Not only partner of the medical device manufacturers

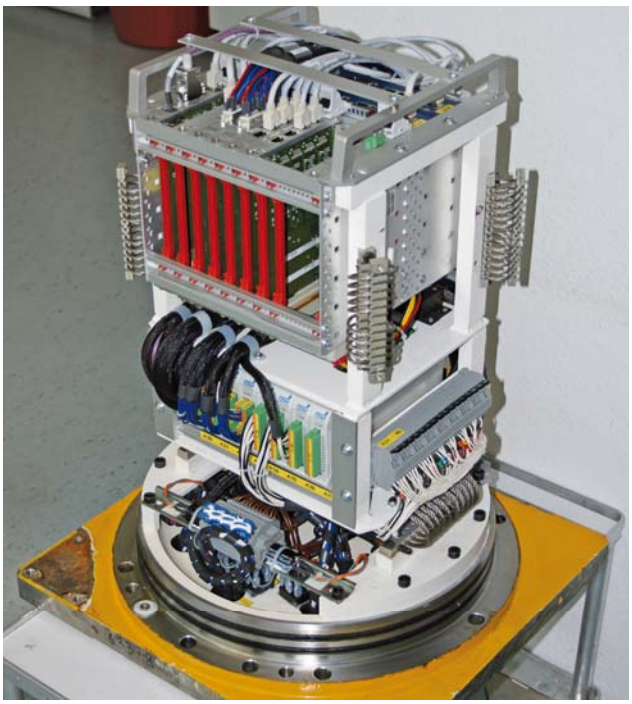
Klaus Detering

Harm-Peter Krause

Established originally as an engineering office, esd (electronic system design) has become a manufacturer of application-specific boards and computer systems. The company located in Hanover (Germany) offers also off-the-shelf products such as CAN interface modules, CAN gateways, etc. A sales office in Hamburg, a subsidiary in USA, and distributors in China and Korea as well as sales partners in France, Israel, Italy, and Japan support customers all over the world. Most of the business is done in Germany (about 60%), followed by other European markets and North America (each about 20%). There are also some interesting projects in Far East, e.g. wind energy systems in China using the CAN-to-Profibus gateway. Gateways are important products. In particular, the CAN-to-Profibus gateway provides some unique features: For example, configuration by the Simatic programmable logic controller (PLC) avoids additional configuration software and interfaces.

"We are partner of all major medical device manufacturers," said Klaus Detering, CEO of esd. "They use our CAN products in nearly all image processing medical devices." The 60-employees company develops and produces since 1992 interface boards and modules for CAN. "Our first CAN interface product was an X-bus board," remembered Detering. "It was followed by the VMEbus CAN-2 board." Today, the company provides CAN interface modules for USB, and PCI and many other bus systems.

Besides the healthcare industry, esd provides for road construction machines IP65-rated control units featuring CAN connectivity. "Our CAN products are in ▷



Controlling the hammering in sub-sea is a challenge: In the depth of 3000 m below the water surface the control system also needs to record all "hammering" data in order to proof the correct and sufficient process of fixing the piles into the ocean ground

CAN/USB module in the connector

The CAN-USB-Micro module by esd is powered via the USB interface. The local ARM Cortex M3 micro-controller and the CAN high-speed transceiver are completely enclosed in the 9-pin D-sub connector housing. On the USB side the module supports data-rates of 12 Mbit/s, and on the CAN side several bit-rates up to 1 Mbit/s are configurable. The USB dongle comes with the CANreal bus monitoring software and a Windows driver program (NTCAN-API). The USB cable has a length of 1,3 m.

about 70% of the road construction machines," said Detering proudly. Most of the sold CAN products are developed closely with the machine builder. These application-specific devices are used in broad range of applications. Recently, esd has redesigned the control system for a deep-sea hammer by Menck. It is now using embedded CAN communication between host controller and I/O modules. Another application is the test system in the Airbus production facility in Finkenwerder (Germany) testing equipment for cabin intercommunication and data systems of the A380 aircraft. The company has also equipped the test systems for the Flight Attendant Panel in the Airbus final assembly line. All the test modules feature CAN interfaces at the front-end as well as the backbone communication. In total, about 2000 modules have been installed in these test systems. The company also provides CAN interface boards with Arinc 825 protocol software to be used in the aircrafts.

"We produce per year about 35000 intelligent CAN interface boards and controllers," stated Harm-Peter Krause from esd. "About 60% are customer-specific." The company also offering Ethercat products doesn't manufacture the printed-circuit boards by itself, but the final testing is done in-house. "So we can guarantee 100% failure-free products," said Klaus Detering.

The company highly committed to the CAN technology, uses in about 50% its self-developed CANopen protocol stack. "For the future, we see besides the Ethernet hype, interesting developments for CAN in particular the upcoming CAN-FD protocol," explained esd's CEO. "CAN safety communication and CAN redundancy are other interesting topics for the future." ◀

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The company, established by Klaus Detering and Dr. Werner Schulze in 1984, was a founding member of the CAN in Automation users' and manufacturers' group. In the 20 years history of CiA, esd's employees have been active in several technical groups as well as in the CiA Business Committee.

Link
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Sub-sea hammer for the off-shore platform installation require very robust control systems

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