



FEDERAL TRANSIT ADMINISTRATION (FTA)

Transit Bus Automation Quarterly Update

Q4 2022 Update



U.S. Department of Transportation
Federal Transit Administration

This FTA document identifies and provides information on transit bus automation pilot projects, demonstrations, and tests and consists of:

- Summaries of news items published in Q4 2022 related to automated transit buses, including both domestic and international projects.
- Summaries of U.S.-based activities related to automated vehicle testing projects with transit agency participation. A sub-section lists projects receiving U.S. Department of Transportation (USDOT) funding.

The information in this document is gathered from publicly available sources (e.g., news articles, press releases, and government websites) and may not represent a comprehensive list of all U.S. transit agency automated vehicle activity. Information on additional projects may be sent to transitautomation@dot.gov.

1. NEWS ITEMS (DOMESTIC AND INTERNATIONAL)

The table below contains Q4 2022 news items related to the use of driving automation systems in transit buses and other vehicle types used to provide public transportation.

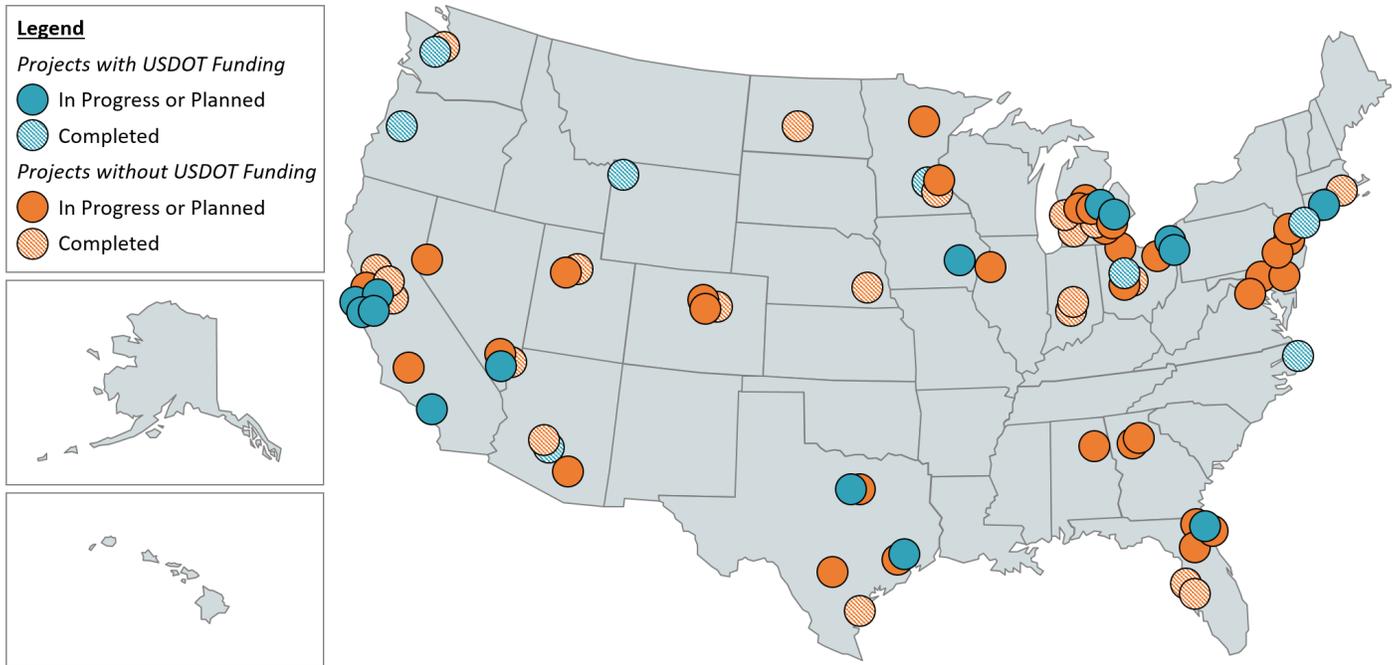
Transit Bus Automation News

Month	News Item
October 2022	<ul style="list-style-type: none"> ➤ Perrone Robotics and Rampini announced a partnership to produce ADS-equipped 20' electric "SIXTRON" buses (link). ➤ Navya and Bluebus announced that they have developed two ADS-equipped IT3 model buses and plan to conduct closed-facility testing at a Keolis facility in Châteauroux, France (link). ➤ Navya shuttles were demonstrated in a parking area at John F. Kennedy International Airport from October 17-21, 2022 (link). ➤ Auve Tech launched its next generation "MiCa" shuttle and partnered with BOLDLY for operations in Japan (link). ➤ San Francisco County Transportation Authority (SFCTA) selected Beep to operate two Navya shuttles on Treasure Island (link).
November 2022	<ul style="list-style-type: none"> ➤ Benteler EV Systems announced it will rebrand as HOLON and focus on electric ADS-equipped shuttles (link). ➤ Navya signed an MOU with Red Sea Global to pilot ADS-equipped shuttles in Saudi Arabia (link). ➤ The Israel Ministry of Transport, the Israel Innovation Authority and Ayalon Highways announced four teams that will carry out ADS-equipped transit bus pilots (link). ➤ Guident Corp. announced an ADS-equipped shuttle service along a 2.1-mile fixed route in Boca Raton, FL (link). ➤ Hyundai subsidiary 42dot launched a free shuttle service with two ADS-equipped shuttles operating along a 2.1-mile loop with two stops in Seoul, South Korea (link).
