TITLE: "CORA-MBAD: A MODEL BASED AVIONICS DESIGN ENVIRONMENT FOR HW/SW CO-DESIGN"

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"Compact Reconfigurable Avionics – Model Based Avionics Design" (CoRA-MBAD) is a TRP R&D study aimed at developing a model based avionics design environment and process permitting the HW/SW Co-design at a high abstraction level, and intensively relying on automatic code generation to optimize the development and the performances of compact reconfigurable avionics.

Model Based Avionics Design System (MBAD System) is based on TASTE toolset and present the following features:

- Allows to model the mission phase transitions in the form of state machines.
- Automatically generates code skeletons from the avionics model but also the drivers that allow communicating software functions with hardware functions so that users only have to worry about implementing the functional code.
- Relies on high level synthesis of C code, either manually implemented or generated by Embedded Coder® from Simulink® models, so that components can be deployed on the FPGA in a transparent way for the user.

The study is led by Thales Alenia Space in France with the participation of GMV in Spain, Thales Alenia Space Spain, Airbus Defense and Space France and Politecnico di Milano.