

CONVERGE develops open V2X Architecture

Berlin, 13. October 2015 – The CONVERGE research initiative, funded by the Federal Ministries of Education and Research as well as for Economic Affairs and Energy, presented the results of its three-year work in Berlin on October 13, 2015. CONVERGE has taken a big step towards defining the organisational and technical foundations of an open and collaborative architecture for V2X-communication.

The aim of the CONVERGE Project was to integrate various communication systems such as ETSI ITS G5, mobile communications and broadcasting for V2X (Vehicle-to-Vehicle and Vehicle-to-Infrastructure) applications, project coordinator Horst Wieker said at the presentation of the results. Wieker, who is a communication technology professor is the head of the transport telematics research group at the University of Applied Sciences of the Saarland (Hochschule für Technik und Wirtschaft des Saarlandes). The results of the research are published thus available for other projects in the field of V2X communication.

"Roles" within the overall concept

The targeted decentralised V2X system network architecture should enable content and service providers to securely interact and deliver services.

To facilitate the possibilities for commercial use of the system, the research project has created a new concept called the "Institutional Role Model": The aim of this concept is to distribute the administrative and economic responsibilities among the stakeholders of the system in order to avoid dependencies on a single or small group of participants. This requires the identification of the participating actors or parties involved and define their respective roles within the system network - for example automotive manufacturers, service providers, mobile communication operators and road operators.

CONVERGE defines the requirements for the introduction and operation of a possible system network including the interfaces between the different roles. The operational implementation of the role model is in the hands of the system partners. The architecture allows a participant to assume multiple roles. For example, a mobile operator can be both a service provider for communications- as well as data services.

Taking the internet as a blueprint the service providers can select and mash up those services which are relevant and important to their customers. For this purpose CONVERGE will establish a directory service based on the "Yellow Pages" for institutional and transnational V2X applications.

The operation of the system architecture has been demonstrated in two verification scenarios. The first scenario illustrates the efficient distribution of wrong-way driver warnings through the system network. The second scenario looked at a value added service, resulting from the integration of various logistics applications.

The project managers believe that the targeted systems network will gain technical and organisational complexity very fast.

Economic benefits

The approach pursued by CONVERGE to create a decentralised system architecture increases the marketability of V2X services significantly. In addition, it allows the competition compliant and non-discriminatory cooperation between the participating companies. The system architecture is designed to integrate authorised service providers with a low technical effort. The system filters the messages so that only the information supplied by trusted users is processed further.

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CONVERGE has developed an integrated and unified IT security concept that is based on standard conformity - for example on the ETSI ITS G5 short range communication standard, the 3GPP mobile phone standards or classical Internet backend standards.

The final evaluation has shown that the technical objectives, such as interoperability and pan-European transferability, can be achieved. CONVERGE allows services that benefit both the individual providers and the overall economy equally.

Participating in the CONVERGE research project are: **Automotive manufacturers:** Adam Opel AG, BMW Group, Volkswagen AG; **Suppliers:** PTV Group, Robert Bosch GmbH; **Mobile Solutions:** Ericsson GmbH, Vodafone GmbH; **Public facilities:** Hessen Mobile - Road and traffic management (road and traffic management); **Research:** Federal Highway Research Institute (BAST), Fraunhofer Institute AISEC, Fraunhofer Institute FOKUS, Academy of Sciences of the Saarland (HTW Saarland). **Associated Partners** are: Federal Network Agency (BNetzA) and the City of Frankfurt am Main (Public Roads Administration).

For more information visit: www.converge-online.de.

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Due to a decision of the German Bundestag



Figure 1: Logo „CONVERGE“

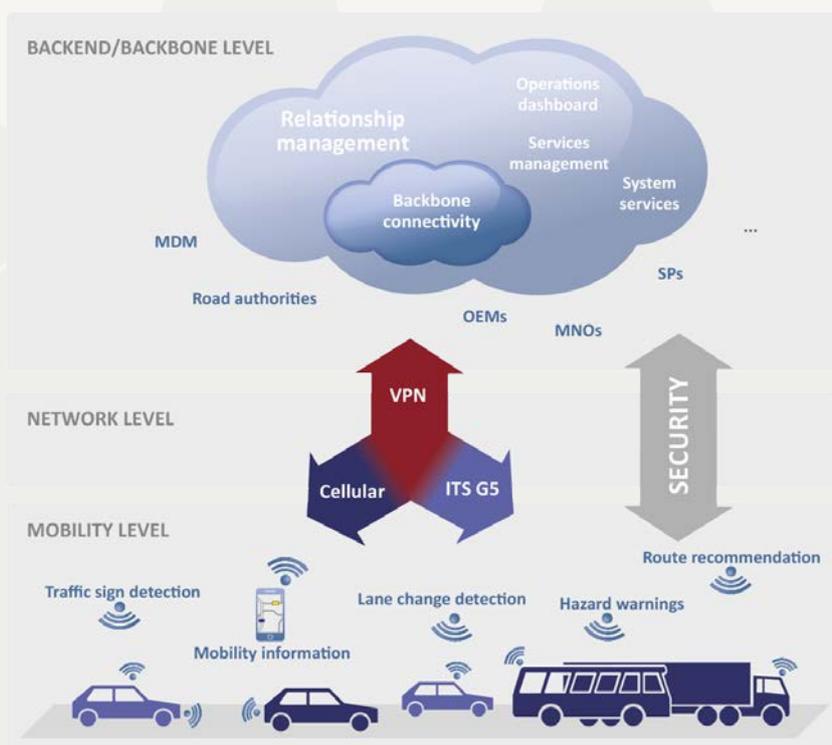


Figure 2: Schematic representation of interactions within the hybrid communication architecture



Figure 3: Title page of the current CONVERGE brochure

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