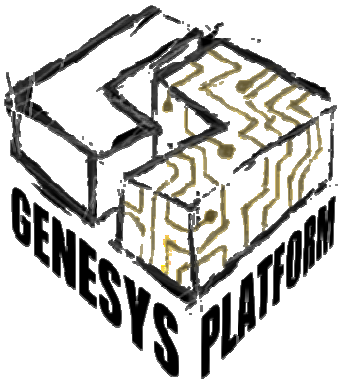
PROMETEO

Plataforma Tecnológica Española de Sistemas con Inteligencia Integrada



GENESYS - GENeric Embedded SYStem Platform

CURRENT FP7 PROJECTS

European Software Institute – Ikerlan

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Valencia, Diciembre 2008

GENESYS - Generic Embedded System Platform

- Motivation: ARTEMIS
  - The ARTEMIS approach is to cut barriers between application sectors […].
    [ARTEMIS. Annual Conference, 2005], p.10

- Project Objetives

  Development of **an architecture candidate for ARTEMIS.**

  To develop **a cross-domain architectural style** for real-time embedded systems, which will serve as a **basis for a reference service template** and a corresponding **cross-domain development methodology**.

  - **The architectures instantiated from the reference architecture template will be compliant with ARTEMIS SRA Objetives :**
    - Composability
    - Robustness
    - Integrated Resource Management
    - Networking and Security
    - Diagnosis and Maintenance
    - Evolvability

GENESYS - Generic Embedded System Platform

- Technical Results.

Cross-domain architectural style.

- Networking and Resource Management
  - MPSoC (Multi Processor System-on-Chip) hardware
  - Exploitation of the concurrency and parallelism exposed by the platform
- Robustness, Diagnosis and Maintenance
  - Acceptable level of service despite the occurrence of transient and permanent hardware faults
  - active/*passive diagnosis*
- Composability
  - Interface Specification
  - Non-Interfering Interactions
  - Error Containment
  - Fault masking

