# HIPOTESE

High PerfOrmance archiTEctures for SpacE

PROJECT IDEA

The adoption of top notch data processing technologies for Space applications has been extremely slow in the last decade due to the constraints imposed by the harsh space environment and the high quality standards requested by Space agencies. This project targets at **Migrating High Performances Full Reconfigurable Commercial Architectures to the Space Domain.** The vision of this project is that High capacity data processing structures based on multi and manycores integrated in MPSoC devices can now target Space applications leveraging on design simulation and validation methodologies previously developed under the CPS paradigm. The target is to identify reconfigurable commercial architectures (Kintex, Zinq, ARM, PPC, GPU…) that can be rapidly introduced in the space domain through the application of several CPS developments such as real time reconfiguration, distributed data processing, Time & Space partitioning, non functional parameters simulation and Model Based design and simulation. This project shall act as gateway to introduce innovative commercial data processing solutions into the space domain including HW and SW architectures as well as design, simulation and validation toolkits associated to those architectures. Actual application demonstrators will be made available for the solution providers to validate their developments against the stringent Space Quality, safety and Dependability standards.

KEY POINTS

- Fast entry point for new CPS oriented High Capacity HW/SW Architectures into Space
- Target Devices: ARM, PPC, ManyCores
- Radiation hardening through SW and Reconfiguration
- Based on Model Based design and Simulation
- New business opportunity for Non space partners
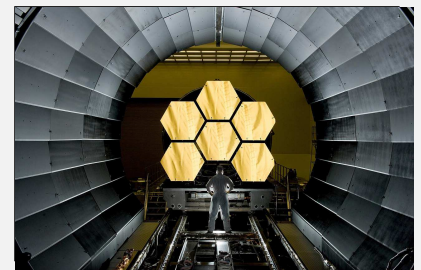
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ORGANISATION
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CONSORTIUM STATUS
> Consortium Under Construction

AVAILABLE KEY PARTNERS
> TASE, CEI-UPM
> Space Applications, In Flight Reconfiguration

MISSING PARTNERS
> HW/SW architecture owners (ARM, PPC or GPU based architectures)
> SW hardening experts
> Model Based Design and validation experts
> Non-Functional parametric simulation tools