embeddedworld2020
Exhibition&Conference
... it's a smarter world

25. – 27. February 2020
Nuremberg, Germany

Connecting Embedded Intelligence

CALL FOR PAPERS

www.embedded-world.eu

WEKA FACHMEDIEN

Comments on the 2019 Conference:

"The embedded world Conference provides an excellent opportunity for engineers to come together to experience high quality technical content over three days. Personally, I enjoy speaking at the conference and the technical interactions with like-minded developers."
Greg Davis, Director of Engineering, Compilers at Green Hills Software

"The embedded world Conference and Exhibition is a unique event in the embedded systems industry because of the mix of excellent technical content in the conference and the right attendees and exhibitors in the exhibition. embedded world has provided great value for me personally and for Imperas Software for learning about the latest in embedded technology and for meeting with partners and customers."
Larry Lapides, VP Sales, Imperas Software

"Thank you guys for the excellent organization (as always!)".
Colin Walls, Mentor Graphics

- Excellently organized meeting from entrance counter (badges,), information desks and columns up to service and served dished during breaks and lunch.
- Friendly and supportive staff, well prepared with information regarding "where to find what".
- The attended class 6.2 lead by Bruce Douglass as experienced process expert and trainer was interesting and informative giving many good hints/ stories and examples on systems engineering and agile development. Good discussion with Mr. Douglass and some of the other participants. Some of the information could be directly transferred into actual project work.
Karsten Seiter, Functional Safety Manager AS, APTIV

embedded world Conference 2020

Connecting Embedded Intelligence

The embedded world Exhibition & Conference is the world's leading meeting place for the embedded community. Here, experienced developers come together to share their knowledge and help others to turn ideas and innovations into real products. Now in its 18th year, the Conference continues its concentration on future-oriented and challenging topics. We see more and more Artifical Intelligence (AI) and Machine Learning (ML) in real applications using embedded and Internet of Things (IoT) architecture: from autonomous vehicles to image recognition and embedded vision systems to preventive and demand-driven maintenance in Industry 4.0 systems, from small edge computers to high-performance cloud servers. And increasingly, these applications are interconnected, balancing edge, cloud, and fog computing – with all its challenges regarding system design, device and application management, security, safety, connectivity, verification and test, and and and …

These developments do not only promise immense possibilities and extensive business opportunities, but are also closely associated with many technical, economic, social and ethical issues.

The Conference covers all aspects of the development and application of embedded systems, from fundamental technologies to development processes and special fields of application. With over 2,100 participants, the embedded world Conference is the largest event of its kind in the world. Speakers are long-standing experts with in-depth knowledge, vital ideas, and strategic thoughts. The audience are competent, knowledge-hungry embedded system developers, specialists, project and product managers. The conference is very much part of the dynamic environment of the embedded world Exhibition, which has become the annual international venue for the professional embedded developer community - with more than 1,100 exhibitors and more than 32,000 visitors.

You are invited to present future-oriented technologies and solutions, new ideas and smart concepts for efficient development and life cycle processes. Use your presentation to initiate fruitful discussions and to help other engineers and managers to benefit from your experience.

Present a technical paper, describe practical insights in a hands-on workshop, outline your experience from implementation projects or present prototypes and application examples. Talks should be substantive, insightful and educational. Of course, submissions promoting commercial technologies and products will not be accepted. Application-related contributions from research and pre-development are welcome to enrich the program.

In addition to the presentation slots in the technical session, we also invite you as a Lecturer of a "class" for either half a day or a full day. “Class” topics are dealt with in depth and interactively with the participants.

Please submit your proposal using the following link www.embedded-world.eu. Here you will also find more detailed information. The Program Committee looks forward to receiving your submission by 30th August 2019.