December 2022	<ul style="list-style-type: none"> ➤ The EU-funded ULTIMO (Unlocking Large-Scale and Passenger-Centric Automated Mobility) project launched, with plans for large pilots (15 or more vehicles per site) in Kronach, Germany; Oslo, Norway; and Geneva, Switzerland (link). ➤ Navya delivered a shuttle to Electromin to support operations in Saudi Arabia (link). ➤ Perrone Robotics partnered with University of Virginia Foundation to provide a free circulator shuttle service using various ADS-equipped vehicles at North Fork, VA (link). ➤ EasyMile and Transdev announced the launch of unstaffed operations in a complex environment beginning in November 2022 as part of the Navetty research project in Les Mureaux, France (link). ➤ Perrone Robotics delivered an ADS-equipped vehicle for testing at Philadelphia Navy Yard and announced plans to launch service in early 2023 (link). ➤ Uisee Technology began operating an ADS-equipped BYD J6 bus at Hong Kong airport (link). ➤ Mogo Auto began a road test using ADS-equipped buses and shuttles in Erhai Lake, Dali in China (link). ➤ Dongfeng Motor deployed ADS-equipped connected buses in Xiongan New Area in China (link).

2. AUTOMATED TRANSIT BUS TESTING ACTIVITIES IN THE UNITED STATES

The USDOT has identified many domestic planned, in-operation, and completed automated transit bus testing activities, as well as many transit agencies interested in participating in automated vehicle testing activities. In several cases, these projects have been or are funded through USDOT programs. Some transit agencies have expressed interest in participating in test activities but do not have a formalized project, or there may be limited information available on the project. The locations of automated transit bus testing are shown in the map below, and additional details are contained in the tables on subsequent pages. The projects included in the map and tables focus on testing automation systems for full-size transit buses or smaller transit vehicles (e.g., low-speed automated shuttles and light-duty vehicles).

U.S. Transit Bus Automation Testing Activities



Source: USDOT Volpe Center, January 2023

Projects with USDOT Funding

Many transit agencies have received USDOT funding for automated vehicle test activities. Some of this funding has been provided through Federal Transit Administration (FTA) programs such as:

- [Accelerating Innovative Mobility \(AIM\)](#)
- [Congestion Mitigation and Air Quality \(CMAQ\) Improvement Program](#)
- [Innovative Safety, Resiliency, and All-Hazards Emergency Response and Recovery \(SRER\) Research Demonstrations](#)
- [Integrated Mobility Innovation \(IMI\) Demonstration Program](#)
- [Mobility on Demand \(MOD\) Sandbox Program](#)
- [Public Transportation COVID-19 Research Demonstration Grant Program](#)
- [Safety Research and Demonstration \(SRD\) Program](#)
- [Strategic Transit Automation Research \(STAR\)](#)
- [Vehicle Assist and Automation \(VAA\) Demonstration](#)

