ITS JPO Strategic Approach

1: Identify and assess emerging, priority technologies for their feasibility, applicability, opportunities, and impacts to the transportation system.

2: Coordinate and lead ITS research and development in the public interest.

3: Demonstrate the benefits of proven ITS technologies for improving the transportation system.

4: Promote widespread adoption of ITS technologies throughout the transportation system.

5: Sustain the adoption of ITS technologies to realize the full potential of benefits across all surface transportation modes.
Collaborate with public and private sector organizations to identify transportation use cases for 5G communications

Develop evolutionary scenarios from present day communications in the transportation system to 5G communications
ITS JPO proposes a multimodal effort to incubate and drive the adoption of modern technology best practices across the ITS portfolio. This will help government program managers effectively procure and manage projects that use innovative practices such as machine learning, agile development, and collaborative source code development that are foundational to the next generation of ITS projects.

Initial focus areas:

- **Agile Development**
- **Collaborative Source Code Development**
- **Machine Learning & Advanced Data Science**

Bring **Innovative Practices and Methodologies** into the USDOT Enterprise and Transportation Sector

- Provides targeted workforce development activities
- Enables multi-modal sharing of code and peer exchanges
- Works with and feeds into the Digital Transformation Initiative and Professional Capability Building programs
- Works with partners in the national innovation community
ITS JPO proposes establishing a cross-cutting, multi-modal effort to develop a customized profile of the NIST cybersecurity framework for ITS deployments.

- **Baseline** – Developing a comprehensive baseline of ITS cybersecurity activities across DOT and analyze this baseline to identify the needs within individual modes as well as across the range of ITS deployments.

- **Profile Development** – Apply the CSF across all deployments of intelligent transportation systems to develop a common ITS profile.

- **Technology Transfer** – Support the technology transfer from other sectors that accelerate adoption of cybersecurity technologies within ITS deployments.

Supports OCIO and OST-P activities regarding a multi-modal approach to transportation cybersecurity.
NIST Cybersecurity Framework

- Voluntary framework developed through a collaborative process by industry, academia, and government stakeholders
- Provides an approach to prioritize cybersecurity resources, make risk decisions, and take action to reduce risk.
- The Cybersecurity Framework consists of 3 components:
  1. **The Core**: provides an easy-to-understand set of desired cybersecurity outcomes.
  2. **Profiles**: portrays organizations’ unique requirements, objectives, risk appetite, and resources.
  3. **Implementation Tiers**: indicates how an organization manages cybersecurity risks.

### Core Components

**Identify**
- Asset management
- Business environment
- Governance
- Risk assessment
- Risk management strategy

**Protect**
- Access control
- Awareness and training
- Data security
- Information protection and procedures
- Maintenance
- Protective technology

**Detect**
- Anomalies and events
- Security continuous monitoring
- Detection process

**Respond**
- Response planning
- Communications
- Analysis
- Mitigation
- Improvements

**Recover**
- Recover planning
- Improvements
- Communications

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**U.S. Department of Transportation**
Automation

Planning & Infrastructure

Traffic Management

Community Access

Safety

Operation

Inspection & Enforcement

Mobility

Research
USDOT Recent Automation Activities

- Automated Driving Systems 2.0
- Roundtable on Data for Automated Vehicle Safety
- Public Listening Summit on Automated Vehicle Policy
- Modal RFI and RFC Releases
- FHWA National Dialogue on Highway Automation Series
- FMCSA and NHTSA Listening
- OMNIBUS 2018
- Preparing for the Future of Transportation: Automated Vehicles 3.0
Enabling the Complete Trip

1. Plan and Book a Trip
   Andy uses a pre-trip concierge application.

2. Travel to Transit Station
   An automated shuttle (rideshare service) is dispatched.

3. Ride the Bus/Take a TNC
   While on the bus, Andy receives direction on when to pull the Stop Request cord from his wayfinding and navigation application.

4. Cross the Street
   As Andy approaches an intersection, his safe intersection crossing application communicates with the traffic signal.

5. Arrival at Destination
   Andy safely arrives at his destination, while the pre-trip concierge application plans his return trip home.
Accelerating Deployment

Connected Vehicles
A Solution worth Achieving
Significant Connected Vehicle Deployment

- Connected vehicles are being tested nationwide
- USDOT supports “Connected Automation” for self-driving cars
- New Security Credential Management System is operational
- USDOT proves connected vehicles are interoperable
- Free connected vehicle data is available to the public