



# **U.S. DOT Perspectives Next Generation Transport**

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# Outline

- Current research at U.S. DOT
  - Accessible Transportation Technology Research Initiative (ATTRI)
  - Universal Automated Community Transportation (UACT)
  - International Coordination
- More Information



Overview and Update

# ATTRI PROGRAM



# Accessible Transportation Technologies Research Initiative (ATTRI)



**Persons with Disabilities**



**Veterans with Disabilities**



**Older Adults**

- A U.S. DOT Multi-Year, Multimodal, Multi-Agency Research and Development Effort
- Identifying user needs of travelers with disabilities to develop new transformative applications to increase personal mobility
- Building collaborative research and deployment partnerships with other US and International research communities, both public and private
- Unique opportunity to develop and deploy novel applications for accessible transportation and extend those benefits to all travelers





# Challenges and Opportunities

76% people with disabilities say adequate transportation is important to their job search  
29% consider it a significant problem in accessing jobs <sup>[1]</sup>

## Targeted Populations



Persons with Disabilities



Veterans with Disabilities



Older Adults

## Types of Disabilities



Vision



Mobility



Hearing



Cognitive

## Enabling Technologies

ITS,  
Wireless  
& Sensors

Connected  
Vehicles

Automated  
Vehicles/  
Personal  
Mobility

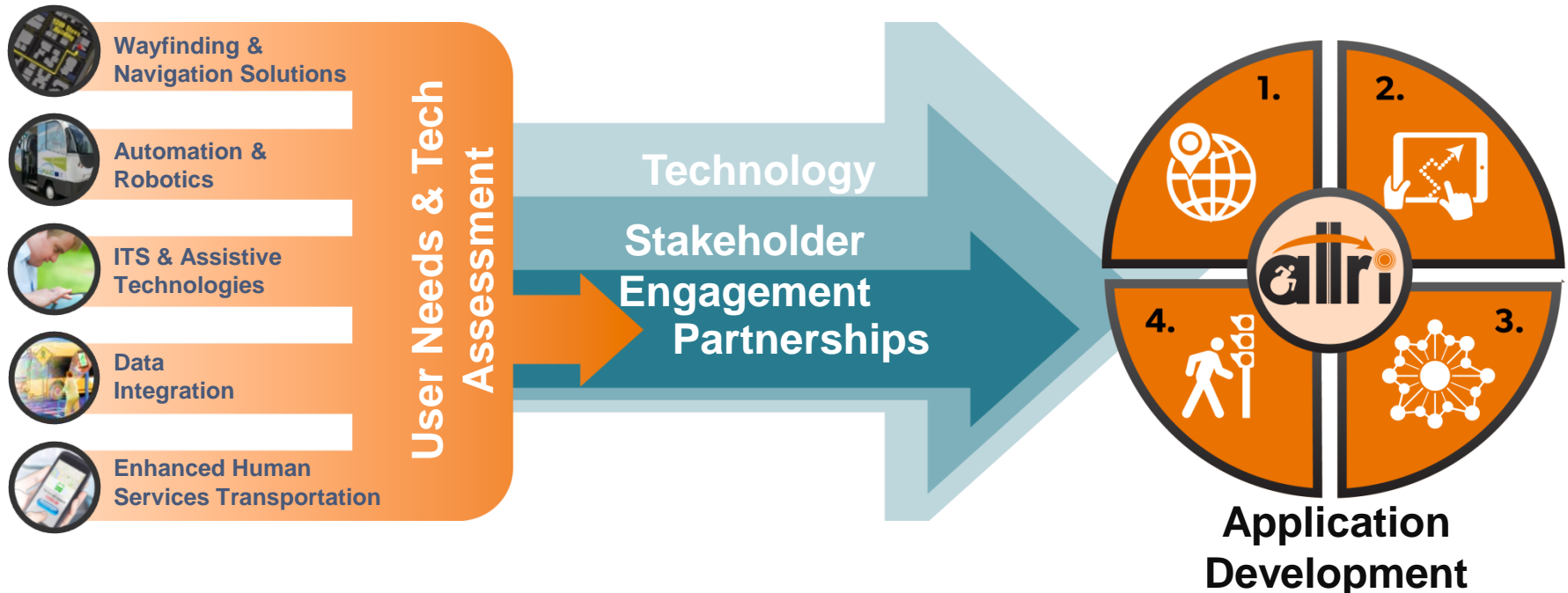
Robotics,  
Artificial  
Intelligence

Accessible  
Data



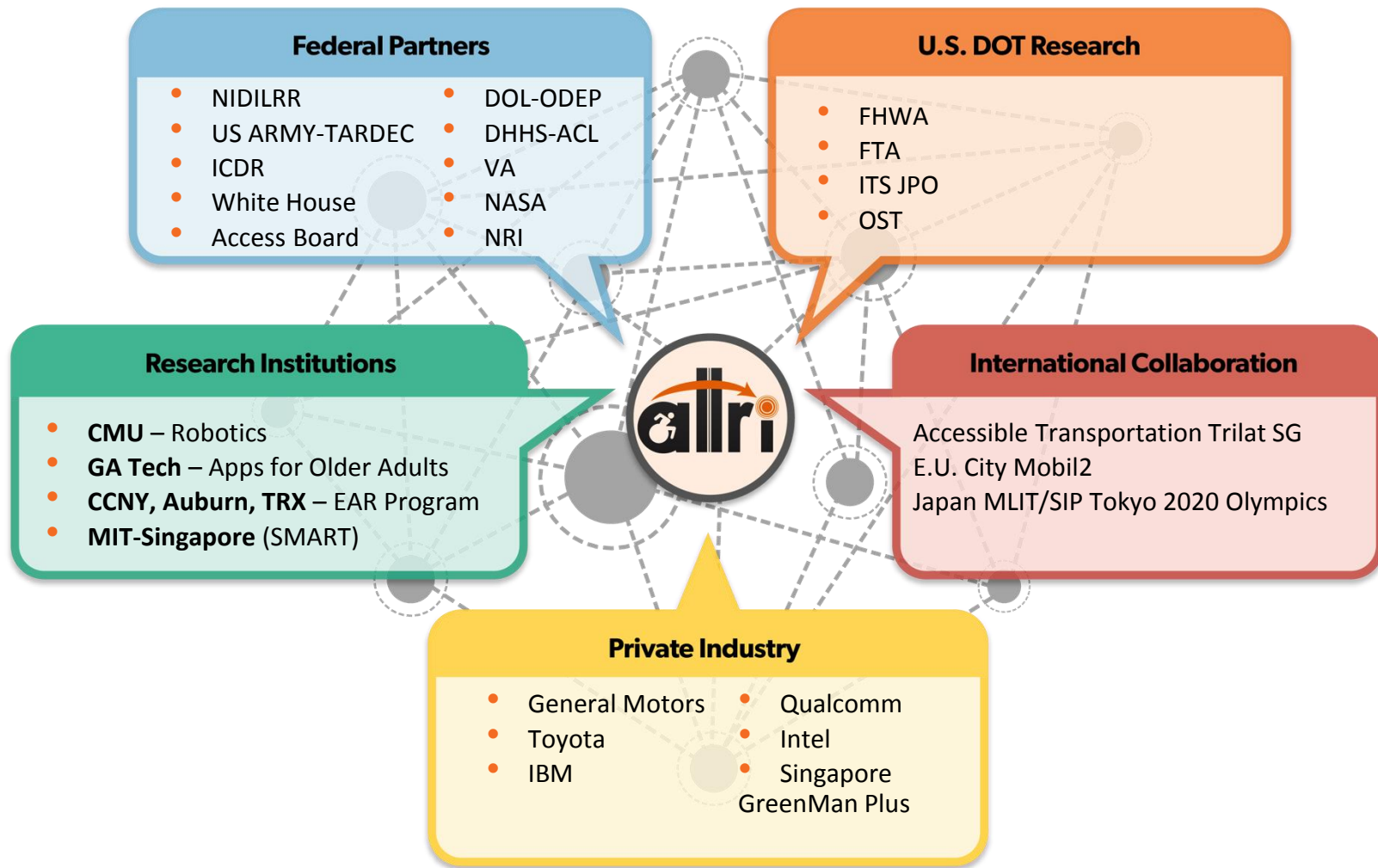
# Application Development Needs Partnership

- Transportation is a complex challenge that affects all aspects of life, including health, education, recreation, and social and economic activities
- A need for multi-agency cooperation and coordination leveraging resources to address challenges in a comprehensive way
- ATTRI is expanding beyond a single-agency approach to help solve mobility challenges, partnerships are necessary!



