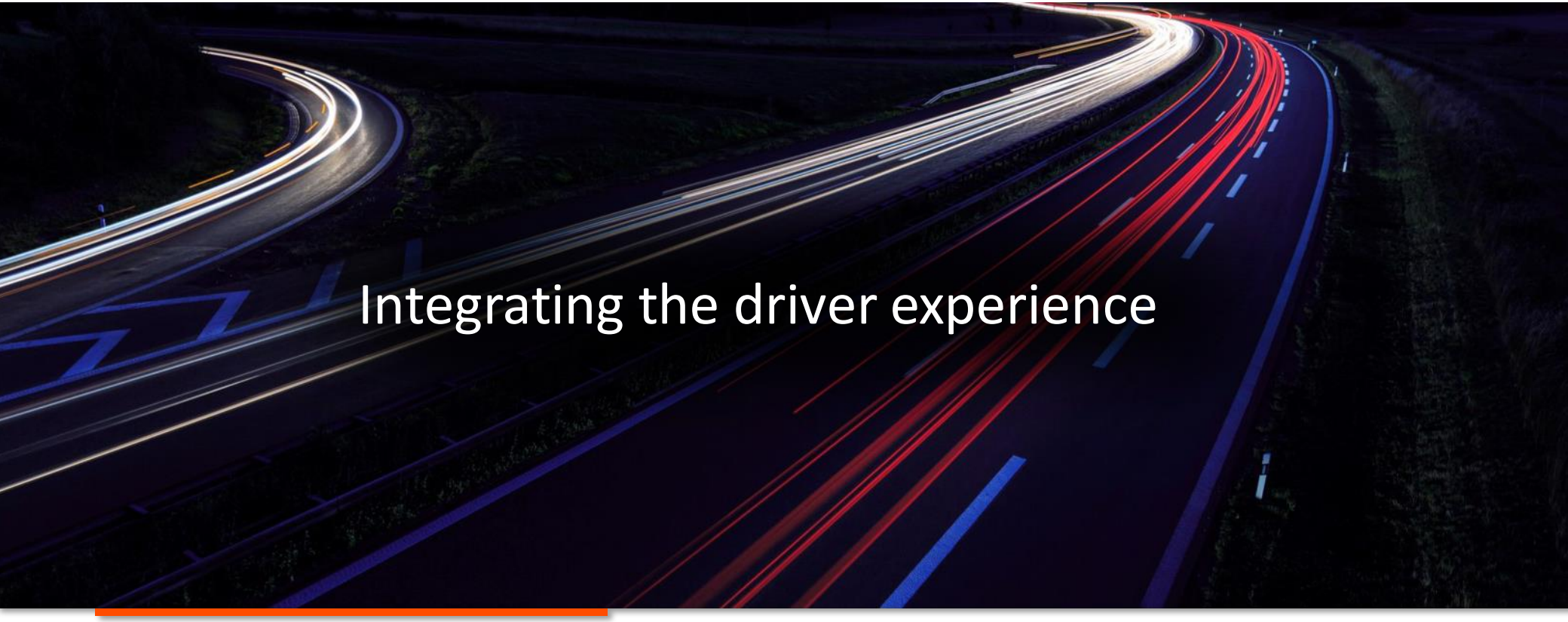
OPENSYNERGY



Integrating the driver experience

VIRTIO AGL integration
18.08.2020

public

Architecture of AGL with Virtualization: I

