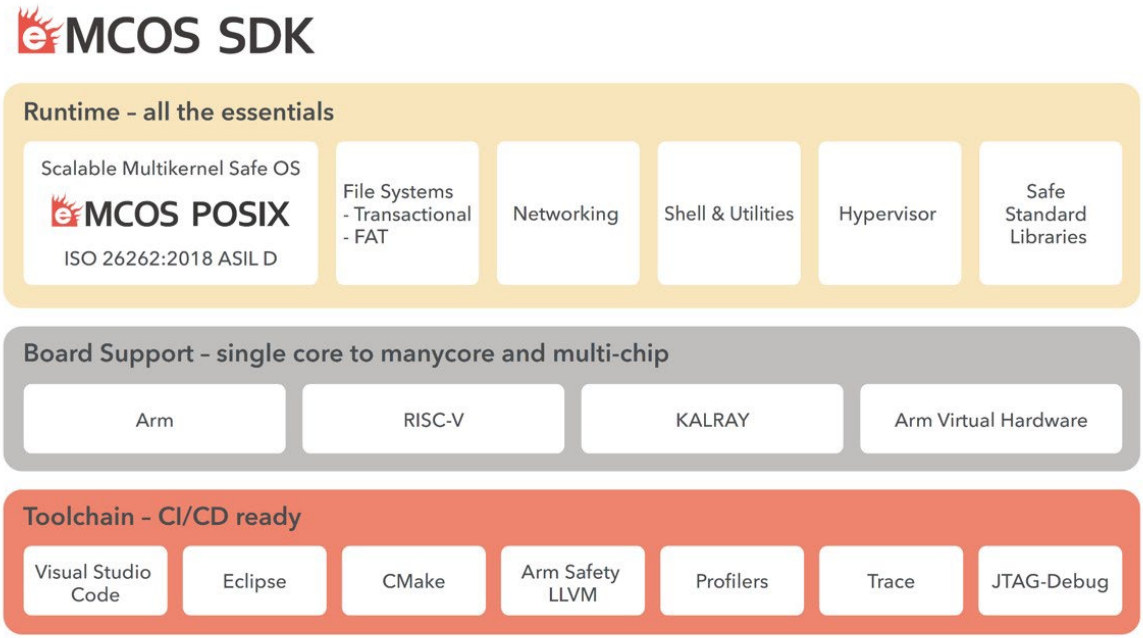
Press Release

eSOL Enhances Its SDx Solutions with eMCOS® POSIX Achieving ISO 26262 ASIL D Automotive Safety Certification

—Based on OS Technology, Realizing Software-First from Platforms to Applications—

Tokyo, Japan, 9 September 2025 – eSOL, a leading developer of real-time embedded software solutions for the automotive and mobility industry, is pleased to announce that the core OS product eMCOS POSIX ver3.0, included in the eMCOS SDK software development kit, has been certified up to ASIL D as a SEooC (Safety Element out of Context) according to the ISO 26262:2018 functional safety standard for automotive applications by SGS-TÜV Saar, a certification body which provides third-party conformity assessment.

This marks the world's first certification of a commercial real-time operating system (RTOS) based on a multikernel architecture. Its high and stable performance, regardless of the complexity of software and hardware, makes it ideal for mission-critical systems in the Software-Defined System (SDx) era. With decades of experience in the embedded field, eSOL supports its customers in developing competitive systems for the SDx era through a comprehensive range of integrated products and world-class full-stack engineering services.



Configuration diagram of eMCOS SDK, software development kit

With the advent of the SDx era, the scale of software development has rapidly increased, now reaching hundreds of millions of lines of code, and hardware configurations are becoming more sophisticated, with the number of processor cores doubling or more with each generation of SoCs. In this context, being able to operate

these complex systems with efficiency and stability, even though they combine intricate software and hardware, has become a major challenge. In such an environment, the role of the OS is extremely important in maximizing overall system performance.

By design, eSOL's eMCOS POSIX was developed to meet the demands of these complex systems as the world's first commercial RTOS with a multikernel architecture. Traditional SMP (Symmetric Multi-Processing) OSes, that try to govern all the processor cores with a single OS kernel, have faced performance degradation with the increase in processor numbers. However, with its multikernel structure, eMCOS POSIX offers scalable and consistent performance, ensuring the reliability and determinism of mission-critical systems.

Masaki Gondo, CEO, CTO, President, and Representative Director at eSOL, says: "In mission-critical fields such as automotive systems and industrial applications, advanced engineering is essential throughout the system's development. Obtaining this ISO 26262:2018 ASIL D certification not only proves that eMCOS POSIX can meet strict safety requirements and that eSOL has taken extensive measures to minimize serious risks, but also demonstrates the company's expertise and both technical and organizational capabilities in achieving the highest level of functional safety in advanced software development such as real-time operating systems. Building on this expertise, eSOL provides comprehensive support for the development of mission-critical systems by offering the eMCOS SDK, as well as through engineering services with extensive experience, from safety analysis to the design, development, and verification of entire systems. "

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About eMCOS
eSOL's flagship eMCOS is a scalable real-time operating system (RTOS), being the first such product to provide support that extends from single-core to many-core CPUs. The use of a distributed microkernel (aka multikernel) architecture unlike that of previous RTOSs enables eMCOS to provide scalability both in the number of cores supported, from single-core all the way up to many-core processors with hundreds of cores, and in terms of functionality, from microcontroller systems based on OSEK and AUTOSAR to high-end POSIX and process-model-based systems. The RTOS is also ideal for the heterogenous computing required for IoT applications that involve a combination of different processor types, such as heterogenous and homogenous multi-core and many-core processors, microcontrollers, GPUs, and FPGAs. eMCOS also offers a proprietary semi-priority-based scheduling algorithm (Japanese patent numbers 5734941 and 5945617). Along with high performance and scalability, these technologies ensure the real-time performance that is essential in mission-critical embedded systems.

For more information, please visit: https://www.esol.com/embedded/product/emcos_overview.html

About eSOL Co., Ltd.
eSOL is a world-class Full Stack Engineering company to realize the Cyber-Physical Society for the people using its innovative computer technologies. eSOL's high-performance and scalable software platform products and first-class professional services, centered around its unique and patented eMCOS® multikernel real-time operating system (RTOS) technology, are used worldwide in demanding embedded application fields that conform to stringent quality, safety, and security standards. This includes automotive systems, industrial equipment, satellites, medical and digital consumer electronics.
In addition to the research and development of its leading-edge products, and joint research with major manufacturers and universities, eSOL is actively engaged in AUTOSAR, Autoware, and multi/many-core technology standardization activities.
eSOL was founded in 1975 and is listed on the Standard Market of the Tokyo Stock Exchange (TSE: 4420).
For more information, please visit: https://www.esol.com/

* Autoware is an open-source software built on ROS/ROS 2 for autonomous driving.

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