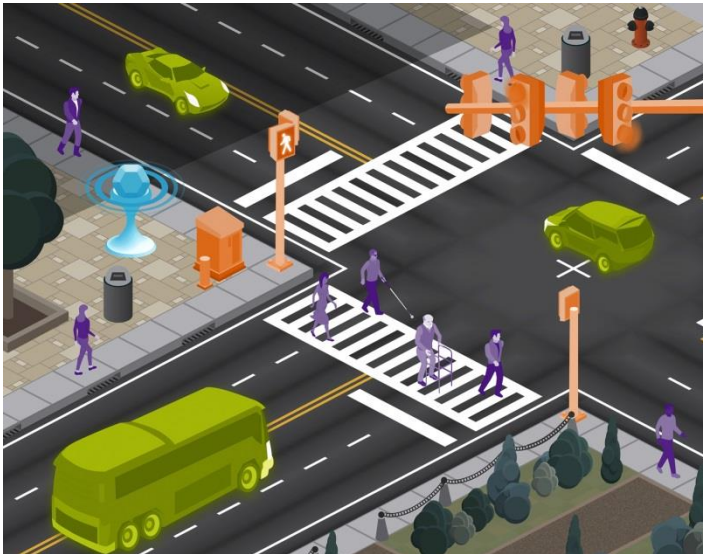


# Strong Partnerships





# ATTRI Foundational Considerations



## Standard Accessible Data Platform

- *Examples:* machine to machine, crowdsourced, archived and real time data, open data, user profiles, sensors, data standards, etc...

