



GAIA-X 4 moveID project develops basis for secure mobile data exchange

An important prerequisite for the next generation of cars

September 8, 2022
PI 11551 BBM ak/Bär

- ▶ 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

Press photos: #2068019, #6f2c9e45

Contact person for press inquiries:

Athanassios Kaliudis
Phone: +49 711 811-7497
Twitter: @Sakis_JD

Mobility Solutions is the largest Bosch Group business sector. It generated sales of 45.3 billion euros in 2021, and thus contributed 58 percent of total sales from operations. This makes the Bosch Group one of the leading automotive suppliers. The Mobility Solutions business sector pursues a vision of mobility that is safe, sustainable, and exciting, and combines the group's expertise in the domains of personalization, automation, electrification, and connectivity. For its customers, the outcome is integrated mobility solutions. The business sector's main areas of activity are injection technology and powertrain peripherals for internal-combustion engines, diverse solutions for powertrain electrification, vehicle safety systems, driver-assistance and automated functions, technology for user-friendly infotainment as well as vehicle-to-vehicle and vehicle-to-infrastructure communication, repair-shop concepts, and technology and services for the automotive aftermarket. Bosch is synonymous with important automotive innovations, such as electronic engine management, the ESP anti-skid system, and common-rail diesel technology.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 128 locations across the globe, Bosch employs some 76,100 associates in research and development, of which more than 38,000 are software engineers.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, [www.twitter.com/BoschPress](https://twitter.com/BoschPress).