Compact Reconfigurable Avionics - Reconfigurable Data Handling Core

Contract 4000121650/17/NL/LF

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CoRA RDHC – Final Presentation

- *Budget:* 700k + 30k (CCN1)

- *Duration:* 18 Months

- *Prime:* Cobham Gaisler (SE)

- Sub co.: , ADS (FR), TAS (FR) and TAS (ES)

- *Main Objectives:*

    1. Design and development of a **modular computing platform based on SAVOIR architecture**;

        A. Apply state-of-the-art rad-hard **multi-core CPU** and **reprogrammable FPGAs**;

        B. **Standard Interfaces** compatible with typical AOCS sensor and actuator interfaces.

    2. Facilitate **COTS bread board kits** to parallel activities for pre-development support.

    3. BSP i.e. **HDSW** (RTEMS5 drivers) and **Middle Ware SW** incl. **PUS subset for TM/TC**.

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CoRA - VISION

- Define high level **mission requirements** e.g. AOCS, data handling needs
  - Avionics architecture is defined by those mission needs e.g. type actuators (i/f and performance) or type of processors/FPGAs.
- **HW and SW co-development environment** utilizing **pre-existing blocks** from **SW sources** and **IP blocks** from libraries
- **Generic HW platform** hosting both **GPP** and **reconfigurable FPGA fabric**
- Generic **Validation environment**
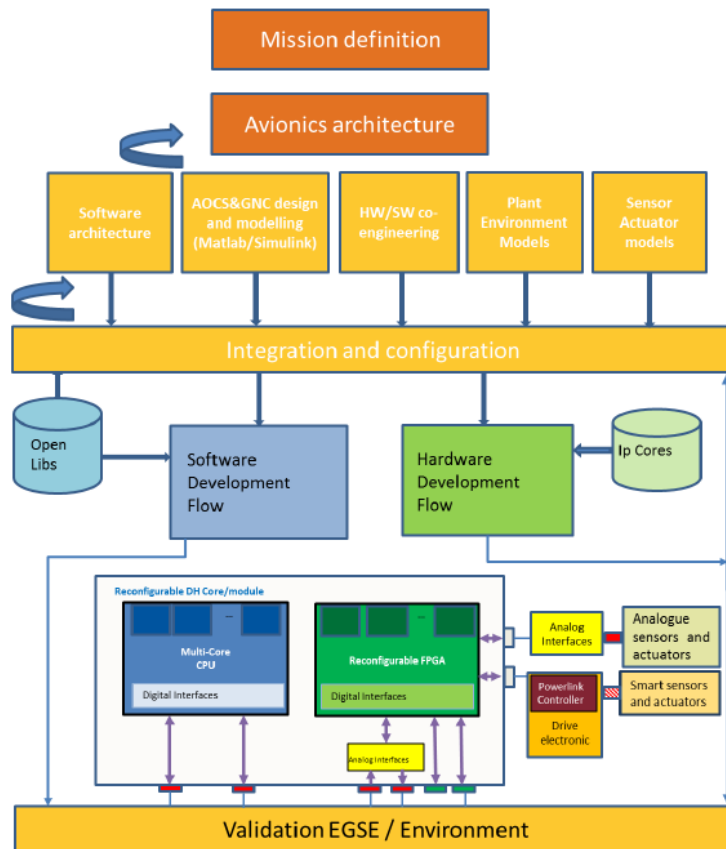
CoRA – ARCHITECTURE DEFINITION

- Modularity
- Standard communication interfaces between data-handling modules.
- AOCS equipment utilizes standard interfaces, serial buses to discrete I/O
- SW Dev. environment supports both traditional GPP and FPGA fabric (re-programmable)

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