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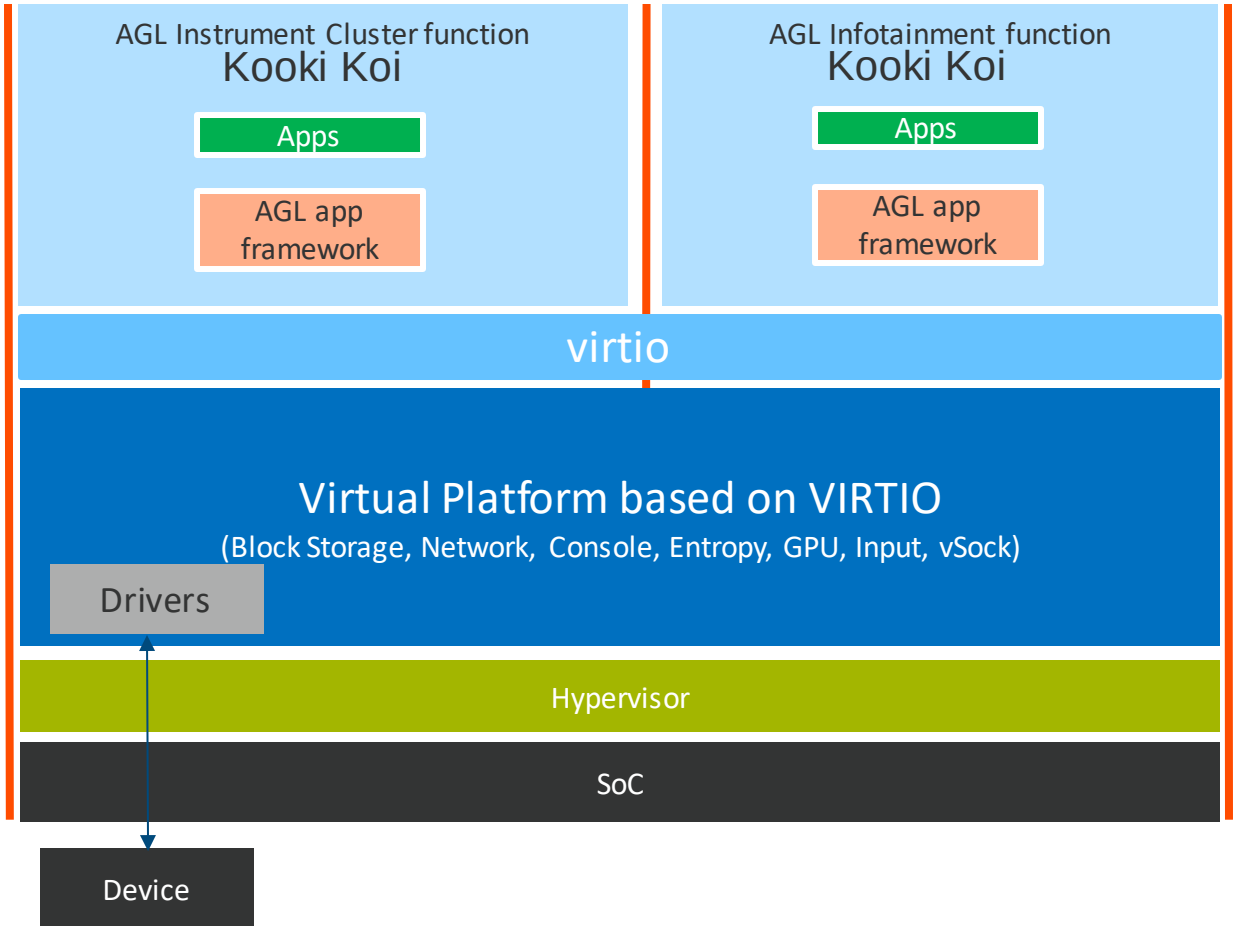
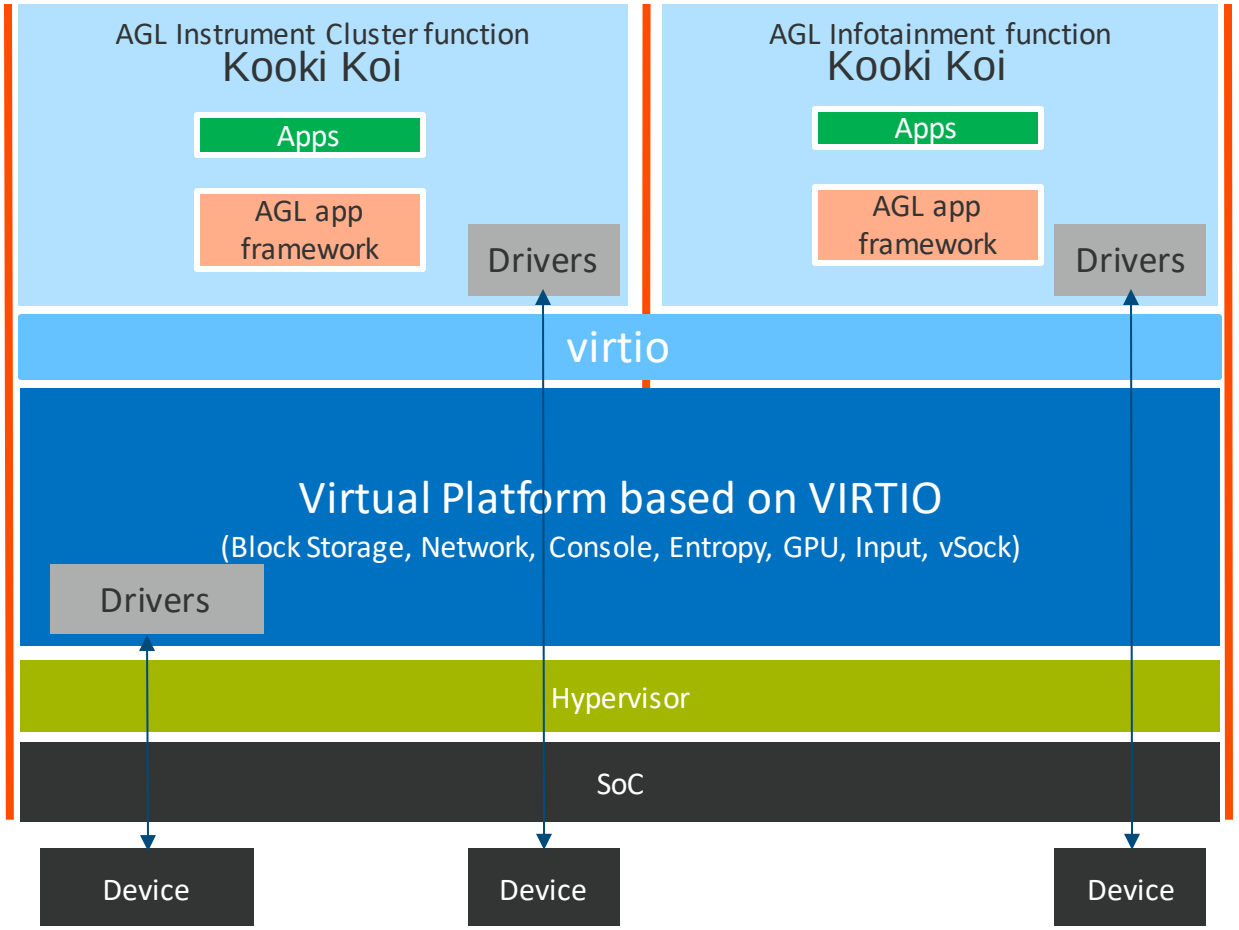


