

Tuxera and eSOL forge partnership to bring highly reliable data management to safety-critical systems

The partnership will allow for safeguarded critical data with eMCOS® RTOS platform for eSOL's automotive customers.

HELSINKI, Finland and TOKYO, Japan, July 27, 2021 – Tuxera, a world-leader in quality-assured storage management software, and eSOL, a leading global developer of real-time embedded software solutions, announced today a strategic partnership for the automotive industry. The partnership will bring superior I/O throughput, data integrity, fail-safety, and improved storage media endurance to the data handling operations in eSOL's eMCOS real-time operating system (RTOS). Tuxera's reliable, high-performance Reliance® file system technology will be integrated as part of the eMCOS architecture. Through this partnership, the companies aim to deliver a quality-driven automotive platform that meets the safety-critical needs of eSOL's customers.

A high-performance platform for a functionally safe drive

eMCOS is eSOL's scalable RTOS for embedded systems. Distributed microkernel architecture, paired with eSOL's proprietary semi-priority-based scheduling algorithm enables eMCOS to deliver the real-time capabilities required for critical embedded systems. In addition, the RTOS features the high performance and scalability demanded by multicore processors.

eMCOS is developed in full compliance with the ISO 26262 functional safety standard for road vehicles. Safety design standards are an increasingly important element in automotive software design, shaping the need for functionally safe operating systems like eMCOS, and for power fail-safe automotive data management provided by Tuxera.

Power fail-safe data management for an advanced RTOS

As data becomes increasingly significant in monitoring and managing vehicle safety, the requirements on data-handling solutions are more stringent than ever before. From security concerns and edge-storage limitations to flash storage lifetime and reliability – the rise of data-driven technologies continues to set new demands on automotive storage solutions, including the file system software.

The partnership allows eSOL to focus on the core development and functional safety of eMCOS, while Tuxera applies its deep expertise in storage development to manage the platform's critical data storage needs. eMCOS will now ship with Tuxera's Reliance file system technology built inside – featuring file system operations specifically configured and optimized to meet eMCOS's state-of-the-art multikernel architecture.

The Tuxera Reliance file system for eMCOS is a POSIX-compliant, transactional file system that ensures data is always in a known-good state, even if an unexpected power loss or system crash were to occur. The superior power fail-safety offered by Tuxera's file system technology was a key consideration in integrating it with eMCOS. The file system technology also features fast mount times and consistently high I/O throughput, making it an ideal match for the high-performance features of eMCOS.

Empowering cutting-edge, safe systems innovation in a thriving market

According to analyst group Mordor Intelligence⁽¹⁾, the Functional Safety Market is growing at its fastest rate in the Asia-Pacific region, where eSOL is headquartered. Tuxera also opened a subsidiary in Japan in 2020 to help meet the booming demand for data-driven cars and devices in the Japanese market.

“This partnership with eSOL is a critical cornerstone in our commitment to empower Japanese car makers with high-performance, fail-safe data management solutions that also meet their functional safety requirements,” says **Tuukka Ahoniemi**, Tuxera’s CEO. “Together, we’re making sure that software-driven vehicles can handle the massive amount of sensor data pouring into these safety-critical systems. At its roots, this partnership allows the development of even more data-driven applications for the automotive market with increased safety requirements. We’re investing into the future technology development of autonomous cars – not only within the Japanese market, but also eSOL’s global customer base.”

Today, many embedded developments in the automotive high-performance computing segment suffer from the bottlenecks of a conventional RTOS. This problem has already been solved by eSOL with its novel high-performance, scalable RTOS based on multikernel technology. **Bob N. Ueyama**, Executive Vice President of eSOL, concludes: "In the embedded field of mixed criticality systems, it is important to offer not only a high-performance RTOS but also the appropriate middleware. For our flagship product eMCOS, therefore, only a solution based on the Reliance established technology, which has already a proven track record, could be considered."

About eSOL

Founded in 1975 and listed on the First Section 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. Learn more at: <https://www.esol.com/>.

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

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About Tuxera

Tuxera is the leading provider of quality-assured embedded storage management software and networking technologies. Helping people and businesses store and do more with their data, our software is at the core of phones, tablets, cars, TV sets, cameras, drones, external storage, routers, spacecraft, IoT devices, and more. We help you store your data reliably, while making file transfers fast and content easily accessible. Tuxera is also an active member of multiple industry organizations, including JEDEC, SNIA, AGL, SD Association, The Linux Foundation, and many others. Founded in 2008, Tuxera’s headquarters are located in Finland, with regional offices in China, Germany, South Korea, Japan, Taiwan, and the US. Learn more about us at <http://www.tuxera.com/>.

For more information, please contact:

eSOL:

Benoit Simoneau
514 Media Ltd.
benoit@514-media.com
+44 7891 920 370

eSOL Marketing Office
eSOL Co., Ltd.
media@esol.co.jp

Tuxera:

VP Marketing, Tuxera

Tiffany Rossi

press@tuxera.com

References

⁽¹⁾ <https://www.mordorintelligence.com/industry-reports/functional-safety-market>