## Universal Design Standards

- Multiple accessible communication formats and user interfaces

## Integrated Payment

## Leverage Existing Technologies

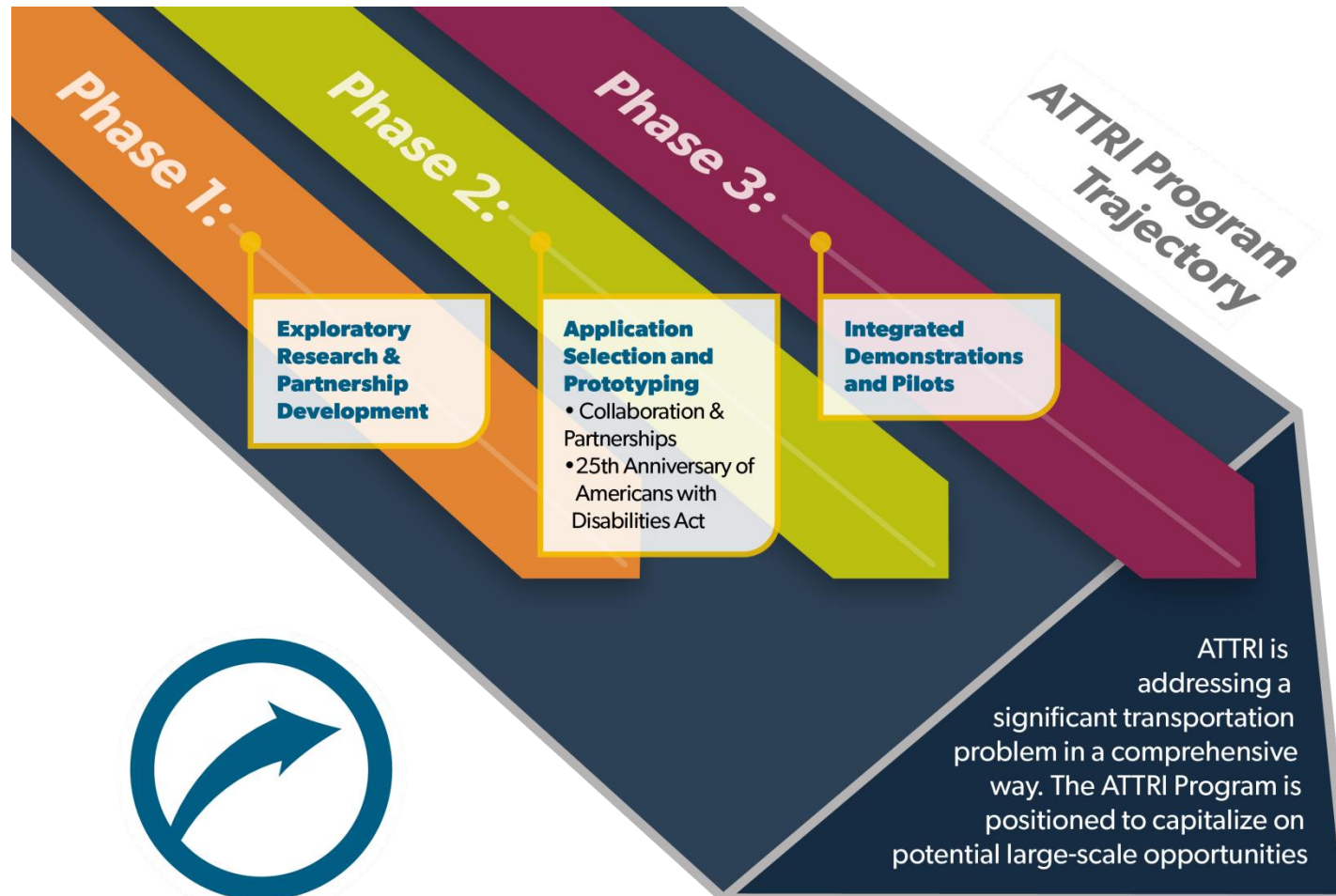
- Wearables, mobiles devices, in-vehicle displays, infrastructure, etc...