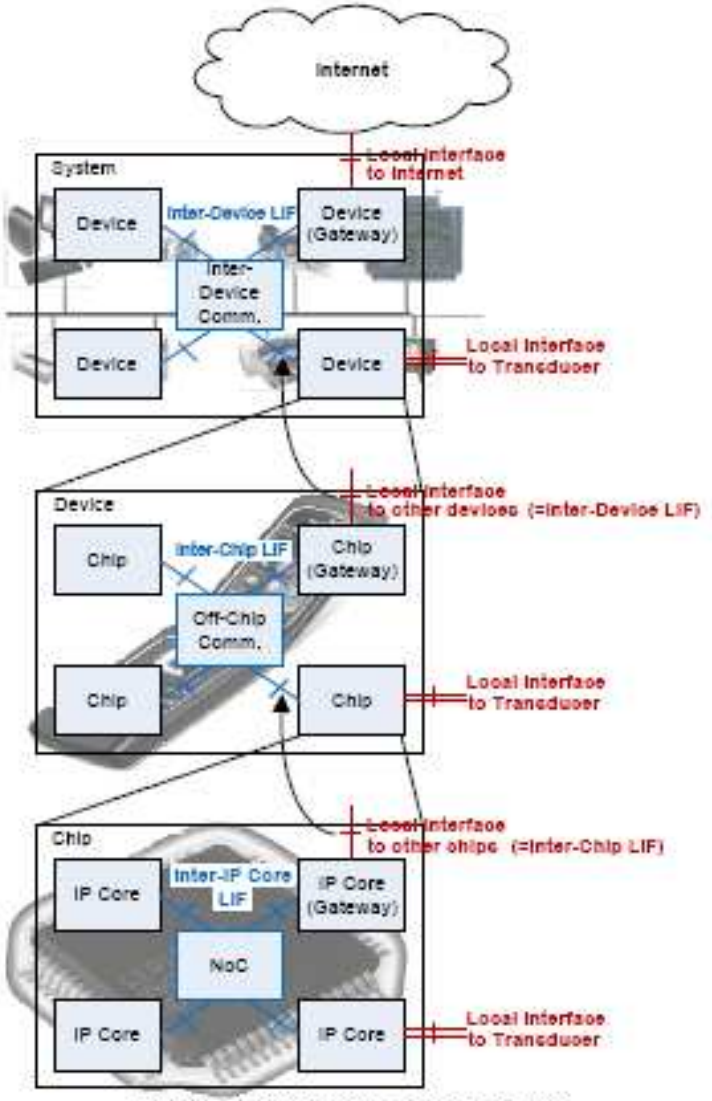
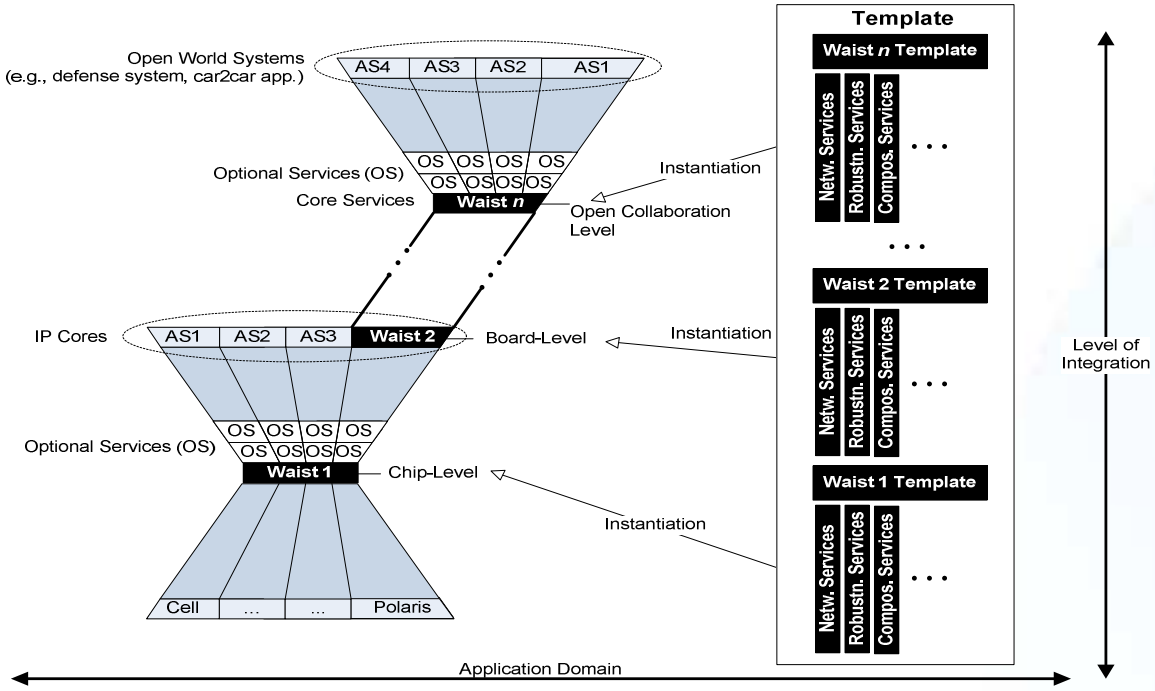


Figure 3: Example for Proposed Integration Levels

- Technical Results.

Reference architecture template.

- A concise description of platform services that spans the different levels of integration for the considered application domains.



