

## Partners



**DENSO**



**Honeywell**

## parMERASA is an FP-7 project of the European Union

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Website: [www.parmerasa.eu](http://www.parmerasa.eu)

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parMERASA

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



## Key features of the parMERASA project

- Parallelisation techniques for safety-critical applications
- Timing analysable parallel design patterns
- Operating system virtualisation and efficient synchronisation mechanisms
- Guarantee of worst-case execution times (WCET) of parallelised applications
- Verification and profiling tools
- Timing analysable multi-core architecture with up to 64 cores



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.

