

Press Release

Austrian lead project develops sensory organ for safe driving in future

GRAZ, 6 August 2020 – The research project “iLIDS4SAM” is dedicated to sensor systems that provide autonomous road and rail vehicles with a three-dimensional image of their surroundings. In addition, the systems will also be able to anticipate danger situations. Under the overall coordination of Infineon Austria, eleven leading Austrian project partners from industry and science are pooling their know-how and expertise in this project.

When it comes to the mobility of the future, the reliability and safety of independently operating vehicles is the top priority. What is happening in the surrounding area must be recognized comprehensively and quickly - especially in complex, urban road and rail traffic. This is precisely what the three-year project "iLIDS4SAM" (Integrated LiDAR Sensors for Safe & Smart Automated Mobility) is researching. The project is managed as an Austrian lead project by the Austrian Research Promotion Agency (FFG) and supported by funds from the Federal Ministry for Climate Protection, Environment, Mobility, Innovation and Technology.

The project objective is to develop a powerful and cost-effective laser sensor system with "deep learning" data management that will contribute to turning vehicles into intelligent and forward-looking road and rail users. The compact sensor system will be tested in urban road and rail traffic as well as in agricultural applications with the aim of demonstrating both its integration and practical performance.

“With this lead project, we are incorporating ‘know-how made in Austria’ into the vehicle of the future”, says Sabine Herlitschka, CEO of Infineon Technologies Austria AG. “This is a major further development of central key technologies for safe autonomous driving. We are bringing together outstanding Austrian partners from science and industry to strengthen Europe’s global technology expertise and competitiveness.”

From precise 360° vision to a compact sensor system

To enable automated vehicles to perceive their environment in its entirety, the team of researchers pursues the approach of the eye with three-dimensional vision. New and compact lidar sensor systems are to provide a wider field of vision at a high level of precision. Lidar is an acronym of ‘light detection and ranging’. A laser beam uses microchip mirrors to scan the environment in millimeter precision horizontally

and vertically. It measures not only the distance but also the shape of objects. The result is a three-dimensional image of moving vehicles or pedestrians, traffic signs, obstacles at the roadside or even road markings.

The associated components, the connection technologies and the mirror design need to be optimized and miniaturized further so that the sensors are compact and sturdy enough to be fully integrated in vehicles. The sensors will, for example, be installed behind the windscreen, in the headlights or rear lights; in combination with radar and camera systems they will offer a 360-degree view.

Learning sensors

The collection, analysis and above all instant processing of data are essential for safe autonomous driving. This is why test rides in real application scenarios are an important part of the project. They provide a wealth of real data, so that it will be possible to predict the behavior by means of signal processing algorithms and to assess risks. Big data and artificial intelligence make the vehicle of the future virtually a “learning machine” that will improve and optimize continually.

The project was launched in January this year. The first milestone was the implementation of a data management plan linked to the open source platform of the European research center CERN. A publicly accessible data pool has been created by this means that can be used as a basis for other research projects, developments and improvements.

Austrian system excellence

The lead project is coordinated by the Infineon Development Center in Graz, Styria, that is specialized in microelectronic solutions in the areas of security and mobility and the Internet of Things. Stefan Rohringer, head of the Development Center: “This is a showcase project that covers the entire chain of technology, application and testing. The 11 Austrian partners in this project contribute their world-leading expertise along the entire value generation chain to drive innovation.”

The project partners are: AVL List GmbH | ams AG | EV Group E. Thallner GmbH | FH Campus Wien Forschungs- und Entwicklungs-GmbH | Infineon Technologies Austria AG | Peschak Autonome Systeme GmbH | RIEGL Research Forschungsgesellschaft mbH | Silicon Austria Labs GmbH | Graz University of Technology (Institute for Computer Graphics and Vision) | TTTech Auto AG | Virtual Vehicle Research GmbH

The Austrian lead project “iLIDS4SAM” spans three years (01/01/2020 to 31/12/2022) and covers a research volume of 5.67 million euros. It is co-financed by the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology and managed by FFG in the framework of the “ICT of the Future” project.

Link: www.ilids4sam.at

About Infineon Austria

Infineon Technologies Austria AG is a group subsidiary of Infineon Technologies AG, a world-leading provider of semiconductor solutions that make life easier, safer and greener. Microelectronics from Infineon reduce the energy consumption of consumer electronics, domestic appliances and industrial facilities. They make a major contribution to the convenience, security and sustainability of vehicles, and enable secure transactions in the Internet of Things.

Besides Germany, Infineon Austria is the only subsidiary within the group that pools competencies for research and development, production as well as global business responsibility. The head office is in Villach, with further branches in Graz, Klagenfurt, Linz and Vienna. With 4,609 employees from around 68 countries (including 1,977 in research and development), in the financial year 2019 (ending in September) the company achieved a turnover of € 3.1 billion. An R&D expense rate of €525 million makes Infineon Austria one of the strongest industrial research companies in Austria.

Further information at www.infineon.com/austria

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