

IAR, Nuclei, and MachineWare Join Forces to Speed Up Innovation in RISC-V ASIL Compliant Automotive Solution

Aachen, Germany, April 8, 2024 – MachineWare GmbH, the leader in RISC-V processor and full system simulation, has joined forces with Nuclei System Technology and IAR to accelerate innovation in RISC-V ASIL-compliant automotive solutions. This collaboration streamlines firmware and MCAL development, offering seamless integration between virtual and physical hardware platforms. Through this collaborative effort designers can start their software development sooner and easily scale their testing environments.

The collaborative effort between Nuclei, IAR, and MachineWare enables seamless transition between virtual and physical SoCs, facilitating early software development and bug detection. This streamlined approach accelerates time-to-market, particularly in automotive system solution development and Hardware-in-the-Loop (HIL) testing scenarios.

Nuclei System Technology is a leading RISC-V CPU IP vendor with a strong focus on automotive applications. Their comprehensive portfolio and ASIL-B to ASIL-D certified RISC-V CPUs, coupled with functional safety packages, cater to various automotive markets, facilitating chip design companies' certification processes.

MachineWare specializes in ultra-fast virtual prototypes, offering the SIM-V platform for high-speed RISC-V simulation. This technology facilitates comprehensive emulation of entire systems, enabling software analysis, verification, and development before physical prototypes are available, thus reducing development time and costs.

Anders Holmberg, CTO at IAR, views the collaboration between the three companies as significant in the automotive industry: "This partnership brings together our strengths to advance RISC-V SoCs in vehicles. Our certified solutions simplify supply chain processes, supporting safety and security compliance. This opens opportunities for innovation and distinction in the market."

"Nuclei's ISO 26262 certified RISC-V CPU IPs offer solid, unprecedented flexibility and efficiency in silicon development to meet the requirements of Automotive from ASIL-B to ASIL-D," said Dr. Jianying Peng, CEO of Nuclei, "Together with IAR and MachineWare, we empower customers in the automotive industry to accelerate their development efforts, ensuring the successful achievement of functional safety and cybersecurity protection."

"Our ultra-fast RISC-V simulator SIM-V empowers engineers to simulate complex hardware/software systems long before physical prototypes are even available. This speeds up the development process and reduces expensive bugs," said Lukas Jünger, co-founder of MachineWare. "We are proud to collaborate with IAR and Nuclei to offer our customers the tools they need for developing SoCs for the automotive industry."

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About MachineWare

MachineWare is a German provider of high-performance virtual prototyping solutions. With SIM-V, MachineWare provides a scalable, blazing-fast RISC-V instruction set simulator for software bring-up tasks, such as development, debug, test and analysis. SIM-V is based on MachineWare's FTL processor modeling toolkit, which is easily extendable to model customized RISC-V architectures. Furthermore, FTL's retargetability enables modeling of processor architectures beyond RISC-V. For constructing a simulator of the entire system, a rich portfolio of SystemC TLM-2.0-compatible hardware models and tools is made available with MachineWare's open-source modeling library VCML. MachineWare's products and services enable their customers to complete software verification ahead of schedule by reducing software defects such as bugs and vulnerabilities. Hardware/software integration is streamlined by providing a shared tool for both hardware and software designers early in the system design cycle www.machineware.de.