CAN *Newsletter Online*

COOPERATION

Power electronics meets Autosar project

B-Plus Automotive and Deutronic Elektronik, two mid-sized companies, are working together to realize communication paths in vehicles. Deutronic's DC/DC converters communicate via Classical CAN and J1939.

(Source: B-Plus)

In response to the ever-increasing demands on communication within vehicles, the Autosar software architecture is establishing itself not only in the automotive industry, but also in the areas of mobile machinery and commercial vehicles. The question of a standardized method is also increasing for other vehicle components that are addressed. The cooperative research project of the two companies B-Plus Automotive and Deutronic shows what standardized communication can look like using the example of high-voltage DC/DC converters.

Already since 2001, B-Plus cooperates with Edwanz. Deutronic Elektronik is member of Edwanz and B-Plus Automotive is member of B-Plus. Deutronic is provider for application-specific special devices and customized solutions in the field of power electronics. The focus is on the four business units "charging technology", "transportation", "logistics", and "test and automation".

With its own "tansportation" division, Deutronic focuses specifically on the requirements in the areas of mobile machinery and commercial vehicles; in particular, the focus is on the development of DC/DC converters, including for hybrid and electric vehicles. The company's converters communicate via CAN and J1939.

B-Plus develops software for electronic control units (ECU) and advanced driving assistance systems (ADAS) for automated, autonomous, and connected driving. From sensor to cloud-based on platform-independent standard components, it offers engineering services from development, integration, testing, and safeguarding (HIL/SIL) to cloud services as a partner for original equipment manufacturers (OEM) and Tier1 customers. The company offers a range of CAN-related products. This computing platform for example features Classical CAN and CAN FD.

Deutronic's DC/DC converters communicate via Classical CAN and J1939 (Source: B-Plus)

B-Plus engineers more than 10 years with Autosar technologies and is involved in the development of Autosar Adaptive. The project "Power electronics meets Autosar" enables the integration of electronic components to a general in-vehicle communication protocol. It is implemented by means of the further development of the communication board of a DC/DC converter.

The DC/DC converters of Deutronic's DVCH series meet the requirements in a vehicle, explained the company. Customer-specific adaptations and also the development of communication paths are possible. In the project, the standard protocols CAN and J1939 are extended by Autosar through the development of the communication module.

With the Conix Autosar solution from B-Plus Automotive and the DC/DC converter series DVCH from Deutronic, the two companies combine their core competencies to solve the challenges of this cooperation project, they explained.

The Conix solution is B-Plus Automotive's customer-oriented solution that combines Autosar together with measurement technology, functional safety monitors, and bootloader interfacing to form a finished system for algorithm development for ECUs. Due to the framework software and the modular structure, the solution provides the basis for the implementation of Autosar on various ECUs.

If additional components, such as a DC/DC converter that is indispensable in e-vehicles, can now also communicate via Autosar,

ECUs that serve as gateways between the various communication protocols become obsolete, said the company. Using the DC/DC converter as an example, signals can be sent directly to the converter, for example, to change the charging voltage for the buffer battery in response to increased or decreased power consumption on the part of the on-board electronics. The converter can also, for example, pass on error messages due to overtemperature directly to the control system without a control unit as a gateway.

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