Two types of platform services at any given level of integration:

- *Core platform services.*
- *Optional platform services*

- Technical Results

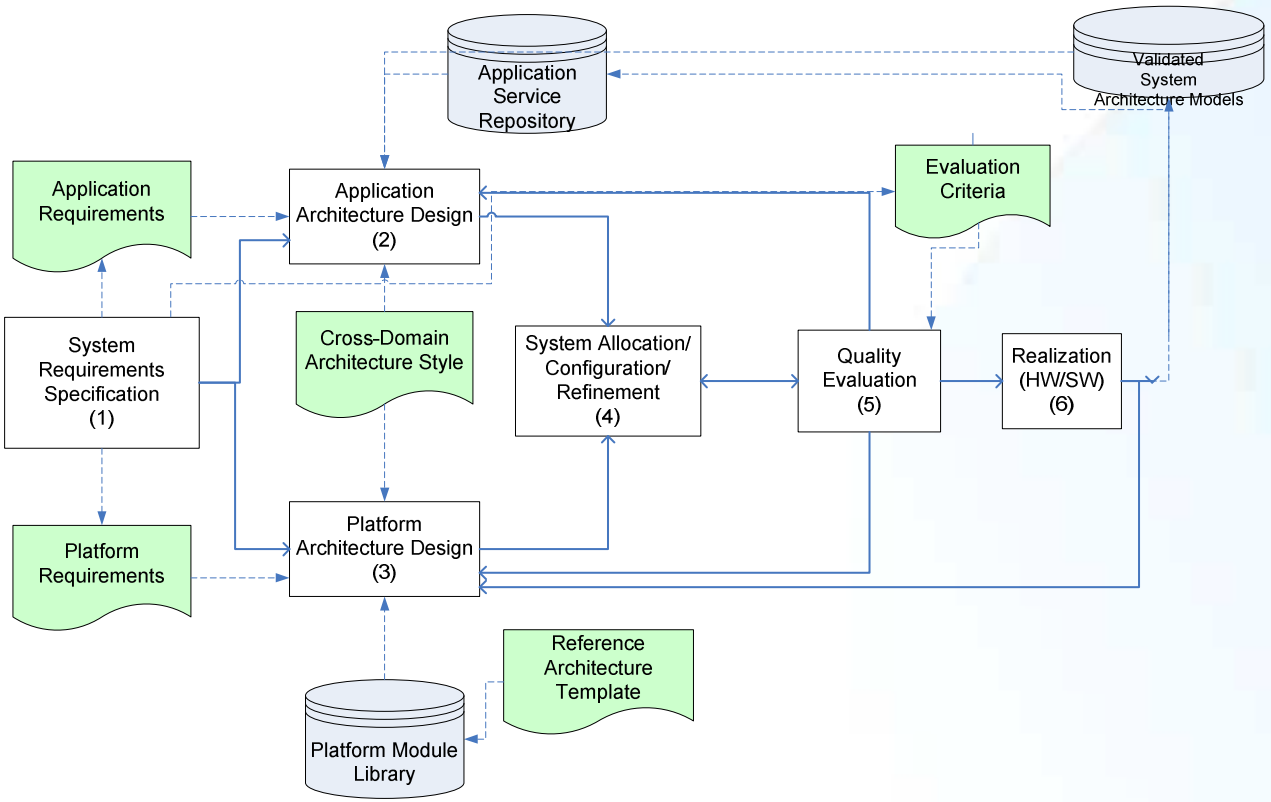
Cross-domain development methodology. Principles

- Model Driven Development.
  - Model Representation.
  - Quality and Non-functional Properties management
- Formal Methods. Precise definition of system behaviour
- Incremental Certification
- Early V & V. Evaluation methods and tools:
  - ESI (schedulability, safety)
  - VTT (performance, power consumption),
- Interactive development and integration environment

- Technical Results

Cross-domain development methodology.

ES Engineering Process. Methodology and tools support the full life cycle of RTES



- **WORKSHOP "GENESYS – An Architecture Candidate for ARTEMIS"**
  - WHEN: **Feb. 4, 2009 10:00 – 17:00**
  - WHERE: Municon Tagungszentrum at **Munich Airport** (Germany)
  - Information & Registration:
    www.genesys-platform.eu/workshop_munich.htm
  - Contact: office@genesys-platform.eu