

CAN Newsletter Online

Q&A WITH ESD ELECTRONICS

“CAN products bridge IoT and applications in the field area”

ESD has extended its management. Since June 1, Norbert Gemmeke conducts business of ESD as the second managing director. We asked him some questions regarding CAN markets and products.



Norbert Gemmeke (on the right) and Klaus Detering (Photo: ESD)

Since June 2017, Norbert Gemmeke conducts business of ESD as the second managing director together with the owner of the company Klaus Detering. In his new position, the 55-year-old engineer is responsible for the business areas sales, marketing, as well as research and development.

ESD is supplier of CAN modules. This particularly includes interface boards and gateways. On OSI layer-7, the CAN pioneer supports the protocols CANopen and Devicenet (with master and slave functionality). For custom-specific implementations this software is offered as a source code. The company has gained CAN experience since 1990 and is one of the founding members of CAN in Automation (CiA) as well as a member of the Open Devicenet Vendors Association (ODVA). Taking part in numerous committees the company contributes to the definition of norms and profiles.

Q: ESD was one of the early adapters of CAN in non-automotive applications. How do you see the future of CAN technology?

A: Beside Ethernet-based industrial networks, there is still a wide range of applications, which are solved with CAN or CANopen, mostly as a sub-network with all advantages CAN provides. We have built up bridge knowledge about CAN and CANopen in the field. Our engineers like the CAN protocol and the direct access to sensors and actuators. We should talk about applications later on.

Q: ESD provides a broad range of CANopen products. Are there still new product designs?

A: Yes, there are several such as CPCSerial and PCIeMini and last but not least we have the CAN-to-Cloud gateway. These products bridge IoT and applications in the field area. Our CAN-to-Cloud connects CAN to the Microsoft Azure Cloud via Ethernet.

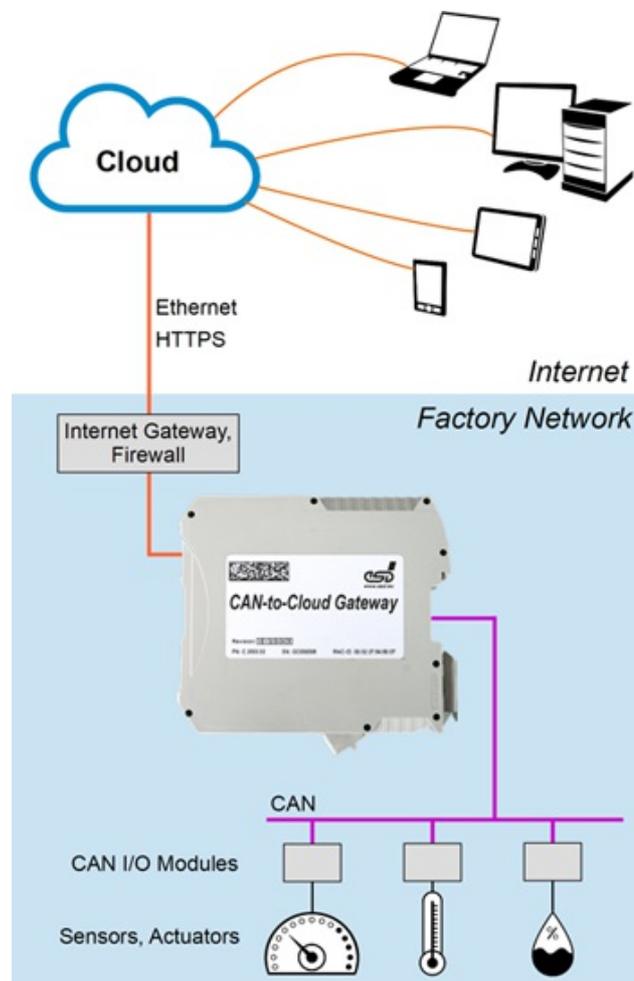
Q: ESD also develops products, which are brand-labeled by customers. Is this trend ongoing?

A: We did this very successful in the past. You will find our brand-labeled products in the machine building and automotive industry as well as in the medical sector and the airborne industry. We use CAN technology in customer-specific products, e.g. at Airbus. And it is an ongoing business-, product-, and technology-wise. This means more and more you will find our modern CAN technology in customer-specific products. Especially in the area of test equipment and test stands, there are our brand-labeled products in the future.

Q: ESD already supports CAN FD with its own implementation, what are the add-on values?

A: We have developed the esdACC FPGA core compliant with ISO 11898-1:2015 supporting Classical CAN as well as CAN FD. ACC stands for Advanced CAN Controller. We implemented an IP core in an FPGA to overcome the long access times of standalone CAN controllers by implementing a 32-bit register interface and streaming the data from the CAN network into the memory of the host CPU by bus master DMA. Deep FIFO sizes for reading and writing, precise time-stamps and the ability to abort a CAN frame accurately, even if it is in the transmit FIFO (as needed for more sophisticated CAN protocols like Arinc 825) and a register model optimized for the needs of CAN, are additional features. Depending on the selected features, up to twelve ACC CAN cores fit into an FPGA.

Various of our products have been already equipped with CAN FD transceivers qualified for bitrates up to 5 Mbit/s. Especially the automotive industry is the driver of CAN FD. Test bench and test equipment in series production are typical applications. CAN FD is also integrated in our CAN tools. These tools are very useful and designed to analyze and monitor CAN FD and CANopen



The CAN-to-Cloud gateway links CAN nodes to the Azure Cloud by Microsoft

networks. And by the way, these tools are free-of-charge.

(Photo: ESD)

Q: ESD supports actively the development of CANopen FD within the CiA working groups. Which applications you are addressing with CANopen FD products?

A: We are still in discussions with customers. I see applications in environments. We have good knowledge in the airborne industry. There is also a need for CANopen FD.

Q: When ESD will provide first CANopen FD products?

A: We have integrated CAN FD in many of our CAN products. We are member of the Special Interest Group (SIG) "Application layer" specifying the CANopen FD protocol. We participated already with an implementation in CiA's demonstrator showed on fairgrounds and conferences. After the release of the specification, we will be able to provide first products, soon. They will be based on our esdACC chip.

[CW](#)