eSOL RTOS adopted by Janome Corporation for its top-of-the-line computerized sewing machine with HD Embroidery

Tokyo, Japan, *8th* **Nov. 2022** – eSOL has announced that its software platform centered on eSOL's real-time operating system (RTOS) eT-Kernel ™ (hereinafter "eT-Kernel ") has been adopted by Janome Corporation (hereinafter "Janome") for its top-of-the-line Continental M17 computerized sewing machine with HD Embroidery, which is sold in overseas markets like North America, Australia and Europe.

Launched in April 2022, the Continental M17 is one of Janome's top-of-the-line model. It offers the industry's largest embroidery field for a home sewing machine, the industry's first ever dual screen controls, the industry's fastest embroidery stitch speed, and other high-performance features unique to the flagship model.

eT-Kernel, the eSOL RTOS adopted for this product, contributed to the construction of the basic parts of the main system, such as the function for drawing embroidery on the touch screen and communication control. In addition, eSOL's professional services supported smooth development by porting the OS from the previous model and providing a Board Support Package (BSP). It is expected eSOL's RTOS will be used in other Janome products in the future.

eT-Kernel RTOS is based on the open source T-Kernel 2.0 with improvements and extensions in terms of performance and functions. In addition to in-vehicle devices, it has seen adoption in a wide range of fields including industry equipment, satellites, and consumer electronics. It features a small footprint[1] and excellent real-time performance. eT-Kernel RTOS was the first Japanese OS to obtain the highest safety level (ASIL D, SIL 4) product certification for both ISO 26262 (automotive) and IEC 61508 (industrial) functional safety standards. eBinder® development environment, which is tightly integrated with eT-Kernel, is used for software development. eBinder provides a set of functions and tools specialized for software development for real-time OSs, enabling efficient development of high-quality software.

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[1] Footprint: The amount of memory used by a program when it runs

"The deciding factors in adopting eSOL's eT-Kernel were its high portability from μITRON, which was used in the previous model, and eSOL's professional service system, including the provision of BSPs" said Project Leader and Developer at Janome Corporation. "These made it possible to proceed with development smoothly and realize the development of a highly functional and high-quality product."

"We are very pleased that eT-Kernel has been adopted for the Continental M17. eT-Kernel has been installed in a wide variety of devices globally and has been adopted in many high-performance and multi-functional consumer devices. eSOL will continue to strongly support software development for embedded systems by providing software platforms – including professional services – that are tailored to the needs of user systems" concluded Masaki Gondo, CTO, Senior Executive Vice President and Head of Software Division, eSOL Co., Ltd.

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▽ Continental M17 product details:
https://www.janome.com/cm17/

▽ Janome Corporation website:
https://www7.janome.co.jp/global/

▽ Use Cases of eSOL products:
https://www.esol.com/successstory/rtos_middleware.html

About eT-Kernel

eT-Kernel is a real-time operating system (RTOS) with a small footprint and excellent real-time performance that provides memory protection with its proprietary ring protection function. In addition, it is ideal for migration from μITRON because the use of a flat memory space without MMU[2], the services it provides, and the OS' internal structure are similar to μITRON. It is equipped with a configuration switch that allows selection of the same direct function calls as μITRON, thus speeding up the operation of eT-Kernel.

eT-Kernel details: https://www.esol.com/embedded/product/et-kernel_overview.html

About eSOL Co., Ltd.

Founded in 1975 and listed on the Prime 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 which conform to stringent quality, safety and security standards. This includes automotive systems as well as 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/

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[2] MMU: Abbreviation for Memory Management Unit

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