ACCESSIBLE TRANSPORTATION TECHNOLOGIES
RESEARCH INITIATIVE

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U.S. Department of Transportation
Federal Transit Administration

U.S. Department of Transportation
Federal Highway Administration

U.S. Department of Transportation
Office of the Assistant Secretary for Research and Technology

The Challenge

Persons with Disabilities

- 56.7 million; 19% US population
- Unemployment Rate – 13.2 %; Income: $38,400 ($61,000)
- Poverty: 24.7% (9.0%)
- Rise in Autism: 1 in 150 (2000) to 1 in 68 (2010)
- Fed expenditures: $226 B (2002); $357 B (2008)

Veterans with Disabilities

- 21.4 million Americas are Veterans
- Disability claims: 104,819 (2006) vs. 634,743 (2012)
- 2.6 million deployed in 2012, 45% of eligible Veterans file claims for disability
- Spending: $0.93 billion (2006) vs. $5.95 billion (2012)

Older Adults

- Disability rates rise as people get older
- 43.1 million age 65 + in 2012 or 1 in 7 people
- 28% live alone
- Expected to reach 72.1 million by 2030

Different User Needs

Impact of Transportation

people say it is important to their Daily Living Needs

say it is important to their job search

consider it a significant problem in accessing jobs

ATTRI's Vision

Accessible Transportation Technologies Research Initiative (ATTRI) seeks 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.*

Application Priorities & Consideration

Foundational Considerations

- Standard Accessible Data Platform
- Universal Design Standards
- Integrated Payment
- Leverage Existing Technologies

Smart Wayfinding & Navigation Systems

- Wayfinding and navigation systems for indoor and outdoor use
- Wearable technologies
- Community navigators

Pre-Trip Concierge & Virtualization

- Pre-trip and in-route traveler information
- Connected travelers
- Virtual caregiver help for pre-trip planning an on route support

Robotics & Automation

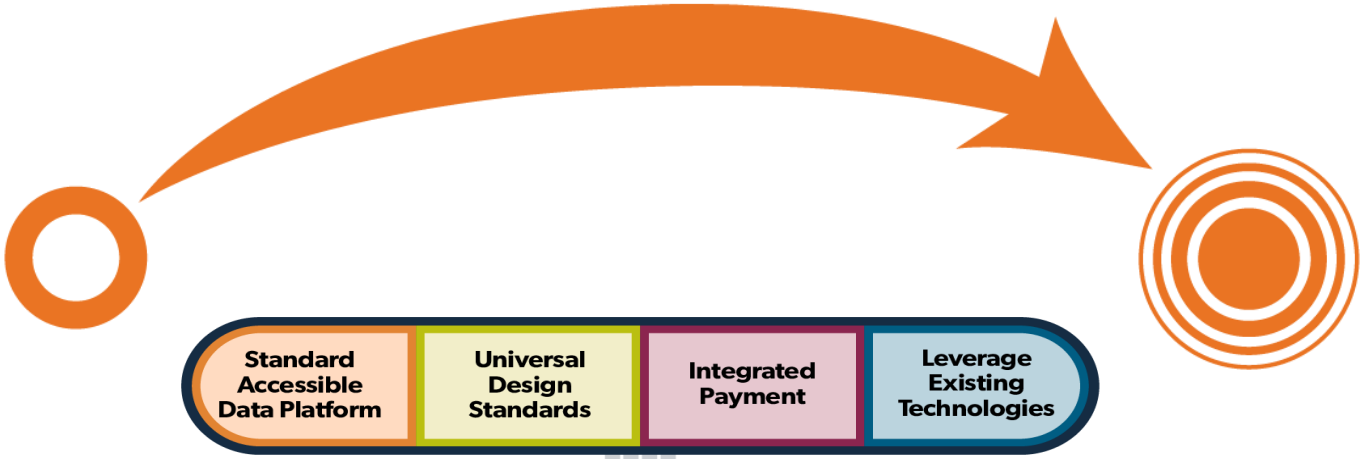
- Assistive and collaborative robotics to enhance mobility
- Ability to plan and execute trips, associated services
- Transformative transportation alternatives

Safe Intersection Crossing

- Intersection crossing assistance for all travelers
- Pedestrians interface with traffic signals, vehicles and nomadic devices
- Guidance, notifications and alerts for optimization

Complete Trip

Complete Trip & ATTRI Applications



Smart Wayfinding & Navigation

Pre-Trip Concierge & Virtualization

Robotics & Automation

Safe Intersection Crossing

ATTRI Application Development Awards

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.

