The U.S. Department of Transportation’s (USDOT’s) connected vehicle research program is a multimodal initiative to enable safe, interoperable, networked wireless communications among vehicles, infrastructure, and personal communications devices. The USDOT and others are researching connected vehicles because of the potentially transformative capabilities of the technology to make surface transportation safer, smarter, and greener. Federal connected vehicle research has produced a considerable body of work to support pilot deployments, including concepts of operations and prototyping for more than two dozen applications. Concurrent federal research efforts are developing critical cross-cutting technologies and other enabling capabilities required to integrate and deploy applications.

Based on the successful results of the connected vehicle research program, and the recent decision by the National Highway Traffic Safety Administration to pursue vehicle-to-vehicle communications safety technology for light vehicles, the USDOT is pursuing a robust Connected Vehicle Pilot Deployment Program. This program will serve as a mechanism to expedite the implementation of connected vehicle technology. The pilots will be initial deployments of connected vehicle technology in real-world settings with the aim of delivering near-term safety, mobility, and environmental benefits to the public.

**Vision**

The Connected Vehicle Pilot Deployment Program seeks to spur innovation among early adopters of connected vehicle application concepts, using best available and emerging technologies. The pilot deployments are expected to integrate connected vehicle research concepts into practical and effective elements, enhancing existing operational capabilities. The intent of these pilot deployments is to encourage partnerships of multiple stakeholders (e.g., private companies, states, transit agencies, commercial vehicle operators, and freight shippers) to deploy applications using data captured from multiple sources (e.g., vehicles, mobile devices, and infrastructure) across all elements of the surface transportation system (i.e., transit, freeway, arterial, parking facilities, and tollways) to support improved system performance and enhanced performance-based management.

The pilot deployments will support an impact assessment and evaluation effort that will inform a broader cost-benefit assessment of connected vehicle concepts and technologies. Pilot deployments offer an opportunity for stakeholders and partners to develop operational systems that exist well beyond the life of the program.

**SAMPLE APPLICATIONS**

Please visit the Connected Vehicle Pilot Deployment Program website for a complete list of connected vehicle applications.

**Mobility**
- Speed Harmonization and Queue Warning
- Multi-Modal Intelligent Traffic Signal System
- Dynamic Transit Operations
- Freight Traveler Information Systems
- Response, Emergency Staging, Communications, Uniform Management, and Evacuation
- EnableATIS

**Environment**
- Eco-Approach and Departure at Signalized Intersections
- Eco-Traffic Signal Timing
- Eco-Speed Harmonization

**Vehicle-to-Infrastructure Safety:**
- Red Light Violation Warning
- Curve Speed Warning
- Stop Sign Gap Assist
- Reduced Speed/Work Zone Warning
- Smart Roadside

**Vehicle-to-Vehicle Safety**
- Emergency Electronic Brake Lights
- Forward Collision Warning
- Intersection Movement Assist

**Agency Operations**
- Probe-based Pavement Maintenance
- Probe-enabled Traffic Monitoring
- Vehicle Classification-based Traffic Studies

**Road Weather**
- Enhanced Maintenance Decisions Support System
- Vehicle Data Translator
- Weather Responsive Traffic Information
Proposed Program Schedule

The Connected Vehicle Pilot Deployment Program envisions a procurement action for multiple pilot deployments with an initial wave starting in calendar year 2015 (See Table 1). Before an initial wave of pilot deployments are selected, the Intelligent Transportation Systems Joint Program Office (ITS JPO) will host a series of outreach activities including workshops, meeting briefings, and webinars. Please check the ITS JPO and Connected Vehicle Pilot Deployment Program websites for upcoming outreach activities.

<table>
<thead>
<tr>
<th>TABLE 1 Proposed Connected Vehicle Pilot Deployment Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schedule Item</strong></td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>Regional Pre-Deployment Workshop/Webinar Series</td>
</tr>
<tr>
<td>Solicitation for Wave 1 Pilot Deployment Concepts</td>
</tr>
<tr>
<td>Wave 1 Pilot Deployments Award(s)</td>
</tr>
<tr>
<td>Solicitation for Wave 2 Pilot Deployment Concepts</td>
</tr>
<tr>
<td>Wave 2 Pilot Deployments Award(s)</td>
</tr>
<tr>
<td>Pilot Deployments Complete</td>
</tr>
</tbody>
</table>

Focus of Pilot Deployments

The pilot deployments should address the following research questions:

- How can diverse data sources be efficiently integrated and used?
- Can customer satisfaction with demonstrated applications be measured?
- Are state and local agencies prepared to implement and maintain connected vehicle technologies?
- How effective is a security credential management system in enabling connected vehicle communications?

How to Get Involved

This is an opportunity for your community to be on the cutting edge of new technology. But start planning now, because there will be a limited time to submit proposals.

The following are some key resources to help you prepare for the Connected Vehicle Pilot Deployment Program:

- Learn more about the program:
  - Review briefing materials presented at recent workshops and public meetings on the Connected Vehicle Pilot Deployment Program
  - Visit the program’s website: www.its.dot.gov/pilots
  - Contact the USDOT with questions
- Form partnerships and identify needs, such as:
  - Create partnerships with transit agencies, neighboring jurisdictions, traveler information service providers, private sector device and equipment manufacturers, local trucking firms, state and local roadway operators, and advocacy groups (among other potential stakeholders)
  - Identify the highest-priority needs across the community partners (mobility, safety, and environmental)
- Assess connected vehicle technologies and applications:
  - Match community needs to connected vehicle applications
  - Consider the potential benefit of an integrated deployment of two or more applications in your community
  - Create a pilot deployment concept that community stakeholders support in preparation for the first wave of deployment solicitations in early 2015. Use of the Connected Vehicle Reference Implementation Architecture (CVRIA) to construct project architectures is encouraged. Please visit www.iteris.com/CVRIA/ for tools and information.

For more information about this initiative, please contact:
Kate Hartman, Connected Vehicle Pilot Program Lead
ITS Joint Program Office | (202) 366-2742 | kate.hartman@dot.gov | www.its.dot.gov

Or, visit the following websites:
Connected Vehicle Pilot Deployment Program Website: www.its.dot.gov/pilots
ITS JPO Website: www.its.dot.gov/