



ACCESSIBLE TRANSPORTATION TECHNOLOGIES RESEARCH INITIATIVE (ATTRI) APPLICATION DEVELOPMENT AWARDS

The U.S. Department of Transportation (USDOT) has entered into agreements to develop six technology prototypes under ATTRI to improve mobility options for all travelers, particularly those with disabilities.

Wayfinding and Navigation:

- **City College of New York** – Smart Cane for Assistive Navigation (SCAN), a wayfinding solution for those with low vision integrated with a smart phone application
- **AbleLink** – An open wayfinding media standard and related infrastructure to create geographically-specific, cloud-based libraries of routes in metropolitan or rural areas
- **Pathways Solutions** – A wayfinding tool for wheelchair users and people with visual impairment that guides users along routes tailored to their preferences
- **TRX Systems** – A smart wayfinding and navigation system to obtain real-time location, en-route assistance, and situational awareness.

Pre-Trip Concierge and Virtualization:

- **AbleLink** – A suite of assessment, self-directed learning, and trip execution technologies to support pre-trip planning for individuals with cognitive disabilities.

Safe Intersection Crossing:

- **Carnegie Mellon University** – A tool to connect pedestrians with disabilities to the traffic signal systems infrastructure (and nearby connected vehicles and infrastructure) and create situational awareness to improve the safety of intersection crossing and increase independent mobility.

Robotics and Automation:

Carnegie Mellon University – The National Institute on Disability, Independent Living, and Rehabilitation Research, a key ATTRI partner, has awarded a grant to Carnegie Mellon University for cloud-based autonomy and shared robots located in and around transportation hubs.



Advancing Mobility Solutions for All Travelers

Targeted Populations

-  Persons with Disabilities
-  Older Adults
-  Veterans with Disabilities

Types of Disabilities

-  Vision
-  Mobility
-  Hearing
-  Cognition

Application Priorities

-  Wayfinding and Navigation
-  Pre-Trip Concierge and Virtualization
-  Robotics and Automation
-  Safe Intersection Crossing



U.S. Department of Transportation

Through these awards, the USDOT is making a significant investment in creative solutions for travelers with disabilities and engaging other federal agencies and public-private partners in testing and deploying ATTRI applications in the coming months.

These applications will provide independent mobility for all travelers, including those with disabilities, using transformative technologies, universal design, and inclusive information communication technologies.

ATTRI and the Complete Trip

ATTRI research will continue to evolve over the next decade, as it lays the groundwork to ensure foundational research enables integration of ATTRI concept applications into the larger transportation ecosystem. A complete trip that considers accessibility from origin to destination, as depicted in the figure below, is an underlying goal of ATTRI. The accessibility of a complete trip depends on an individual's ability to go from origin to destination within the travel chain, including such links as trip planning, travel to station, station/stop use, vehicle boarding and unboarding, stops or transfers, and travel to destination after leaving the station/stop. If one link is inaccessible, then access to subsequent links is broken, and the trip cannot be completed.

The travel chain defines the scope of potential accessible transportation research and development. The inability to get to and from destinations (e.g., from home to a transit station and from the station to a destination—the “first mile/last mile” problem) and distance traveled pose persistent challenges within the travel chain. ATTRI's goal is to work with system operators and the stakeholder community to address all parts of the travel chain, allowing individuals with disabilities—especially those with severe disabilities—to have independent access to work sites, educational programs, health facilities, and social and recreational activities.

THE COMPLETE TRIP

After his doctor's appointment, Andy decides to take a spontaneous trip to meet a friend at a coffee shop in an unfamiliar part of town. Using ATTRI's **pre-trip concierge**, **wayfinding and navigation**, **robotics and automation**, and **safe intersection crossing** applications, Andy can travel with confidence throughout his trip.



for more information about this initiative, please visit: https://its.dot.gov/research_areas/attri/ or contact:

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