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Safe design in real-time
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ASTERIOS

The ASTERIOS automated RTOS framework

With ASTERIOS parallel real-time applications are as simply and safely designed as sequential programs.

Krono-Safe commercializes RTOS technologies originally developed by the CEA and validated with major customers in the aerospace, automotive, industrial automation and energy markets.

ASTERIOS enables to describe explicitly all the real-time requirements of the application, even if non-periodic, multi-clocked or event-driven. It then configures automatically all the RTOS-related mechanisms needed to run the real-time application on the selected hardware platform. It ensures by construction an optimal scheduling, deterministic data synchronization and freedom from interference while providing state-of-the-art performances.

ASTERIOS also includes simulation functionalities to debug the temporal behavior of the application. The application can be incrementally architected, enriched, modified or validated, all on a desktop computer with simulation alone. A simple compilation directive is used to select a supported hardware platform and the number of cores to run the application. The configuration automation of all RTOS-related mechanisms provided with ASTERIOS ensures by construction strict determinism and reproducibility between simulation and the chosen hardware configuration.

ASTERIOS is especially suited to address high reliability and performance for mix-criticality real-time applications in a certification context.

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