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Cortus MINERVA Out-of-Order 4GHz 64-bit RISC-V Processor Platform targets automotive applications

Cortus, an innovative fabless semiconductor manufacturing group today announces a key achievement of its high-performance Out-of-Order RISC-V 64-bit processor implemented as part of the eProcessor HPC project. The prototype chip using the OoO RISC-V core developed by Cortus and whose synthesis and physical layout were done by Cortus, was fabricated by GlobalFoundries in their 22FDX process.

The first silicon of this RISC-V chip successfully boots and runs Linux.

Based on our rich and solid experience in chip design and, above all, our strong expertise in processor architecture, Cortus is creating the **Minerva high-performance RISC-V platform** for the next generations of 64-bit RISC-V processors which can run up to 4GHz for the automotive industry. This platform is designed for flexibility, customization and has a scalable and configurable cluster architecture, making it suitable for diverse automotive compute-intensive applications from low-end to mid and high-end as well as applications in Avionics.

The Cortus Minerva platform features lock-step cores, memory error correction, partitioning and includes a hardware security module (Evita HSM compliant) and meets the requirements for safety and security for automotive certification.

OEM manufacturers and automobile manufacturing companies require these kinds of MPUs for implementing the Software Define Vehicle (SDV) offering flexibility for adding new features in the future. This enables OEMs and Tier-1 to simplify migration from existing MPUs with maximal software reuse to minimize development cost.

From this platform, Cortus can rapidly develop a range of MCUs and MPUs for different market segments from Body and Chassis Control to Gateway, Domain Controller and ADAS/AD Level-3 and Level-4.

Other Cortus 32/64-bit RISC-V processors have been specifically developed for customers for use in Satellite, Civil Nuclear, Consumer and high-security and high safety system and have been successfully deployed for years.

Cortus RISC-V chips offer designers of embedded systems and applications a balance between performance, power, security, total system cost and energy efficiency. These are not just RISC-V chips, but complete solutions from chip to product, with a fully featured Software Development Kit (SDK), Development Boards and Reference Design providing comprehensive support through to the final product development stage.

Cortus Ulyss1, engineering samples available, is a 32-bit RISC-V automotive MCU running at 120MHz, covering a wide range of applications such as body electronics control, chassis control, infotainment connection module, HAVC, windows, door, sunroof management, powertrain, motor control and more. It targets ISO26262 ASIL-B and IEC 61508, AEC Q100/1 compliance. Other members of the family will target ISO26262 ASIL-D compliance and will have an Evita full HSM.

For embedded processing of consumer products, engineering samples of the **Lotus1** consumer RISC-V MCU are available. This is a 32-bit RISC-V MCU with advanced motor control.

The RISC-V ISA (Instruction Set Architecture) offers the automotive industry a standard ISA which can be applied across the entire range of MCUs and MPUs, thus assuring a long-lived stable and consistent software tooling, including open source compilers and operating systems helping reduce software costs.

You are welcome to visit the Cortus stand at **Embedded World 2025** from 11 to 13 March, in Nuremberg, **Hall 5-126.** We would be happy to show you a demo that might be of interest to you.

About Cortus S.A.S.

Cortus is a fabless semiconductor manufacturing group headquartered in Mauguio (near Montpellier, France). Cortus provides RISC-V chips from a simple MCU to a high-end SoC using its own broad IP portfolio which includes processors 32/64 bits (Cortus ISA and RISC-V ISA), digital, analog, RF, mixed-signal, security, safety, interconnect and peripherals, for different markets such as Avionics, Automotive and Consumer including a highly efficient scalable AI platform for high-performance image inference for computer vision. We are experts in processor architecture, ASIC/SoC design, advanced systems, embedded processing and AI inference to create value beyond products. Over 16 billion devices have been manufactured containing Cortus processors and IP. Cortus is one of the dozen Platinum Founding Members of the RISC-V Foundation.

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