

Codeplay Software and eSOL Partner to Enable Open Standards Programming With eMCOS® RTOS Platform for Automotive Applications

Combining Codeplay's Acoran Platform Supporting SYCL™ and OpenCL™ With eSOL's eMCOS RTOS Platform Will Empower Safety Critical Embedded Multicore Applications

TOKYO, Japan, Nov. 4, 2021 – eSOL, a global developer of real-time embedded software solutions, and Codeplay Software, a leader in enabling acceleration technologies for AI and HPC, today announced their partnership to develop high-performance, safe embedded applications for automotive and industrial applications running on multicore real-time systems.



Codeplay and eSOL are both pioneers in their respective fields. Codeplay led the creation and definition of SYCL (pronounced “sickle”), The Khronos Group’s open standard C++ programming model for heterogeneous processor architectures in artificial intelligence (AI) and high-performance computing (HPC). eSOL is a leading global embedded software vendor, providing unrivaled high-scale, multicore support for extreme high performance in safety critical and secure environments through its unique and innovative “multikernel” commercial real-time operating system (RTOS) solution. Through the partnership, Codeplay will integrate their Acoran Software Platform with eSOL eMCOS, the ultra-scalable RTOS platform, allowing advanced driver assistance systems (ADAS) application developers to port their software using modern C++ to eSOL’s reliable and familiar framework.

The strategy for integration will start with a multicore CPU environment and then grow to support integrated accelerators for AI and computer vision (CV) functions. AI and CV are being adopted for next generation automotive systems to provide enhanced safety and control, reducing accidents, saving lives, and taking into account increasing autonomy of vehicles.

According to Data Bridge Market Research, embedded systems are expected to have a market growth of almost 6% annually from 2020 to 2027. However, AI and autonomous focused solutions within the embedded market are forecasted to grow significantly faster. ADAS solutions in the automotive segment are projected to grow at a 21% annual rate and machine vision (MV) applications are expected to grow 34% annually over the same period.

Codeplay’s Acoran Software Platform provides programmability, optimized processor-specific routines, and a wide ecosystem of domain-specific optimized libraries for exascale and AI. A key foundation of Acoran is SYCL, an open standard programming model that enables heterogeneous programming based on standard ISO C++. Heterogeneous programming is the basis for today’s growing HPC, AI, and machine learning applications. SYCL has been gaining momentum as embedded C++ developers look for a non-proprietary programming model.

eMCOS is a breakthrough real-time operating system platform for next-generation embedded applications with high performance and functional safety requirements. It combines a common POSIX user interface with an underlying multikernel architecture to enable the highest possible performance on modern multicore and manycore hardware by reusing available source code. eMCOS has been developed from scratch and designed to meet the most stringent quality, safety and security standards of automotive and industrial critical embedded applications.

“Our customers have the highest demands for quality and safety. They are also eager to apply AI and HPC to their real-time embedded systems to meet the growing demand for autonomous solutions,” said Bob N. Ueyama, Executive Vice President of eSOL. “We are excited to partner with Codeplay and bring an open standard heterogeneous programming model to our customers.”

“More and more AI and HPC systems require true real-time execution within the operating system,” said Andrew Richards, CEO and founder of Codeplay Software. “The POSIX compliant eMCOS perfectly aligns with our solutions and approach to open standards support across all processor systems for ADAS.”

“The momentum has grown with SYCL, with organizations embracing SYCL for their next generation processing systems, and developers favoring the open standards approach” said Michael Wong, Chairperson of the SYCL Working Group within The Khronos Group and Distinguished Engineer at Codeplay Software. “This partnership between eSOL and Codeplay is a great example of the increasing choice available for software developers within a rapidly growing SYCL ecosystem.”

About eSOL

Founded in 1975 and listed on the First Section of the Tokyo Stock Exchange (TSE: 4420), [eSOL](https://www.esol.com/) 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.

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

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

About Codeplay Software

Codeplay Software is a world pioneer in enabling acceleration technologies used in AI, HPC and automotive. Codeplay was established in 2002 in Edinburgh, Scotland and developed some of the first tools enabling complex software to be accelerated using graphics processors. Today, most AI software is developed using graphics processors designed for video games, and more recently specialized AI and computer vision accelerators. Codeplay continues to work with global technology leaders to make the latest complex AI systems programmable using open standards based programming languages and allows application developers to quickly bring software to the market. Codeplay is also deeply involved with the definition of open standards, especially OpenCL™, SPIR™, SYCL™, and Vulkan™ through The Khronos Group, and MISRA C++ for automotive.

SYCL, SPIR, Vulkan are trademarks of the Khronos Group Inc. OpenCL and the OpenCL logo are trademarks of Apple Inc. used by permission by Khronos.

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

Codeplay Software:
Charles Macfarlane
Chief Business Officer
Codeplay Software
charles.macfarlane@codeplay.com
+44 7766 104856