OpenSynergy Works with Google and Qualcomm to Deliver Virtualized Android Automotive OS Reference Platform

Berlin, September 8, 2021 / OpenSynergy introduced today the company's new automotive reference platform for virtual Android™ 11 (based on Trout). With technology from Google and Qualcomm Technologies, Inc., the reference platform features the integration of the Virtual I/O (VIRTIO) framework into Android Automotive OS, which allows Android to run on any hypervisor supporting the upcoming VIRTIO devices and any system on chip (SoC). The reference platform contains Android 11, a board support package (BSP) from Qualcomm Technologies, Inc., and the VIRTIO-based COQOS Hypervisor SDK, all of which are running on a Snapdragon® Automotive Development Platform (ADP).

VIRTIO is an established virtualization standard maintained by the OASIS Open consortium that provides a device sharing framework for devices such as Block, Network, Console, graphics processing unit (GPU), Input, etc. As active members of the consortium, OpenSynergy and Google have worked to expand the scope of the open standards in the automotive domain. As there are missing automotive-specific VIRTIO devices, the two companies are working within the OASIS consortium to close the gap. Furthermore, the collaboration between OpenSynergy and Google aims to allow flexibility to automakers and Tier-1 suppliers to switch between SoCs and hypervisors to best match their needs.

The reference platform showcases an Android Automotive OS-based Cockpit Domain Controller (CDC) architecture. Similar to other CDCs, the underlying hypervisor guarantees the secure coexistence of Android (typically a QM system) with systems of higher criticality, such as the real-time OS displaying the telltales on an Instrument Cluster (typically ASIL B).

The novelty lies in deploying a fully virtualized Android Automotive OS (Trout), i.e., an Android version with no dependencies on the hardware. Instead of directly accessing the hardware devices, Android accesses these devices using the standardized VIRTIO framework provided by the underlying virtual platform.

A fully virtualized Android Automotive OS can easily be ported onto any hardware supported by the underlying virtual platform. In the case of the COQOS Hypervisor SDK, the hardware is any automotive relevant ARMv8-A-based SoC. The clean architectural separation introduced by VIRTIO makes updating Android and the BSP easy.

The reference platform and the usage of virtualized Android Automotive OS were showcased over the last year in several promotional events. Now, customers can access it and develop their specific applications on it. The released reference platform is intended only for research and pre-development purposes and not for series production. Customers can acquire the Snapdragon ADP through Qualcomm Technologies' distribution channels. The reference platform software is now available at OpenSynergy.

Jonathan Siegel, Portfolio Manager of OpenSynergy: "It has been an honor to work with Google and Qualcomm Technologies on such a game-changing project for the automotive industry. After intense years of development, the day has come in which we at OpenSynergy are finally releasing the virtual Android Automotive OS reference platform to the community. We are confident that this will ignite a new dynamic features we did not think of will be developed; easier deployment processes will be

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implemented. And we look forward to what comes next for VIRTIO-based Android. The community will guide us!"

Find more on our website: www.opensynergy.com/coqos-hypervisor-sdk-trial-for-android-reference-platform/

About OpenSynergy

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

The automotive virtual platform COQOS Hypervisor SDK integrates a mix of real-time applications and open source solutions on powerful domain controllers. It supports a large bundle of features corresponding to the virtualization standard VIRTIO, creating maximum flexibility: guest operating systems can be used and reused on different Systems on Chips.

The automotive leading Bluetooth® stack Blue SDK is one of OpenSynergy's communications platforms. It is the reference Bluetooth® implementation for many OEMs around the world. The variant Blue SDK Fusion offers a reliable Automotive-Grade Bluetooth stack for Android™ Automotive OS.

OpenSynergy further provides complimentary Automotive-Grade software components tailored for the Android™ Open Source Project (AOSP) to boost Android's adoption in the automotive domain.

OpenSynergy also provides engineering services to support the customization of its products.

Read more on www.opensynergy.com

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