Piloting Automated Driving on European Roads

PRESS RELEASE

Joint European effort boosts automated driving

L3Pilot, Europe's first comprehensive pilot test of automated driving on public roads demonstrates automated systems for cars in Hamburg, Germany, in conjunction with ITS World Congress 2021.

- SAE Level 3 and 4 functions tested on ordinary roads in seven European countries, including cross-border activities
- Pan-European testing environment and methodology developed
- "Code of Practice" created to speed up and harmonise the development of automated driving systems
- Framework for collection, storage and evaluation of large amounts of data in a harmonised manner created
- Datasets for further research publicly available
- Increased safety identified as main benefit of SAE Level 3 automated driving systems

Hamburg, Germany, 11 October 2021. From 11 to 15 October the European research project L3Pilot, led by Volkswagen AG and co-funded by the European Commission, showcases automated driving functions in the City of Hamburg and on motorways nearby. The four-year project will now come to its successful end with performing its Final Event in conjunction with the ITS World Congress in Hamburg 2021.

Running from 2017 to 2021, the project consortium brought together stakeholders from the whole value chain, including car manufacturers, suppliers, academia, research institutes, infrastructure and governmental agencies, user groups and the insurance sector. The experience of the partners in large-scale testing intelligent vehicle technologies made it possible to create a pan-European testing environment. The Code of Practice for the Development of Automated Driving Functions (CoP-ADF) is one of the major achievements of L3Pilot. It provides comprehensive guidelines for supporting the design, development, verification and validation of automated driving technologies.

Fourteen partners focused on testing automated driving functions in normal motorway driving, traffic jams, urban driving and parking. The pilots, running from April 2019 until February 2021, involved seven countries: Belgium, Germany, France, Italy, Luxemburg, Sweden and the United Kingdom and included two cross-border activities between Germany and Luxemburg as well as Germany, Belgium and the United Kingdom.

"Automated driving has a huge potential to make mobility safer, more efficient and more comfortable. The L3Pilot partners made great efforts to pursue piloting and met the project goals – despite the tremendous pandemic crisis. This shows the outstanding commitment of our Europe-wide partner network. One of our major achievements is a Code of Practice for the Development of Automated Driving Functions. It provides

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 723051.

guidelines that will support the development of safe and reliable automated driving systems", says L3Pilot Coordinator Aria Etemad, Volkswagen AG.

The project equipped 70 vehicles and the test fleet comprised 13 different vehicle brands, from a passenger car to a SUV. More than 400,000 kilometres were driven on motorways including 200,000 km in an automated mode and 200,000 km in a manual mode as a baseline for comparison of the user experience and evaluation of the impacts. More than 24,000 km were travelled in the automated mode in urban traffic. With the aim to put the focus on the user experience of automated driving functions, over 1,000 persons participated in piloting and complementary virtual environment tests.

The project focused on SAE Level 3 automated driving functions on motorways and in urban traffic, while SAE Level 4 functions targeted exclusively parking and close-distance scenarios. The SAE Level 3 features Conditional Automation which requires the driver to respond appropriately to a request to take-over the vehicle control for manual driving. In case the driver is not responding properly to a take-over request, the vehicle performs an automatic minimum risk manoeuvre to safely stop the vehicle.

Moreover, L3Pilot carried out extensive supplementary tests to also research user experiences that were difficult to address in large-scale piloting due to safety requirements and legal issues. Therefore, supplementary studies were performed in addition to the on-road piloting to be able to study system usage and other relevant user experiences with ordinary, non-professional drivers in safe and virtual environments. The extensive studies comprised some 600 subjects.

Research evaluation results have shown that increased safety is the main benefit of SAE Level 3 automated driving systems. They also show that an automated driving system consisting of motorway, urban and parking functions for robust hands-off driving will generate a social benefit that is higher than the social costs of installing it.

L3Pilot paved the way for scaled-up driving tests with automated series vehicles in real-life traffic. This underscores the leadership of Europe's automotive industry in developing reliable, thoroughly tested and user-friendly technology.

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About the demonstrations

Motorway dynamic driving demonstration

The car follows the lane and adjusts its speed, taking into account various factors such as maintaining a safe distance from the vehicle ahead or observing the speed limit. If a slower vehicle ahead is detected, the car overtakes automatically as soon as it is safe to do so. The vehicle operates in a conditionally automated mode. Safety drivers are prepared to respond appropriately at any time to the vehicle's requests to intervene.

- 15 to 20-minute drive
- Tour on B75 or A255/A1 starting at Elbinsel Veddel
    - BMW X5
    - Honda Legend
    - Stellantis: Maserati Ghibli, DS7 Crossback and Citroën C4 Picasso
    - Ford Focus

Urban dynamic driving demonstration

The cars will be driving in conditional automated mode and taking over all dynamic driving tasks. Safety drivers are prepared to respond appropriately at any time to the vehicle's requests to intervene.

- 5 to 7-minute drive on the TAVF test track in Hamburg
    - 2 VW eGolf
    - 1 VW Passat – test vehicle of fka GmbH (linked third party)

Exhibition hall B3, booth B3EG01

The L3Pilot partners exhibit 13 prototype vehicles on 450m² in hall B3. In addition, the overarching research results are exhibited. The experts of the project will answer the questions of the visitors and invite to discussions.

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NOTE TO THE EDITOR

L3Pilot is an Innovation Action, co-funded by the European Union under the Horizon 2020 programme with the contract number 723051. Thirty four organisations have committed to scientifically test and assess the impact of automated driving systems on driver comfort, safety and traffic efficiency as part of the project.

www.l3pilot.eu
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Duration: 50 months, 1 September 2017 – 31 October 2021
Total cost: €68 million
EC contribution: €36 million
Coordinator: Volkswagen AG

Partners:

Automotive manufacturers: Volkswagen AG, AUDI AG, BMW Group, Stellantis | Centro Ricerche Fiat SCPA, Ford, Honda R&D Europe, Jaguar Land Rover, Mercedes-Benz AG, Opel Automobile GmbH, Stellantis, Renault, Toyota Motor Europe, Volvo Car Corporation

Suppliers: Aptiv, FEV GmbH, Veoneer Sweden

Research: German Aerospace Center DLR; ika RWTH Aachen University; VTT Technical Research Centre of Finland; Chalmers tekniska hoegskola; SNF – Centre for Applied Research at NHH; University of Leeds; Institute of Communication and Computer Systems ICCS; Würzburg Institute for Traffic Sciences WIVW; University of Genoa; TNO – Netherlands Organisation for Applied Scientific Research; WMG, University of Warwick; European Center for Information and Communication Technologies – EICT GmbH

Authorities: Federal Highway Research Institute BASt; The Netherlands Vehicle Authority RDW

User Groups: Federation Internationale de l'Automobile FIA

Insurers: AZT Automotive GmbH, Swiss Reinsurance Company

SMEs: ADAS Management Consulting,

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