Nuremberg, Germany
10.–12.3.2026

# embeddedworld
Exhibition&Conference

Organized by Elektronik

## CONFERENCE PROGRAM

### Tuesday, 10 March

| | | | | |
|---|---|---|---|---|
| 9:30-13:00 | **Class 2.1**<br>**Faster. Smarter. Firmware. Modern Best Practices for Better Embedded Systems**<br>Jacob Beningo,<br>Beningo Embedded Group | **Class 2.2**<br>**Hands-On Zephyr Project Workshop**<br>Jonas Remmert,<br>SMIGHT | **Class 4.1**<br>**Soft Logic, Hard Math: Building a RISC-V FPU With IEEE 754 Support on FPGAs**<br>Mark Honman,<br>Altera | **Class 7.1**<br>**Introduction to tinyML – Deploying Deep Learning Models Onto Low-power Micro-Controllers**<br>Prof. Daniel Müller-Gritschneder,<br>TU Wien |
| 14:00-17:00 | **Class 4.2**<br>**Safeguarding Industrial Interfaces: Reliable Protection Against Transient Overvoltage**<br>Dr. Heinz Zenkner,<br>Würth Elektronik eiSos | **Class 5.1**<br>**Rust, a Safe Language for Low-level Programming**<br>Prof. Dr. Stefan Wehr,<br>Hochschule Offenburg | **Class 5.2**<br>**GitLab for Embedded DevOps: Integrated AI for Both DevSecOps Adoption and Product Delivery**<br>Darwin Sanoy,<br>GitLab | **Class 7.2**<br>**Edge AI: Evolution and Hands-on**<br>Danilo Pietro Pau,<br>STMicroelectronics |

### Wednesday, 11 March

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|---|---|---|---|---|
| 9:30-13:00 | **Class 3.1**<br>**CRA Regulations and Certification**<br>Joe Lomako,<br>TÜV SÜD | **Class 5.3**<br>**Programming With Rust for C/C++ Programmers**<br>Prof. Dr. Dieter Nazareth,<br>Landshut University of Applied Sciences | **Class 5.4**<br>**C++ and Modern C++ for Embedded Development**<br>Dr. Carmelo Loiacono,<br>Green Hills Software | **Class 7.3**<br>**From Vision to Deployment: Developing Secure AI-Enabled Linux Devices**<br>Raul Muñoz,<br>Foundries.io |
| 14:00-17:00 | **Class 2.3**<br>**Embedded GNU/Linux in Mid-integrity/Mixed-criticality Safety-related Systems**<br>Prof. Nicholas Mc Guire<br>Open Source Automation Development Lab (OSADL) eG | **Class 2.4**<br>**Embedded Linux Security Exercised on the Secure Platform GyroidOS**<br>Dr. Michael Weiß, et al.,<br>Fraunhofer AISEC | **Class 3.2**<br>**Cyber Resilience Act (CRA) – Practical Implementation Examples**<br>Stefan Grohmann,<br>Hitex | **Class 3.3**<br>**Embedded Safety Architectures**<br>Alessandro Bastoni<br>STMicroelectronics |

### Thursday, 12 March

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|---|---|---|---|---|
| 9:30-16:30 | **Class 2.5**<br>**Introduction to Embedded Linux Using a Yocto Project SDK**<br>Robert Berger,<br>Reliable Embedded Systems | **Class 4.3**<br>**FPGA-Design Using C/C++ and High-Level Synthesis**<br>Prof. Dr. Frank Kesel,<br>Hochschule Pforzheim | **Class 4.4**<br>**Designing Battery-free IoT**<br>Herman Roebbers,<br>Capgemini Engineering | **Class 5.5**<br>**Embedded Software Testing – With Fundamental Skills and Artificial Intelligence**<br>Dr. Stephan Grünfelder,<br>Stephan Grünfelder |

**Classes:**
In the embedded world Classes, reputed experts speak on special topics for half a day or a full day. This format is aimed primarily at participants who want to familiarize themselves thoroughly and efficiently with a specific topic.