Prof. Dr. Axel Sikora
Conference Chairman

Topics of interest include, but are not limited to:

1. Internet of Things – Platforms & Applications	1.1 Application Protocols & Profiles, e.g. OPC UA, MQTT, LWM2M, CANopen, …
	1.2 Edge/Fog/Cloud Computing
	1.3 Cloud Services & Solutions
	1.4 Industry 4.0 - Technologies & Services
	1.5 Embedded Internet Technologies & Web Services
	1.6 Software Platforms for IoT
2. Connected Systems	2.1 Wired Technologies
	2.2 Wireless Technologies
	2.3 M2M Communications
	2.4 Low Power Wide Area Networks (LPWAN)
	2.5 Cellular Communication & 5G
	2.6 Connectivity, e.g. for Industry 4.0, Automotive, …
3. Embedded OS	3.1 RTOS
	3.2 AutoSAR & Adaptive AutoSAR
	3.3 Embedded Linux
	3.4 Android
	3.5 Virtualization and Separation
	3.6 Safety OS
	3.7 Multi-Core OS
	3.8 Field Updates, e.g. OTA
4. Safety & Security	4.1 Functional Safety: Architectures
	4.2 Functional Safety: Application of Standards
	4.3 Security: Architectures
	4.4 Security: Application of Standards
	4.5 Cryptography in Software & Hardware
	4.6 Long-Term Security & Post-Quantum Cryptography
	4.7 Securing Embedded Communication
	4.8 Securing Embedded Devices
	4.9 Blockchain Technologies
	4.10 Trusted Computing
	4.11 Hacking
5. Hardware Engineering	5.1 Single-Core Microcontrollers
	5.2 Multi-Core Microcontrollers
	5.3 Memory Trends, Technologies and Design (ICs & IPs)
	5.4 Sensors & Actuators
	5.5 High Performance PCB Design
	5.6 Flexible, Hybrid & Printed Electronics
	5.7 Hardware Prototyping
	5.8 Packaging
	5.9 Power Supply & Energy Management
	5.10 Wireless Power Supply
	5.11 Power over Ethernet, over RS232, over…
	5.12 Design for Low Power & Ultra Low Power
	5.13 Free and Open Hardware on IP- and IC-Level (RISC-V, MIPS, ...)
	5.14 Free and Open Hardware on System Level (RaspBi, Arduino, ...)

6. Software & Systems Engineering	6.1 Programing Languages & Standards
	6.2 Coding Standards (e.g. MISRA)
	6.3 Development Processes & Methods
	6.4 Agile Development
	6.5 Requirements Engineering
	6.6 Design & Modeling
	6.7 Domain Specific Languages & Technologies, e.g. EMF
	6.8 HIL, SIL, MIL, Virtual Integration
	6.9 Verification & Validation
	6.10 Static Design & Code Analysis
	6.11 Debugging Techniques
	6.12 Software & System Quailty
	6.13 High Performance Embedded Architectures
	6.14 Parallelization of Algorithms
7. Embedded Vision	7.1 Application Case Studies & Business Cases for Embedded Vision
	7.2 Hardware Components & System Integration for Embedded Vision
	7.3 Software Tools (incl. AI) & Toolchains for Embedded Vision
	7.4 IoT Connection & Cloud for Embedded Vision
	7.5 Standardisation (e.g. Camera Interfaces)
	7.6 Migration Paths from PC to Embedded Vision
8. Autonomous & Intelligent Systems	8.1 Sensor Systems & Integration
	8.2 Sensor Fusion
	8.3 Embedded Data Analytics
	8.4 Machine Learning & Deep Learning
	8.5 Artificial Intelligence
	8.6 Algorithmics (Sensor Fusion)
	8.7 ICs for Deep Learning
	8.8 Qualification of AI Systems
	8.9 AI in Safety Relevant Applications
9. Embedded Graphics & HMI	9.1 Usability & HMI Design
	9.2 Embedded Graphics & HMI Development
	9.3 Embedded HMI Test & Test Automation
	9.4 Graphic Software Libraries
	9.5 Augmented Reality
	9.6 Graphics Accelerators
10. System-on-Chip (SoC) Design & Development	10.1 Emerging Complex ICs & System Solutions
	10.2 IP Core Design & Integration
	10.3 FPGA & ASIC Design
	10.4 Digital Design, Architectures & Systems
	10.5 On-Chip Memory Trends & Technologies
	10.6 Data & Signal Converters
	10.7 Analog, RF & Mixed-Signal Circuits & Systems
	10.8 Foundry Technologies & Design Solutions
	10.9 Wearable, Implantable & Biomedical SoCs
	10.10 Novel Semiconductor Technologies & Design Challenges
	10.11 EDA Tools & Solutions for Leading-Edge SoCs
	10.12 SoC Design Validation, Verification & Testability

Slides:
Presentation slides will be distributed to the registered audience after the event.

