



Workshop: GENESYS (GENERIC Embedded SYSTEM Platform)

Munich, February 4, 2009



Agenda

- 10:00 – 10:15: Welcome, Introduction
- 10:15 – 10:45: Requirements, M. Goedecke (Infineon)
- 10:45 – 11:00: Introduction of Poster Session
- 11:30 – 12:30: Overview of the Architectural Style, H. Kopetz (TU Vienna)
- 12:30 – 13:30: Lunch & Poster Session
- 13:30 – 14:00: ARTEMIS and GENESYS Architecture, T. Clausen (EC)
- 14:00 – 14:30: Consumer point of view of GENESYS, H. Waris (Nokia)
- 14:30 – 15:00: Industrial point of view of GENESYS, G. Edelin (Thales)
- 15:30 – 17:00: Panel Discussion: To what extent does the architectural style fulfil the ARTEMIS requirements?



GENESYS: Project General Information

Project major partners:

- STMicroelectronics
- Commissariat à l'Énergie Atomique
- Nokia Oyj
- Thalesgroup
- Embedded Systems Institute
- IMEC
- Technical University Darmstadt
- Infineon
- European Software Institute
- Univ. of Bologna
- Volvo Tech.
- Technical Research Centre of Finland
- Verimag
- Centro Ricerche Fiat
- TTTech Computertechnik AG
- Fraunhofer IGD
- TU München
- Vytautas Magnus Univ.
- Ikerlan
- Budapest University of Technology and Economics
- Univ. Politecnica de Madrid
- NXP Semiconductors

Starting Date: January 2008 **Ending Date:** June 2009

Budget Total/Funding: 2.79 MEUR / 1.85 MEUR

Type of project: Collaborative Project



GENESYS: Motivation, Objectives

- **Motivation**
 - World of embedded systems is broad and diverse
 - Fragmented technological situation
 - Increasing user expectations for embedded systems
 - Convergence of domains (e.g., car with subsystems ranging from multimedia to control functions)
 - **Objectives**
 - Optimal support for a converging application world
 - Take advantage of the economics of scale in the semiconductor industry
 - Avoid fragmentation through a cross-domain development methodology
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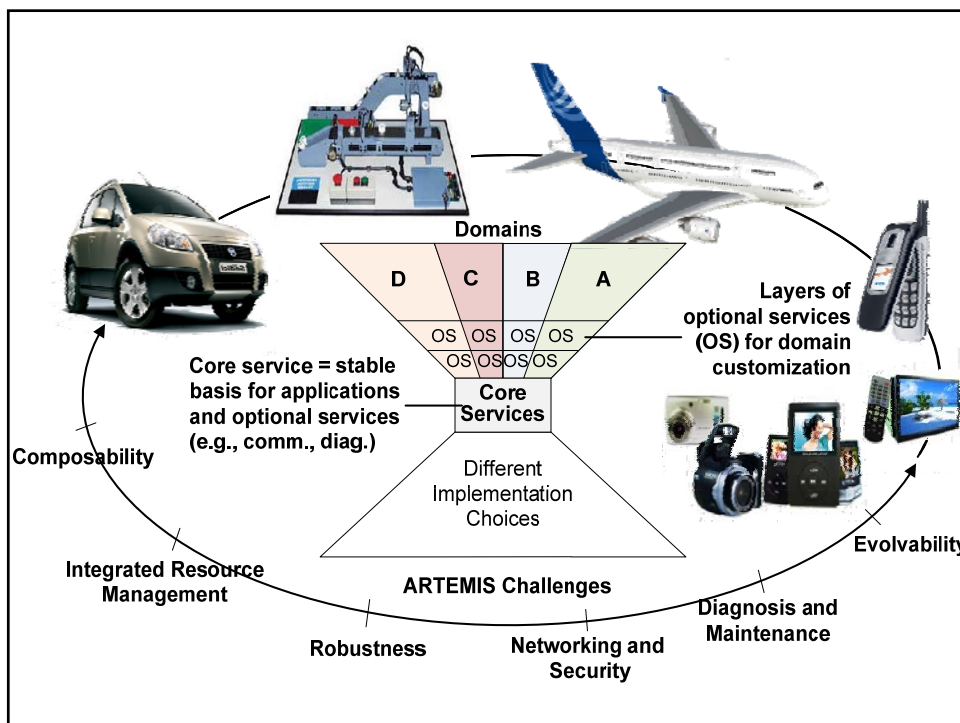
Starting Point

- ARTEMIS: European Technology Platform on Embedded Systems
- Working group on generic reference designs and architectures
 - Driven by pan-application domain relevance of embedded systems research
 - avoidance of fragmentation in embedded systems technologies (e.g., platforms, tools, ...)
- Key challenges identified within ARTEMIS will drive the GENESYS project

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Overall Technical Approach

- Consolidated cross-domain architectural style
 - architectural principles
 - rules and guidelines for the partitioning of a system and the design of interfaces
- Reference architecture template
 - specification of a comprehensive set of platform services
 - support for integration levels (e.g., chip level, board level, ...)
- Cross-domain development methodology
 - modeling, evaluation and validation of platform services and embedded systems based on the reference architecture template
 - measurable quality characteristics

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Cross-Domain Architectural Style

- General principles (e.g., complexity management, component-based design)
- Networking and resource management (e.g., integrated resource management, message passing)
- Robustness and security (e.g., error containment, state awareness)
- System design and evolution (e.g., legacy Integration, model-based design)

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