WIN for Transportation

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- $3B from telecom spectrum auctions for licenses
- 4G broadband focus
- $100M/5yr Transportation
- Safer, less congested, more flexible, sustainable, efficient, reliable, and resilient surface transportation system

WIN Program

It is proposed that the program will:

- Use **"living laboratories"** in a competitively-selected region or corridor where innovative wireless communications methods and applications can be safely evaluated in an operating environment. These living laboratories will leverage other public and private investments.
- Create **broadband wireless "fast lanes" for multi-modal transportation** applications for real-time safety inspections, reporting, and access nationwide, including in underserved rural areas and at border crossings.
- Work with state inspection and public safety partners, along with other Federal agencies, **to deploy rural wireless access points** in areas of critical need for enhanced emergency communications.
- Require that all applications **discourage distracted driving/operations** and uncover advances that can work to reduce driver workload.

WIN Program for Transportation

- It's SAFETY, stupid!
- Three Foci gleaned from responses:
  - Policy needs (vs. technology)
  - Interoperability and standards
  - Innovation on applications using V2X
- Identification of government barriers, opportunities

Applications

Applications enabled questions include:

- Are there specific new commercial vehicle, rail, and transit safety applications or new methods and operations, based on the use of broadband wireless, that would significantly **lower the cost and improve the quality of regulated commercial vehicle applications**?
- How should the WIN for Transportation program invest in innovative applications supporting the use of **alternative fuel vehicles**?
- How can the WIN for Transportation program help address issues related to **reducing the use of non-renewable fuels** and to reducing greenhouse gas emissions from transportation vehicles?
- To what extent would the provision of **open, real-time, anonymous traffic and travel conditions** data via wireless broadband significantly increase opportunities for entrepreneurs to develop innovative transportation applications, as the provision of public, standardized transit schedule data has done in cities across the U.S.?

Technology

Technology focused questions include such items as:

- Are there other broadband technologies or applications, beyond those currently underway in the USDOT's connected vehicle program, that would provide substantial public benefits, the deployment of which could be accelerated by WIN for Transportation funding?
- Providing rural access to the Internet may be very different than providing coverage for surface transportation applications. For example, there may be rural highway rail intersections, border crossings in sparsely populated areas, or roads over mountain passes that experience severe weather that would benefit from ITS applications.
  - What types of rural and lightly populated locations and what applications would benefit from this type of broadband deployment?
  - Is research needed on alternative broadband approaches other than cellular that may be either more suitable or more cost-effective to deploy broadband mobile wireless in these areas?

Connected Vehicle

Questions related to the ability of commercial wireless services to meet the requirements of connected vehicle applications include:

- What new technologies or attributes (e.g., ad-hoc networking) might future commercial broadband services need to meet to fully address connected vehicle applications, and what action could the USDOT take to ensure that commercial industry addresses these requirements?
- Connected vehicle security standards are expected to incorporate techniques to provide anonymity and defeat tracking attempts against individual drivers when using connected vehicle applications. Commercial broadband networks are designed to provide location information for emergency response (E911 and NG911) and are increasingly implementing applications using location-based services that specifically track user and/or vehicle locations. These features might limit the suitability of commercial broadband networks for some applications, especially those that may be potentially mandatory and/or government-sponsored. What policy initiatives and possible technical features will need to be implemented to assure users that their privacy is protected regardless of which communications network is used?

"Homework Questions"

- Question #1: Based on the background paper and your personal experience, please **identify the key communications challenges facing surface transportation.** In addition, please note if you wish to take a more active role in initiating discussion on any of the challenges you cite.
- Question #2: What is the **single most important lesson you would like to share concerning how your organization has successfully deployed wireless communications** to address the problems noted above (or might)? Please illustrate your answer with an example or story to help in its communication. If there is an exhibit, document, or item that would help to describe or explain your insights, please email it.
- Question #3: What is the **single most important pitfall which the government should be aware of in its efforts to collaborate on these matters**? Again, if appropriate, please illustrate your answer with an example or story to help in its communication.

Denaro Responses to Questions

- Coordination of common solution to vehicle positioning and communications – traffic services, navigation, emergency crash notification, usage-based insurance, road user charging, fleet management.
- Optimal mix of communications solutions
- Early wins with low hanging fruit
- It's not about technology, it's about business models. Content providers, network providers, device manufacturers, consumer all must win.
- The concept of model deployments surviving to operations is not working – no one funds the maintenance and support.
- We're struggling to find the right interface of government and the private sector.
- The nation needs a visible and passionate champion for ITS.