



Multi-Core Execution of *Parallelised* Hard Real-Time Applications Supporting Analysability

www.parmerasa.eu

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Increased performance at reduced costs while maintaining safety levels – these are the key demands from European avionic, automotive and automation industries. Even the latest state-of-the-art embedded single core processors cannot cope with these demands. The pursuit of higher performance, improved safety levels and lower costs requires a new solution. parMERASA combines the requirements for high-performance with time-predictable execution that is indispensable in our focused safety-critical domains.

Hard real-time applications, such as flight management system, automotive engine and drilling machine control, will be parallelised and executed on an embedded multi-core processor. The parMERASA multi-core processor and system software is expected to scale up to 64 cores. Objectives include an at least eightfold improvement of the worst-case execution time for parallelised legacy applications in the avionics, automotive and construction machinery industries.

Project Partners



Verification
and
Profiling

Avionics

Automotive

Construction
Machinery

Parallelisation of Hard
Real-Time Applications

IMA

AUTOSAR

ESX-3XL

..... Abstraction Layer Real-Time Environment

Multi-Core RTOS-Kernel

Memory

Processor Cores

I/O

Predictable Multi-Core
Hardware

Industrial Advisory Board

