

## Press Release

# eSOL's Leading OS “eMCOS® POSIX” Now Supports Latest Arm Real-Time Automotive Processor, Demonstrating Continued Ecosystem Momentum

— Leveraging Corellium's Virtualization Technology to Achieve Efficiency in Automotive System Development in the Software-Defined Vehicle Era —

**Tokyo, Japan, 31st July 2024** – eSOL, a leading developer of real-time embedded software solutions for the automotive market, now supports Arm's latest real-time safety-enabled processor, Arm® Cortex®-R82AE, demonstrating the ongoing automotive innovation being driven by the Arm ecosystem through close collaboration between leading automotive supply chain partners.

This achievement was made possible by utilizing virtual prototypes of Arm's leading-edge Automotive Enhanced IP under [Arm Virtual Hardware](#) (AVH) developed by Corellium, also an Arm ecosystem partner. AVH is a cloud offering that hosts high performant virtual platforms of the Arm IP that offers ISA parity accelerating software development activities ahead of silicon availability. This enables the rapid deployment of a real-time OS on a virtual prototype running natively on Amazon Web Services (AWS) instance, significantly reducing the development time as compared to traditional virtual prototypes.

The new Arm Cortex-R82AE processor implements Arm's 64-bit ISA and can be used in applications that enable advanced real-time control and safety islands, ensuring functional safety within a system. It offers a Memory Management Unit (MMU) which supports the deployment of rich operating systems. The ability to deploy eMCOS POSIX on the new Cortex-R82AE processor as well as on Arm's Cortex-A family of processors, positions eMCOS POSIX as a scalable operating system that supports everything from microcontrollers to high-end SoCs, making eMCOS POSIX an optimal choice for mission-critical systems.

By leveraging the ISA parity provided by Arm-based virtual platforms, eMCOS POSIX can be smoothly deployed on the virtual Arm Cortex-R82AE processor without the need for special adjustments for the virtual platform executing natively in the cloud, thereby reducing development costs by nearly half.

A significant advantage of this development process is the ability to accurately test functionalities without waiting for the physical hardware. It is also possible to confirm that the network drivers, TCP/IP stack, and other components operated flawlessly without any modifications of the virtual platform. This technology allows developers to immediately start designing, developing, and validating cutting-edge software for the automotive industry, realizing a significant shift-left approach (conducting functional verification and integration activities early in the development lifecycle). This minimizes software rework once hardware becomes available thus improving efficiency.

Bob N. Ueyama, Executive Vice President and the Head of the Business Management Head Quarter at eSOL says: “We are confident that the integration of eMCOS POSIX and Arm Cortex-R82AE offers the optimal solution for software development in the SDV era. As an Arm ecosystem partner, we will continue to pursue innovations in automotive system development in the SDV era, contributing to both the efficiency of software development and the safety of systems.”

Suraj Gajendra, vice president of products and solutions, Automotive Line of Business, Arm says: “To achieve the scale needed to unlock the full potential of software-defined vehicles requires collaborations that span the entire automotive supply chain. By leveraging the latest Arm Automotive Enhanced technology, made available through a virtual platform



from Corellium, partners can leverage eMCOS POSIX on the safety-capable Cortex-R82AE to rapidly develop safety-critical applications with greater efficiency and higher performance.”

– END –

## 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 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 has a proprietary semi-priority-based scheduling algorithm (Japanese patent numbers 5734941 and 5945617). Along with high performance and scalability, these technologies also 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](https://www.esol.com/embedded/product/emcos_overview.html)

## About eSOL Co., Ltd.

Founded in 1975 and listed on the Standard Market of the Tokyo Stock Exchange (TSE: 4420), eSOL is a leading global company in the fields of embedded systems and edge computing that seeks to contribute to a safer and better-connected society.

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.

For more information, please visit: <https://www.esol.com/>

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

\* eSOL, eSOL Co. Ltd, and eMCOS are registered trademarks or trademarks of eSOL Co., Ltd. in Japan and other countries.

\* Arm and Cortex are registered trademarks of Arm Limited. in Japan and other countries.

\* Other company or product names are trademarks or registered trademarks of their respective companies.

## For more information, please contact:

### eSOL:

Benoit Simoneau

514 Media Ltd.

[benoit@514-media.com](mailto:benoit@514-media.com)

+44 7891 920 370

Marketing Communications

eSOL Co., Ltd.

[media@esol.co.jp](mailto:media@esol.co.jp)