**Be sure to register now!**

# Tuesday, 10 March
## Conference Program

embeddedworld Exhibition&Conference

| | 1. IOT & CONNECTIVITY | | 2. EMBEDDED OS | 3. SAFETY & SECURITY |
|---|---|---|---|---|
| 10:00-10:15 | **Words of Welcome**<br>Prof. Dr. Axel Sikora, Offenburg University | | | |
| 10:15-10:45 | **Conference Keynote: Learning from the Octopus: Nature's Blueprint for Intelligence Everywhere**<br>Rich Simoncic, Microchip Technology | | | |
| | **1.1: Ambient IoT** (Ambient IoT Alliance) | **1.4: WiFi and Long-Range** | **2.1: Long-Term Stability with Yocto** (yocto PROJECT) | **3.1: Implementing the Cyber Resilience Act (CRA)** |
| 11:00-11:30 | **The Ambient IoT Alliance: Mission, Vision, and the Path to Pervasive Connectivity**<br>Stephen Statler,<br>Ambient IoT Alliance | **Wi-Fi HaLow The Future of Long-Range Connectivity is Here!**<br>Boliang Xu,<br>Vantron Technology | **Linux Kernel Hardening With the Yocto Project**<br>Michael Opdenacker,<br>Root Commit | **Unlocking Cyber Resilience: What the CRA Means for Embedded Systems and Your Business**<br>Andrés Muñoz,<br>Microchip Technology |
| 11:30-12:00 | **Ambient IoT in Action**<br>Simon Ford,<br>Blecon Ltd | **Wi-Fi 8: A Deep Dive into IEEE802.11bn for Ultra-High Reliability**<br>Joerg Koepp,<br>Rohde & Schwarz | **Beyond the Release: Managing Long-Term Risk and Compliance in Embedded Linux with Yocto**<br>Anna-Lena Marx,<br>inovex | **Cyber Resilienc Act and Open Source Software Companies. A Practical Guide**<br>Davide Ricci,<br>Linaro |
| 12:00-12:30 | **Security and Privacy for Ambient IoT: Challenges and Options**<br>Steve Hanna,<br>Infineon Technologies | **Long-range Low-power Communications: Advancements in LoRa, WM-Bus, mioty, and NB-IoT**<br>Victor Royant,<br>STMicroelectronics | **Linux Kernel Upgrades in Yocto: Strategy, Constraints, and Vendor Support**<br>Enrico Bragante,<br>Witekio | **CRA Risk Assessment and Scoring for Non-IP Embedded Communication Systems**<br>Olaf Pfeiffer,<br>Embedded Systems Academy |
| 12:30-12:45 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| | Lunch Break & Networking | | | |
| | **1.2: IoT Ecosystem Technologies 1** | **1.5: CAN Technologies** (CiA) | **2.2: Yocto Use Cases** (yocto PROJECT) | **3.2: Post Quantum Cryptography Strategies** |
| 13:45-14:15 | **Scaling Edge AI for the IoT Era: From Fragmented Devices to an Intelligent, Connected Edge**<br>Yaron Galitzky,<br>Ceva | **CAN XL & FD are Ready for the SDV**<br>Dr. Arthur Mutter<br>Robert Bosch | **TPM-Based Disk Encryption on Raspberry Pi with Yocto**<br>Josef Holzmayr,<br>Northern.tech Inc. (Mender.io) | **Post-Quantum Cryptography in Embedded Systems: Migration Strategies for 2030 Readiness**<br>Dr. Joost Renes,<br>NXP Semiconductors |
| 14:15-14:45 | **Securing Device Credential Provisioning: Matter and the Wider IoT Ecosystem**<br>Dr. Xin Qiu,<br>CommScope | **Tunneling and mapping of CAN-based communication via Ethernet and Bluetooth**<br>Dr. Martin Merkel<br>CAN in Automation (CiA) | **Maintaining ROS on Yocto: A Survival Guide for Embedded Open Source Integrators**<br>Rob Woolley,<br>Wind River | **How to Upgrade to Long Term Security with Post Quantum Cryptography**<br>Oliver Winzenried,<br>WIBU-SYSTEMS |
| 14:45-15:15 | **Zigbee 4.0: Connecting Devices Safely, with Low Power Efficiency Across Generations**<br>Faisal Bhaiyat,<br>Silicon Labs | **From Classical CAN to CAN FD, What is the Impact on the Physical Layer?**<br>Magnus Hell,<br>Infineon Technologies | **Modern Yocto Linux Best Practices: Evolving Beyond the Basics**<br>Margarita Manterola Rivero,<br>Igalia | **Detecting Cryptographic Algorithms for Quantum-Ready Embedded Systems**<br>Matias D'aloia,<br>Scan Open Source Solutions |
| 15:15-15:30 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| | Coffee Break & Networking | | | |
| | **1.3: IoT Ecosystem Technologies 2** | **1.6: CAN Safety & Security** (CiA) | **2.3: RTOS Orchestration** | **3.3: Long-Term & Post Quantum Security** |
| 16:00-16:30 | **Hybrid IoT Connectivity Solutions for Smart Homes and Smart Factories**<br>Andrés Muñoz,<br>Microchip Technology | **Functional Safety in CAN XL**<br>Dr. Thomas Cwienk,<br>DCD-SEMI | **Choosing the Right Software Foundation: Bare-Metal, RTOS, or Embedded Linux**<br>Pierre Lecomte,<br>Witekio | **Secure Bootloader Signing Workflow for Arm-Based Embedded Systems: Enabling Compliance and Integrity**<br>Dr. Xin Qiu,<br>CommScope |
| 16:30-17:00 | **Multiprotocol Connectivity in Smart Homes: Enhancing Interoperability and User Experience**<br>Devanjan Sikdar,<br>Silicon Labs | **Enhancing Functional Safety & Security Aspects of CAN XL in Automotive Systems**<br>Dr. Nikos Zervas,<br>Computer Aided Software Technologies Inc. (CAST) | **Real-Time Meets Cloud: Orchestrating RTOS and Linux with Kubernetes**<br>Andrei Kholodnyi,<br>Wind River | **Secure Boot and Firmware Signing – The Best Use-cases to Get Started with Post-Quantum Cryptography**<br>Guillaume Crinon,<br>Keyfactor |
| 17:00-17:30 | **Ambient IoT at µW Budgets: A 2026 Update Across 3GPP, IEEE 802.11, and Bluetooth LE**<br>Rakesh Taori,<br>Infineon Technologies | **Overview of Emerging CAN Security Standards in the Context of CRA and IEC 62443**<br>Christian Keydel,<br>Embedded Systems Academy | **Beyond Cyclictest: a Unified Benchmark Framework for POSIX Compliant RTOS on ARM Processor**<br>Lei Zhou,<br>Linaro | **Trusted Resilience Edge: Unified FPGA-TPM for Post-Quantum Cryptography RED & Cyber Resilience Act**<br>Eric Sivertson,<br>Lattice Semiconductor |
| 17:30-17:45 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |

**Register online:**

| 3. SAFETY & SECURITY | 4. HARDWARE DESIGN | 5. SOFTWARE & SYSTEMS ENGINEERING | | 6. EMBEDDED VISION |
|---|---|---|---|---|
| **Words of Welcome**<br>Prof. Dr. Axel Sikora, Offenburg University | | | | |
| **Conference Keynote: Learning from the Octopus: Nature's Blueprint for Intelligence Everywhere**<br>Rich Simoncic, Microchip Technology | | | | |
| **3.4: Open Source for Safety & Security 1** | **4.1: Chiplets in Automotive Applications** UCIe | **5.1: Programming Languages: Rust** | **5.4: Software Architectures** ECLIPSE FOUNDATION | **6.1: Concepts and Standards** |
| **Open Functional Safety: Safety-Qualified Lifecycle with Sphinx**<br>Christopher Zimmer, innotec | **Chiplets: A Game-Changer for Advanced Automotive Computing**<br>Dr. Ericles Sousa, Cadence Design Systems / UCIe AWG | **From C to Rust: Modernizing Firmware Development for Resource-Constrained Embedded Devices**<br>Jürgen Fitschen, SSV Software Systems | **From Embedded Systems to Embedded Intelligence: Architectural Patterns for Autonomous Industrial Operations**<br>Afshin Asli, Synaptrix Technologies | **How to Run Smart-Phone AI Models on a Microcontroller in Real-time With MicroPython**<br>Kwabena Agyeman, OpenMV |
| **Approaches on Assessing Safe Usage of Linux**<br>Kate Stewart, Linux Foundation | **Enabling Chiplet-Based Solutions for Autonomous Driving Systems**<br>Gil Golov, Socionext Europe | **Reliable Real-time with Rust Using the Example of Automation Technology**<br>Marc Fischer, Universität Stuttgart | **Building a Safety-Certifiable Open Middleware for POSIX-Based Automotive Platforms**<br>Philipp Ahmann, ETAS (BOSCH) | **Take Back Control of Your Cameras with libcamera**<br>Laurent Pinchart, Ideas on Board |
| **Leveraging Open Source for IEC 62443-Compliant Embedded Systems**<br>Dr. Florian Kauer, Linutronix | **High-level Modelling Methodology to Evaluate Automotive Chiplet Archetypes**<br>Dr. Diksha Moolchandani, imec | **Understanding the Rust Borrow Checker**<br>Leonardo Held, Toradex | **A Complete Open-Source, Functionally Safe Software Stack for the Software Defined Vehicle**<br>Dr. Oliver Pajonk, Elektrobit Automotive | **Kamaros – Advancing an Open Camera API Architecture for Embedded Vision**<br>Harri Kaimio, NVIDIA |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| Lunch Break & Networking | | | | |
| **3.5: Open Source for Safety & Security 2** | **4.2: Chiplets – Certification, Validation & Test** UCIe | **5.2: Programming Languages** | **5.5: Development Processes for SW-Defined Vehicles (SDV)** | **6.2: Hardware Acceleration** |
| **Open Source for Safety-Critical Systems: A Landscape Exploration**<br>Philipp Ahmann, ETAS (BOSCH) | **Building Trust and Transparency Across the Chiplet Ecosystem: A Standardized Security Framework**<br>Prof. Dr. Sylvain Guilley, Secure-IC | **Rust Guidelines and Standards – A State of the Feld Report**<br>Alex Celeste, Perforce Software | **SDV Applications for Automotive ECUs: Achieving Cybersecurity and Functional Safety Compliance Through a Holistic Software Product Lifecycle Management**<br>Dr. Ahmed Majeed Khan, SystemWeaver | **CPU and Co-Processor Paradigms for Edge AI Inference: Implications for NPU Design**<br>Omar Lone, Züricher Hochschule für Angewandte Wissenschaften (ZHAW) |
