Train Screenboard / Driver Display
Managing the Complexity ahead

PikeOS RTOS & Hypervisor
Proven Platform for a Safe & Secure Operation

Graphical UI and Real-Time
Allow mixed Criticality
Safe GPU Sharing

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Trusted by leading OEMs & Tier-1s • Quality „Made in Germany“

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CHALLENGE

Driver display systems (or screenboards) are becoming more and more complex, while integrating highly critical with commodity functions. This trend will continue, leading to configurable multi-function displays (MFDs), as already seen in Avionics cockpits. This requires to run certified Safety-critical UI components in parallel to feature-rich non-critical commodity UI (setup with mixed criticality).

The latter requires the use of standard components, while focusing on a sophisticated UI representation (e.g. through 2D/3D acceleration and rendering through hardware). Safety-critical UI components will focus on a leaner approach in order to reduce risks and cost of the certification while using a pre-certified UI framework.

SOLUTION

In order to have a cost-effective commodity UI implantation, the feature richness of today’s available UI frameworks have to be available. And the coexistence of UIs of different criticality requires a strict separation of functionality, while being able to share the same graphic hardware.

- The pre-certified PikeOS RTOS/Hypervisor allows you to use commodity functionality from an embedded Linux (e.g. HTML5) side-by-side with a pre-certified UI framework.
- The UI framework can share the GPU, while access to the GPU is controlled and managed by PikeOS.
- While implementing a feature-rich UI, PikeOS enables the concurrent execution of real-time tasks on the same platform.

PIKEOS SOFTWARE ARCHITECTURE

PIkeOS®