Additional projects have been funded by other USDOT modal administrations or by departmental programs, including:

- [Advanced Transportation and Congestion Management Technologies Deployment \(ATCMTD\) Program¹](#)
- [Automated Driving System \(ADS\) Demonstration Grants](#)
- [Better Utilizing Investments to Leverage Development \(BUILD\) Program²](#)
- [Federal Highway Administration \(FHWA\) Office of Federal Lands Highway \(FLH\)](#)
- [Federal Lands Transportation Program \(FLTP\)](#)
- [FHWA Technology and Innovation Deployment Program \(TIDP\)](#)
- [Smart City Challenge \(SCC\)](#)

The table below lists many projects with USDOT funding that test automated transit buses and related technologies. Each entry contains information on the transit agency or lead organization, a short description of the project, the funding program supporting the project, and a project status.

The status of “In Planning” indicates projects that are producing planning documents or conducting other activities to prepare for operations. The status of “In Operation” indicates projects that are operating a vehicle (e.g., to map out a route, to verify functionality, on a closed course, in mixed traffic, with or without passengers) or are in the data collection/evaluation phase. Projects with a “Completed” status are no longer in operation, and “Cancelled” projects have been discontinued and are no longer moving forward.

Note: Light teal blue shading and bolded text indicate projects that have been added or updated since the previous version of this document.

Projects with USDOT Funding

State	Transit Agency / Lead	Description	USDOT Program	Status
AZ	Valley Metro	Providing service to users of the RideChoice program via Waymo vehicles. The initial phase of testing provided rides to Valley Metro employees. On-road testing was completed in summer 2020.	MOD	Completed
CA	Access Services	Testing automated vans to provide shuttle service between a light rail station and Veterans Administration (VA) hospital. Access Services partnered with LILEE Systems for the ADS. Due to the complexity of getting approval from local jurisdictions and time restrictions for the project, the demonstration will take place in a controlled environment rather than public roads. The team has conducted some initial off-site testing, and plans final acceptance testing at a site in Pomona, CA.	STAR (Strategic Partner)	In Planning

¹ In 2022, the ATCMTD Program was renamed as the changed to Advanced Transportation Technologies and Innovative Mobility Deployment Program (ATTIMD) Program.

² In 2021, the BUILD discretionary grant program was renamed as the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program, and, prior to 2018, it had been known as the Transportation Investment Generating Economic Recovery (TIGER) grant program.

State	Transit Agency / Lead	Description	USDOT Program	Status
CA	Contra Costa Transportation Authority (CCTA)	Testing automated vehicles through three real-world demonstration projects. CCTA issued an RFP that closed in April 2022. Operations are expected to occur in 2023 and 2024.	ADS	In Planning
CA	San Francisco County Transportation Authority (SFCTA) and San Francisco Municipal Transportation Agency (SFMTA)	Testing automated shuttles to provide first-last mile circulation on Treasure and Yerba Buena Islands. In October 2022, SFCTA announced that it would work with Beep to operate two Navya shuttles beginning in 2023.	ATCMTD	In Planning
CA	Santa Clara Valley Transportation Authority (VTA)	Developing accessibility features for an automated Local Motors Olli shuttle and testing it at the VA Palo Alto Health Care System. In early 2022, this work was temporarily paused due to the closure of Local Motors.	CMAQ	In Operation – Temporarily Paused
CA	Santa Clara VTA	Partnering with the Western Reserve Transit Authority (WRTA) and CALSTART to test a purpose-built, common specification prototype automated bus in Mahoning Valley, OH and Santa Clara Valley, CA. VTA is participating as a member of the Connected and Automated Transportation Users Forum (CATUF) effort. In March 2021, a Request for Proposals (RFP) to procure buses was issued, and in August 2021, VTA announced that it selected First Transit as the successful proposer. VTA has since executed a contract with First Transit.	AIM	In Planning
CT	Connecticut Department of Transportation	Testing automated, electric New Flyer buses on the CTfastrak bus rapid transit corridor to improve safety for riders with disabilities.	IMI	In Planning
FL	Jacksonville Transportation Authority (JTA)	Testing 12-15 automated vehicles and other ITS systems in Jacksonville, FL. In January 2022, JTA signed a deal with a consortium led by Balfour Beatty to design, build, maintain, and operate a service on an at-grade loop along Bay Street from Hogan Street to the Sports and Entertainment District.	BUILD	In Planning
IA	University of Iowa	Testing automated vehicles in a loop from Iowa City through rural areas and small towns, providing an example for how ADS can connect rural populations (focus on connecting rural transportation-challenged populations such as older adults). The project is divided into six phases, and the project team plans to complete the final phase of testing by the end of May 2023.	ADS	In Operation
MI	City of Detroit	Developing a replicable safety evaluation process and deploying vehicles on test tracks and streets in Detroit to evaluate their safety. The project will also work with older adults and persons with disabilities to better understand their mobility challenges.	ADS	In Planning