| **Owning the Stack: Open-Source Device Management Without SaaS Lock-In**<br>Julien Vermillard, Clunky Machines | **Analyzing Fault Propagation and Coverage in Chiplet-Based SoCs with Improved Colored Petri Nets**<br>Ernesto Cristopher Villegas Castillo, Cadence Design Systems | **Architecture-Aware C/C++ to Rust Migrations**<br>Dr. Daniel Simon, The Qt Company | **A Performance Comparison Study of Embedded Hypervisors for Software-Defined Vehicles Developed in Rust and C/C++: Focusing on ARM-based MCU SoCs**<br>Dr. Sang-Bum Suh, Perseus Co. | **FPGA + GPU: A Hybrid Vision for Embedded AI**<br>Dr. Tony Albrecht, hema electronic |
| **AI for Managing Embedded Linux Vulnerabilities: Too Good to Be True?**<br>Dr. Julien Bernet, The Embedded Kit | **Wafer-Level Test Concept for the UCIe Interface**<br>Alexander Persicke, Racyics | **Fuzion – A Language Designed for Safety-Critical Embedded Systems**<br>Dr. Fridtjof Siebert, Tokiwa Software | **From Open Source to Automotive-Grade: Distributing Eclipse S-CORE for Safety-Critical and Real-Time Embedded Systems**<br>Lars Bauhofer, Qorix | **Adaptive Multispectral Imaging with Onboard AI Based on a Reconfigurable FPGA Architecture**<br>Filip Novoselnik, Protostar Labs |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| Coffee Break & Networking | | | | |
| **3.6: Trusted Artificial Intelligence** | **4.3: MIPI Interfaces** mipi alliance | **5.3: MISRA SW-Coding Guidelines** MISRA | **5.6: Open Source Software** | **6.3: Pipelines** edge ai + vision ALLIANCE |
| **Integrating Edge AI in Safety-Critical Embedded Systems – Safety Still Ensured?**<br>Eranyan Ravanan, Hitex GmbH | **MIPI I3C Serial Bus: Latest Features and Market Applications**<br>Michele Scarlatella, MIPI Alliance | **MISRA – A Year in Review, and a Look Ahead**<br>Andrew Banks, LDRA | **Understanding Open Source License Compliance in an OTA Situation**<br>Josef Holzmayr, Northern.tech Inc. (Mender.io) | **Synchronized Vision Pipelines for Efficient Multi-Camera Perception**<br>Florian Netter, Advanced Micro Devices (AMD) |
| **From Secure DFT to Lifecycle Security: Enabling SLM in Complex AI/HPC SoCs**<br>Dr. Shahram Mossayebi, Crypto Quantique | **Turning Up the Volume: How SoundWire I3S Transforms Embedded Audio**<br>Ettore Antonino Giliberti, SmartDV | **MISRA C:2023 & MISRA C++:2023: So Close Yet So Different**<br>Loïc Joly, SonarSource | **Open Source Hardware-in-the-Loop Testing**<br>Detlef Vollmann, vollmann engineering | **Efficient Image Registration Methodology for Depth and RGB Camera**<br>Sagar Dhatrak, eInfochips - an Arrow Company |
| **AI-Powered Intrusion Detection at the Edge: Hardware Anchors for Software Resilience**<br>Prof. Dr. Sylvain Guilley, Secure-IC | **Wired for Intelligence: SWI3S The New Sensor Interface for Ambient AI**<br>Manuela Heiss, Infineon Technologies | **High-Quality Code Meets Industry Standards: Linux and MISRA in Perspective**<br>Prof. Dr. Roberto Bagnara, BUGSENG / University of Parma | **Free But Not Cheap: The Journey of Productizing Open Networking Software**<br>Bruno Banelli, Sartura | **Power-Efficient AI at the Edge: Real-World Gains With Model Sparsity**<br>Yaron Raz, Microchip Technology |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |

