PEGASUS
AUTOMOTIVE HYPERVISOR

ISO 26262 ASIL-D Certified (CPU & MCU)

PERSEUS
Be Simple, Be Secure

WHAT IT IS

Type-1 (bare-metal) automotive hypervisor

Foundational system software for SDV platforms

WHAT IT DOES

Supports multiple operating systems on shared CPU & MCU hardware

Enforces isolation and deterministic execution at the system layer

Enables safe consolidation of mixed-criticality workloads

WHY IT MATTERS

Significant reduction in SoC requirements and E/E system complexity

Establishes a stable, safety-certified foundation for scalable SDV platforms

Enables predictable, long-term deployment & evolution of SDV fleets

www.cyberperseus.com

Solving Key Challenges

SDV programs concentrate more functionality onto fewer SoCs. Safety-critical, real-time, and non-critical software must coexist on shared hardware across long vehicle lifecycles.

This creates system-level challenges that must be addressed **together,** not in isolation:

EFFICIENCY

Rising H/W count increases development & maintenance cost, integration effort and E/E complexity.
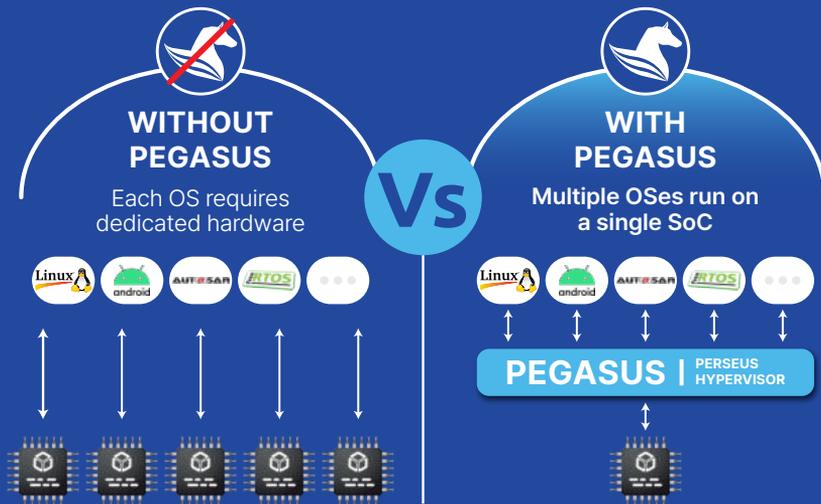
SECURITY

Mixed-criticality loads increase attack surface, as well as the impact of faults and malicious interference.

PERFORMANCE

Safety-critical workloads must remain deterministic while system capability and software scope scale.

These Challenges that cannot be solved independently, are addressed together with PEGASUS.

WITHOUT PEGASUS

Each OS requires dedicated hardware

Vs

WITH PEGASUS

Multiple OSes run on a single SoC

Linux · android · AUTOSAR · RTOS · ...

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PEGASUS | PERSEUS HYPERVISOR

PEGASUS: Foundational System Software

PEGASUS operates at the system layer, where execution rules, determinism, explicit system architecture and long-term platform behavior are defined, and where system performance is enforced.

ARCHITECTURAL SCOPE

- Enables safe virtualization across **CPU and MCU architectures**

- Supports both application-class CPUs and real-time MCU platforms

- Industry-standard guest OS integration is possible **without modification** (AUTOSAR Classic, RTOSs, Linux, Android, QNX, legacy systems)

SAFETY & DETERMINISM

- **ISO 26262 ASIL-D certified for both CPU and MCU architectures**

- Deterministic execution for mixed-criticality workloads

- Strong isolation and controlled resource allocation enforced at the system layer, ensuring critical features remain protected as non-critical software evolves, scales, or is updated

PEGASUS enables E/E architecture consolidation without compromising safety or real-time behavior, reduces reliance on dedicated ECUs and SoCs per operating system and supports scalable SDV platforms with long lifecycles (up to ten years)

Applicable Across SDV Programs

- Foundational system software for SDV platforms
- ADAS and domain controllers
- MCU-centric real-time control systems (powertrain, chassis, body)
- Digital cockpit and infotainment systems

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BUILT & READY FOR PRODUCTION

PEGASUS is certified, integrated with leading automotive platforms, built on more than 18 years of embedded virtualization experience & supported by purpose-built tooling:

- Workbench (SDK) for design-time configuration and validation
- A User Dashboard for runtime visibility and management at the hypervisor layer
- Pair with GAIA - a secure boot loader, to enable predictable, secure startup for hypervisor-based & multi-OS SDV systems

BEYOND AUTOMOTIVE

PEGASUS is applicable to other software-defined, safety-critical systems, including logistics & transport, industrial infrastructure, defense & government, edge computing & AI, and high-reliability professional systems.

Talk to us about your system architecture

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