State	Transit Agency / Lead	Description	USDOT Program	Status
MI	Michigan Department of Transportation (MDOT)	Installing Q'Straint Quantum automated wheelchair securements on buses operated by Blue Water Area Transit (St. Clair County), the Jackson Area Transportation Authority, Saginaw Transit Authority Regional Services and Western-Washtenaw Area Value Express.	COVID-19 Research and Demonstration Program Grant	In Operation
MN	Minnesota Valley Transit Authority (MVTA)	Equipping buses in MVTA's express bus fleets with GPS-based technology to improve safety and bus service within narrow shoulder lanes along highly congested corridors (a non-automated system).	SRER	Completed
NC	North Carolina Department of Transportation (NCDOT) and National Park Service (NPS)	Testing an EasyMile EZ10 automated shuttle on a route at the Wright Brothers National Memorial. Transdev managed operation of the shuttle.	FLTP	Completed
NY	Port Authority of New York and New Jersey (PANYNJ)	Testing lateral lane-keeping and bus platooning to improve operations and reduce headways between buses as they traverse Exclusive Bus Lane (XBL) between the Lincoln Tunnel and New Jersey Turnpike. PANYNJ partnered with Southwest Research Institute (SwRI). The team conducted initial off-site testing in December 2021 and conducted on-facility XBL testing in summer 2022.	STAR (Strategic Partner)	Completed
NV	Regional Transportation Commission of Southern Nevada (RTCSN)	Testing an automated circulator shuttle in the Las Vegas Medical District. RTCSN released an RFP on August 30, 2022 for the acquisition of four electric autonomous vehicles. Proposals were due in October 2022.	BUILD	In Planning
OH	Western Reserve Transit Authority (WRTA) - Eastgate Regional Council of Governments is the lead	Testing automated shuttles in a dedicated shuttle lane as part of the SMART2 Network in Youngstown, Ohio.	BUILD	In Planning
OH	WRTA	Partnering with the Santa Clara Valley Transportation Authority (VTA) and CALSTART to test a purpose-built, common specification prototype automated bus in Mahoning Valley, OH and Santa Clara Valley, CA. WRTA is participating as a member of the CATUF effort. In March 2021, an RFP to procure buses was issued, and in August 2021, VTA announced that it selected First Transit as the successful proposer. VTA has since executed a contract with First Transit.	AIM	In Planning
OH	Central Ohio Transit Authority (COTA) - City of Columbus is the lead	Testing EasyMile EZ10 automated shuttles for the Linden LEAP pilot, which began in February 2020. Due to COVID-19, the shuttles were repurposed to deliver food boxes to residents in Linden, OH. The shuttles ceased operation in April 2021.	SCC	Completed
OR	Lane Transit District (LTD)	Testing lateral lane-keeping and precision docking on LTD's Emerald Express Bus Rapid Transit.	VAA	Completed

