

OpenSynergy Enhances Virtual Platform to Fully Support Android Automotive OS

Automotive manufacturers can now deploy the latest Android Automotive OS with drastically reduced integration effort

Berlin, September 22, 2022. OpenSynergy has announced today the release of an enhanced version of their automotive reference platform for virtual Android™ (based on Trout) with Android 12 MVP 1.0 ready for series production. Containing technology from Google, the reference platform highlights the integration of the Virtual I/O (VIRTIO) framework into Android Automotive OS (AAOS). More importantly, the reference platform now offers a complete vehicle-ready solution due to the fact that OpenSynergy has specified and implemented devices necessary for automotive use cases. This allows Android to run fully virtualized on any solution containing the newest VIRTIO device implementation. Additionally, VIRTIO enables support for multiple System on Chip(SoC)s, and provides higher flexibility to change hardware.

VIRTIO is an established virtualization standard maintained by the OASIS Open consortium. It provides a device-sharing framework for devices such as block, network, console, graphics processing unit (GPU), input, etc. OpenSynergy assumes the role of an automotive expert in the consortium specifying missing automotive-specific VIRTIO devices to expand the scope of the open standard in the automotive domain such as sound, video, Bluetooth®, camera, GNSS, and more. Thanks to the OASIS consortium's active membership and expertise gathered in the open-source domain, OpenSynergy always provides a mature virtual platform equipped with the very latest VIRTIO devices already shipping in a large number of cars.

OpenSynergy's latest COQOS Hypervisor SDK supports VIRTIO devices required for automotive use cases, allowing customers to fully leverage the virtualized AAOS reference platform. The cooperation between OpenSynergy and Google ensures that Android™ Automotive OS is fully compatible with the COQOS Hypervisor SDK. As Android Automotive OS can be deployed fully virtualized, customers enjoy the quick integration of Android onto their hardware, easy upgrade of Android versions, as well as easier CTS certification by using a pre-CTS tested Android (AOSP).

Operating systems fully compliant with this open VIRTIO standard can be flexibly deployed and reused across any hardware and hypervisors adhering to the standard. As an example, OpenSynergy has successfully collaborated with several Tier1s to transition and upgrade their infotainment systems already in series production to newer hardware and the latest Android version in the span of only a few months. This maximum flexibility gives OEMs and Tier1s the freedom to choose any chipset vendor for their series projects, which is especially useful to accelerate the move to more powerful hardware, supporting the rapid introduction of additional features. At the same time, this flexibility is crucial in times of silicon shortage.

OpenSynergy's 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 reference platform software is available from OpenSynergy. It contains the VIRTIO-based COQOS Hypervisor SDK as well as links and tools to download and build AAOS.

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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.

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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