PRESS RELEASE

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High-calibre expert knowledge for the embedded world

- **Embedded intelligence**
- **Top keynotes**

The embedded world is making developing brilliantly. The prospects are also excellent for the embedded world Conference and the electronic displays Conference, the programmes of which are already available online. The motto for this year's embedded world Conference is "Embedded Intelligence", focusing on a central issue in the industry. The electronic displays Conference deals with the latest topics relating to OLEDs, touchscreens, and much more.

The performance of processors and integrated circuits has improved so much and they have become so inexpensive that new technologies like machine learning and artificial intelligence are finding their way into an increasing number of applications. This opens up the possibility of totally new systems that independently perceive their environment, formulate conclusions, and make decisions. The embedded world Conference reflects this trend with the motto "Embedded Intelligence", which takes up the title of one of its precursors from the 1990s. These technologies that were once only a dream have since become a reality. The 2019 programme includes ten conference clusters:

1. Internet of Things
2. Connected Systems
3. Embedded OS
4. Safety & Security
5. Hardware Engineering
6. Software & Systems Engineering
7. Embedded Vision
8. Autonomous & Intelligent Systems
9. Embedded GUI & HMI
10. System-on-Chip

NÜRNBERG MESSE

The individual clusters are made up of sessions and classes. Sessions last an entire morning or afternoon and generally consist of a number of half-hour presentations. Classes are limited to smaller groups and are more like seminars. They allow participants to delve into a specific topic, sometimes also participating in practical exercises on a computer or microprocessor boards.

Keynotes by industry experts

The high points of the embedded world Conference are always the two keynotes on the first and second days of the conference. This year's keynote speakers are two first-class industry experts who approach embedded intelligence from very different angles: Jim Tung, MathWorks Fellow, and Jean-Marc Chery, President and CEO of STMicroelectronics since May 2018.

On the first day of the conference, 26 February 2019, Jim Tung will speak about "Developing game-changing embedded intelligence". In particular, he'll focus on how algorithmic expertise and domain-specific knowledge must be combined to maximize the added value created by systems and products. This global approach, in conjunction with dynamic changes in the market, presents developers with ever greater challenges.

On the second day of the conference, Jean-Marc Chery's keynote will focus on "Embedded intelligence for the next wave of smart systems – opportunities and challenges on the edge". He will demonstrate the continued role of the embedded system in the field, on the edge. Not all data will be moved to the backend, to the cloud, but an optimal balance needs to be found between the computer, storage and communication resources.

Topics in detail

The presentations in the topic clusters are state-of-the-art and span the entire range of the ten conference clusters:

1. The presentations in the "Internet of Things" track focus on topics relating to IoT platforms, databases for distributed applications and the discussion of cloud vs. edge vs. fog computing.
2. The presentations in the "Connected Systems" track focus on wireless and wired communication technologies. There are many innovations in this area, including on the lower levels.

embedded**world** Nürnberg, Germany 26.–28.2.2019
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In addition to low-power wide-area networks (LPWANs), the most interesting innovations in the wireless area are narrow-band IoT (NB IoT) and 5G. At the same time, CAN and Ethernet and especially TSN Ethernet continue to evolve.

3. Embedded OS: In a basic session, participants can learn how real-time operating systems function in the multi-core age. The Open Source Automation Development Lab (OSADL) eG has put together a session on open-source topics. Other major focuses include Linux, virtualization and measures required in the operating system to ensure system security.
   Six classes complete the offering.

4. Safety & Security: Functional safety and protection against attacks on the system are both essential requirements for many embedded systems. Among other things, the presentations deal with how this can be achieved despite limited computing resources. Of particular interest: Reports on actual attacks and countermeasures taken, allowing developers to quickly familiarize themselves with this complex subject area.

5. Presentations in the "Hardware Engineering" track mainly deal with the RISC-V architecture. Unlike most instruction set architectures, this open RISC instruction set architecture is not patented and can be freely used, thanks to the generous BSD license. This means that anyone can design, manufacture and sell RISC-V microprocessors. It's becoming an extremely exciting topic.

6. Software & Systems Engineering: The trend away from C and toward C++ offers many advantages as well as much greater complexity and risks. The topics in this area include development methods, tracing errors and developing more secure and reliable systems. An additional focus is on the use of standards such as MISRA and AUTOSAR.

7. Embedded Vision: This is a brand new sector with innovative technologies and applications. Thanks to a collaboration with VDMA, there will be many interesting presentations.

8. Autonomous & Intelligent Systems: In the near future, we'll be seeing a growing number of technical systems whose actions are not only programmatic, calculated in a completely predictable context, but are also situative. This means that machines will be making decisions in situations not previously simulated.

9. Embedded GUI & HMI: Embedded systems are also being equipped with increasingly complex graphical user interfaces, all the way to AR and VR add-ons.

10. For the first time, a "System-on-Chip" track is being offered, which takes into account many hardware and design aspects for programmable FPGAs and hardwired ICs with ever smaller structural sizes down to 7 nm.

"The embedded world Conference has become the largest and most important application-oriented exhibition on embedded systems. This will once again be impressively demonstrated in 2019 by the broad range and depth of its unique presentation programme, which includes 250 contributions by international experts in 42 sessions and 12 classes," says Prof. Dr.-Ing. Axel Sikora of Offenburg University and Chairman of the embedded world Conference. "In particular, topics relating to 'Embedded Intelligence', possible architectures and solutions and the associated challenges play a central role this year. But the technical tracks that deal with 'traditional topics' are also being more intensively developed," adds Sikora. The programme, including presentation abstracts and information on the speakers, is now available online at **www.embedded-world.eu**, where it is also possible to register for the conference directly online.

electronic displays Conference offers first-class professional knowledge for display experts

"The electronic displays Conference is the most important European B2B platform for display technologies. It's the central dialog and sector platform for high-calibre expertise, presented by experts for experts. What makes this conference so special is the exchange of information on a high professional level. This is the place where innovations are presented and new projects launched," explains Prof. Dr. Karlheinz Blankenbach, Pforzheim University and Chairman of the conference board. The conference has been evolving dynamically over the past three decades. "Once again, many exceptional presentations have been submitted for the electronic displays Conference 2019. The display sector's strong commitment to our conference makes us very happy," continues Blankenbach. From 27 to 28 February 2019, developers, scientists and users of electronic displays will once again be able to learn about the latest display technologies, including LCD, touchscreens, optical bonding, display systems and promising HDR technology.

Highlights in 2019 include keynotes on display trends and Micro-LEDs, four sessions on automotive displays and additional high-calibre sessions on measurement technology and e-signage, as well as applications and optimizations. The author interviews have become a fine conference tradition. After each session, they provide an excellent opportunity to discuss the information just received in a small group. Displays are a central and important topic not just at the conference, but also in the exhibition halls. The electronic displays Area in Halls 1 and 3A provide a platform for state-of-the-art technology relating to all aspects of LCDs, OLEDs, ePaper, touchscreens, interfaces, display solutions and much more.

For information on the electronic displays Conference 2019 programme and
to register for the conference, visit: **www.electronic-displays.de**

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