State	Transit Agency / Lead	Description	USDOT Program	Status
TX	City of Arlington	Integrating automated vehicles from May Mobility into its existing on-demand system operated with the Via ride-sharing service. The service includes four Lexus RX 450h SUVs and one wheelchair-accessible Polaris GEM shuttle. For the initial year of operation, it allowed University of Texas at Arlington students to ride fare free. The initial one-year pilot ended in March 2022, but the North Central Texas Council of Governments provided funding to extend the Arlington RAPID service for another two years. May Mobility plans to replace the current fleet with ADS-equipped Toyota Sienna vans later in 2022.	IMI	In Operation
TX	Metropolitan Transit Authority of Harris County (METRO)	Testing an automated cutaway bus to provide service to Texas Southern University and Houston's Third Ward community. The service will connect to Metro buses and light rail. METRO executed a contract with ADS developer Perrone Robotics and held a kickoff meeting in December 2022.	AIM	In Planning
WA	Pierce Transit	Testing DCS Technologies' Pedestrian Avoidance Safety System (PASS) automated emergency braking in 30 buses. This project was rescoped to focus on driver assistance technology, and the automation component was not activated when the buses were in revenue service.	SRD	Completed
WY	National Park Service (NPS)	Testing two Local Motors Olli automated shuttles on routes in the Canyon Village area of Yellowstone Park, with shuttle operations managed by Beep.	TIDP & FLH	Completed

Source: USDOT Volpe Center, January 2023

Projects without USDOT Funding

The transit agencies listed in the table below are involved in demonstration or pilot activities that are not part of a USDOT-funded program. As with the previous table, cells with light teal blue shading and bolded text indicate updates from the previous version of this document.

Note: Light teal blue shading and bolded text indicate projects that have been added or updated since the previous version of this document.

Projects without USDOT Funding

State	Transit Agency / Lead	Description	Status
AZ	City of Peoria and Maricopa Association of Governments	Testing Navya Autonom automated shuttles on a fixed route in healthcare district located near Plaza Del Rio Boulevard. The "RoboRide Medical Autonomous Shuttle" service operated Monday through Saturday from 8:00 am - 2:00 pm. The pilot launched in January 2022 and ran through April 2022. Beep managed operation of the shuttle.	Completed

State	Transit Agency / Lead	Description	Status
AZ	Sun Tran	Participating as a member of the AECOM Automated Bus Consortium (ABC) effort.	In Planning
CA	Central Contra Costa Transit Authority (CCCTA) and Contra Costa Transportation Authority (CCTA)	Testing two EasyMile EZ10 shuttles at GoMentum Station and Bishop Ranch business park.	Completed
CA	CCTA	Participating as a member of the CATUF effort.	In Planning
CA	Golden Empire Transit District (GET Bus)	Participating as a member of the CATUF effort.	In Planning
CA	Livermore Amador Valley Transit Authority (LAVTA), the City of Dublin, the Bay Area Air Quality Management District, BART, and the Metropolitan Transportation Commission	Testing an EasyMile EZ10 automated shuttle and providing service from the Dublin/Pleasanton BART Station to nearby locations. Service began on November 16, 2020 and continued through July 30, 2021. Transdev managed operation of the shuttle. A previous short-term demonstration of an EasyMile EZ10 automated shuttle was conducted in 2018.	Completed
CA	Yolo County Transit District (YCTD)	Demonstrating an EasyMile EZ10 automated shuttle.	Completed
CO	Regional Transportation District (RTD) - Denver	Testing an EasyMile EZ10 automated shuttle to connect the 61st Avenue and Peña Boulevard commuter rail station to nearby areas.	Completed
CO	RTD	Participating as a member of the CATUF effort.	In Planning
CO	Colorado Smart Cities Alliance, EasyMile, Stantec, Colorado School of Mines, City of Golden, Colorado Springs, Greenwood Village, Siemens, Panasonic, NREL, Colorado Department of Transportation (CDOT)	Testing EasyMile EZ10 automated shuttles as part of the "Autonomous Vehicles in Colorado" (AvCo) effort in three different communities (Golden, Greenwood Village, and Colorado Springs). In Golden, CO, shuttle service for the Mines Rover project commenced on August 1, 2021 and has concluded. There are no shuttles currently operating as part of the AvCo project. Additional service in other locations will begin at different times yet to be announced.	In Operation – Temporarily Paused
DE	Delaware Department of Transportation (DeIDOT)	Testing two EasyMile EZ10 Gen 3 automated shuttles on a 1.2 mile (22 minute) loop on the DeIDOT Campus in Dover, DE. The shuttles will operate in other locations around the state once feasibility is determined.	In Operation

