



Shared GPU using Virtualization

About OpenSynergy



Short Profile

- Located in Berlin, Germany
- Worldwide customers and partners
- Focused on automotive embedded software & development services
- Approximately 50 employees
- Excellent expertise in AUTOSAR, Infotainment, Car2X, Linux in automotive
- Product development funded through Investments from Hasso-Plattner Ventures and VC Fonds Technology Berlin

COQOS virtualization approach





The product COQOS contains all orange modules. It is based on PikeOS technology.

COQOS target platforms





μ OS: Partitioning





The Micro Operating-System separates the hardware resources into "partitions"

- The µOS ensures proper separation
- The µOS provides communication mechanisms between the partitions

Challenge in sharing GPU





Drivers in local partition – exclusive access





Virtual drivers





Share through high-level frameworks





Share through low-level frameworks





Shared Graphics: Use Cases





Use-Cases:

- run ADAS (e.g. rear-view camera) in its own fast-booting partition
- drive 2 displays (e.g. instrument cluster and central head-unit display) from a single SoC
- combine critical (time-critical or safety-relevant) and uncritical information on a single display

Shared Frame-Buffer





GPU sharing





Example: Fast-boot rear-view camera



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Demo





Contact





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