

IVS-KOM

Communication technologies for intelligent traffic systems (ITS)
Developing of an reference system for ITS-Communication with heterogeneous technologies



Project description

With the IVS-KOM project, a reference system for IVS communication (intelligent traffic systems) is to be developed in a two-stage development. This system is based on heterogeneous communication technologies like IEEE 802.11p (WLAN 11p), mobile communication or DAB+ and actual specification-standards for the stability of interoperability (step 1). Subsequently, the system will be extended by functions for the high-automated driving (HAD) and the integration into different platforms: into the vehicle (On-Board-UNIT OBU), to the infrastructure (Road-Side-Unit RSU) as well as into mobile devices (step 2). The exchange of combined sensor data is used as the basis for cooperative maneuver tuning procedures and for infrastructure maneuver recommendations.

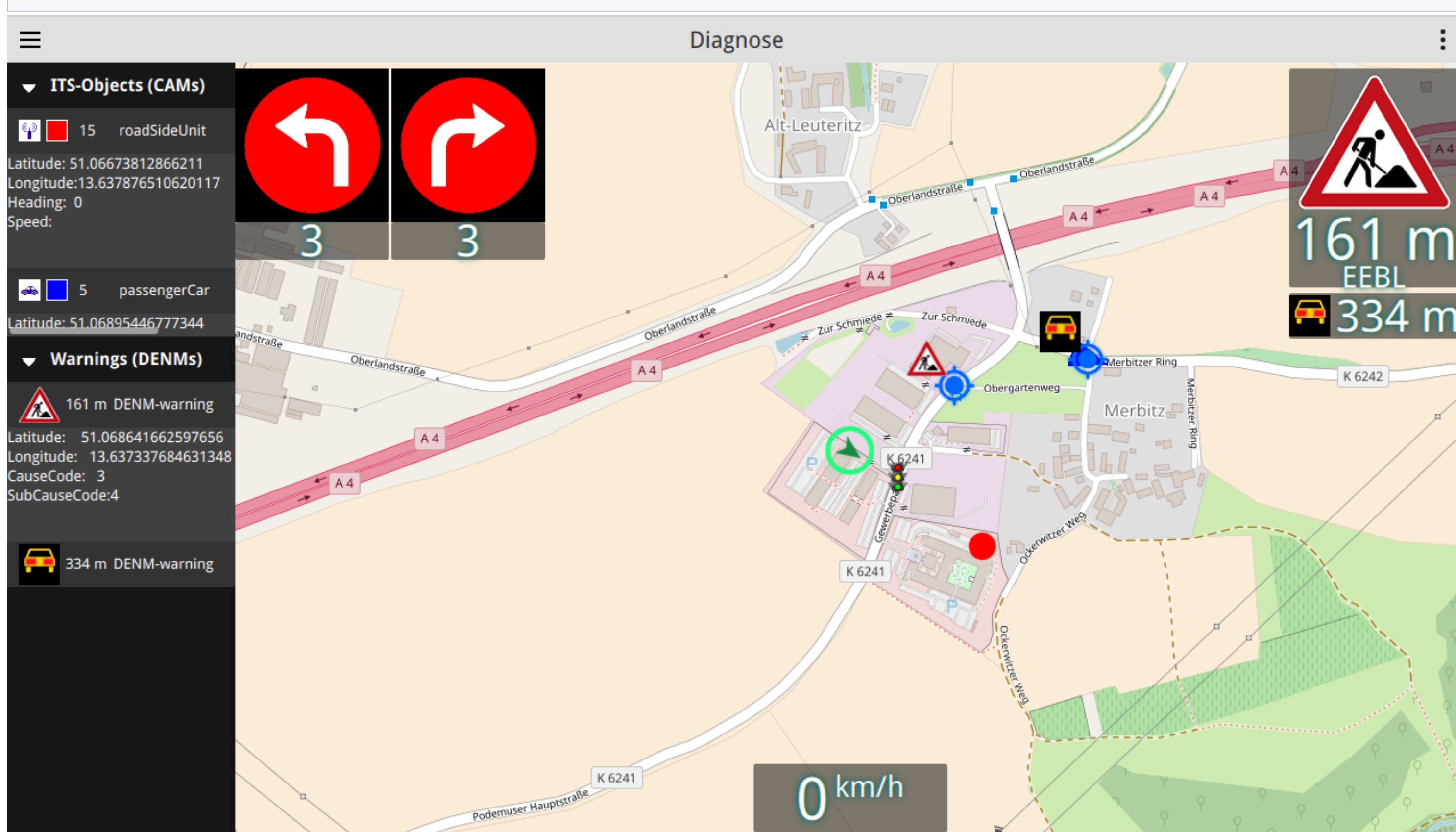


figure 1: V2X-Diagnosis-Application

Contribution Preh Car Connect

Within the scope of this project Preh Car Connect is developing a prototypical platform for different software- and hardware components. Thereby, the focus is on the integration of primary communication technologies like IEEE 802.11p, mobile communications (4G, 5G) and DAB+.

Additionally, there are interfaces for implementing and transmitting data to other components, e.g. to integrate vehicle sensor technology or to make data fusion possible. These interfaces are used to extend the reference system by functions for the HAD and to integrate it into the test-vehicles.

Furthermore, the newly defined and specified protocols will be integrated into the software-stack of the Connectivity-Box enabling that future protocols can be exchanged error-free with other vehicles and the infrastructure. These protocols include the transmission of correction data for the GNSS, maneuver advisory from the infrastructure or cooperation for lane changing between vehicles.

Preh Car Connect is designing an HMI solution based on Android especially for developers and test drivers, on which all data of the communication between the vehicles and the infrastructure are visualized. As an extension of the Connectivity-Box 5G and C-V2X modules will be integrated, but will not be available during the project period.

Project partner

- IAV GmbH Ingenieurgesellschaft Auto und Verkehr
- Fraunhofer-Institut für Verkehrs- und Infrastruktursysteme IVI
- dresden elektronik verkehrstechnik gmbh
- NXP Semiconductors Germany GmbH
- MUGLER AG
- IVM Institut für vernetzte Mobilität GmbH
- Vodafone-Stiftungslehrstuhl Mobile Nachrichtensysteme der TU Dresden

Project lead

NXP Semiconductors Germany GmbH

Project coordination

Fraunhofer-Institut für Verkehrs- und Infrastruktursysteme (IVI)

Lead partner

Sächsische Aufbaubank – Förderbank (SAB)

Duration

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