AI-SEE

PRESS RELEASE

Enabling automated driving in variable traffic and weather conditions: AI-SEE project kicks off

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Cooperation for safe autonomous driving: In the AI-SEE project, a PENTA EURIPIDES² funded research project safe travel in poor visibility conditions is key. 21 partners comprising world class players on the OEM (Original Equipment Manufacturer) and supplier level will join forces over a period of three years to build a novel, robust sensor system supported by artificial intelligence for low visibility conditions. The result will be a robust, fault-tolerant multi-sensor perception system. It will be functional in practically all lighting and weather conditions in 24h/365-day mode enabling safe automated driving at SAE Level 4. The project led by Mercedes Benz AG kicked off as a virtual meeting on 10th June 2021.

Without artificial intelligence and without proven safety for all road users, the vision of autonomous driving will not be realized. Automated vehicles can be ready for market introduction only if they can operate in a reliable manner in all relevant conditions. This comprises an all-conditions capable AD system that can ensure safe travel in all relevant weather and lighting conditions such as snow, heavy rain or fog in 24h/365-day mode. In order to achieve this the AI-SEE project will take up the findings and results of the predecessor project DENSE. This EU-funded project that ended in February 2020 already developed a significantly improved environment perception system compared to conventional systems. The AI-SEE project partners will further improve it to realistically simulate sensor output under adverse weather and to adapt and test the system on artificial data. The novel High Resolution Adaptive all-weather sensor suite will comprise an active polarimetric imager with congruent LIDAR data and a SWIR LIDAR with a novel SPAD (Single Photon Avalanche Diode) receiver architecture. It will also include a high resolution 4D MIMO Radar and a gated SWIR-camera. Employing multisensory data fusion approach, the sensor data acquired will be fused and simulated by means of sophisticated AI-algorithms tailored to adverse weather perception needs. This novel sensing system and a HD dynamic map will enable localization performance in bad weather conditions in 24h and 365-day mode.

The project's innovations will not only greatly strengthen Europe's competitiveness by enabling the market introduction of L4 automation by 2030, it will also save time and development costs. Thus, AI-SEE has a possibility to become *a game changer* in the global race for automated vehicles to first enter the market and pave the way for safe automated driving.

About AI-SEE

AI-SEE is a PENTA EURIPIDES² funded project. EURIPIDES² is a EUREKA Cluster promoting the generation of innovative, industry-driven, pre-competitive R&D projects in the area of Smart Electronic Systems. Twenty-one organisations have committed to build a novel, robust sensing system supported by Artificial Intelligence (AI) that enables automated travel in variable traffic and weather conditions.

Project duration: 36 months, starting on 1st June 2021
Total costs: €21.57 million
Funding from national public authorities (PENTA EURIPIDES²) label funding: €9.51 million
Coordinator: Mercedes Benz AG

Partners:
OEMs: Mercedes Benz AG, Patria Land Oy
Automotive Suppliers: Veoneer Sweden AB, Robert Bosch GmbH, Ibeo Automotive Systems GmbH, AVL List GmbH, Brightway Vision Ltd., ams AG, Algolux Germany GmbH, Algolux Inc.
Research Institutes: VTT Technical Research Centre of Finland Ltd., Institut für Halbleitertechnik der Universität Stuttgart, Technische Hochschule Ingolstadt CARISSMA Institute of Automated Driving, Institut für Lasertechnologien in der Medizin und Meßtechnik an der Universität Ulm
Engineering Companies: Ansys Germany GmbH, Meluta Oy, UNIKIE Oy, OQmented GmbH, FIFTY2 Technology GmbH, Basemark Oy, AstaZero AB