

CAN is a backstage technology

The 51st CES (Consumer Electronic Show) is in the books. What remains except heavy rain and power cuts: Automated driving with e-cars, smart homes, and of course gadgets.

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



Figure 1: CES 1967 – 51 years ago, the show started in New York City (Photo: CTA)

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.



Figure 2: CES 2018 – 51 years later, the exhibition is spread out in entire Las Vegas including hundreds of private events (Photo: CTA)

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



CES in numbers

When kicked off in 1967 in New York City, there were 250 exhibitors and 17 500 attendees. This year, more than 3 900 exhibiting companies presented their innovations to more than 170 000 visitors. The focus is not more just on consumer electronic products, but on future technologies for the consumers. Exhibitors featured products from all facets of tech, from audio, vehicle technology and wireless to drones, augmented and virtual reality, 3D printing, sensor tech, and more. Manufacturers, developers, and suppliers gather in Las Vegas not only to showcase game-changing technology to the world, but also to build strong business relationships with new and existing industries. More than 7 000 editors and bloggers participated, to report first-hand news. This event is not just at one location in Las Vegas, it is all over the town. In addition, there were 860 732 tweets about the CES and 450 554 uses of the #CES2018 Twitter hashtag.

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. ◀

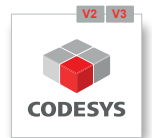
Author



Holger Zeltwanger
CAN Newsletter
pr@can-cia.org
www.can-newsletter.org

CAN YOU IMAGINE THE POSSIBILITIES? WE CAN!

CANopen®



The PFC200 Controller from WAGO – Compelling, Fast and Intelligent

- High processing speed
- Programmable with CODESYS 2 and e!COCKPIT (based on CODESYS 3)
- Configuration and visualization via Web-server
- Integrated security functions
- Robust and maintenance-free

www.wago.com/pfc200

WAGO

ID	Len	Data 0...N	Count	T. Diff.
43500			1558	30 us
45608	72	3489236900D8FF	623	100 us
45702		23AA	1558	30 us
65320	ABDD	000023221C07 22AADF0765114000	1558	30 us
		000035FF		
04032215	64	11576DF000243311 EE910A576572206B	623	100 us
		616E6E2064696573 656E205465787420		
		656E747A69666665 726E3FFD87BB0005		
		077234FEDCBA9876 5432100123456789		
18F00300	08	00AF000000000000	2633	20 us
18F00400	08	0000003F84000000	6583	10 us
18FDD100	08	0000020501000000	13	1000 us
18FE6C00	08	0210000000003775	2633	20 us
			131	100 us
			131	100 us
			131	100 us
			263	



Mobile CAN FD Diagnosis

■ 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.

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

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

NEW



Meet us in hall **1**, booth **483**

PEAK-System Technik GmbH

Otto-Roehm-Str. 69, 64293 Darmstadt, Germany
Phone: +49 6151 8173-20 - Fax: +49 6151 8173-29
E-mail: info@peak-system.com

www.peak-system.com

