Virtualized eCockpit

COQOS Hypervisor on NXP i.MX 8 and i.MX 8X

Berlin, January 3, 2018. OpenSynergy's next release of COQOS Hypervisor SDK will support NXP® i.MX 8 and 8X applications processors. CEO Stefaan Sonck Thiebaut confirms, that "the i.MX 8 and i.MX 8X applications processors fit very well to our eCockpit development strategy." This includes, for example, OpenSynergy's virtualization technology for use in an instrument cluster based on Linux including safety features.

NXP's i.MX 8 series of applications processors is a feature and performance scalable multicore platform that includes single-, dual- and quad-core families based on 64-bit Arm® Cortex® architecture. It includes combined Cortex®-A72 + Cortex-A53, Cortex-A35 and Cortex-M4 based solutions for advanced graphics, imaging, machine vision, audio, voice, video and safety-critical applications. One of the target applications is the fully digitized, electronic cockpit (eCockpit) for the car, containing an instrument cluster, head unit, heads-up display (HUD) and rear seat entertainment.

OpenSynergy's COQOS Hypervisor SDK meets the specific requirements of demanding automotive applications. It supports the hosting of multi-purpose operating systems such as Linux or Android and real-time operating systems (e.g. AUTOSAR), both of them running on a single system-on-chip (SoC). COQOS Hypervisor SDK also provides freedom from interference and controlled communication between guest operation systems.

Running on the i.MX 8 applications processor, COQOS Hypervisor SDK takes advantage of the hardware-based virtualization, system MMU and two GPUs that enable device-customers to develop and upgrade their automotive product to faster time-to-market and lower cost.

Customers can, for example, integrate the software of an instrument cluster into a Linux guest and an IVI-System into an Android guest on COQOS Hypervisor SDK running on i.MX 8. Some elements of the instrument cluster are safety-critical and require qualification up to ASIL-B. Therefore COQOS Hypervisor SDK would take advandage of the CRC–checking feature which is part of the i.MX 8. The CRC-checking feature supports realizing safety for the safety-critical features. In the case of any software failure, running on the instrument cluster, the guard mechanism would activate near-immediate recovery of the instrument cluster. By separating the instrument cluster software and the guard mechanism, this safety feature is protected from interference.

The next generation of COQOS Hypervisor SDK will also support the i.MX 8X product family. Extending the scalable range of the i.MX 8 series, the i.MX 8X family comprises common subsystems and architecture from the higher-end i.MX 8 family, establishing an unmatched range of cost-performance scaling with pin-compatible options and the highest level of software reuse.

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OpenSynergy will use this hardware to support customers developing connectivity and telematics solutions by providing customized virtualization software based on COQOS Hypervisor SDK.

 "Virtualization technology is key to enabling high levels of safety, security and performance when running safety-critical applications and infotainment applications on the same SoC. With OpenSynergy's virtualization platform COQOS Hypervisor SDK supporting our i.MX 8 platforms, users are able to take full advantage of the unique hardware architecture and features of the i.MX 8 processor and deliver an optimal eCockpit experience, " said Ron Martino, Vice President, i.MX Applications Processor Product Line at NXP.

About OpenSynergy

OpenSynergy is a high-tech company specializing in embedded automotive software for in-car cockpit solutions. The core products are the modular software development kit COQOS Hypervisor SDK and the leading Bluetooth™ stack Blue SDK.

Our products enable the convergence of instrument cluster, head unit, driver assistance and connectivity systems. Essential technologies are virtualization and Open Source software. Our solutions comply with requirements of standards like AUTOSAR and Bluetooth™. By doing, so we pave the way for autonomous driving.

OpenSynergy is an independently managed company headquartered in Berlin with further locations in Munich and the U.S. We continue to grow through the strong demand for our products. Our company's team consists primarily of highly qualified engineers. Our corporate culture is inspired by the international character that defines our employees, partners and customers.

Read more on www.opensynergy.com

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