Technology update for OEMs and suppliers

The CAN FD symposium organized by Vector saw more than 130 attendees. The given presentations provided a status of the CAN FD standardization and some information on products under development.

Mr. Zeltwanger during his speech at the event (Photo: Vector)

Martin Litschel, one of the CAN fathers and one of the Vector founders, opened the symposium. It was the first time that Vector used its Auditorium in the new building in Weilimdorf (Germany). The event took place on February 16. Holger Zeltwanger, CiA Managing Director and convenor of the ISO working group for in-vehicle networks, gave the first speech providing an overview on the CAN FD standardization. He also moderated the event.

Mr. Zeltwanger (left) and Mr. Litschel (right) are opening the event (Photo: Vector)

Three carmakers gave presentations. Dr. Marc Schreiner from Daimler spoke about the general ideas of future in-vehicle network architectures. CAN FD and Ethernet are the preferred communication systems. Harald Eisele from Opel reported in detail about the SAE J2284 series of CAN FD network design recommendations. Additionally, he shared some lessons learnt, for example, that the BRS bit should have the same length in all nodes. Takashi Matsumoto working with Nissan and chairman of the Jaspar working group for CAN FD presented the intermediate results of system design recommendations. Jaspar is a Japanese nonprofit organization of OEMs and suppliers. It has 164 members. Jaspar and CiA exchange experiences and knowledge regarding CAN FD. The wish of the carmakers is to achieve in the future 5 Mbit/s in bus topologies. Today they like to use 2 Mbit/s.

Dr. Arthur Mutter from Bosch introduced the plug-and-secure communication for CAN. This approach contains also to exchange automatically randomly generated keys. Bosch has been submitted this technology for evaluation to independent security experts. It is based on the CAN arbitration method meaning that both partners send randomly generated keys at the very same moment by means of CAN messages. From the resulting frame on the bus, both nodes "filter" the exchanged keys. The basic idea was already presented at the international CAN Conference (iCC). In the meantime, Bosch has improved the procedure of exchanging keys.

Impressions of the CAN FD symposium (Photo: Vector)

Tony Adamson presented the plans of NXP regarding CAN FD transceivers. The chipmakers will introduce this year its shield transceivers hiding CAN FD frames. This allows using Classical CAN nodes in CAN FD environment. Additionally, he introduced the security view of NXP. This includes smart transceivers able to filter unknown messages or to detect IDs, which are used by this node. He also talked briefly about the Gold Bee security concept, originally developed by Freescale, which has been acquired by NXP last year.

Vector gave also some presentations on its CAN FD tools under development. This included some information on the CANoe version 10.0, which supports with additional hardware also CAN FD physical layer tests. Integrating oscilloscope hardware and time-base controller allows synchronizing the logic and the physical view. Moreover, Vector also offers a CAN FD stress hardware. This VH6501 will be completely integrated into CANoe. The new test environment will be available in late summer 2017, said Dr. Jan Taube. The CANoe.scope extension will be launched at the same time. Vector also plans to provide CAN FD conformance test systems for ECUs. These OEM-specific test packages are intended for ECU integration and stimulation testing. Such a conformance test environment has been already developed for the Volkswagen group. The CANoe-based tester has been extended to CAN FD communication, said Joachim Scharf.

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