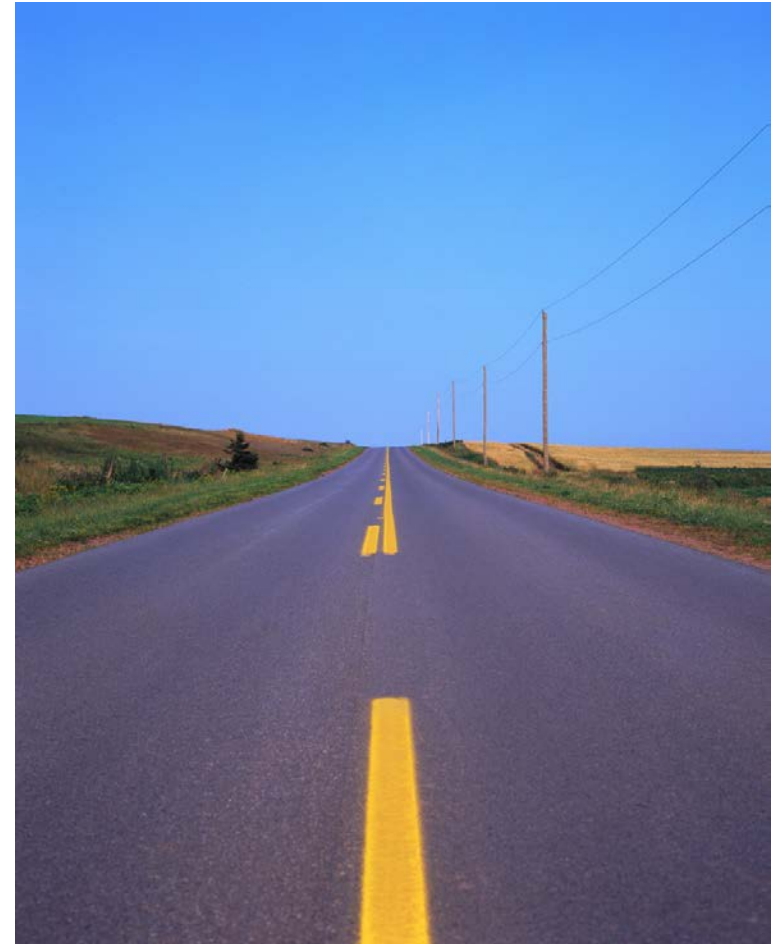
Making Connected Vehicles a Reality

- Moving the technical research into real world implementations

- Defining the benefits and cost data

- Defining the necessary policy framework to support nationwide deployment
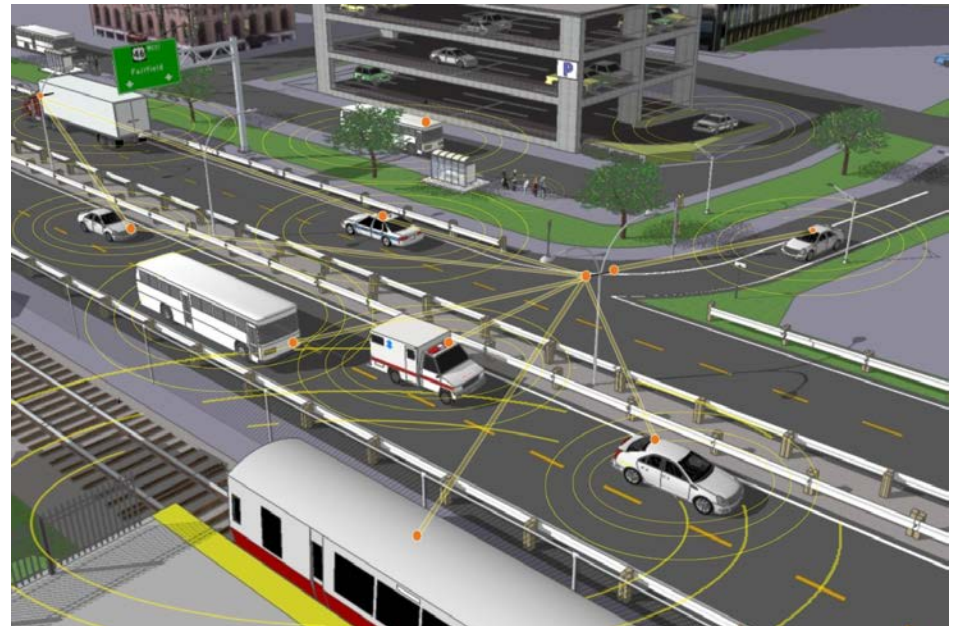
Still Working on Some Open Issues