Multimodal and Accessible Travel (MAT) Standards Coordination Committee (SCC)

Kickoff Meeting

September 9, 2024

A Community of Transportation Professionals

Agenda

Agenda

ITE Disclaimers
Introduction (20 minutes)
Poll #1 Participant Introductions
Scope/objectives/background (25 minutes) • Background • MAT SCC Scope • SCC Purpose, Objectives and Expectations
SCC Action Plan (15 minutes)
Poll #2 Expectations of participating in SCC
Poll #3 Interest in standard priorities
Reservation Scheduling and Dispatching (RSD) Subcommittee (15 minutes)
Next steps and Closing (10 minutes)

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  - Profits, profit margins or cost data;
  - Market shares, sales territories or markets;
  - The allocation of customer territories;
  - Selection, rejection or termination of customers or suppliers;
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  - Restricting the customers to whom a company may sell;
  - Unreasonable restrictions on the development or use of technologies; or
  - Any matter which is inconsistent with the proposition that each company must exercise its independent business judgement in pricing its service or products, dealing with its customers and suppliers and choosing the markets in which it will compete.

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- Disclosure must identify the patent or patent application, the part of the NEMA Standard incorporating an essential patent claim, and an assurance that a license to use the essential patent claims will be made available either on reasonable terms and conditions that are demonstrably free of any unfair discrimination or without compensation but with other reasonable terms and conditions that are demonstrably free of unfair discrimination.

Introduction and Welcome

- Robert Sheehan, Architecture, Standards, and Cybersecurity Program Manager, Intelligent Transportation Systems (ITS), Joint Program Office (JPO), USDOT
- Brian Cronin, Director, Intelligent Transportation Systems (ITS), Joint Program Office (JPO), USDOT
- Mary Leary, PhD, Associate Administrator for Research, Demonstration and Innovation, Federal Transit Administration (FTA), USDOT
- Hendrik (Rik) Opstelten, Transportation Program Specialist, Office of Research, Demonstration and Innovation, Federal Transit Administration (FTA), USDOT
- Siva Narla, Senior Director, Transportation Technology, Institute of Transportation Engineers (ITE)

Introduction and Welcome

Standards Coordination Committee (SCC) Co-Chairs

- Elliott McFadden, Greater Minnesota Shared Mobility Program Coordinator, Minnesota Department of Transportation

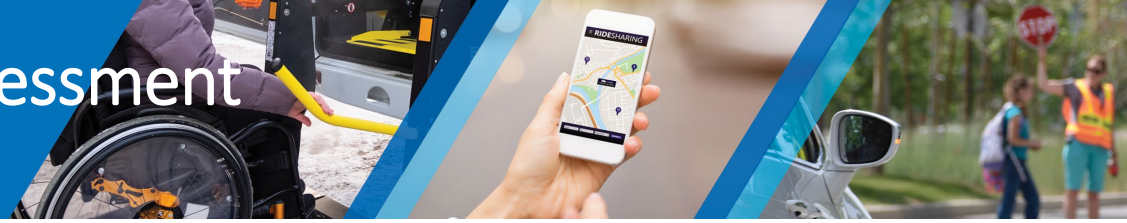
- Eric Plosky, Executive Director, MobilityData

Poll #1: Please indicate the type of organization (check only one)

1. Federal government agency
2. State/Provincial government agency
3. Regional government agency (MPO, COG, etc.)
4. Local government agency
5. Public transportation agency
6. Health/human service agency
7. Consultant
8. Software vendor
9. Hardware vendor
10. Transportation Network Company
11. Standards/specifications organization
12. Association
13. Public transportation operations contractor
14. Other

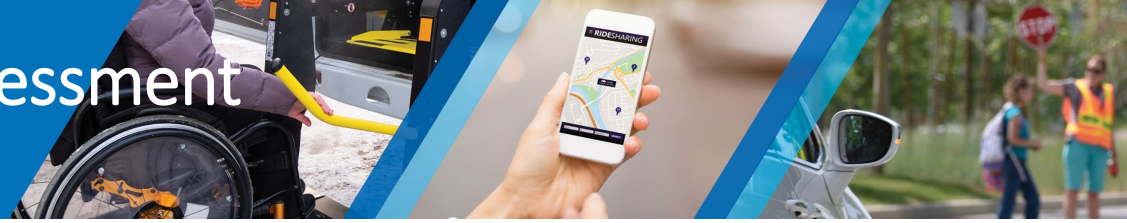
Multimodal and Accessible Travel (MAT)

Background on MAT Standards Initiatives



Complete Trip

- Identifies each action, transition, leg, and process that encompasses a Complete Trip
- Four groups:
  - On-Demand/Mobility Platform Application Programming Interfaces (APIs)
  - Wayfinding and Navigation
  - Safety
  - Integrated Payment



Complete Streets

- Policy and design approach prioritizing safety and mobility for all users
- Two categories:
  - Curb and Micromobility Vehicle Management
  - Public Right of Way / Data Modeling for Indoor Navigation

Illustration of neighborhood street with Complete Streets design elements.
Source: NACTO

