
Renesas and OpenSynergy Adopted by Parrot Faurecia Automotive's Safe Multi-Display Cockpit

Renesas' R-Car SoC and OpenSynergy's Hypervisor Enables Practical Shared Display of Meter Display and IVI Function

TOKYO, Japan, Berlin, Germany, September 12, 2018 —Renesas Electronics Corporation (TSE: 6723), an industry-leading supplier of automotive semiconductor solutions, and OpenSynergy, a market leader in automotive hypervisors, today announced that the Renesas' system-on-chip (SoC) [R-Car H3](#) and [OpenSynergy's COQOS Hypervisor SDK](#) have been adopted on Parrot Faurecia's automotive safe multi-display cockpit. The latest version of Android™ is the guest OS of the COQOS Hypervisor, which executes both the instrument cluster functionality, including safety-relevant display elements based on Linux, and the Android-based in-vehicle infotainment (IVI) on a single R-Car H3 SoC chip. The COQOS Hypervisor SDK shares the R-Car H3 GPU with Android and Linux allowing applications to be presented on multiple displays, realizing a powerful and flexible cockpit system.

“OpenSynergy's hypervisor technology on the Renesas R-Car H3 platform brings safety and scalability to our front and rear infotainment systems,” said Frederic Fonsalas, director of strategy at Parrot Faurecia Automotive. “Our first multi display cockpit domain controller using this technology will go to production in 2019 with a European Premium car maker.”

“We are glad about joining forces with OpenSynergy, a strong partner who enabled us to deliver an innovative cockpit solution utilizing Android for the IVI function,” said Naoki Yoshida, Vice President, Automotive Technical Customer Engagement Division, Automotive Solution Business Unit, Renesas Electronics Corporation. “Having this robust and flexible hypervisor system adopted by Parrot Faurecia for start of production 2019 opens up new horizons.”

“The COQOS Hypervisor SDK takes full advantage of the hardware and software virtualization extensions provided by Renesas. Our products are a perfect match,” emphasized OpenSynergy's CEO Stefaan Sonck Thiebaut. “OpenSynergy's solution includes key features, such as shared display, which allows several virtual machines to use multiple displays flexibly and safely. This gives more options to our customers and helps them to speed up time-to-market.”

Renesas' automotive R-Car H3 SoC provides the optimum function and performance for integrated cockpits and connected cars. The R-Car H3 GPU and video/audio IP incorporates virtualization functions, making virtualization by the hypervisor possible and allowing for multiple OSs to operate independently and safely.

Open Synergy's latest virtualization technology, COQOS Hypervisor SDK, is built around a safe and efficient hypervisor that can run software from multipurpose OSs such as Linux or Android, RTOS and AUTOSAR-compliant software simultaneously on one SoC. It makes use of the R-Car H3 virtualization functions to make the best use of the R-Car H3's performance and ensures high reliability.

The instrument cluster functionality, which requires a high level of reliability, is rendered by Linux. Although Linux is an ideal operating system to render instrument cluster, it cannot provide the required safety (ASIL) level by itself. For this reason, OpenSynergy has developed the Safe IC Guard as a safeguard mechanism. It runs on a separate guest OS and verifies that safety-relevant information is displayed correctly.

The IVI functionality runs on a third guest OS, in this case based on Android. The COQOS Hypervisor SDK has been pre-integrated and tested with the newest versions of Android, including Android P.

Open Synergy's COQOS Hypervisor SDK allows multiple OSs to use the R-Car H3 GPU concurrently without interference and to access to several multiple displays. The IVI application running on Android and the instrument cluster running on Linux can share the same display. A screen manager controls the shared display within the instrument cluster so that the respective image content does not obscure safety critical information. The COQOS Hypervisor SDK also includes an AUTOSAR-compliant CAN gateway that runs on the Arm® Cortex®-R7 core on the Renesas R-Car H3. This allows a seamless connection to the in-vehicle network.

About Renesas Electronics Corporation

Renesas Electronics Corporation (TSE: 6723) delivers trusted embedded design innovation with complete semiconductor solutions that enable billions of connected, intelligent devices to enhance the way people work and live—securely and safely. A global leader in microcontrollers, analog, power and SoC products and integrated platforms, Renesas provides the expertise, quality, and comprehensive solutions for a broad range of Automotive, Industrial, Home Electronics, Office Automation and Information Communication Technology applications to help shape a limitless future. Learn more at renesas.com.

About OpenSynergy GmbH

OpenSynergy provides embedded software products for the next generation of vehicles. Our hypervisor and communication products pave the way for an integrated driving experience.

The virtualization platform COQOS Hypervisor SDK supports the convergence of software-based vehicle functions with different requirements on safety and security. It is designed for multi-display cockpit controllers, smart antennae or powerful domain controllers using a mix of AUTOSAR technology and open solutions, such as Linux and Android.

OpenSynergy's communication stacks allow the wireless connection between the car and the cloud or between the car and mobile devices. OpenSynergy's Blue SDK is the reference bluetooth implementation for many OEMs around the world.

Our engineering services complement the products.

Read more on www.opensynergy.com

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