



GAIA-X 4 moveID project develops basis for secure mobile data exchange An important prerequisite for the next generation of cars

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- ▶ The publicly funded GAIA-X 4 moveID project is developing a standard for communication between vehicles and their environment.
- ▶ Standards are a prerequisite for the electrified, automated, and connected mobility of the future.
- ▶ The European Gaia-X project is creating a decentralized data infrastructure as a foundation for digital business models.

Stuttgart, Germany – Which parking garages currently have vacant charge spots available? Where are free parking spaces in the city center? And how can this information be digitally transmitted, and services billed, across providers? The answer to these and similar questions calls for secure data exchange between the vehicles and their environment. It is precisely this foundation that a research project consisting of universities, automotive suppliers, and system providers is now in the process of building, with Bosch leading the consortium. Over the next three years, the GAIA-X 4 moveID project is set to develop the necessary standards and technological concepts to enable the secure exchange of information between providers of mobility applications and their customers. The goal is to create decentralized digital vehicle identities. This is an important prerequisite for the mass use of electric vehicles, automated driving, and the establishment of connected cities. GAIA-X 4 moveID is supported to the tune of 14 million euros by the German Federal Ministry for Economic Affairs and Climate Action – covering half of the project costs.

Connectivity for digital services across the board

“An integrated and transparent system architecture for the exchange of data on the road that incorporates different products and players simply isn’t available today. While it’s true that some companies out there already offer services, those services are tailored for specific applications, vehicles, or customer groups,” explains Peter Busch, project manager at the consortium leader Bosch. They

often map the infrastructure, for example, but they rarely provide information about availability due to a lack of connectivity between the many independently operating service providers. “Open standards are needed so that users, for example, can find all available charging stations or pay for charging processes,” Busch says. It’s important to always ensure that the data is processed securely and that individual providers don’t exploit it solely for their own purposes. For Busch, this is the only way that the necessary user confidence can grow and a broad range of all available services, such as so-called deep parking (use of otherwise unavailable parking spaces), can be created. That is why the consortium is building on the European GAIA-X system, which defines the technological, economic, and legal framework for a secure and trustworthy data infrastructure. GAIA-X relies on decentralization and the interplay of different cloud providers under common guidelines. In this spirit, the GAIA-X 4 moveID project is using open source software for its developments and making them available to all providers for various business models.

Vehicles are becoming marketplaces

The standards that GAIA-X 4 moveID is pursuing will allow vehicles to securely and independently exchange information with other vehicles and their environment without an “intermediary.” The vehicles’ “infrastructure partners” include charge spots, barriers, traffic lights, and parking lots. The research project will use internationally recognized hardware and software to develop management and administrative services to facilitate the interaction and trade between different players. This will enable providers to connect a great many services, such as news, entertainment, and navigation, with the car’s system, especially in automated driving. The market for services related to connected parking alone is estimated to be worth ten billion euros annually worldwide. What’s more, the ability to navigate directly to a vacant parking space significantly reduces congestion and emissions. After all, today, about a third of downtown urban traffic is people looking for parking spaces. The availability of information is also a crucial factor for the success of electromobility. It is estimated that about half of newly registered cars in Europe will be electric by 2030. “Their drivers need to know that they’ll be able to find a charge spot quickly whenever they need one. And that requires connected systems,” Busch says.

Extensive data exchange as a basis for automated driving

The mass use of automated vehicles is conceivable only if cars are able to quickly and reliably communicate with their environment. The data exchange this requires will enable climate-friendly traffic control based on the volume of traffic at any given moment. This will allow cities to regulate incoming traffic to particular areas in real time, thus preventing congestion. However, this method, known as zoning, requires that vehicles be able to immediately recognize

changing conditions and to reroute accordingly. Zoning is being demonstrated with test vehicles – for the first time across borders – in the Germany-France-Luxembourg (Merzig/Saarbrücken) test area as part of the GAIA-X 4 moveID project. The cars receive dynamic information regarding their approach to defined zones.

The project partners:

Robert Bosch GmbH

Materna Information & Communications SE

Denso Automotive Deutschland GmbH

Continental Automotive Technologies GmbH

WOBCOM GmbH

ecsec GmbH

HTW Saar (University of Applied Sciences)

Atos Information Technology GmbH

Chainstep GmbH

Peaq Technology GmbH

Zeppelin Universität gGmbH (Zeppelin University)

Datarella GmbH

51nodes GmbH

Bigchain DB GmbH

Fetch.ai Research & Development GmbH

ITK Engineering GmbH

Deutsches Zentrum für Luft- und Raumfahrt e.V. (German Aerospace Center)

Airbus Defence and Space GmbH

Delta Dao AG

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