- AGL guests:
  - **vanilla kernel**
  - **AGL BSP**
  - no pass-through device access
  - can run in qemu on x86/arm host
- Virtualization platform:
  - Provides virtio interfaces to **AGL guests**
  - can be **AGL or non-AGL**
  - pass-through devices access

Architecture of AGL with Virtualization: II



- AGL guests:
  - **Vendor BSP kernel**
  - **Vendor + AGL BSP**
  - pass-through device access
  - Leverage SoC **virtualization support**
- Virtualization platform:
  - Provides virtio interface to **AGL guests**
  - can be **AGL or non-AGL**
  - pass-through devices access

Properties

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AGL without phys HW access:

Pros:

- HW/BSP/Hypervisor independent, one AGL image for everyone
- Latest Linux kernel can be used, independently from 'host' BSP-specific kernels
- Can be developed in emulator (e.g. Qemu/KVM)
- Clear "host" VM / "guest" VMs separation (no circular dependencies)

Cons:

- Limited HW virtualization leverage
- Larger virtio interfaces gap needs to be filled (new virtio devices needed)

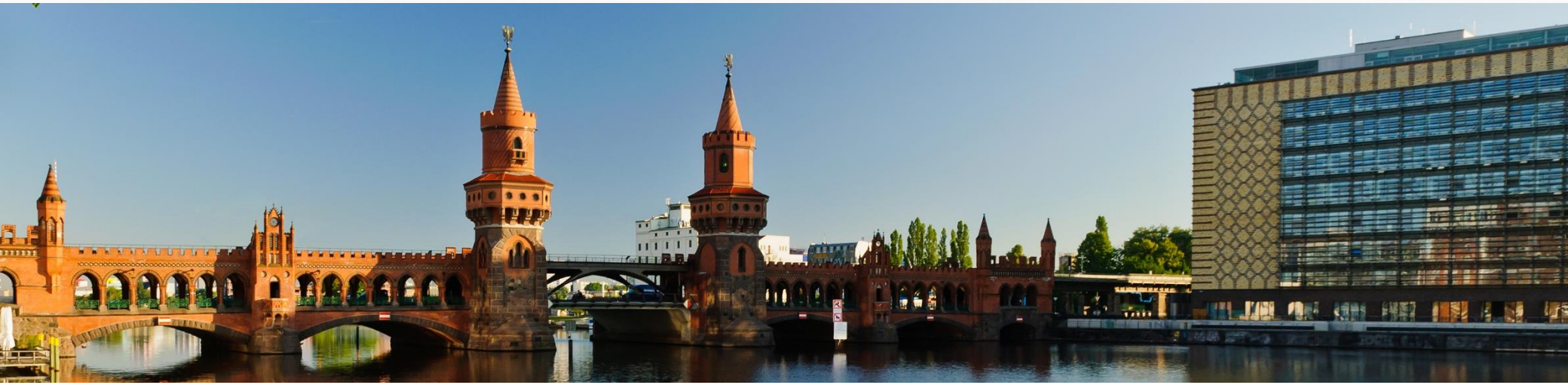
AGL with phys HW access:

Pros:

- Exclusive pass-through access to HW (e.g. connectivity HW: wifi/bt)
- HW virtualization support leverage
- Re-use existing HW-specific SW

Cons:

- HW/BSP specifics (kernel ver, drivers etc.) for each supported board



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