ITE MAT/Vulnerable Road User (VRU) Cybersecurity Standards Support Project (Phase 1)

Project Objectives and Deliverables

Task 3a: Review Gaps in MAT/VRU Standards and Use Cases

- Identify gaps (and conflicting configurations) in MAT use cases and projects

Task 2: Develop VRU Cybersecurity and Privacy Risks Whitepaper

- Analyze the security and privacy risks associated with VRUs participating in connected vehicle (CV) environments

Task 3b: Develop MAT Use Cases

- Develop Use Cases to fill gap and showcase MAT capabilities to support standards development

Task 4: Develop MAT Standards Coordination Plan

- Address multimodal and accessible travel (MAT) standards coordination
  - Develop stakeholder roster
  - Invite to working group
  - Engage stakeholders in working group

MAT/VRU = Multimodal and Accessible Travel and Vulnerable Road User

Documents available on https://www.ite.org/technical-resources/topics/standards/mat-and-vru-cybersecurity/

MAT Standards Coordination Strategy (ITE Phase 1)

Issue #1: Limited focus by Standards Development Organizations (SDOs) on MAT related standards.

Issue #2: With no central program by the USDOT, all MAT specification development efforts have been de-centralized piecemeal work.

Issue #3: MAT standards and specification efforts have no centralized forum for the broad-based stakeholders to communicate and collaborate.

Gaps in Standards (ITE Phase 1)

Reservations, Scheduling and Dispatching (RSD)

- Governance
- Processes, e.g., operations
- Reservations (customer facing) and dispatching (operations facing) interfaces
- Semantics / Data Dictionary
- Eligibility

Cybersecurity and Privacy – vulnerabilities and policies for deploying

- Wayfinding/navigation
- Eligibility processes
- Payment processing / mobility payment integration
- Reservation systems
- Data storage
- Data backup and recovery

Gaps in Standards (ITE Phase 1)

3. Vulnerable Road User (VRU)

- VRU Classification/Taxonomy
- Incident Data Reporting
- Personal Safety Message Confidence Intervals
- On-Board Units for Bicycles

4. Public Right of Way

- Accessibility
- Curb Management
- Wayfinding and Routing
- Typical mapping standards including network modeling, attributes/semantic ontologies, metadata, compliance tests, performance descriptions and tests
- Transfer / access formats (encoding, feed exchanges, APIs)

Recommendations from ITE Project Phase 1

- Establish a Standards Coordination Committee (SCC) to convene a forum for MAT standards coordination
- Engage Standards Development Organizations (SDOs), Community-Based Specification Development Organizations to work together to harmonize standards
- Lower the barriers for standard/specification adoption and deployment
- Involve stakeholders from Equity and Accessibility advocacy groups

SCC Purpose and Scope

SCC Purpose

The purpose of the new Standards Coordination Committee (SCC) is to:

Accelerate the development and adoption of Multimodal and Accessible Travel (MAT) standards

This acceleration aims to enhance accessibility for all travelers regardless of their mode of transportation.

SCC Goals

Promote existing and planned MAT standards

Awareness, promotion, documentation, training/best practices, reference implementations, security policies, workforce requirements, etc.

Increase coordination of existing standards and development activities

In both the public and private sectors, particularly with other standards committees/efforts within U.S. DOT, Transportation Research Board (TRB), and American Public Transportation Association (APTA), through the Mobility Data Interoperability Principles, and internally, with the aims of reducing development time and increasing adoption

Identify and prioritize gaps/needs not addressed by current standards

Promote evaluation of the effectiveness of standards

In terms of broader policy goals for example, increasing transit ridership

Approach and Methods

The SCC will accomplish its goals by:

- **Clearly defining its domain:** identifying committee scope, roadmap/principles, composition, resources available (from ITE, JPO, members, SMEs, etc.), and concerns; setting expectations (regular meetings, reporting, etc.)
- **Working inclusively and transparently with stakeholders**, representing all sectors; seeking legitimacy through an "all players at the table" approach
- **Creating a positive environment**, getting constructive input, leveling the playing field, collaborative rather than competitive
- **Drawing on committee members and participants**, as well as ITE staff and SMEs
- **Focusing on real-world use cases** (rather than academic/research/theory)
- **Identifying minimum viability requirements** for early success (rather than a "kitchen sink" approach)

SCC Priorities

Initial Priority

- Reservations, Scheduling and Dispatching (RSD) standards coordination

Other Priorities

- Public Right of Way (PROW) through coordination with National Collaboration on Bicycle, Pedestrian, Accessibility and Infrastructure Data Committee (NC-BPAID).