State	Transit Agency / Lead	Description	Status
FL	Gainesville Regional Transit System (RTS)	Testing an EasyMile EZ10 shuttle in partnership with the City of Gainesville and Transdev as part of the “Gainesville Autonomous Transit Shuttle” (GAToRS) project. Some initial testing took place in May 2018, but the project was on hold until it launched in February 2020. Phase 1 started in downtown Gainesville and extended into the Innovation Square area. Phase 2 began in March 2021 and involved additional stops across the street from University of Florida and communication with traffic signals.	Completed
FL	Hillsborough Area Regional Transit Authority (HART)	Testing two Navya Autonom automated shuttles on a route between the TECO Line Streetcar and the Marion Transit Center along North Marion Street. The one year pilot began in October 2020. Beep managed operation of the shuttle.	Completed
FL	Jacksonville Transportation Authority (JTA)	Testing multiple automated bus and shuttle models, including those from EasyMile (EZ10 shuttle), Navya (Autonom shuttle), Local Motors (Olli shuttle), GreenPower (AV Star bus with Perrone Robotics ADS), and Polaris (GEM e6 shuttle with Perrone Robotics ADS). Testing has taken place on a 1/3-mile “Test & Learn” track as part of a project to replace the existing Skyway monorail.	In Operation
FL	JTA	Participating as a member of the CATUF effort.	In Planning
FL	Florida DOT, Pinellas Suncoast Transit Authority (PSTA), and Tampa Bay Area Regional Transit Authority (TBARTA)	Testing two Navya Autonom automated shuttles along Bayshore Drive in St. Petersburg, FL as part of the “Autonomous Vehicle Advantage” (AVA) project. The four month pilot began in November 2020. Following the initial AVA pilot, shuttle service using a Local Motors Olli shuttle began in Dunedin, FL in May 2021. That service was temporarily paused following an incident in June 2021. In December 2021, the AVA Local Motors Olli shuttle began operating in Clearwater, FL for a six week pilot. AVA service in Dunedin, FL used a Navya shuttle, and operated from April 28, 2022 until June 12, 2022. Beep managed operation of the AVA shuttles.	Completed
GA	Metropolitan Atlanta Rapid Transit Authority (MARTA)	Participating as a member of the AECOM ABC effort.	In Planning
GA	City of Peachtree Corners	Testing automated shuttles from Local Motors and Navya as part of the project “Piloting Autonomous Use Locally” (PAUL). Daily service operates from 10:00-4:00 pm and includes seven stops along the “Technology Parkway – Curiosity Lab” route. Beep is managing operation of the shuttles. Other partners include T-Mobile, OVHcloud, Applied Information, and Temple. Use of the Local Motors shuttles was paused due to the closure of Local Motors.	In Operation
IL	Quad Cities MetroLINK	Participating as a member of the AECOM ABC effort.	In Planning

