AbleLink Smart Living Technologies

COLORADO SPRINGS, CO

U.S. DOT INCLUSIVE DESIGN CHALLENGE

WAYFINDER RIDE

INDEPENDENT ACCESS TO DRIVERLESS VEHICLES FOR PEOPLE WITH IDD

The Inclusive Design Challenge focuses on innovative solutions to enable people with physical, sensory, and cognitive disabilities to use Stage IV and V automated vehicles – vehicles with no driver present – to access jobs, healthcare, and other critical travel destinations (from https://www.transportation.gov/accessibility/inclusivedesign).

As a Semi-Finalist and 2nd place Winner in the national competition, AbleLink Smart Living Technologies envisioned and created a pathway for autonomous vehicle (AV) access for people with cognitive disabilities. A groundbreaking collaboration that brought together AbleLink's existing technology and research, partners in public and private sectors, and family and self-advocates resulted in the WayFinder Ride prototype.

PROJECT CONCEPT

WAYFINDER RIDE

AbleLink's project, titled "WayFinder ADS – Enabling Independent Use of Autonomous Vehicles by Individuals with Cognitive Disabilities and others with Special Needs," involved the primary goals of developing universally designed technologies for educating individuals with intellectual and other cognitive disabilities on emerging automated vehicle technology, and developing a mobile application and support ecosystem to provide independent access to reserving and using automated vehicles.

Expertise gained from real-life deployments, the U.S. DOT's ATTRI project, Ford Mobility's City:One Challenge, and over 80 federally-funded research projects gave AbleLink developers a foundation for the WayFinder Ride concept. The summary video submitted in Stage II is now available at http://videos.ablelinktech.com/WayFinder_Ride.mp4.

