

ARCHEOCS proposal

Architectural Exploration and Optimization on Complex SoCs



Objectives

- Provide methods and tools to exploit **safely and efficiently** modern computation platforms



The problem

- Emergence of complex **high-performance computation platforms** embedding multiple heterogeneous cores, accelerators, hypervisors...
- Emergence of **deterministic communication networks** providing system-wide synchronization...
- **Ever growing demand for computation power** to support, in particular, AI-driven applications...
- **Persistent need for dependability and certification**...



2 M€



36 months



Thales Alenia Space,
Safran Electronics and
Defense, Renault
Software Labs, Liebherr,
CS,
ASTC, Krono-Safe, IRT,
INRIA, ONERA

The solution

- Multi-core and **multi-CPU** deterministic platform based on the ASTERIOS environment and a deterministic communication network (target: TSN, link with the EDEN project).
- Method and tools to **demonstrate compliance with certification requirements** for applications deployed these platforms (e.g., interference analysis/mitigation, WCET analysis).
- Method and tools to **optimize the deployment of applications** these platforms.