Proceedings of embedded world Conference:
Also, full papers of accepted contributions to the embedded world Conference will be published in a dedicated volume of conference proceedings, with full ISBN registration, page numbers, and the possibility of subsequent download. The volumes of the earlier years are available at.

Novel Ideas:
The above list represents just a selection of the topics covered. You are very welcome to submit further interesting suggestions related to the respective topic.

Language:
The conference language is English. All submissions must therefore be in English.

No Promotion:
Promotional or marketing-oriented presentations or pure product descriptions will not be accepted.

Originality:
Submissions to embedded world Conference 2020 should not have been published previously in a journal or conference proceedings, nor presented at another conference, nor currently under review or consideration for publication or presentation elsewhere.

Presenters:
Talks should be presented by speakers who have strong public speaking skills and subject matter expertise.

Important Deadlines:

- Abstract Submission: **August 30, 2019**
- Notification of Authors: **October 30, 2019**
- Final Paper (ISBN): **January 17, 2020**
- Final Presentation: **January 31, 2020**

Please find more details about the Call for Papers at: **www.embedded-world.eu**

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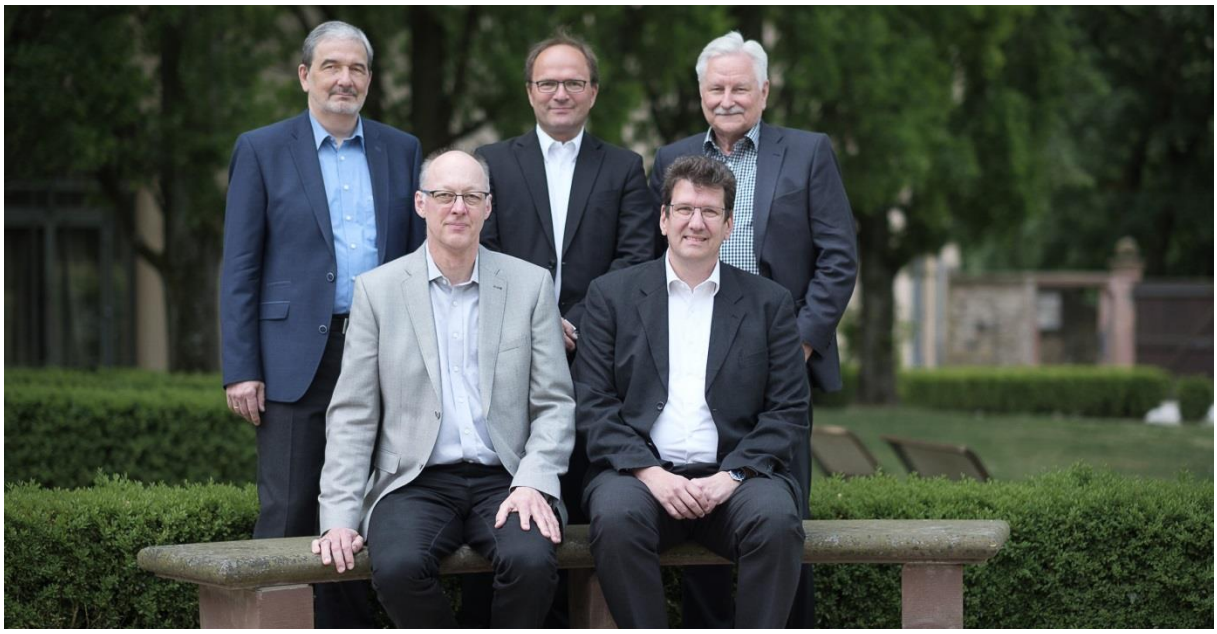
embedded world Conference is organized by DESIGN&ELEKTRONIK, the leading German speaking magazine for embedded developers

STEERING BOARD 2020:

The steering board is the strategic think tank behind the embedded world Conference. Currently five senior engineers with excellent scientific and business records, with open minds and lots of ideas, shape the future direction of the embedded world Conference.



Dr. Bernd Hense, Joachim Kroll, Prof. Dr. Axel Sikora, Prof. Dr. Peter Fromm, Dr. Klaus Grimm (from left to right)

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