



# Advanced Driver Assistance Systems

Safe Real-Time ADAS

PikeOS RTOS & Hypervisor

## Connection needs Safety & Security



Safe and secure  
RTOS



Safe  
Hypervisor



ISO 26262

**CHALLENGE**

Flexibility and scalability are the most prominent needs for Advanced Driver Assistance Systems (ADAS) platforms. The requirement of being pre-certified up to the highest assurance level according to ISO 26262 is self-evident. Future ADAS platforms will require robust separation of applications to run in a safe and secure manner, as well as meeting Safety & Security standards applicable for the Automotive industry. They will also need to quickly adapt to the standard that may vary depending on the geographical regions (e.g. Europe, US, China or Japan).

- Flexibility is supposed to allow various heterogeneous functions, legacy applications and sub-systems to be

seamlessly integrated and to assure the highest level of independence from the underlying hardware architecture.

- Scalability is supposed to ensure that, whatever complexity, performance, Safety & Security demands the final use case may require, the software platform doesn't have to be changed.
- Legacy certification should be reusable while developing a new system.
- Integration of functions also become more complex. The challenge is to ensure a smooth integration of multiple functions developed by completely different teams using a large variety of technologies.

**SOLUTION**

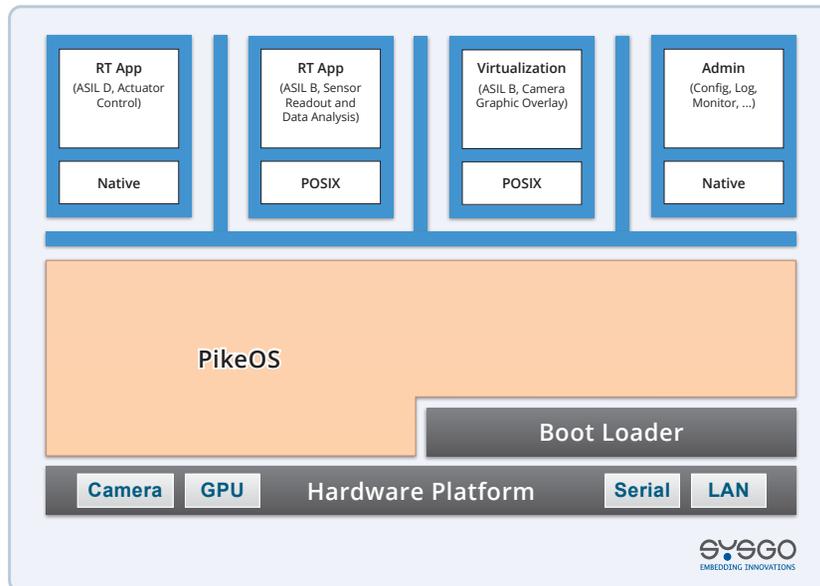
To meet the requirements of a robust separation of applications to run safe and secure, PikeOS is the solution.

- The PikeOS RTOS/Hypervisor runs on all industry standard hardware architectures and platforms, supports several APIs (e.g. native, POSIX, legacy APIs) and guest OSES (e.g. Linux, Android) while being ISO 26262 pre-certified
- PikeOS scales from being a pure embedded RTOS running a single application to a hypervisor concurrently hosting

multiple OSES and multiple instances thereof as well as real-time applications.

- The PikeOS certification kit structure enables re-use of certification artefacts across different domains both for Safety & Security enabling fast adaptations to new global or regional certification standards.
- PikeOS guarantees the independence of each of the concurrent running OSES and applications, allowing these OSES and applications to have various criticalities.

**PIKEOS SOFTWARE ARCHITECTURE**



Founded in 1991, SYSGO became a trusted advisor for Embedded Operating Systems and is the European leader in hypervisor-based OS technology offering worldwide product life cycle support. We are well positioned to meet customer needs in all industries and offer tailor-made solutions with highest expectations in Safety & Security. More information at [www.sysgo.com/automotive](http://www.sysgo.com/automotive)