Teraki | Radar Recognition Software

Teraki, an AI-software company based in Berlin (Germany), has launched new radar recognition software that can identify stationary and moving objects with high precision and low computing power. The Real-Traffic solution runs on Infineon’s ASIL-D compliant AURIX-TC4x microcontrollers. The machine learning approach used is reported to be able to overcome interference and fulfill the very high accuracy requirements by processing raw data and reducing noise. This results in more points per object and hence fewer false alarms and hence more safety. The algorithm reduces the radar signals according to the first Fast Fourier Transformation (FFT) and thus achieves a factor of 25 lower error rate for missing objects for the same RAM/fps. Compared to CFAR, the accuracy of the classification is up to 20 % higher and the number of valid recognitions increases by 15 %.

Softing Automotive | Diagnosis Simulation

Softing Automotive has presented TCS, a new product for the simulation of individual control units up to entire vehicles. The diagnosis simulation is suitable for all cases where the ECU is not yet or no longer available for test purposes, for example for function validation in early stages of development, tester regression tests, and training. The system allows test sequences to be created and verified during control unit and vehicle development. The entire communication path is tested including the vehicle interface and cabling so that all sources of error can be excluded. The Softing solution consists of simulation hardware, a configuration application, and an API for integration into test automation hardware.
Elektrobit and Argus Cyber Security have launched what they say is the industry’s first intrusion detection and prevention solution for highly developed Ethernet communication systems in software-defined vehicles of the next generation. The EB zones SwitchCore Shield recognizes possible threats early in the switch so that they are unable to penetrate into the host microcontroller. The pre-integrated, series-ready package also enables shorter times-to-market. The vehicle implementation enables manufacturers to not only fulfill the UN R155 and the Chinese GB/T standards but also to extend protection even further. The flexible and powerful solution is said to make it possible to evaluate the recognized data and to make quick decisions which measures should be taken against an attempted attack.

Elektrobit | Argus Cyber Security | Fully Integrated Switch Firmware

Microchip Technology | Chip for Cybersecurity
Microchip Technology has launched the PIC32CM JH family of microcontrollers (MCU) equipped with functions to implement functional safety standard ISO 26262 and cybersecurity ISO/SAE 21434 applications. The MCU based on the Arm Cortex-M0+ architecture offers Autosar support, memory built-in self-test (MBIST), and secure boot. The PIC32CM JH can be paired with one of Microchip’s security ICs, the Trust Anchor TA100 CryptoAutomotive making it compliant with ISO/SAE 21434. The TA100 uses secure hardware-based cryptographic key storage and cryptographic countermeasures to eliminate potential backdoors associated with software weaknesses.

dSpace | 60-GHz Radar Converter
dSpace has expanded its portfolio in the field of radar target simulation. The DARTS HBC-7066V is a converter that enables every dSpace Automotive Radar Test System (DARTS) to operate in the 60 GHz-V band. The easy-to-use over-the-air test methods in the DARTS product family guarantee the validation of the entire sensor transmission channel. In combination with different base units, short distances of less than 1 m can be simulated or 5-GHz processing bandwidth can be supported.

NXP Semiconductors | Radar Transceiver
NXP Semiconductors has released the second generation of its RFCMOS radar transceiver family for production. The TEF82xx is optimized for fast chirp modulation and supports short-, medium- and long-range radar applications, including cascaded high-resolution radar and 360° sensing for critical security applications. The fully integrated RFCMOS chip includes three transmitters, four receivers, ADC converters, phase rotators and low phase noise VCOs. Also integrated are safety monitors and external interfaces for MIPI-CSI2 and LVDS.
Rohm | 40-V Window Voltage Detector

Rohm’s new BD48HW0G-C is a highly accurate voltage detector (Reset-IC) with a very low current consumption of 500 nA. It has been optimized for automotive and industrial applications where the voltage monitoring of electronic circuits is required to increase safety. The new detector is based on a high voltage BICDMOS process and uses Rohm’s proprietary analog design technology. It has an operating voltage range of 1.8 to 40 V and a detection voltage accuracy of ±0.75 % over the entire temperature range. The detection voltage can be freely adjusted thus enabling highly precise voltage monitoring in a variety of applications.

