FTA Research Activity Update

State DOT Roundtable
AASHTO - Multistate Transit Technical Assistance Program
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Office of Research, Demonstration, and Innovation (TRI-10)
FTA TRI-10 Programs

• Mobility on Demand (MOD)
• Mobility Services for All Americans (MSAA)
• Mobility Payment Integration (MPI)
• Strategic Transit Automation Research (STAR)
• Accessible Transportation Technologies Research Initiative (ATTRI) – with FHWA and ITS JPO
• Small Business Innovative Research (SBIR)
• Transit Cooperative Research Program (TCRP)
• TRI Website: https://www.transit.dot.gov/about/research-innovation
Integrated Mobility System

FTA Research Office envisions an integrated mobility system to be an effective way to provide value-based, reliable, and convenient mobility services for all, and TRI-10 research is geared towards putting the pieces together for the future of mobility.
TRI-10 Research and Interprogram Activities

- Mobility Services for All Americans (MSAA)
- SBIR and TCRP
- New Generation of Performance Metrics
- Innovation and Knowledge Accelerator (IKA)
- Strategic Transit Automation Research (STAR)
- MOD Sandbox Demos and Evaluations
- Policies and Practices
- Stakeholder Engagement and Outreach
- On-ramp Planning Support
- Mobility Payment Integration (MPI)
- Other Programs and Activities
- ATTRI
MOD is a vision for an integrated multi-modal network of safe, carefree, affordable, and reliable transportation options that are available to all.
MOD Sandbox: Partnerships at a Glance
Current MOD Program Activities

MOD Research Efforts:
- MOD Foundational Research
- MOD Performance Metrics
- MOD Innovation & Knowledge Accelerator
- MOD Sandbox Demonstrations
- MOD Sandbox Evaluations
- Stakeholder Engagement & Outreach
- Policies and Practices
Mobility Services for All Americans (MSAA)

MSAA’s goal is to increase mobility and transportation accessibility for transportation disadvantaged and general public by overcoming technical and institutional barriers, integrating Intelligent Transportation Systems (ITS) technologies such as Travel Management and Coordination Centers (TMCCs) to promote system interoperability, and optimizing the effectiveness of resources by interagency or inter-provider collaboration.
MSAA Deployment Planning Projects

• San Luis Obispo County TMCC - United Cerebral Palsy of San Luis Obispo/Ride-On Transportation
  – Enhancing personal mobility using Common Fleet Information Platform through TMCC’s real-time Ride Coordination System (RCS) cross the county

• Northwest Metro Denver Coordination System – Via Mobility Services
  – Expanding Via Mobility Services to other urban communities within NW Denver Metro Area (Northglenn, Federal Heights, Broomfield, and Thornton). Building on DRMAC’s VTCLI Trip Exchange Project.

• Simply Get There Trip Triage Design – Atlanta Regional Commission
  – Atlanta Region Travel Management Coordination Platform (TMCP) - Developing open-source TMCP designed for complexity of HST trip transactions

• Travel Management Coordination Center (TMCC) of Southern Wisconsin - Greater Wisconsin Agency on Aging Resources
  – The project will demonstrate how emerging technologies can eliminate barriers to HST coordination, providing low cost of entry and operation, and ease of use to participants. The project will serve an area of southern Wisconsin comprised of ten contiguous counties.
MPI was initiated to promote innovation and adoption of integrated mobility payment options as part of an effort in advancing the USDOT’s vision for an integrated mobility system under its MOD portfolio.
MPI Program Highlights

• Demonstration-based and collaboration-oriented research program to position FTA to make informed decisions involving policies, collaboration models, data standards, and sustainability of mobility systems

• MPI aims to set a vision and establish a demonstration framework by involving all stakeholders to integrate payment into the broader goals and objectives of mobility systems currently being developed under the Mobility on Demand (MOD) initiatives

• MPI and MOD emphasize the requirement for business, technology, and policy collaborations for regional interoperability of mobility systems
MPI Program Activities

Enabling Research
- Industry Scan
- Multi-perspective Impact Assessment
- Stakeholder Engagement
- Research and Demonstration Plan
- Roadmap
- Policy Analyses
- Standards Development
- Innovation and Knowledge Transfer
- Training and Capacity-building
- Outreach

Integrated Demonstrations
- Demonstration Planning
- Demonstrations
- Phase 1 - Demonstration Initiation Phase
- Phase 2 - Learning and Refinement Phase
- Phase 3 - Demonstration Maturity Phase
- Test Plans
- Evaluations
- Technical Assistance Plan
- Streamlining Process

Strategic Partnerships
- Regional Integration
- Urban Integration
- Equity Integration
- Technology Integration
Strategic Transit Automation Research (STAR) Research Goals

- **Conduct enabling research** to achieve safe and effective transit automation deployments
- **Identify and resolve barriers** to deployment of transit automation
- **Build awareness** to socialize automation for transit stakeholder community
- **Demonstrate market-ready technologies** in real-world settings
- **Leverage technologies** from other sectors to move transit automation industry forward
Strategic Transit Automation Research (STAR) Activities

• **December 2017**, FTA held a webinar to introduce and solicit input on a proposed, draft strategic transit automation research program.

• **January 2018**, FTA issued two (2) Requests for Comments (RFCs) to inform future areas of research, including scoping for upcoming demonstrations

• **May 2018**, FTA published the STAR Plan

• **Next Steps:**
  - FTA plans to launch the first of a series of real-world demonstrations of automated transit bus applications – fall 2018.
  - Conduct enabling research, integrated demonstrations and strategic partnerships as planned – continuous
  - Continue participation in DOT-wide automation research activities – continuous
  - Initiate greater awareness and participation with respect to transit automation research and adoption of automated vehicles – continuous.
ATTRI aims to remove barriers to transportation by leveraging advanced technology to enable people to travel independently, anytime of the day to any destination, regardless of their individual abilities.
ATTRI: 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.
ATTRI: Applications in Development

Wayfinding and Navigation:

- CITY COLLEGE OF NEW YORK
- ABLELINK
- PATHWAYS SOLUTIONS
- TRX SYSTEMS

Pre-Trip Concierge and Virtualization:

- ABLELINK

Safe Intersection Crossing:

- CARNEGIE MELLON UNIVERSITY

Robotics and Automation:

- CARNEGIE MELLON UNIVERSITY
Program Links and Resources


• Mobility Services for All Americans (MSAA): https://www.its.dot.gov/research_archives/msaa/index.htm

• Mobility Payment Integration (MPI): Website under development

• Strategic Transit Automation Research (STAR): https://www.transit.dot.gov/automation-research

• Accessible Transportation Technologies Research Initiative (ATTRI): https://www.its.dot.gov/research_areas/attri/index.htm

• TRI Website: https://www.transit.dot.gov/about/research-innovation
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