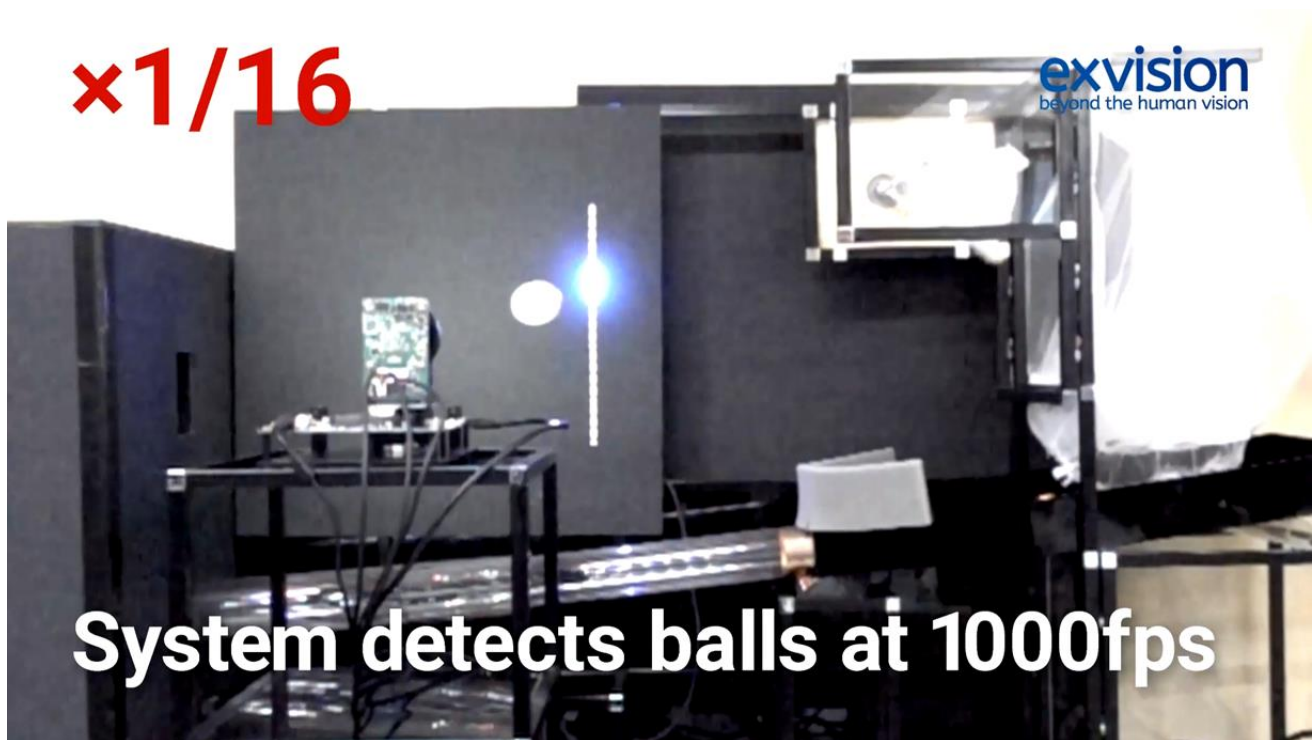


High-Speed Image Processing Platform

Developed by Exvission Corporation, a Spin-off of the University of Tokyo,
Adopts eT-Kernel Multi-Core Edition RTOS from eSOL

eT-Kernel Multi-Core Edition RTOS Provides Real-Time Capability and Reliability for Image Processing Technology
Capable of a World-Class 1,000 fps, Enabling Applications such as Robots and High-Speed Inspection in Factories,
Autonomous Driving, and the Latest Medical Devices



Detect and Catch Demonstration in Progress (Video Capture)

Tokyo, Japan. April 27, 2017 – Exvission Corporation and eSOL, a leading developer of real-time embedded software solutions, today announced the adoption of an eSOL software platform based around eT-Kernel Multi-Core Edition, a real-time operating system (RTOS) for multi-core processors, by the High-Speed Vision Software Development Kit (HSV SDK), an SDK for the high-speed image processing platform developed by Exvission Corporation.

