CAN Newsletter Online

CAN technology symposium 2022

On October 25, 2022, the Wagenhallen in Stuttgart, Germany, open their doors for the 2nd CAN Technology Symposium of CAN in Automation (CiA) member Vector. At the one-day conference, speakers from different companies present the latest news on CAN technology, especially CAN XL.

Welcome speech to the audience in 2019 (Source: Vector)

Up to 200 experts discuss the latest developments in CAN technology, said Vector. In several presentations the speakers show the current status and present solutions for the upcoming challenges. The presentations are rounded off with an accompanying exhibition in which the companies of the speakers and Vector present tools and solutions for various CAN applications. Simultaneous translation English/German for all lectures is offered.

There are two keynotes planned. Carsten Schanze (Volkswagen) and Nico Juhasz and Marko Moch (both Cariad) talk about corporate development between the networking departments of Volkswagen and Cariad in general. By using the example of the series development of the communication technology CAN FD SIC (Signal Improvement Capability) this cooperation is shown in detail.

The second keynote is from Dr. Arthur Mutter (Bosch) with the name "CAN XL - Enabler for future-proof E/E architectures". Functions (e.g. automated driving) and the trend to more centralized E/E architectures push the demand for higher communication bandwidths. CAN XL provides bit rates of up to 20 Mbit/s and fills the gap between CAN FD and 100BASE-T1. Beside high bit rates, CAN XL provides features, up to 2048-byte payload, and keeps the advantages of CAN FD (including robustness and large topologies). With Ethernet tunneling (CiA 611-1, Autosar integration ongoing,) CAN XL can bring IP communication to any ECU (electronic control unit), explained Vector on its website. By this, CAN XL qualifies itself as cost efficient and flexible enabler of future E/E architectures, the company continued. CiA's Holger Zeltwanger (Managing Director) also introduces CAN XL including data link layer features, physical layer options, and higher-layer support.

After a coffee break, the event continues with more presentations. These include "The future of CAN physical layer" by Magnus Hell from Infinion with a focus on CAN SIC physical layer, CAN SIC XL physical, as well as a recommendation which combination of CAN protocols and CAN SIC XL transceiver are possible.

Tony Adamson from NXP Semiconductors presents "CAN SIC and CAN XL transceivers: Opening new possibilities for CAN" and gives a summary how CAN SIC transceivers have impacted CAN FD networks and allowed extensions in network topology and bit rate. This speed increase laid the foundation for thinking about higher speed CAN networks, which CAN XL will further extend in a more fundamental way, explained Vector in the event agenda.

After Lunch break and time for networking and visiting the exhibition, Vector's Alex Schäfer presents "Level up the CAN - Impact of CAN XL on Autosar-based ECUs". This includes changes in the Autosar system template and the Autosar architecture, migration from Classical CAN/CAN FD to CAN XL, as well as Ethernet frame tunneling with CAN XL. The speech "CANsec – The CAN XL layer 2 security protocol" from Renesas' Tobias Belitz provides an introduction to the CAN XL security protocol CANsec,

Networking in the catering and exhibition area in 2019 (Source: Vector)

explanation of motivation as well as the basic concept. Additionally, first results from a CANsec prototype implementation are shown.

After another coffee and exhibition break, the conference ends with two further talks. The first one is from Fred Rennig (ST Microelectronics) about CAN FD Light in practice featuring a CAN FD Light introduction and evaluation with existing tools. "Communication design as part of system design" from Vector's Alexander Mayr and Claudia Gettkandt is finishing the conference. The paper includes workflow and steps of a system design with communication design as final result, aspects and consequences of the different update processes and iteration cycles, as well as an example of an iteration cycle, tool demo in Preevision, and conclusion.

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