State	Transit Agency / Lead	Description	Status
IN	Bloomington Transit	Demonstrating an EasyMile EZ10 automated shuttle.	Completed
IN	Toyota Mobility Foundation (TMF), Energy Systems Network (ESN), Indiana Economic Development Corporation (IEDC), and IndyGo	Testing May Mobility shuttles (five Lexus RX 450h SUVs and one wheelchair-accessible Polaris GEM shuttle) as part of the “Together in Motion Indiana Initiative” through two six-month fixed-route services. The first service took place in downtown Indianapolis, IN and Indiana University–Purdue University Indianapolis (IUPUI), from June 2021 to November 2021. The second service took place in Fishers, IN and operated from December 2021 to June 2022.	Completed
MD	Robotic Research LLC and New Flyer	Developing a 40’ automated transit bus, with initial development and testing in Clarksburg, MD and planned demonstrations in Anniston, AL.	In Operation
MD	Maryland Transportation Authority (MDTA)	Participating as a member of the CATUF effort.	In Planning
MI	Michigan Department of Transportation (MDOT) and Michigan Office of Future Mobility and Electrification (OFME)	Participating as a member of the AECOM ABC effort. On behalf of the consortium, in January 2022, Michigan issued an RFP to manufacture the full-size, automated, accessible buses. Evaluation of submitted proposals is currently underway.	In Planning
MI	City of Detroit	Participating as a member of the AECOM ABC effort.	In Planning
MI	MDOT, OFME (formerly PlanetM), and Pratt and Miller Engineering	Constructing and testing automated shuttles at Western Michigan University in Kalamazoo.	Completed
MI	MDOT, OFME (formerly PlanetM), and Ann Arbor Area Transportation Authority	Demonstrating the Q’Straint Quantum automated wheelchair securement system in 10 buses in Ann Arbor.	Completed
MI	MDOT	Participating as a member of the CATUF effort.	In Planning
MI	OFME, Michigan State University, and Adastec	Testing a full-size automated bus on a seven-mile route in East Lansing, MI. On-campus testing began in late 2021, and the bus began providing service to students, staff, and faculty beginning in April 2022.	In Operation
MI	City of Grand Rapids	Testing May Mobility shuttles (four Lexus RX 450h SUVs and one wheelchair-accessible Polaris GEM shuttle) as part of the “Grand Rapids Autonomous Vehicle Initiative,” which provided on-demand rides in a 4.21-square mile service area. On-demand service began on July 26, 2021 and lasted until April 29, 2022. It followed a previous service that provided fixed-route service on a 3.2-mile route with 20 passenger stops. That previous service began in July 2019 and lasted for one year.	Completed

State	Transit Agency / Lead	Description	Status
MI	Ann Arbor SPARK, Mcity, and Michigan Economic Development Corporation (MEDC)	Testing May Mobility shuttles (four Lexus RX 450h SUVs and one wheelchair-accessible Polaris GEM shuttle) as part of the “A2GO” service, connecting Kerrytown, the University of Michigan campus, and the State Street corridor in Ann Arbor, MI. Service commenced in October 2021. May Mobility announced plans to replace the current fleet with ADS-equipped Toyota Sienna vans in late 2022.	In Operation
MN	Minnesota Department of Transportation (MnDOT), the City of Rochester, Destination Medical Center, Mayo Clinic, First Transit, and EasyMile	Testing two EasyMile EZ10 shuttles as part of “the Med City Mover” service in downtown Rochester, MN. Operations are scheduled to occur from 9:00-3:30 pm on Monday through Friday and 9:00-5:00 pm on Saturdays and Sundays, from September 2021 through August 2022.	Completed
MN	City of Grand Rapids	Testing May Mobility shuttles (Toyota Sienna vans) to provide on-demand service in a 17-square-mile area. Service began in late September 2022. Via is providing the booking platform for the service.	Operating
MN	MnDOT and the City of White Bear Lake	Testing a Navya Autonom shuttle as part of a yearlong “Bear Tracks” service. The route is 1.5 miles and connects a number of residential facilities (including PAI, The Boulders and Willow Wood Apartments) to the community YMCA.	Operating
ND	Capital Area Transit	Demonstrating an EasyMile EZ10 automated shuttle.	Completed
NE	StarTran (City of Lincoln)	Demonstrating a Navya automated shuttle. The demonstration was conducted in 2018.	Completed
NJ	New Jersey Governor’s Office, New Jersey Department of Transportation (NJDOT), the City of Trenton, and Princeton University	Testing 100 automated shuttles as part of the “Trenton Mobility & Opportunity: Vehicles Equity System” (Trenton MOVES) project. In December 2021, New Jersey released a Request for Expressions of Interest (RFEI) for the project, and the RFEI closed in February 2022.	In Planning
NJ	New Jersey Transit (NJ Transit)	Participating as a member of the AECOM ABC effort.	In Planning
NV	Regional Transportation Commission of Southern Nevada (RTC of Southern Nevada)	Testing a Navya Autonom automated shuttle in Las Vegas near the Downtown Container Park. The shuttle was operated by Keolis.	Completed
NV	RTC of Southern Nevada	Participating as a member of the CATUF effort.	In Planning
NV	Regional Transportation Commission of Washoe County (RTC Washoe)	Testing a Proterra bus equipped with sensors as part of a larger project with the University of Nevada, Reno to develop an automated bus prototype. This project has been rescoped to focus on driver assistance technology, but may include an automation component in the future.	Project Rescoped – Automation Component Removed