# Wednesday, 11 March
## Conference Program

embeddedworld Exhibition&Conference

| | 1. IOT & CONNECTIVITY | | 2. EMBEDDED OS | 3. SAFETY & SECURITY |
|---|---|---|---|---|
| | **1.7: Ethernet Time-Sensitive Networking (TSN)** | **1.10: Cellular – Emerging Technologies** | **2.4: Zephyr – Best Practice** | **3.7: Reliable Architectures** |
| 10:00-10:30 | **Maintaining Time Synchronization in High Network Traffic Applications**<br>Schuyler Patton,<br>Texas Instruments | **The Cellular Revolution: Trends, Security, and Emerging Capabilities**<br>Hans Andersson,<br>ACAL BFi Germany | **Zephyr: 10 Years After Launch**<br>Kate Stewart,<br>Linux Foundation | **What is the Future of Using Standard Complex Semiconductors in Safety Applications?**<br>Alessandro Bastoni,<br>STMicroelectronics |
| 10:30-11:00 | **Harnessing Linux Timekeeping for Multi-Domain Precision Time Protocol in Time-Sensitive Networking**<br>Weifeng Voon,<br>Intel | **Sky-High RAN: Bridging Terrestrial to Satellite in 5G/6G with FPGAs**<br>Dr. Hossam Fattah,<br>Lattice Semiconductor | **How to Migrate from FreeRTOS to Zephyr RTOS**<br>Jacob Beningo,<br>Beningo Embedded Group | **Most Automotive MPU Strategies Have Hidden Safety Flaws, Is Yours One of Them?**<br>Kevin Brand,<br>Synopsys |
| 11:00-11:30 | **Hard-Earned Wisdom from TSN Interop Events: Lessons You Can't Afford to Miss**<br>Ionel Ghita,<br>Keysight Technologies | **Voice Over NB-IoT NTN – Is it Viable?**<br>Richard Carter,<br>Communications Consultants WorldWide | **Practical Zephyr: Boosting Your Embedded Workflow**<br>Benjamin Cabé,<br>The Zephyr Project | **The Challenge of Sharing: Building Safe Mixed-Criticality Systems**<br>Ofra Bechor,<br>Green Hills Software |
| 11:30-11:45 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| | Lunch Break & Networking | | | |
| | **1.8: Single-Pair Ethernet** Single Pair Ethernet System Alliance | **1.11: Cellular – 5G** | **2.5: Zephyr in Safety-Critical Applications** | **3.8: Reliable Code / Safe Rust** |
| 12:45-13:15 | **Extending Ethernet to the Industrial Edge: Practical Insights into 10BASE-T1L and PoDL Deployment**<br>Nina Lai,<br>Netio Technologies Co. | **Securing the Next Wave of Connectivity: 5G Cybersecurity Challenges and Solutions for Embedded IoT Systems**<br>Simon Mullenger,<br>Telit Cinterion | **Zephyr's Roadmap to a Pre-Certified Kernel for Safety-Critical Systems**<br>Dr. Tobias Kästner,<br>inovex | **How To Use Formal Methods To Detect Runtime Faults in Mixed C, C++ & Rust Codebases**<br>Steve Barriault,<br>TrustInSoft |
| 13:15-13:45 | **Increasing Fault Tolerance of 10BASE-T1S Multidrop Networks with PLCA Coordinator Redundancy**<br>Arndt Schübel,<br>onsemi | **MicroTCA Next Gen: A New Backbone for High-Performance Embedded Systems**<br>Brandon Lewis,<br>Samtec | **Turning the Ignition on Safety: Zephyr RTOS in Automotive Compliance**<br>Saravanan Sekar,<br>Linumiz | **Addressing Functional Safety with Rust**<br>Jill Britton,<br>Perforce |
| 13:45-14:15 | **Classic Connection Technology Meets Modern Data Transmission – PCB Terminal Blocks Enable Single Pair Ethernet (SPE)**<br>Andy Schäfer,<br>Phoenix Contact | **Open, Agile, Intelligent: The Future of 5G with AI and ORAN**<br>Dr. Hossam Fattah,<br>Lattice Semiconductor | **Industrializing Zephyr for Safety-Critical Products: A Four-Pillar CI Playbook**<br>Prof. Dr. Roberto Bagnara,<br>BUGSENG / University of Parma | **Rust on the Road: Navigating Challenges and Opportunities in Automotive**<br>Sjoerd van der Zwaan,<br>Solid Sands |
| 14:15-14:30 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| | Coffee Break & Networking | | | |
| | **1.9: Applying Ethernet Technologies** | **1.12: Cellular – eSIM** | **2.6: Zephyr Use Cases** | **3.9: Reliability Testing** |
| 15:00-15:30 | **Simplifying Multi-Protocol Industrial Ethernet: One Design, Every Protocol**<br>Thomas Mauer,<br>Texas Instruments Deutschland | **Realising the Transformative Potential of eSIM for the IoT**<br>Stéphane Jacquelin,<br>IDEMIA | **Zephyr Squared: Zephyr and Linux ‚Side by Side' on the Same Device**<br>Hugh Breslin,<br>Microchip Technology | **Safety and Security by Design Through Formal Methods**<br>Mark Hermeling,<br>AdaCore |
| 15:30-16:00 | **Debugging a System of Microcontrollers over Ethernet**<br>Dr. Albrecht Mayer,<br>Infineon Technologies | **How SGP.32 eSIM Accelerates Secure Supply Chain Digitalization**<br>Stéphane Jacquelin,<br>IDEMIA | **The RTOS Puzzle: How Far Can We Go in Vulnerability Management? A Zephyr Case Study**<br>Pierre Gal,<br>The Embedded Kit | **Sound Static Application Security Testing**<br>Dr. Daniel Kästner,<br>AbsInt Angewandte Informatik |
| 16:00-16:30 | **Leveraging High-speed Ethernet for Scalable Audio in Automotive Zonal Control Systems**<br>Dr. Giuseppe Di Giore,<br>STMicroelectronics | **How eSIM is Evolving into a Multi-Application Secure Platform**<br>Gil Bernabeu,<br>GlobalPlatform | **How Zephyr Delivers Low Power**<br>Dr. Ayoub Bourjilat,<br>AC6 | **Hyper Coverage with Integration Testing: How Can I Get Half of My Test Cases for Free?**<br>Dr. Alexander Weiss,<br>Accemic Technologies |
| 16:30-16:45 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |

**Register online:**

| 4. HARDWARE DESIGN | 5. SOFTWARE & SYSTEMS ENGINEERING | 6. EMBEDDED VISION | 7. EDGE AI | 8. USE CASES FOR EMBEDDED |
|---|---|---|---|---|
| **4.4: System on Chip Design Process** | **5.7: Testing Embedded Software** | **6.4: Emerging Embedded Vision & Audio Technologies** | **7.1: Lightweight Embedded AI** | **8.1: Medical Applications** |
| **Bridging the Virtual and Physical Divide: A Comparative Methodology for Validating Complex SoCs**<br>Prashant Yadav,<br>The Judge Group | **Unit Testing for Embedded Development: From Real Silicon to Emulated Environments**<br>Ilia Motornyi,<br>JetBrains | **Extreme Low-bit Quantization for Real-world Edge AI**<br>Daniel Chang,<br>ENERZAi | **Tiny Foundation Models: Exploring Scalable Pretrained Architectures for Embedded AI**<br>Nitish Kumar,<br>The Judge Group | **Sustaining Medical Devices: The Long-Term Support Imperative**<br>Pierre Lecomte,<br>Witekio |
| **Evaluating Tiled Convolution Designs on SoC-FPGA with Unified HW/SW Performance Metrics**<br>Prof. Dr. Guy Bois,<br>Polytechnique Montreal | **Agile Testing for Microcontroller Projects – What are Realistic Objectives?**<br>Daniel Penning,<br>embeff | **Unlock Real-Time Visual Intelligence with Generative AI at the Edge**<br>Wilfried Rakow,<br>NVIDIA | **Lightweight and Secure MCP for Embedded AI: Bringing Agent Protocols to the Edge**<br>Jürgen Belz,<br>PROMETO | **Confronting the Connectivity Challenge in Endoscopic and Robotic Surgeries**<br>Effi Goldstein,<br>Valens Semiconductor |
| **Design of Domain Specific Accelerators with High-Level Synthesis**<br>Prof. Russell Klein,<br>Siemens EDA | **Did We Test the Right Things? Prevent Production Defects with Test Gap Analysis**<br>Jonas Bogenberger,<br>CQSE | **From Foundation to Factory: Adapting Foundational Vision Encoders to Custom OCR at the Edge**<br>Alex Avery, D3 Embedded | **Generate Plain C/C++/CUDA Code from TensorFlow and PyTorch Models Using MLIR**<br>Christoph Stockhammer,<br>The MathWorks | **Design Review of Embedded Medical Sensor & Camera Platform with Emphasis on Medical EMC Solutions**<br>Ozan Günaydin, Brainlab/Snke OS |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| Lunch Break & Networking | | | | |
| **4.5: System Hardware – Design Examples** | **5.8: Trustable Embedded Software** | **6.5: EV Use Cases** | **7.2: Neuromorphic Computing** | **8.2: Predictive Maintenance Applications** |
| **Deterministic Software Co-Design of RL-Tuned iLQR Controllers on Embedded SoC Systems**<br>Marco Torelli, TXT e-tech | **Eclipse Trustable Software Framework: A New Industry Standard for Embedded Systems**<br>John Ellis, Codethink | **Extending HDR Capabilities in Smart Vision Systems via Multi-Exposure Fusion and Adaptive Tone Mapping**<br>Dr. Alex Lopich,<br>Altera | **Neuromorphic Deployments Made Easy: from Datasets to Applications**<br>Dr. Petrut Antoniu Bogdan,<br>Innatera Nanosystems | **Modernizing Railway Brake Diagnostics: A Raspberry Pi DAQ Approach**<br>Prof. Dr. Georgi Nikolov,<br>Darmstadt University of Applied Sciences |
| **Designing Smart Displays with STM32 MCUs: Usecases from Industrial, Automotive, and Medical Applications**<br>Sakshi Madaan, Anders Electronics | **AI-Generated Code for Critical Systems: Can We Trust It?**<br>Miroslaw Zielinski,<br>Parasoft | **Enhancing Industrial Visual Inspection with Expert-guided, Feedback-driven AI**<br>Lena Heidemann,<br>Fraunhofer IKS | **Going Beyond the von Neumann Wall: In-Memory and Neuromorphic Computing for Efficient Embedded AI**<br>Sebastian Karl, Fraunhofer IIS, Fraunhofer Institut für Integrierte Schaltungen | **Motor Predictive Maintenance Using Edge AI**<br>Dr. Han Zhang,<br>Texas Instruments |
| **Benefits of Embedded Mixed Signal IC Solutions for Type-C Rapid Battery Charger Applications**<br>Dr. Robert Vartanian,<br>Infineon Technologies | **Safely and Securely Combining Trusted Rust Code with Untrusted Software**<br>Andre Schmitz,<br>Green Hills Software | **Isolated Camera Serial Interface Integration with GMSL for High-Reliability Imaging Systems**<br>Prasanthi Yerra,<br>Analog Devices | **New Semiconductor Platform for Neuromorphic Computing and Gen 3.0 In-Memory Edge AI Applications - The Embedded TiF-Memristor-Xbar**<br>Prof. Dr. Heidemarie Krüger,<br>TECHiFAB | **Vibration Monitoring: Integrating Precision Sensing with Edge AI Processing**<br>Dr. Lisa Trollo,<br>STMicroelectronics |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| Coffee Break & Networking | | | | |
| **4.6: Architectural Design** | **5.9: Formal Verification** | **6.6: Radar and Artificial Intelligence** | **7.3: Qualification and Validation** | **8.3: Mobility Applications** |
| **Minimizing Power in Clock Domain Crossing: Architectural Innovations for SoC Design**<br>Aradhana Kumari,<br>STMicroelectronics | **Formal Verification in Practice: Experiences from Embedded Software Projects**<br>Markus Krahl, Munich University of Applied Sciences HM | **Applying Artificial Intelligence in Radar Sensing Applications**<br>Kottyn Quintanilla,<br>Texas Instruments | **Qualification of AI/ML Systems and Interfacing Devices**<br>Steve DiCamillo,<br>LDRA | **Bringing Native Maps and Navigation to Resource-Constrained MCUs**<br>Sumitabh Ghosh,<br>Qt Group |
| **MIPI A-PHY as an Enabler for Remote Multi-Head "Smart Camera" Architecture**<br>Jonathan Regalado-Hawkey,<br>Valens Semiconductor | **Usage of Formal Methods in Embedded Software Development to Automate Test Case Generation Based on Model Coverage Gaps**<br>Vincent Rossignol,<br>Ansys, part of Synopsys | **Radar Development Essentials: Overcoming Complexity with the Right Tools**<br>Katsuhiro Atsumi,<br>NXP Semiconductors Germany | **Implementing ISO/PAS 8800: 2024 to Assure Safety and Enable Deployment of AI in Embedded Systems**<br>Ricardo Camacho.<br>Parasoft | **Enhancing Steering Wheel Safety Through AI-Based Signal Correction**<br>Jasmin Frick,<br>invenio |
| **AI-Driven NoC Topology Optimization for Large-Scale SoC Designs**<br>André Bonnardot,<br>Arteris | **Making Software Formal Verification Methods A Viable Technique In An Industrial Setting**<br>Steve Barriault, TrustInSoft | **Imaging Radars for Physical AI**<br>Dr. Gor Hakobyan,<br>Waveye | **From Cloud to Edge: Digital Twin Frameworks for Real-Time Autonomous System Validation**<br>Nitish Kumar,<br>The Judge Group | **Radar and Lidar Fusion for Enhanced Perception in Urban Air Mobility**<br>Marco Roggero,<br>The MathWorks |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |

# Thursday, 12 March
## Conference Program

embeddedworld Exhibition&Conference

| | 1. IOT & CONNECTIVITY | 2. EMBEDDED OS | 3. SAFETY & SECURITY | 4. HARDWARE DESIGN |
|---|---|---|---|---|
| | **1.13: Bluetooth – Best Practices** | **2.7: Container Use Cases** | **3.10: Ensuring Resilient Embedded Systems** | **4.7: Hardware Design & Production Process** |
| 09:30-10:00 | **Data-Driven Bluetooth LE Development: Measuring What Matters for Connection Stability and Power Efficiency**<br>Gillian Minnehan, Nordic Semiconductor | **Managing Container Updates – Challenges and Solutions**<br>André Detsch, Foundries.io | **100 Million Inputs or it Did Not Happen: Fuzzing Full Embedded Software Via Rehosting**<br>Tobias Scharnowski, CISPA Helmholtz Center for Information SecuritySecurity | **The Challenge of Sharing Structured Knowledge with GenAI Tools**<br>Jürgen Mayer-Zintel, Infineon Technologies |
| 10:00-10:30 | **Precision Distance Measurement with Bluetooth Channel Sounding - The Technical Case for Multi Antenna Support**<br>Jonathan Kaye, Ezurio | **Commodization of Distro Building: Why Bootable Containers Will Transform Embedded Linux Development**<br>Leonardo Held, Toradex | **From Firmware to Keys: Reverse Engineering Cryptography in Embedded Devices**<br>Dr. Nils Albartus Emproof | **Good Documentation Practices Meet Modern, Development and Design Needs**<br>Dr. Marco Häuser, Marco Häuser Design \| MHD |
| 10:30-11:00 | **Building Distributed Beacon Networks with Bluetooth**<br>Donatien Garnier, Blecon | **From Regret to Reproducibility: Why Embedded Workflows Belong in Containers**<br>David Källberg, IAR | **Inherent Trust: How Hardware Identity can Secure the Global Supply Chain**<br>Dominic Rizzo, ZeroRISC | **Approach to Optimize Quality, Cost and Delivery for PCBs**<br>Georg Thämer, Festo SE |
| 11:00-11:15 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| | Coffee Break & Networking | | | |
| | **1.14: Bluetooth – Emerging Technologies** | **2.8: Beyond Virtualization** | **3.11: Trustworthy Systems with CHERI & RISC-V** | **4.8: Hardware Design Examples** |
| 11:45-12:15 | **Standardizing Ultra-low Latency HID Using Bluetooth Technology**<br>Alfredo Perez, Bluetooth SIG | **Reevaluating the Role of Hypervisors in Safe and Secure Software Partitioning**<br>Marcus Nissemark, Green Hills Software | **Building Safe and Secure Systems with RISC-V**<br>Gerard Vink, TASKING | **PCB-Design of High-Speed Boards**<br>Prof. Rainer Thüringer, TH-Mittelhessen |
| 12:15-12:45 | **Enhancing the Responsiveness of Bluetooth Gaming Controllers with HID over ISO**<br>Jan Slupski, Telink Semiconductor | **Containers for Embedded Linux; The Next Chapter**<br>Drew Moseley, Toradex | **CHERI Standardization For All RISC-V Processors From Tiny to Huge**<br>Tariq Kurd, Codasip | **DC to AC Conversion With DC to DC Buck Converters for PDLC Displays**<br>Andrew Kutzler, Texas Instruments |
| 12:45-13:15 | **An Overview of the Bluetooth High Data Throughput Project**<br>Damon Barnes, Bluetooth SIG | **When Docker Doesn't: What Embedded Engineers Need to Know**<br>Joe Schneider, Dojo Five | **Industrializing CHERI on RISC-V: VxWorks and Hypervisor Support for Safety-Critical Edge Systems**<br>Dmitriy Yeliseyev, Wind River | **From Earth to Orbit: The Essential Role of Antennas in NTN-IoT**<br>Carmen Redondo, Kyocera AVX |
| 13:15-13:30 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| | Lunch Break & Networking | | | |
| | **1.15: Bluetooth in Automotive Applications** | **2.9: Real-Time Virtualization** | **3.12: DevSecOps for Safe & Secure Systems** | **4.9: Power Supply Design** |
| 14:30-15:00 | **Modular Architecture for Enhanced Vehicle Access with Bluetooth Channel Sounding**<br>Martin Cuvelier, NXP Semiconductors | **Embedded Virtualization on Arm v8-R: When You Need It, and When You Don't**<br>Dr. Carmelo Loiacono, Green Hills Software | **Secure By Default: DevSecOps Workflows for CRA-ready Embedded Systems**<br>Dr. Marc Thomas, IAR | **Comparison of Wireless Power Transfer Methods, Simulation and Analysis of a Standard Resonant Converter Design**<br>Dr. Willy Stephen Tounsi Fokui, Teleconnect |
| 15:00-15:30 | **Seamless Handover of Bluetooth LE Connections for Enhanced User Experience**<br>Bhargavi Nisarga, Texas Instruments | **An Open Hypervisor for Automotive Zonal Controllers**<br>José Martins, OSYX Technologies | **Agent-Driven DevSecOps: Transforming Embedded Software Development**<br>Rainer Poisel, honeytreeLabs Cooperation | **Comparing Solar Cells and Power Management Circuits Used for Indoor Low Power Wireless Embedded Systems**<br>Prof. Dr. Marcel Meli, Applied Science University of Winterthur |
| 15:30-16:00 | **Secure Localization with Bluetooth Channel Sounding for Localization and Smart Keys in Automotive Systems**<br>Rudi Latuske, OpenSynergy | **Beyond Containers and VMs: Are Unikernels the Next Stage in Real-Time Virtualization?**<br>Moritz Walker, Universität Stuttgart | **Next Level DEVSECOPS for a Functional Safety Software Development Process**<br>Jeffrey Fortin, Vector Informatik | **Reliable Power Supplies: Overvoltage and Avalanche Energy in Mosfets**<br>Prof. Markus Rehm, IBR Ingenieurbüro Rehm |
| 16:00-16:15 | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |

**Register online:**

| 4. HARDWARE DESIGN | 5. SOFTWARE & SYSTEMS ENGINEERING | | 7. EDGE AI | 8. USE CASES FOR EMBEDDED |
|---|---|---|---|---|
| **4.10: RISC-V Ecosystem** | **5.10: DevOps & CI/CD Pipeline** | **5.13: Digital Twin** | **7.4: Execution** | **8.4: Development Processes** |
| **The Growing Software Ecosystem for RISC-V**<br>Richard York, SiFive | **Platform Integrated AI Reduces The Cognitive Load of Onboarding to Embedded DevOps**<br>Darwin Sanoy, GitLab | **Security First: Why Digital Twins Need a Trusted Foundation**<br>Sebastian Rohr, umbrella.associates | **A Review, a Proposal and an Extrapolation on the Theme of Edge AI Execution Frameworks**<br>Prof. Hans Dermot Doran, Züricher Hochschule für Angewandte Wissenschaften (ZHAW) | **Informed Systems Engineering Decision-making Through SysML v2 Modelling with Architecture Simulation**<br>Dr. Bernhard Kaiser, Ansys Germany |
| **Scalable Benchmarking and Profile-Based Alignment for RISC-V Ecosystems**<br>Angel Berrio, Quintauris | **Using CI/CD for Grass Roots Software Quality Improvements**<br>Mark Hermeling, AdaCore | **Lightweight Digital Twins and Co-Simulation for Physical AI**<br>Dr. Pablo Oliveira Antonino, Fraunhofer IESE | **Deploying Energy-Efficient Machine Learning at the Edge: A Practical Approach**<br>David Fosca Gamarra, Texas Instruments | **WinLightNet: A Self-Distillation Technique for Time Series Classifications on Constrained Devices**<br>Ghaia Belaakaria, Schneider Electric |
| **Toward a Holistic Compute Platform for Mixed-Criticality RISC-V Platforms**<br>Dr. Sandro Pinto, University of Minho | **DevOps for Systems Engineering in Software-defined Vehicles**<br>Dr. Frank Schreiner, AUMOVIO Engineering Solutions | **Virtual Prototypes for Embedded Systems – Transforming Product Development**<br>Christopher Schwager, CarByte Engineering | **Running Transformer Models Efficiently on Edge Devices with Static AI Engines**<br>Sauryadeep Pal, Synaptics | **Real-Time Software Autotuning of PID Controllers via Neural Networks on Embedded SoC Platforms**<br>Marco Torelli, TXT e-tech |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| Coffee Break & Networking | | | | |
| **4.11: RISC-V Applications** | **5.11: Workflows and Tools** | **5.14: SW Debugging and Tracing** | **7.5: From Lab to Field** | **8.5: Security Applications 1** |
| **Extending RISC-V into VLIW/SIMD Architectures for Application-Specific Workloads**<br>Gert Goossens, Synopsys | **Rapid Prototyping of Autonomous Driving Algorithms on Embedded Platforms Using Docker and MATLAB**<br>Benedikt Schlereth-Groh, Technische Hochschule Nürnberg Georg Simon Ohm | **Unified Tracing for Zynq UltraScale+: CPU and Programmable Logic in One View**<br>Dr. Hendrik Schnack, pickplace Consulting | **From Lab to Field: Operating AI Models Across Thousands of Edge Devices**<br>Carl Moberg, Avassa | **Securing Defence Software: From Threat Modelling to Long-Term Maintenance**<br>Dr. Julian Bernet, Witekio |
| **Utilizing the RISC-V Architecture to Accelerate Real-Time Applications**<br>Sean Murphy, MIPS Tech | **Modern IDE Workflows for Kernel Linux Module Debugging**<br>Matheus Castello, Toradex | **Debugging the Invisible: Observability Techniques for Embedded RTOS Systems**<br>Dr. Carmelo Loiacono, Green Hills Software | **Faster to Efficent and Reliable Edge AI Solutions with Automated MLOps**<br>Dr. Axel Plinge, Fraunhofer IIS | **No Safety Without Security: Tool-Supported Co-Engineering for Automotive Systems**<br>Roman Trentinaglia, Fraunhofer IEM |
| **Real-Time Signal Processing and AI on a RISC-V CGRA**<br>Prof. Dr. Christian Siemers, Ubitium | **Platform, Not Product:Modernizing RCP with Theia/VSCode and a Broader Tech Ecosystem**<br>Enrico Bragante, Infineon Technologies Italia | **Accelerating SDV Development with Cloud Debugging and Profiling on Automotive Platforms**<br>Vittorio Serra, Lauterbach | **Agentic Generative AI on Embedded Devices**<br>Michaël Uyttersprot, Avnet Silica | **Importance of IEC 62443 for Upcoming Regulations**<br>Michelle Michael, TÜVIT |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |
| Lunch Break & Networking | | | | |
| **4.12: Open-Source SoC Hardware** | **5.12: Technical Debt and Legacy** | **5.15: Generating Flexible & Efficient Code** | **7.6: Use Cases** EDGEAI FOUNDATION | **8.6: Security Applications 2** |
| **Taping-out Open-Source Hardware and the Reproducibility Gap**<br>Dr. Augusto Hoppe, Fraunhofer IIS | **The Breeding and Rearing of Technical Debt**<br>Ingo Nickles, Vector Informatik | **Honey, I Blew Up the Code. Binary Size Reduction in Practice**<br>Dr. Andreas Wilhelm, CQSE | **Using Industry-standard AI Techniques to Solve Real-world Display Problems at the Edge**<br>Derek Solven, Synaptics | **Automated Identity Management for Embedded Components**<br>Florian Handke, Campus Schwarzwald |
| **Open-Source Silicon: Driving Innovation, Trust, and Security in Embedded Systems**<br>Dominic Rizzo, ZeroRISC | **Avoiding New ECU Development: Unlocking Hidden Potential in Legacy Systems**<br>Dominik Jürgens, tensor embedded | **Web Engines for Embedded Devices: An Introduction to WPE WebKit**<br>Mario Sanchez-Prada, Igalia | **Optimizing Neural Network Models for Low-Power Edge Hardware in Speech Processing Applications**<br>Osman Erman Okman, Analog Devices (ADI) | **Beyond Hardware: White-box Cryptography and Obfuscation for Modern Security**<br>Rafie Shamsaasef, CommScope |
| **Custom Open-Source FPGAs are Here**<br>Prof. Dirk Koch, Universität Heidelberg | **Keep it `clean': Practical Strategies for Reducing Build-System and Host Tech Debt**<br>Joe Schneider, Dojo Five | **WebAssembly in Safety-Critical Embedded Systems: A Runtime for the Heterogeneous Future**<br>Dan Milea, Wind River | **Lessons Learned Designing an Edge AI ASIC for Audio Applications**<br>Matteo Vit, Starware Design | **From Cloud to Car: Edge AI in Next-Generation Automotive Cybersecurity**<br>Gregor Knappik, VicOne |
| Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A | Discussion/Q&A |