- Vulnerable Road Users (VRU) through coordination with Connected Transportation Interoperability Standards Committee (CTIC) (Combined NTCIP, SAE standards group), other interested associations, and USDOT efforts

SCC Action Plan and Priorities

Action Plan Purpose

The Action Plan describes activities needed to establish the SCC. This Action Plan or tactical guide provides information on the organization, governance, composition and ongoing activities needed to establish and manage the SCC

First Year -- Desired Accomplishments

Charter

Strategic Plan

RSD foundational documents

Poll #2: What are your interests in setting standards for multimodal and accessible travel (MAT)? (Please select all that apply)

1. Identification of standards/specifications
2. Creation of standards/specifications
3. Demonstration of the use of standards/specifications
4. Adoption of standards/specifications
5. Development of materials about how to use specific standards
6. Dissemination of materials about available standards
7. Engagement of additional stakeholders in the use of standards
8. Understand impacts of standards/specifications (e.g., safety, operations, traveler/traffic flows, etc.)
9. Other

Poll #3: In what specific disciplines should the SCC consider MAT standards development beyond RSD? (Please select all that apply)

1. Eligibility to participate in specific mobility service programs
2. Public right of way: curb management
3. Public right of way: wayfinding and routing
4. Cybersecurity in MAT
5. MAT Payment and Payment Integration
6. Demand-responsive/mobility on demand operations
7. Trip planning/Trip discovery
8. Vulnerable road users (VRU) safety
9. Incident data reporting
10. VRU to infrastructure (e.g., hands-free pedestrian signals)
11. Other

Subcommittee on Reservations, Scheduling and Dispatching (RSD)

Why RSD Standards

- **Primary reasons:**
  - RSD system functionality is provided mostly in proprietary software
  - Standardizing this functionality has not been a priority in the transit industry in general
  - Emerging standards are not integrated or harmonized
- **Several open software products that include this functionality** (e.g., RideSheet, Ride Pilot) but they have been deployed in a very limited number of agencies
- **Several efforts to standardize** these processes, conducted by community-based standards development organizations such as MobilityData and California Integrated Travel Project (Cal-ITP)
- **Lack of standards or specifications that govern RSD processes** which are essential to transit operations

Opportunities in RSD Standards

- **Example: Transactional Data Specifications (TDS)** for demand-responsive transportation (DRT) to facilitate interactions among the software systems that manage these services. TDS accomplishes 2 objectives:
  - **Establishes common language for software systems to communicate transactional data**—all pertinent DRT trip details, such as origin & destination and time of the requested pickup or delivery—with each other to accomplish DRT trips from the beginning to the end of the trip lifecycle; and
  - Provides recommended technical approach for **how data communication will occur among the interoperating computer systems**.
- **Current status of TDS:**
  - **Rural Lake County, OR:** First 2 providers to rely on TDS to collaborate
  - **NeoRIDE:** Will enable real-time open data exchange for demand response software using TDS via an Enhancing Mobility Innovation (EMI) project

Opportunities in RSD Standards (2)

- **Example: General On-demand Feed Specification (GOFS)** will standardize the representation of on-demand services and set guidelines to manage rider-facing transactional data
  - **Main purpose:** to provide improved information for travelers when discovering demand-response services
  - **Initially, four key features being prioritized:** service discoverability, service description, real-time service description, and booking (via deep linking) along with pricing information
- **Currently in need of funding to complete development and demonstration**

Opportunities in RSD Standards (3)

- **Example: Operational Data Standard (ODS)**, an open standard for describing how to operate scheduled transit operations which can be used to port scheduled operations between software products (e.g., scheduling systems and computer-aided dispatch (CAD)/automatic vehicle location (AVL) systems), agencies, and more
- **Cal-ITP** bringing together transit agency, scheduling and CAD/AVL vendors to test compliance with ODS
- **Potentially address funding to complete development and demonstration of standards** that are in process, such as General Transit Feed Specification (GTFS)-Flex and General On-demand Feed Specification (GOFS)

Introduction to RSD subcommittee co-chairs

Daniel Whitehouse, Vice President of Paratransit and On-Demand Services, Suburban Mobility Authority for Regional Transportation (SMART)

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Santosh Mishra, President & CEO, Flexlynqs

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Next Steps

Recurring Meetings

SCC Meetings

- Monthly, Bi-Monthly, Quarterly?

RSD SC Meetings

- Weekly –
- *Starting September 20 through November 22*
- *every Friday at 1:00-2:00 ET (through Thanksgiving)*

Discussion

Contacts

SCC Co-Chairs

- **Elliott McFadden**, Greater Minnesota Shared Mobility Program Coordinator, Minnesota Department of Transportation, elliott.mcfadden@state.mn.us
- **Eric Plosky**, Executive Director, MobilityData, eric@mobilitydata.org

RSD SC Co-Chairs

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- **Santosh Mishra**, President & CEO, Flexlynqs, santosh.mishra@flexlynqs.com

ITE

- **Ashraf Ahmed**, Transportation Technology Project Specialist, ITE, aahmed@ite.org
- **Siva Narla**, Senior Director, Transportation Technology, ITE, snarla@ite.org

Resources and Links

SCC GitHub site

https://github.com/ite-org/MAT-VRU?tab=readme-ov-file

ITE Phase 1 Document Repository

- https://www.ite.org/technical-resources/topics/standards/mat-and-vru-cybersecurity/
- https://www.ite.org/ITEORG/assets/File/Task%204%20Multimodal%20and%20Accessible%20Coordination%20Plan_FINAL_2023-08-01.pdf

USDOT MATSA Project documents

https://rosap.ntl.bts.gov/view/dot/58673