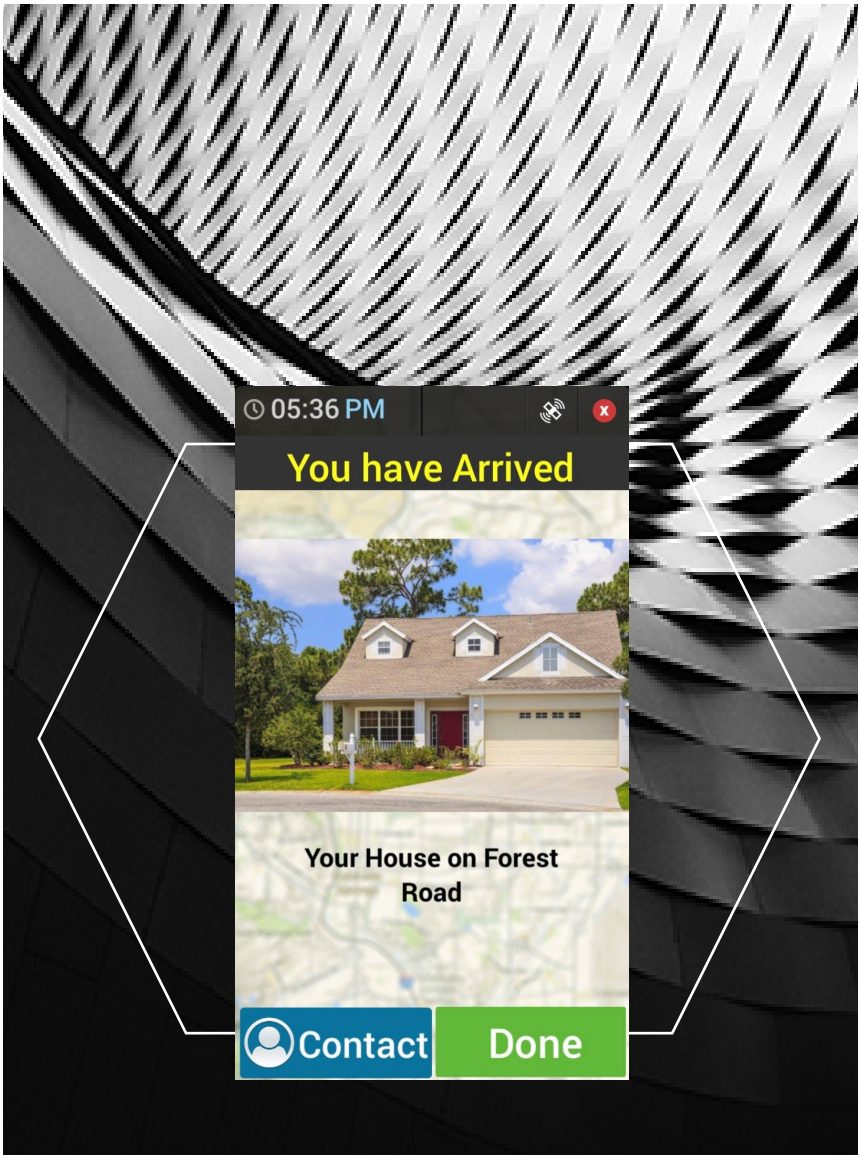
AbleLink WayFinder

THE WAYFINDER APP

ENABLING ACCESS TO PUBLIC TRANSIT SINCE 2011

The WayFinder app was initially released in 2011. Since that time, it has been deployed in multiple states, with applications ranging from transit system bus routes, walking routes, community inclusion projects, accessible transportation initiatives, and family/personal use.

WayFinder uses customized, geolocation-based instructions to provide pictures and descriptions of landmarks or other key locations along the route, prompting the user when it's time to proceed to the next step – seamlessly transitioning even to a different mode of transportation. The individual simply chooses which route to take, and WayFinder safely guides them to their destination. Videos depicting testing and real-life usage examples are available on AbleLink's YouTube channel.



SEMI-FINALIST STAGE

MOVING FROM IDEA TO PROTOTYPE

With direction from the Project Steering Committee, AbleLink designed several safety measures to support the system to include one touch phone calls, remote tracking capability, and several other in-app safety supports to be developed in later stages. The project included a brief study that showed the WayFinder Ride prototype was significantly more usable for people with intellectual and developmental disabilities (IDD) than comparable ride sharing apps. Further, the number of people with IDD who said they would be willing to ride in a driverless vehicle increased from 18% to 82% over the course of the study.

"We want to thank the Project Steering Committee for their passionate work in support of this effort. With representatives from universities, the AV industry, service practitioners, people with disabilities, and family members, the Committee was instrumental in guiding the project through consideration of the needs and opportunities of these diverse stakeholders in improving transportation options for people with cognitive disabilities." -Steven E. Stock, Project Coordinator

THE WAYFINDER ECOSYSTEM

CLOUD-BASED SERVICES TO SUPPORT INDEPENDENT TRAVEL

AbleLink's WayFinder Ecosystem is a set of cloud-based tools that provide route creation, management, and training resources to support use of the WayFinder app and independent travel. Users today – and eventually WayFinder Ride app users – can take trips on their own after being trained, while family members, caregivers, and coaches can monitor their success in real time. Currently available Ecosystem components include:

- SMART Route Builder – online, personalized route creation
- SMART Route Library – access to a wide range of existing routes and larger-scale content management
- SMART Travel Manager – real-time trip tracking, intervention, and support tools
- SMART Virtualization – VR resource for training and experiencing route challenges ahead of the first trip
- ATLAS Travel Readiness Assessments – cognitively accessible assessments on a variety of real-life experiences
- Transportation Skills Training – cognitively accessible, step-by-step instruction and travel skills development

FINALIST STAGE

WHERE WE GO FROM HERE

Members of the AbleLink team were honored to participate in a special ceremony in Washington, DC, featuring other Challenge winners and representatives from the Department of Transportation and the White House. This recognition of the importance of full inclusion for people with cognitive disabilities is in many ways a realization of AbleLink's mission and goals over the past 25 years.

AbleLink intends to use the $700,000 in prize money to continue development of the system in preparation for the future availability of driverless car services. Self-advocates with intellectual disabilities who participated in the research portion of this project displayed positive attitudes toward the use of AV technology. Their excitement at the prospect of having on-demand, independent travel opportunities provides hope and validation for the potential of driverless vehicles. The future impact of WayFinder Ride could improve social, recreational, and employment gateways for greater access to the community.

"We look forward to continuing the work of enhancing our accessible travel solutions by integrating with both traditional ride-hailing services as well as the services being offered by the emerging AV market. This will allow individuals with cognitive disabilities the previously unavailable opportunity to access new transportation services and live more independent lives." -Erik Mugele, Technical Director

AbleLink
Smart Living Technologies

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