ATTRI Application Development Awards

Pre-Trip Concierge and Virtualization:

ABLELINK

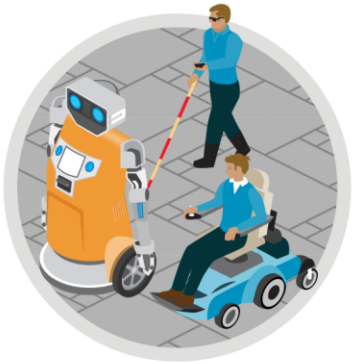
A suite of assessment, self-directed learning, and trip execution technologies to support pre-trip planning for individuals with cognitive disabilities.

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

Awarded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILLR) this project researches and develops seamless transportation assistance from cloud-based autonomy and shared robots located in and around transportation hubs.

The Complete Trip Scenario

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

While on the bus, Andy receives direction on when to pull the Stop Request cord from his **wayfinding and navigation application**.

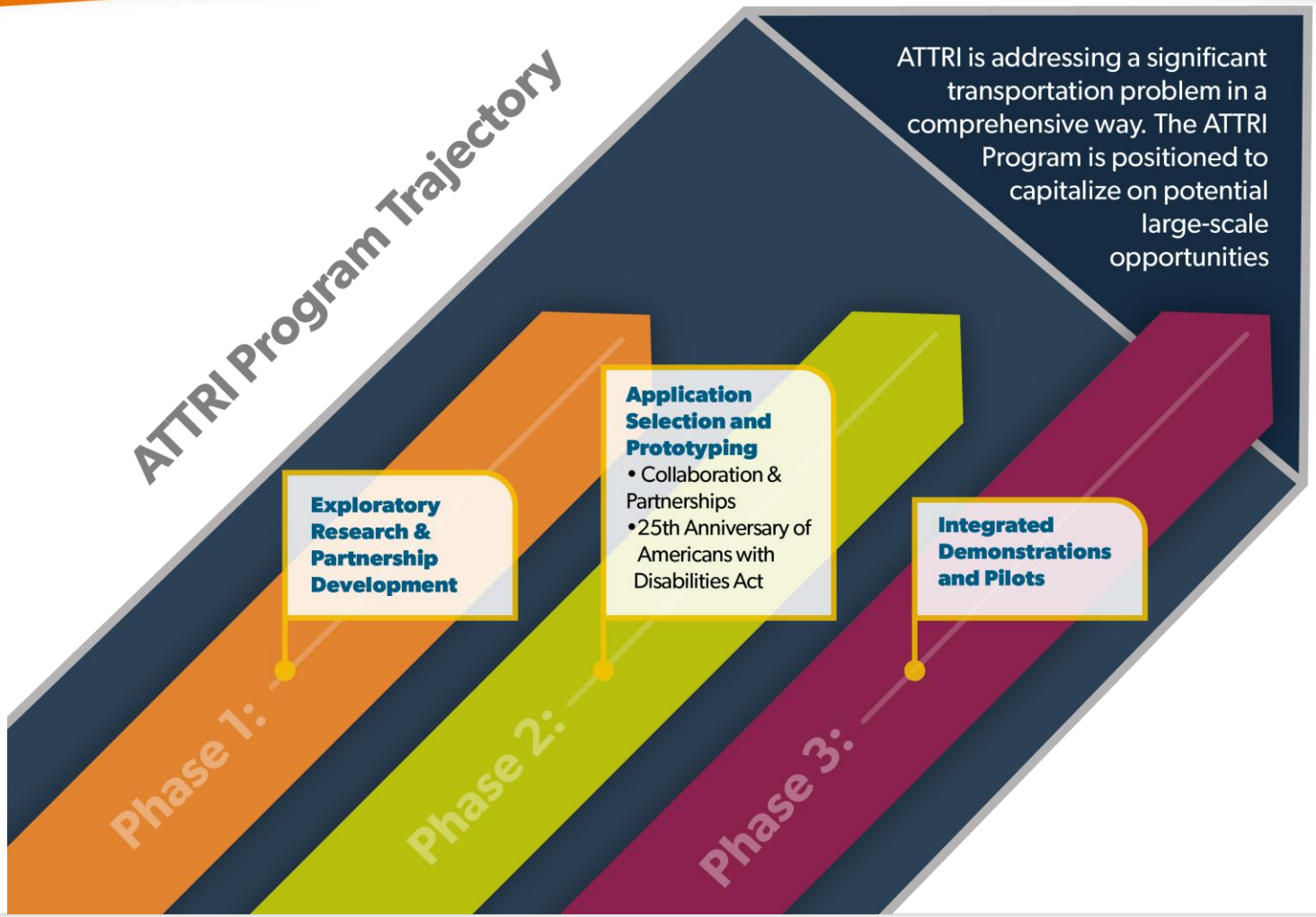
4. Cross the Street

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 Way Forward



Stay Engaged!

- Sign up for Friends of ATTRI's listserve
- Attend ATTRI's webinar series on application and technology development
- Participate and give feedback on ATTRI technology development
- Collaborate on future ATTRI activities

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ATTRI Website: http://www.its.dot.gov/research_areas/attri/index.htm