The Consumer Electronic Show (CES) has changed its face. When established in 1967, it was dominated by commercial audio and video equipment. Nowadays, the focus is on next generation technology. Samsung presented its view of smart homes, carmakers and suppliers showed concept vehicles and automated driving prototypes, and lot of other electronic equipment. CAN technology was not a hot topic. Nevertheless, you found it on the backstage doing its job deeply and very deeply embedded in particular in many of the exhibited automated driving vehicles and the concept cars. At the end, you always have to communicate reliable and robust just a few bits and bytes. CAN is a very proven network technology for such tasks. But it was nearly invisible for the shallow visitor. You needed to dig a little bit deeper to find the CAN-based embedded networks on the exhibition in Las Vegas.

In this issue, we try to inform about the CES trends in automated driving and next generation’s vehicles. Although CAN was not in the main focus and not in the headlines, it was so-to-say below the sea-level, like an iceberg, sometimes looking a little bit out of the water. Still most of these embedded CAN networks were based on the Classical CAN protocol. In the following years, we will see increasingly CAN FD solutions.

This years CES saw more than three centimeter of rain, which was a record for the desert city. Additionally, a two-hour blackout in many parts of the Las Vegas Convention Center stopped...
the high-tech show partly and reminded us that innovative high-end technology still depends on some functioning low-tech infrastructure. Let us take the cap in hand and look, how a low-priced communication technology such as CAN does its job on the backstage and in the backstreets not always visible for the consumers. “CES 2018 will be remembered as the year where the wattage of innovation was so huge that it caused a blackout!” said IBM’s Bridget Karlin. “CES 2018 once again demonstrated that this is the world’s premiere showcase for technology innovation with unparalleled diversity from international public officials to industry leaders to entrepreneurs.”

What becomes also clear, the first generation of autonomous driving vehicles will be not purchasable for everyone. Firstly, they will support on-demand ride serves, deliveries, and some commercial transportation.

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Overview of functions
- Clear display of the CAN traffic with various information
- Configurable symbolic message representation
- Transmitting individual messages or CAN frame sequences
- Recording of incoming CAN messages
- Playback of trace files with optional loop function
- Automatic bit rate detection based on a fixed value list
- Switchable listen-only mode and silent startup function
- Measurement of the CAN bus load and termination
- Voltage measurement at the CAN connector for pin 6 and 9

Oscilloscope functions
- Oscilloscope with two independent measurement channels, each with a maximum sample rate of 100 MHz
- Display of the CAN-High and the CAN-Low signals as well as the difference of both signals
- Trigger configuration to various properties of CAN messages like frame start, CAN errors, or CAN ID
- Decoding of CAN frames from the recorded signal trace
- Display of various properties and of measuring data of the decoded CAN frame

Specifications
- High-speed CAN connection (ISO 11898-2)
- Complies with the CAN specifications 2.0 A/B and FD (switchable support for ISO and Non-ISO)
- CAN FD bit rates for the data field up to 12 Mbit/s
- CAN bit rates from 20 kbit/s up to 1 Mbit/s
- CAN bus connection via D-Sub, 9-pin (in accordance with CiA 303-1) with switchable CAN termination
- Display with 800 x 480 pixel resolution
- Device operation via a push dial and 4 buttons
- Memory card for saving projects, traces, and screenshots
- Power supply via the internal rechargeable batteries or the provided supply unit

PCAN-Diag FD
Mobile Diagnostic Device for CAN and CAN FD Busses

The new PCAN-Diag FD is a handheld diagnostic device for CAN 2.0 and CAN FD busses that allows the examination on the physical and on the protocol layer. A funded analysis is done by the scope function and further measuring functions for voltage and termination. The examination of the CAN communication can be done by the display of CAN and CAN FD messages, a bus load measurement, or the recording and replay function for the CAN traffic.