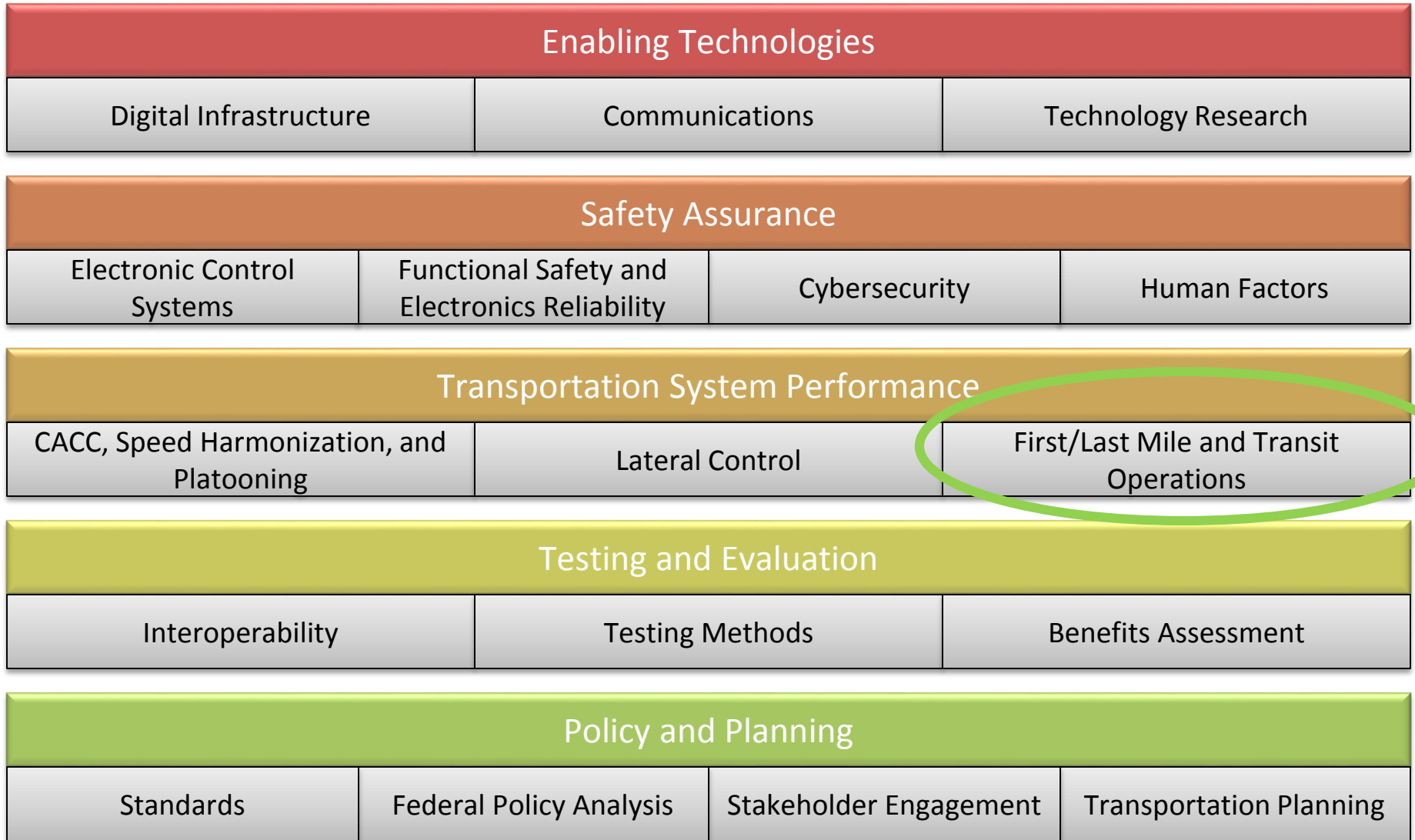
# ATTRI Program Trajectory





Introduction

# UNIVERSAL AUTOMATED COMMUNITY TRANSPORT





# UACT Elements



"DART On-Call" (Dallas)





# Universal Community Automated Transport

- Conduct foundational research and develop a concept for an inclusive automated community transport application, which:
  - Uses Intelligent Transportation Systems (ITS) and automation technologies
  - Is accessible to all travelers (employs “universal design”)
  - Provides service to local destinations or feeder service for transit (1st/last mile)
  - Exceeds service of existing paratransit and demand-response operations
- Concept Development
  - Existing Conditions and User Needs
  - Vehicle and Infrastructure Requirements
  - Operational Strategies
- Schedule
  - October 2015 – June 2017



# International Coordination

- Trilateral Working Group on Automation in Road Transportation
  - Accessible Automation Research and Development Sub-Working Group
  - Objective: *Advance research, development, testing, and implementation of transformative automated transportation solutions for all people, including those with disabilities, and demonstrate operational solutions*
  - 2015-2021
- ATTRI International Research Coordination
  - New ATTRI task
  - Collaboration with entrepreneurs, researchers, and government on accessible transportation
  - 2015-2017





# For More Information

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# ADA 25

AMERICANS WITH DISABILITIES ACT 1990-2015

### Current Research

- + Strategic Plan 2015-2019
- + Safety
- + Mobility
- + Environment
- + Road Weather
- + Policy
- + Connected Vehicle Technology
- + Intermodal Research
- + Exploratory
- + ITS Cross-Cutting Support
- + Success Stories

All Research >>

### Spotlight

**September 8, 2015**  
USDOT Releases Dedicated Short Range Communications (DSRC) Spectrum Sharing Test Plan ... [Read more](#)

**August 18, 2015**  
Report from the 2015 Automated Vehicles Symposium (AVS 2015) in Ann Arbor, Michigan ... [Read more](#)

**July 14, 2015**  
Release 2.2 of the Research Data Exchange and New Connected Vehicle Data Sets Are Now Available. ... [Read more](#)

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### CV Pilots Deployment Project

### Planning for the Future of ITS

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