



U.S. DOT Automation Program

TRB Vehicle-Highway Automation Committee

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Research Tracks

Enabling Technologies			
Digital Infrastructure	Communications	Technology Research	
Safety Assurance			
Electronic Control Systems	Software Assurance and Reliability	Cybersecurity	Human Factors
Transportation System Performance			
CACC, Speed Harmonization, and Platooning	Lateral Control	First/Last Mile and Transit Operations	
Testing and Evaluation			
Interoperability	Testing Methods	Benefits Assessment	
Policy and Planning			
Standards	Federal Policy Analysis	Stakeholder Engagement	Transportation Planning



USDOT Automation Research Currently Underway

Project	Major Deliverable
Introduction of Cooperative Vehicle-Highway Systems to Improve Speed Harmonization	Test and evaluation of optimized variable speed targets
Simulation for Research on Automated Longitudinal Vehicle Control	Simulation of CACC near term operational scenarios both Freeway and Arterial
High Performance Vehicle Streams Simulation	Simulation of CACC operational scenarios
Partial Automation for Truck Platooning: PATH/Caltrans	Prototype CACC truck platooning system; examination of factors affecting benefits
Partial Automation for Truck Platooning: Auburn University	Analysis of key issues prior to heavy truck CACC market introduction
Saxton Transportation Operations Laboratory Task 3: Procure and Instrument Research Vehicles	Procurement and instrumentation of 3 Cadillac SRX vehicles
Development of a Platform Technology for Automated Vehicle Research	Procurement of 5 Vehicles with CACC experimental platform
Vehicle Automation Program Management and Planning	Development of roadmaps and program plan materials
Human Factors Evaluation of Level 2 and Level 3 Automated Driving Concepts	DVI Principles for L2 & L3 Automation Systems
Cooperative Adaptive Cruise Control (CACC) – Investigation of Key Human Factors Issues	Validated driving simulator test methodology and tools
Development of Functional Descriptions and Test Methods for Emerging Automated Vehicle Applications	Functional descriptions and potential test and evaluation methods for emerging L2-L4 operational concepts



USDOT Automation Research Starting in FY14

Project	Major Deliverable
Intelligent Network Flow Optimization CACC Test	Prototype and small-scale field test
Automated Speed Harmonization Prototyping and Testing	Live traffic test of speed harmonization
Lane Changing/Merge Foundational Research	State-of-the research review, concept development, simulation and testing of concept
AERIS – Eco-Approach & Departure	Test and evaluation of AERIS application
Enabling Technologies: Future Forecast	Ongoing tracking and projections of enabling CV and VA technologies
Foundational Research for Automated Vehicle Policy	Analysis of policy issues, gaps, research needs, and Federal role
Vehicle Cybersecurity Research	Cybersecurity knowledge base
Functional Safety of Automated Lane Centering Controls	Minimum functional and safety requirements for lane centering technologies
Transportation System Benefits Study of Highly Automated Vehicles	Model for evaluation of safety, mobility, and environmental benefits



New U.S. DOT Automation Research Projects

ITS JPO

Development and Validation of AV Benefits Model

Standards Planning for Automation

AV Policy Issue Evaluation

Stakeholder Engagement

FTA

Advanced Automated Vehicle Guidance and Precision Docking Technologies Evaluation

