

Fully driverless service, new expansions and partnerships

Waymo, an autonomous vehicle (AV) technology company with its primary operations center in Chandler, Arizona, has opened their fully driverless Waymo Driver technology to Waymo One riders—a first for Waymo, the AV industry and the world—eliminating having to share a vehicle during a pandemic, while underscoring how far things have progressed in just a few years.

Five years ago, Steve Mahan, the retired director of the Santa Clara Valley Blind Center, who had lost his sight years before, took the world's first ride in a self-driving car on public roads. This little car, called Firefly, had a top speed of just 25 mph and used a combination of lidar, radar, cameras and massive on-board computing power to navigate the busy streets of Austin, Texas.

Since that first ride, Waymo has been hard at work to bring service to more people. In 2017, they began an early rider program in Metro Phoenix in the Chrysler Pacifica hybrid minivan. Generation-four Waymo Driver, significantly more sophisticated than Firefly's technology, pioneered fully driverless, paid rides on high-speed roads across a service area larger than the city of San Francisco, with a vehicle operator monitoring the ride.

By 2020, five to ten percent of rides were fully driverless for an exclusive group of early riders under non-disclosure agreements, gathering key feedback for further development.

For today's completely driverless experience, enhanced health and safety policies and procedures have been implemented throughout their fleet, with input from their team, partners and rid-

ers, and federal, local and state authorities.

Though motivated by separation, members can also take friends and family along on their rides.

In the near term, all rides will be fully driverless. As in-vehicle barriers between the front row and rear passenger cabin are completed for hygiene and safety, they'll be re-introducing rides with a trained vehicle operator, for more capacity over a larger geographical area.

You can check Waymo's services and become a member through their app (Apple and Android).

Expansion beyond the Valley

While Waymo's current driverless territory is 50 square miles in Chandler, Mesa and Tempe, they have announced two new facilities, one in Ohio and one in Silicon Valley, to advance their Waymo Driver fully autonomous technologies.

With Transportation Research Center Inc. (TRC), a comprehensive independent vehicle test facility and proving grounds in East Liberty, Ohio, Waymo is co-developing an exclusive, first-of-its-kind test environment for fifth-generation Waymo Driver, their most advanced software and hardware yet, incorporating lidar, cameras and radar. The new facility will be built to Waymo's requirements, to model a dense urban environment, able to test longtail challenges they might never encounter on public roads, and using other TRC assets including tracks specifically for truck testing.

Continuing to deepen their investment in truck-

ing, Waymo has also secured a new research and development facility in Menlo Park, California, which they will move into early this year. Here, they will focus on advancing their fifth-generation Waymo Driver on Class 8 semi trucks, while helping to accommodate their growing trucking team and test vehicle fleet in the Bay Area.

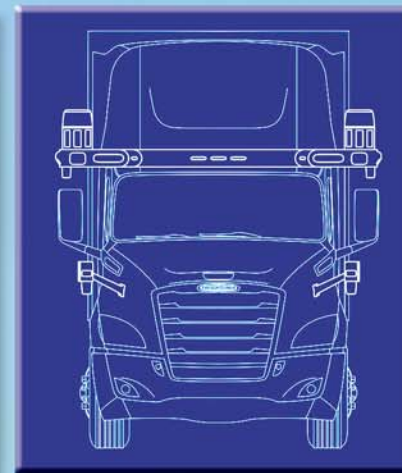
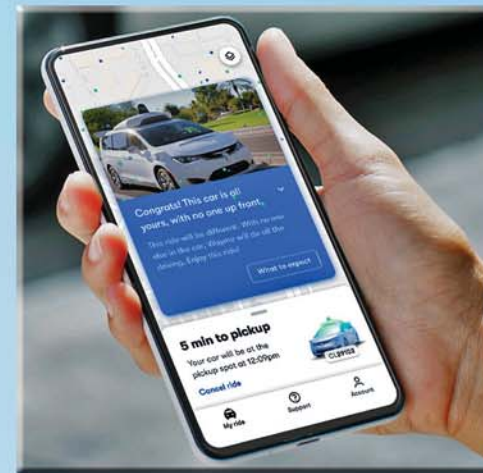
Waymo's latest generation of vehicle platforms includes the all-electric Jaguar I-PACE and Class 8 trucks, as they scale their testing program and operations across a diverse set of geographies and driving environments.

