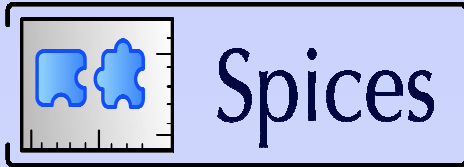


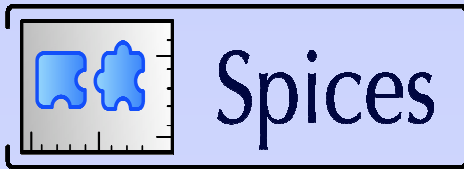
Project Report

AADL committee meeting
Salt Lake City, April 16, 2007



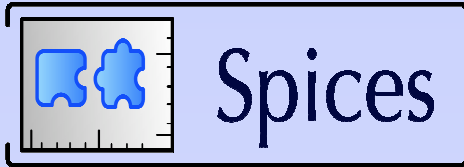
Goals

- ***The general goal of the project*** is to propose a component based predictable implementations of mission-critical embedded systems associated with certification issues.
- Definition of new methods and tools based on extended AADL descriptions
- AADL extensions to support specific non-functional real-time embedded constraints and to provide run-time execution capabilities.



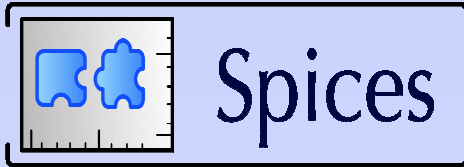
Framework

- ITEA program (Information Technology for European Advancement)
www.itea2.org
- 3 years project: Sept 2006 -> Aug 2009
- 15 Partners:
 - AIRBUS France (Industry - France) + subcontractor: ELLIDISS Technologies (SME –France)
 - Axlog Ingénierie (SME - France)
 - BARCO Avionics (Industry – Belgium)
 - CEA-List (Research institute – France)
 - CETIC (Research institute – Belgium)
 - FéRIA (Research institute – France)
 - K.U Leuven (University – Belgium)
 - Israel Aircraft Industries LTD (Industry –Israel)
 - LESTER (University – France)
 - SQS (SME – Spain)
 - TCP/SI (SME –Spain)
 - THALES Avionics (Industry – France)
 - THALES Communications (Industry –France)
 - Universidad de Cantabria (University – Spain)
 - Verimag (Research institute –France)



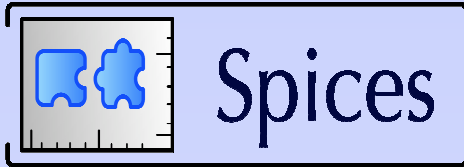
Work Package 1

- WP1 : Multi-domain extended AADL
- Several concepts and aspects have to be studied:
 - high level concept of components and containers,
 - behavioural description,
 - timing requirements and behaviour,
 - power consumption properties,
 - quality of components,
 - support of the standards (Arinc 653...)
- Status (April 2007)
 - requirements gathering
 - AADL modelling guidelines
 - work about the Behavioral Annex



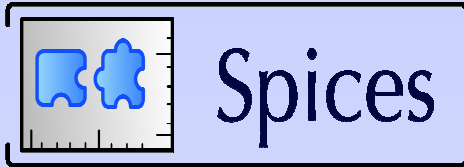
Work Package 2

- WP2: Verification and Validation Techniques
- Goal: study, define and prototype methods and tools that will assist in the verification and validation of architectures that have been expressed using AADL
- Status (April 2007)
 - work about AADL semantics
 - overview of tool qualification in airborne software
 - tooling activities (Eclipse based):
 - AADL simulator (Axlog)
 - interaction with OSATE and TOPCASED
 - new AADL editor: ADELE



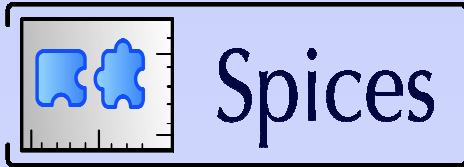
Work Package 3

- WP3: Component Execution Support
- Execution support based on the Component/Container Model (CCM) that offers the following benefits:
 - explicit description of the provided and requested services of each component
 - separation of concerns, between the business code (to be hosted by the component) and the non-functional one (whose realisation is to be achieved by the generated container)
- HW/SW co-design: AADL to SystemC translation tool.
- Status (April 2007)
 - modelling CCM with AADL: concept mapping and modelling process
 - cf. separate presentation about CCM and AADL



Work Package 4

- WP4: Demonstrators
- Use case 1: Avionics
 - ARINC 653 and Integrated Modular Avionics (IMA)
 - Airbus, Barco, IAI, ...
- Use case 2: Space
 - POSIX compliant real-time in satellite ground tracking station
 - embedded HW/SW controllers for earth observation satellites
 - TCP, IAI, ...
- Use case 3: Communication systems
 - Representative architecture of a Software Radio concept for an avionic equipment
 - Thales Communications



Work Package 5

- WP5: Dissemination, Standardisation and Exploitation
- Status (April 2007)
 - gforge
 - website: <http://www.spices-itea.org>
 - interaction with the AADL committee !
- SPICES and the AADL committee:
 - SPICES will propose extensions to the language
 - SPICES will experiment AADL in industrial contexts
 - Need to coordinate with other AADL related activities
 - Wish to exchange advices and results