A core component of the high-speed image processing platform from Exvission is the Vision Chip announced in February

2017 at ISSCC 2017, an international semiconductor conference. The Vision Chip is based on technology from the Ishikawa Watanabe Laboratory at the University of Tokyo from which Exvission is a spin-off. In addition to a frame rate of 1,000 fps, more than 30 times the typical rate of 30 fps in current use, the Vision Chip hardware breaks new ground by providing a single-chip implementation of parallel signal processing for detecting fast-moving objects. This technology has the potential for use in a wide variety of applications such as high-speed inspection for detecting defects without interrupting factory operation as well as industrial robots, autonomous driving systems, and the latest medical devices, while also contributing to equipment miniaturization and lower power consumption. Having developed the HSV SDK, which combines a software development kit (SDK) and an evaluation board made up of a main board and sensor board (the Vision Chip being mounted on the latter), Exvission plans to offer it as a standard platform that facilitates the rapid development of a variety of image processing systems.

By adopting eT-Kernel Multi-Core Edition and a USB device stack from eSOL as its runtime software, the HSV SDK combines the high throughput of SMP with a high level of real-time capability that enables high-speed control of actuators as well as real-time processing of the imaging information received from the sensor board. eT-Kernel Multi-Core Edition controls the ARM®-based multi-core processors on the main board. eSOL's Blended Scheduling® technology makes it possible to run both SMP and AMP programs on the same system and OS. It is used in a variety of applications where it has demonstrated a high level of real-time capability and reliability, including automotive equipment, factory automation and industrial equipment, and consumer devices. The eBinder IDE used to develop applications to run on eT-Kernel Multi-Core Edition is tightly integrated with the RTOS and provides a variety of powerful tools for the debugging and analysis of complex multi-core systems.

eSOL is putting a lot of effort into improving quality to support the sort of safety critical systems that are potential applications for Exvission's image processing platform. eT-Kernel has product certification for the highest safety levels under both ISO 26262 (for automobiles) and IEC 61508 (for industrial equipment) (ASIL D and SIL 4, respectively). eSOL has also obtained certification that its development processes for RTOS products comply with the IEC 62304 safety standard for medical devices.

“The technical innovation of our unprecedented high-speed image processing platform based around the high-speed Vision Chip that features a high frame rate of 1,000 fps opens up potential applications in a variety of fields. In addition to eT-Kernel Multi-Core Edition already being widely used in automotive applications, key factors in our choosing eSOL were the depth of its technical personnel and the fact that it offered an extensive range of products and services to meet the needs of many different applications. I have faith in the comprehensive capabilities of eSOL to work with us as a partner, both in our current work on commercializing the image processing platform and looking ahead to the future provision of development support to users,” said Shunichi Kajisa, Director, Exvission Corporation.

“I am honored that our RTOS-based platform based around eT-Kernel Multi-Core Edition has been chosen for HSV SDK. The potential applications for the image processing platform are the same sort of mission-critical applications demanding real-time capability and reliability that eSOL has had such extensive experience with in the past. Our intention is to continue not only with the provision of development support to Exvission as a user of eSOL products, but also with working toward the establishment of a business partnership in which we have shared goals,” said Nobuyuki Ueyama, Executive Vice President of eSOL.

■ Additional Notes

About the HSV SDK

The High-Speed Vision Software Development Kit (HSV SDK) is a platform for the rapid development of high-speed image processing solutions with a variety of potential applications. It comprises an evaluation board and SDK, with the evaluation board in turn being made up of a main board and a sensor board fitted with the Vision Chip that is the core of the high-speed image processing technology. The evaluation board can run applications that perform image processing, including the detection and tracking of fast-moving objects at speeds of more than 1,000 frames per second (fps), and that can control actuators or other peripheral devices in real time based on the information obtained by image processing. The evaluation board can also send the information obtained by image processing as well as the images themselves to a connected PC. The SDK enables the rapid development of high-speed image processing solutions, providing APIs and sample code for developing real-time control applications for the evaluation board and applications to run on the PC.

▽ For more information about the HSV SDK: <http://exvission.co.jp/newsblog/84-news/267-2017-02-07-02-39-25.html>

About Exvission Corporation

Exvission Corporation is a venture business spin-off of the University of Tokyo that was established to develop the advanced high-speed image processing technology that came out of research and development at the Ishikawa Watanabe Laboratory, Graduate School of Information Science and Technology, University of Tokyo; to develop solutions that utilize this technology; and to contribute to its commercialization in a variety of different industries, with one example being the implementation of a gesture recognition system using the Vision Chip.

About eSOL Co., Ltd.

Founded in 1975, eSOL is a leading developer of real-time embedded software solutions 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.

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