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

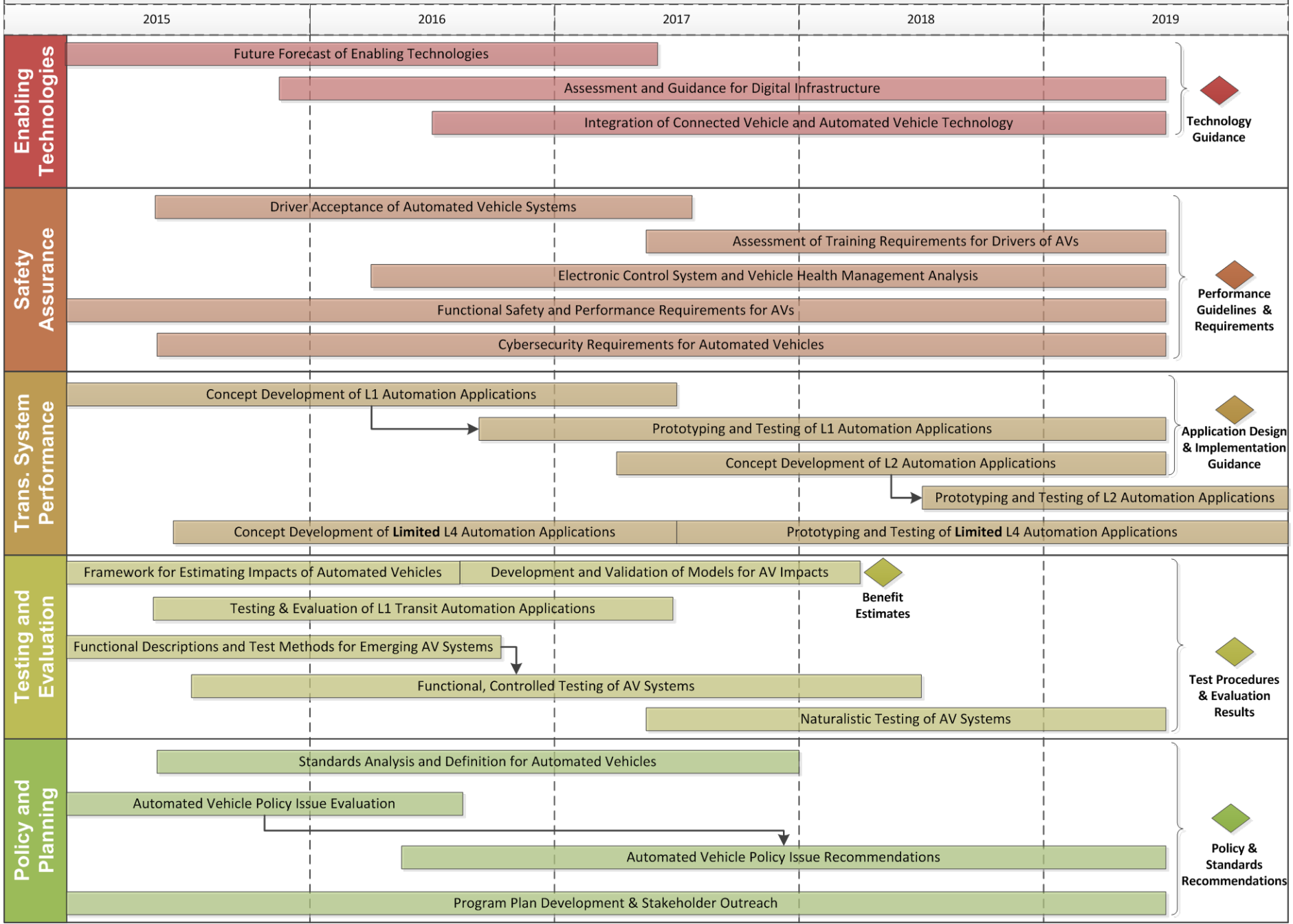
FTA
Advanced Automated Vehicle Guidance and Precision Docking Technologies Evaluation

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



For More Information

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