State	Transit Agency / Lead	Description	Status
OH	Central Ohio Transit Authority (COTA) - City of Columbus is the lead	Testing May Mobility shuttles on Scioto Mile.	Completed
OH	COTA	Participating as a member of the CATUF effort.	In Planning
OH	Stark Area Regional Transit Authority (SARTA)	Participating as a member of the CATUF effort.	In Planning
OH	Toledo Area Regional Transit Authority (TARTA)	Participating as a member of the CATUF effort.	In Planning
PA	Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia Industrial Development Corporation (PIDC), Philadelphia Navy Yard, and Delaware Valley Regional Planning Commission (DVRPC)	Testing an ADA compliant automated electric bus from Perrone Robotics and Lightning eMotors at the Philadelphia Navy Yard. Testing began in late 2022, and Phase 1 of the pilot is scheduled to begin in early 2023.	In Operation
RI	Rhode Island Public Transit Authority (RIPTA) - Rhode Island Department of Transportation (RIDOT) is the lead	Testing May Mobility shuttles in downtown Providence.	Completed
TX	Corpus Christi Regional Transit Authority (CCRTA)	Testing an EasyMile EZ10 shuttle (called "SURGE") at Texas A&M University-Corpus Christi began in January 2020. CCRTA partnered with MV Transportation to manage operations.	Completed
TX	Dallas Area Rapid Transit (DART)	Participating as a member of the AECOM ABC effort.	In Planning
TX	Metropolitan Transit Authority of Harris County (METRO)	Participating as a member of the AECOM ABC effort.	In Planning
TX	Southwest Research Institute (SwRI)	Testing a 14-passenger automated shuttle bus on the SwRI campus in San Antonio, TX	In Operation
UT	Utah Transit Authority (UTA) - Utah Department of Transportation (UDOT) is the lead	Testing an EasyMile EZ10 automated shuttle in several different communities in Utah. The project began in April 2019.	Completed
UT	UTA	Participating as a member of the CATUF effort.	In Planning

State	Transit Agency / Lead	Description	Status
VA	Virginia Department of Rail and Public Transportation (DRPT), Fairfax County, and Dominion Energy	Testing EasyMile EZ10 shuttle (called “Relay”) between the Dunn Loring-Merrifield Metro station and the Mosaic District. Initial testing began in August 2020, and passenger service began in October 2020. The shuttle operates Monday to Thursday from 10:00-2:00 pm. Transdev is managing operation of the shuttle. In September 2022, Relay expanded its route from two stops to four stops.	In Operation
WA	King County Metro, Kitsap Transit, Community Transit, Pierce Transit, Intercity Ctransit, C-Tran, Ben Franklin Transit, Spokane Transit Authority	Testing of driver assistance systems—Mobileye Shield+ (a non-automated collision avoidance system)—on 38 buses from several transit agencies.	Completed

Source: USDOT Volpe Center, January 2023

Contact

The information in this briefing was compiled by the John A. Volpe National Transportation Systems Center in support of the FTA’s Office of Research, Demonstration and Innovation (TRI). For more information, or to provide information on transit bus automation projects that were not included in this document, send an email to transitautomation@dot.gov.

Cover Image Description

The cover image shows a large transit bus from Pierce Transit, which is parked at the Virginia Tech Transportation Institute (VTTI) Smart Road test track. A member of U.S. Department of Transportation staff took the photo, and staff from Pierce transit and VTTI provided permission for its use.