# Press Release

June 11, 2019

eSOL Co., Ltd.

## Denso Vehicle Surround View Adopts eSOL eT-Kernel Functional-Safety RTOS

*Supporting Development of Mechanisms for Guaranteeing Safety*

Tokyo, Japan. June 11, 2019 -eSOL, a leading developer of real-time embedded software solutions, today announced that eSOL's eT-Kernel™ Multi-Core Edition (MCE) base platform has been selected for use in a vehicle surround view system developed by DENSO Corporation. eT-Kernel MCE is a software platform that incorporates eT-Kernel MCE, a real-time operating system (RTOS) for multi-core processors that supports Functional Safety (FuSa). eSOL will also supply services to support the development of safety mechanisms based on its extensive knowledge and experience with Functional Safety compliance. This will help achieve the required level of safety and reliability to satisfy Functional Safety standards in the development of vehicle periphery monitoring systems, in addition to it demanding real-time performance and quality requirements.

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The vehicle periphery monitoring system developed by DENSO combines high-resolution cameras and image processing to stitch together images from the cameras mounted around the periphery of a vehicle, thereby providing clear video pictures and advanced detection functions.

eT-Kernel has acquired product certification under the ISO 26262 (road vehicles) and IEC 61508 (industrial equipment) Functional Safety standards at the highest safety levels (ASIL D and SIL 4 respectively). Similarly, eSOL's development process for RTOS products has also been certified compliant with the IEC 62304 safety standard for medical equipment. The eBinder® development environment, meanwhile, supports high reliability and enables development to be undertaken in a way that satisfies the requirements of ISO 26262 and IEC 61508. For eT-Kernel and eBinder users, eSOL also supplies the eT-Kernel Safety Package, which packages together safety manuals, reports, and other documentation containing the evidence and related information associated with implementing Functional Safety on user systems that incorporate eSOL products. eSOL provides comprehensive support for achieving Functional Safety in ways that suit user needs, thereby allowing users to focus on the development of their own products and on achieving compliance with Functional Safety standards.

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"I am honored that DENSO Corporation has chosen to use the eT-Kernel MCE base platform in its vehicle surround view systems. At eSOL, we provide a high level of support for ensuring quality and safety in automotive system development, drawing on our extensive involvement in the development of embedded systems with demanding real-time performance and reliability requirements, and also on the experience and know-how we have built up from acquiring Functional Safety certification for our own products," said Nobuyuki Ueyama, Executive Vice President of eSOL.

### ■ For Reference

**eT-Kernel MCE**

eT-Kernel Multi-Core Edition (MCE) is an RTOS for embedded systems using a multi-core processor. Featuring eSOL's proprietary Blended Scheduling, the eT-Kernel MCE enables the coexistence of both symmetrical (SMP) and asymmetrical (AMP) multi-core processing in a single system. Four scheduling modes are available based on Single Processor Mode

(SPM) and True SMP Mode (TSM). By using a program to select the appropriate mode, it is possible to enjoy the advantages offered by both SMP-type and AMP-type programs within a single system. SMP-type programs offer high throughput, while AMP-type programs feature remarkable real-time capability and software asset re-usability.

For more information, please visit the eT-Kernel MCE website at
https://www.esol.com/embedded/et-kernel_multicore-edition.html

**About eSOL Co., Ltd.**

Founded in 1975, eSOL is a leading company in the embedded systems and IoT sector that seeks to create a rich IoT society using its innovative computer technologies. eSOL's software platform products and professional services, centered around its real-time operating system technology, are used worldwide in every field, starting with automotive systems, which conform to the most stringent quality standards, and including industrial equipment, satellites, and digital consumer electronics. In addition to the research and development of its own leading-edge products, and joint research with major manufacturers and universities, eSOL is actively engaged in AUTOSAR and Multi/Many-Core technology standardization activities.



■ Contact for inquiries relating to this press release

Marketing Office, Embedded Products Division, eSOL Co., Ltd.
Tel : +81-3-5302-1360 / Fax : +81-3-5302-1361
e-mail : media@esol.co.jp
URL : https://www.esol.com/