TTControl | New Control Unit Family

TTControl has announced the launch of TTC 2030 and TTC 2300 as new elements in its ECU family TTC 2000. They fulfill the safety standards in the construction, agricultural, and automotive industries and thus contribute to a reduction in certification costs for the manufacturers of mobile machines. TTC 2300 features the high performance Aurix TriCore from Infineon with up to six CPU cores and two high speed data connections (HSD) for standard Ethernet and BroadR-Reach Ethernet communication. The TTC 2030 family also contains the ECU compact variant TTC 2038 with an Aurix dual-core CPU and the TTC 2038XS I/O module.

Rohde & Schwarz | Extended Test Option for Radar

The R&S ATS1500C antenna test chamber now offers a new temperature test option and a new feed antenna. The option Temp creates a temperature controlled environment for the radar system to be tested and supports a temperature range from -40 °C to 85 °C. In addition, the system can be equipped with the universal feed antenna ARC-FX90 that supports 60 to 90 GHz. The antenna includes an orthomode transducer that enables access to vertical and horizontal polarizations.

Cognizant Mobility | Programmable Key

With version Key-Sharing 3.0, Cognizant Mobility has implemented new functions in its digital vehicle key system. So for example the vehicle key can be given to other people including the previously defined settings and limitations (range limit, speed, only open and lock to keep items in the vehicle). According to the company, three different technologies form the basis of the digital key, that is NFC (Near Field Communication), UWB (Ultra-Wideband) and Bluetooth. The underlying CCC (Car Connectivity Consortium) standard uses the UWB technology for location-based functions and improved usability.
MicroNova | AVL | HiL Simulation Platform

Users of the interdisciplinary simulation platform AVL Cruise M can now use the real-time simulation system NovaCarts from MicroNova as a target system. MicroNova uses its expertise in the testing of electronic control units for a comprehensive consulting portfolio for the integration of Cruise M. The user has access to a comprehensive library of components for modelling from a range of vehicle development domains. Even complex system models can be created in a short time in this manner. The numerical solver is designed for efficient multi-physics simulation. The model and solver are supplied together in a functional mockup unit. The consistency from system layout to final test considerably shortens the development process.

STW | Compact Controllers

The ESX.4 family of mobile controllers was developed for the automation of mobile machines. The compact controllers feature a multicore Aurix platform with $3 \times 300$ MHz processor. Together with the integrated and managed Ethernet switch, the controller family is well equipped for applications. The control unit and software are certified according to SIL 2 / PL d and the integration of functional safety applications is user-friendly. The ESX.4cl is the largest variant in the controller family. The ESX.4cl can be optimally networked with other components in a system with its total of three 100-Mbit/s Ethernet ports, a 1-Gbit/s Ethernet port, and two BroadR-Reach ports. It also offers 53 low-side and high-side outputs and 60 multi-function inputs. The control supports the SENT protocol and LIN and delivers supply voltages from 5 to 12 V for connected sensors.

ATZ electronics worldwide 11/2022

UPCOMING CONFERENCES

Heavy-Duty, On- and Off-Highway Engines
November 16 and 17, 2022 | Donaueschingen, Germany and virtually via live stream

Sustainability in Automotive
December 1, 2022 | Digital Conference

10th International Engine Congress
February 28 and March 1, 2023 | Baden-Baden, Germany

Powertrains and Energy Systems of Tomorrow
March 28 and 29, 2023 | Berlin, Germany

chassis.tech plus
June 20 and 21, 2023 | Munich, Germany

Automotive Acoustics Conference
July 11 and 12, 2023 | Zurich/Rueschlikon, Switzerland

CALL FOR PAPERS

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Deadline for submission proposals: November 4, 2022

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