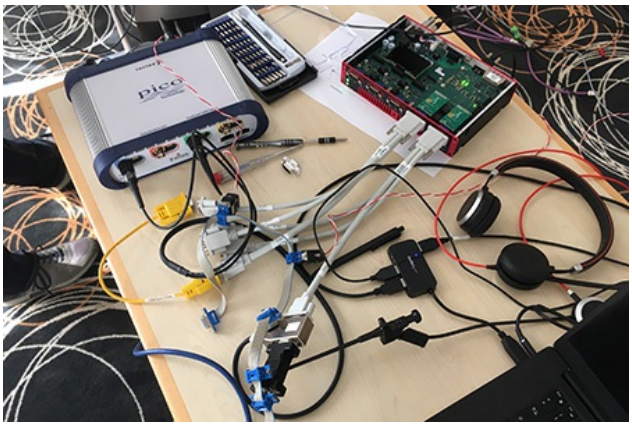
CAN Newsletter Online

CAN XL PLUGFEST

Three IP cores under test

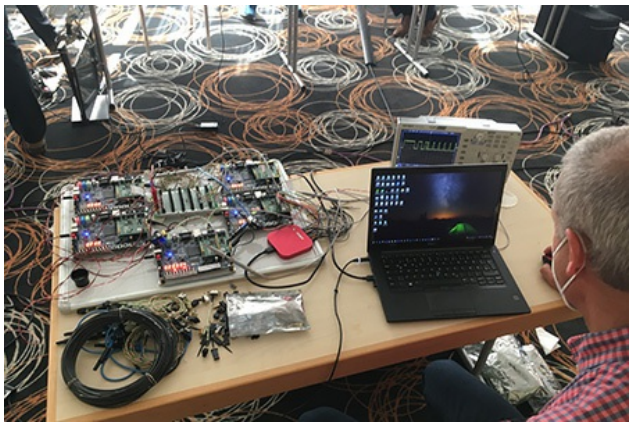
Beginning of July, Bosch, Fraunhofer IPMS, and Vector provided IP cores for the first CAN XL plugfest organized by CAN in Automation (CiA). All nodes used SIC (signal improvement capability) transceivers.

The first CAN XL plugfest was attended by Bosch, Fraunhofer IPMS, Infineon, NXP, Rhode & Schwarz, and Vector (Source: CiA)

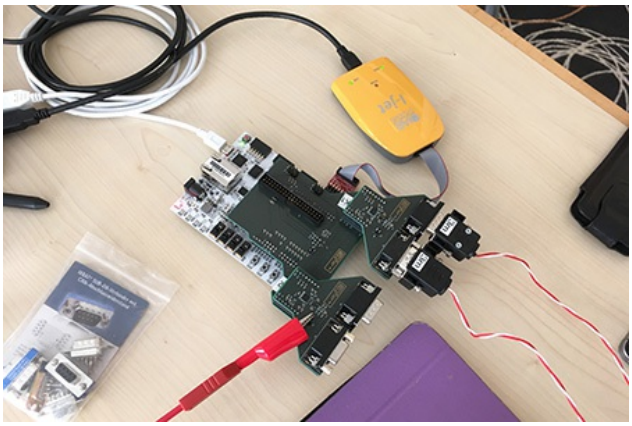


The CAN XL board by Vector will be released soon (Source: CiA)

The CAN XL plugfest participants tested first the compatibility of CAN XL protocol controllers using a SIC transceiver compliant with CiA 601-4 or CiA 610-3. The first tested approach was a bus-line topology with an overall length of 19 m. There were connected five nodes plus some only-listen tools, such as the new digital oscilloscope by Rohde & Schwarz – just introduced a couple of weeks ago. A CAN XL decoder was not yet available, but is in preparation. The bit-rate was increased from 1 Mbit/s to 10 Mbit/s using busloads up to 100 %. There were no problems at all.

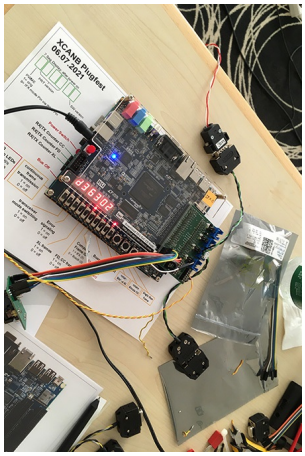


The double-star CAN XL test network by NXP comprises eight nodes (Source: CiA)



The board by Fraunhofer IPMS features two CAN XL interfaces based on the institute's IP core implemented in an FPGA (Source: CiA)

The tests were performed with and without error signaling. Furthermore, the attendees tested also a mixed transmission of the three CAN protocol generations: Classical CAN, CAN FD, and CAN XL. An interesting test was the simultaneousbosch fraunhofer transmission of CAN XL and CAN FD frames using different bit-rates in the dataphase. CAN XL frames were sent with 10 Mbit/s and CAN FD frames with 2 Mbit/s – also with no problems.



The CAN XL board by Infineon implements the Bosch IP core and the company's SIC transceiver (Source: CiA)

In the afternoon, NXP presented its double-star topology network with eight nodes suitable for CAN XL communication up to 10 Mbit/s. A single-star topology was running at 20 Mbit/s in the dataphase connecting three CAN XL nodes from NXP and two from Fraunhofer IPMS. In another set-up running at 10 Mbit/s the CAN XL star network linked four NXP nodes, two Fraunhofer nodes, and a daisy-chained node by Infineon. The maximum not terminated stub length was 6 m. All nodes implemented the new CAN XL SIC transceiver as specified in CiA 610-3.

All participants were satisfied with the results of the first CAN XL plugfest. The next step is to test the behavior, when introducing faulty CAN XL data frames to the network lines and to inject dedicated bit errors. CiA is committed to organize further plugfests in the near future.

hz