To date, Waymo Driver has been tested on five generations of passenger vehicles, adding Waymo Via on autonomous class 8 trucks in 2017. Waymo Via trucking is currently testing around their headquarters in Mountain View, California, in Arizona along the Phoenix-Tucson I-10 corridor, and across New Mexico and Texas.

Partnering with TRC in Ohio (their tenth US test state) introduces new environments and weather including snow and rain, and offers easy transport from their Novi, Michigan assembly facility.

Overall, this partnership with TRC will enable us to further advance our Waymo Driver on our next-gen platforms, while scaling our robust testing program across a diverse set of geographies and driving environments.

Testing is a never-ending feedback loop that



includes structured testing, simulation and public road operations. After executing a test on their private track, they can then create and run hundreds of variations of that scenario in simulation. While there is a high level of realism in simulation, structured testing allows evaluation of both the software and hardware stack. Recreating scenarios already successfully completed in simulation, they can continuously verify the simulator and assess small nuances that may affect vehicle behavior, an valuable extra layer of testing and redundancy before vehicles drive on public roads.

Daimler Class 8 trucks partnership

Waymo has entered a broad global strategic partnership with Daimler Trucks, market leader in large commercial vehicles, to deploy autonomous SAE L4 technology. The initial effort will combine

Waymo's automated driver technology with a unique version of Daimler's Freightliner Cascadia, to enable fully autonomous driving.

Waymo has driven over 20 million miles on public roads across 25 US cities and 15 billion miles in simulation. Daimler Trucks North America, parent company of the Freightliner brand and US market leader in commercial vehicle manufacturing, provides their experience in developing state-of-the-art Class 8 vehicles.

Fully autonomous trucks, equipped with the Waymo Driver—the World's Most Experienced Driver™—will be available to US customers in coming years, with expansion into other regions and brands in the near future.

Waymo and Daimler Trucks share the common goal of improving road safety and efficiency for fleet customers. ■



ABOUT WAYMO

Waymo started in 2009 as a moonshot project at Google X, developing (L4) autonomous technology as part of the Google self-driving car project, seeing huge potential to make roads safer and save lives. Their mission is to make it safe and easy for people and things to get where they're going. Waymo Driver autonomous technology can be applied across a number of applications, from people-moving Waymo One to Waymo Via, focused on moving goods.

ABOUT TRC

Transportation Research Center Inc. is an advanced, independent mobility testing and research complex, providing leading transportation innovators with a full range of engineering and research expertise and a comprehensive array of transportation testing and evaluation facilities. TRC's 4,500-acre full-service automotive proving ground and laboratory facility in East Liberty Ohio is home to the SMARTCenter, TRC Inc.'s automated and connected vehicle test facility.

ABOUT DAIMLER TRUCKS & BUSES

More than 120 years ago, Gottlieb Daimler and Carl Benz laid the foundation for the modern transport industry. Today, Daimler's Truck and Bus division is one of the world's largest commercial vehicle manufacturers, with more than 35 locations, 100,000 employees and seven vehicle brands: Mercedes-Benz and Setra in Europe; BharatBenz in India and FUSO in Japan (serving Asia, the Middle East, Africa, Europe and Latin America); and Freightliner Trucks, Western Star and Thomas Built Buses in North America—a broad portfolio of commercial vehicles, from minibuses to heavy trucks for specialized transport. Daimler Trucks & Buses is now working to bring emission-free, automated and connected driving to volume series production across brands, divisions and regions, taking its vision of CO2-neutral transport and accident-free driving a major step closer to sustainable global goods and passenger transport. In 2019, Daimler Trucks & Buses delivered a total of around one-half million trucks and buses to customers.



WAYMO



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