ACOSAR
Advanced Co-simulation Open System ARchitecture

PROJECT SUMMARY
The coupling and integration of real-time systems into simulation environments still requires enormous effort. This problem is particularly challenging for distributed hardware-in-the-loop systems and their simulation. ACOSAR aims to develop a non-proprietary Advanced Co-Simulation Interface (ACI) for the integration of real-time systems and an accompanying integration methodology.

OBJECTIVES
- Standardized real-time system interface
- Methodology for real-time system integration
- Distributed real-time co-simulation

UNIQUE SELLING POINTS / BUSINESS VALUE
- Standardized integration of RT-Systems
- Accelerated development process
- Broadly horizontal development

(EXPECTED) RESULTS
- ACI Specification (ACI Standard)
- Handbook ‘Integration Methodology’
- Prototype Converter Module (FPGA)
- Reference Implementation
- ACI Community

EXTENSION OF FMI TOWARDS REAL-TIME SYSTEMS

ENHANCED INTEGRATION METHODOLOGY
ACOSAR
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PROJECT CONSORTIUM

START DATE SEPTEMBER 2015
PROJECT END AUGUST 2018

WORK PACKAGES OVERVIEW
- WP1: Requirements Engineering
- WP2: Integration Methodology
- WP3/4: ACI Interface Development
- WP5: ACI Communication
- WP6: ACI Specification
- WP7: Application Use Cases
- WP8: Dissemination
- WP9: Project Management

ACOSAR PROJECT PARTNERS
- Large companies (8)
- SMEs (4)
- Universities (3)
- Research institutes (1)

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This use case is intended to demonstrate the capabilities of the Advanced Co-Simulation Interface (ACI) along a distributed Co-Simulation scenario. Involved virtual/real testing environments are executed at different locations. ACI supports:

- Remote control of Advanced Co-Simulation Units (ACUs)
- Abstracted communication via the ACI Protocol
- ACU integration via interface description