

Global OEM continues its journey to autonomous driving

Capgemini/Altran applies its engineering, data and technology expertise to develop end-to-end systems for gathering, analyzing, and storing testing data and advance automated driving technologies for a global OEM.

The future is autonomous

The automotive industry is moving steadily towards intelligent automation, with Advanced Driver Assistance Systems (ADAS) increasingly integrated in today's cars through features like adaptive cruise control, parking assistance, and forward collision warning. It's clear that the future is autonomous, with 15% of cars sold in 2030 forecasted to be fully autonomous and, by 2035, 95 million autonomous cars expected to be sold annually. This move to more intelligent driving systems will bring many potential benefits: fewer accidents due to human error, a drop in the cost and environmental impact of transport, and safer and more accessible driving, to name just a few.

Achieving increased autonomy, however, brings a host of challenges for Original Equipment Manufacturers (OEMs). They must innovate quickly while ensuring their technology infrastructure remains stable, scalable, and reliable. In addition, to specifying complex systems by mission profile studies, an absolute focus on safety means verification and validation (V&V) of ADAS is paramount – involving billions of kilometers of road tests alongside simulated modelling, as well as huge amounts of data to be processed, stored, and analyzed.

Overview

Client: A global OEM

Sector: Automotive

Client Challenge:

To stay competitive, a global Original Equipment Manufacturer (OEM) needed to advance its automated driving technologies quickly yet safely, which meant managing exponentially increasing amounts of data and systems complexity. The IT infrastructure needed to be rethought, to adapt to the architecture of data collection, storing, and exploitation required by different teams.

Solution

Using Capgemini/Altran's unique combination of automotive engineering, data, and technology expertise, the global OEM has been able to move further faster on the exploitation of the huge volume of data generated by the test campaigns.

Benefits:

- More connected and optimized end-to-end data mining
- New datasets, proofs of concepts and use cases for training models and algorithms
- More robust systems and processes for gathering, storing, and analyzing the vast amounts of data from road tests and simulated driving



The OEM's opportunity

The client is a global leader in vehicle automation. Through one of its flagship program, it is working to make autonomous cars safe, intuitive, and accessible to as many customers as possible across a number of its brands.

Thanks to early investments in AD/ADAS, the OEM was the first car manufacturer to test the autonomous car on open roads, which it did in France in 2015. It was also the first to experiment with non-experts behind the wheel in 2017. It's now working to move beyond the level 1 and 2 automation features already available in its cars (emergency braking, park assist, some hands-off automated functions) to equip its premium products with functions that facilitate automated 'eyes-off' driving in certain conditions, such as traffic jams or highways.

To do this, the OEM must innovate at scale while adhering to evolving environmental and safety regulations. As well as on-road testing with prototypes, this involves using virtual modelling and constant learning to create sufficient amounts of data. The advances in autonomous technologies and validation requirements are bringing exponential increases to the system complexity and volumes of ADAS test data, which must be kept for 30 years.

Advancing autonomy together

The collaboration began as part of the L3Pilot European automated driving testing project, which has so far involved 34 partners, 1000 drivers, 100 cars, and 10 countries to test level 3 and 4 automated functions in situations such as traffic jams, motorways, parking, and urban driving.

Using its unique combination of engineering, data analytics, and technology expertise, Capgemini/Altran is also building and scaling both on-premise and cloud networks for the OEM's ADAS, providing a secure platform for the petabytes of data that validation and verification creates. The fully managed end-to-end platform provided allows the global OEM to enhance their proven validation processes, tools, and technologies with an optimum blend of digital methodologies and testing environments. From July 2020, the global OEM and Capgemini/Altran have been applying this integrated approach to a government-funded project aiming to accelerate the development of autonomous vehicles.

The ongoing collaboration with Capgemini/Altran is helping the global OEM and its partners to excel in an industry under pressure from changing consumer behaviors, climate change, and disruptive technologies. Through agile adaptation and intelligent innovation, the OEM continues to accelerate its journey to autonomous driving and safer, more comfortable journeys for its customers.





About Capgemini

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