FTA/FHWA

First Mile / Last Mile Mobility – Concept Development

NHTSA

Functional Testing of AV Systems

Extension of Cybersecurity Guidelines to AV

Driver Acceptance Assessment of Level 2 AV

FHWA

Assessment of Digital Infrastructure for Automation

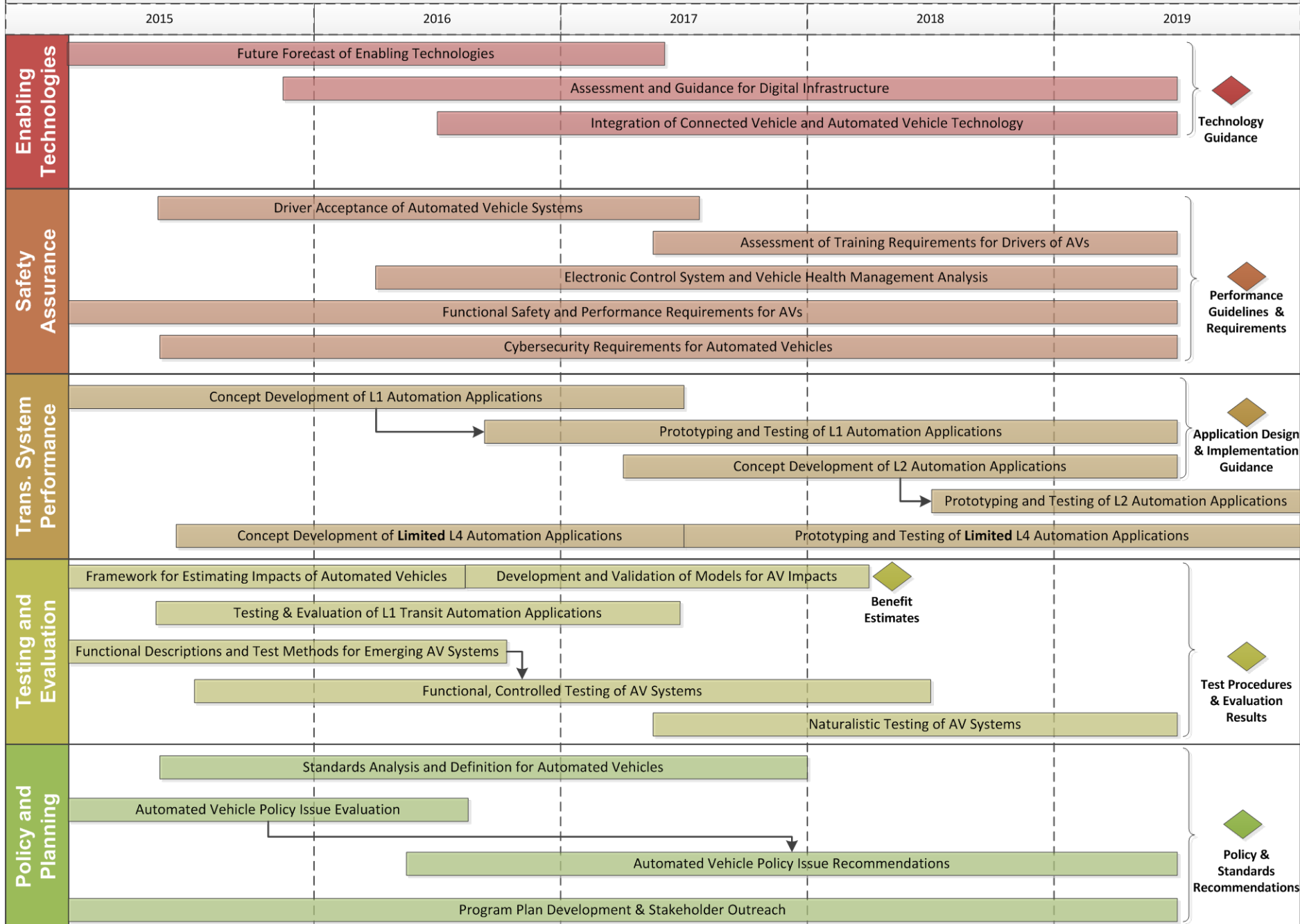
Cooperative Adaptive Cruise Control – Enabling Research

Automated Speed Harmonization – Testing and Evaluation

Driver Acceptance of Automation Applications



U.S. DOT Automation Program Roadmap



Technology Guidance

Performance Guidelines & Requirements

Application Design & Implementation Guidance

Benefit Estimates

Test Procedures & Evaluation Results

Policy & Standards Recommendations

For More Information

The screenshot shows the website for the Office of the Assistant Secretary for Research and Technology, Intelligent Transportation Systems Joint Program Office. The page features a navigation bar with links for About, Research, Tech Transfer, Library, Press Room, ITS PCB Program, and Contact Us. A search bar is also present. The main content area includes a large banner for the 'ITS 2015-2019 STRATEGIC PLAN' with the text 'Planning for the Future of ITS'. Below this are two columns: 'Current Research' with a list of topics like Safety, Mobility, and Environment; and 'Spotlight' with news items dated December 10, 2014, and August 12, 2014. On the right side, there are several promotional tiles for 'FREE ITS TRAINING', 'Public Meetings & Webinars', 'Connected Vehicle TEST BED', 'CV Pilots Deployment Project', and 'ITS & YOU'. Social media icons for Facebook, Twitter, Email, RSS, and YouTube are at the bottom of the main content area. The footer contains contact information for the OST-R office and various accessibility and privacy policy links.

www.its.dot.gov

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