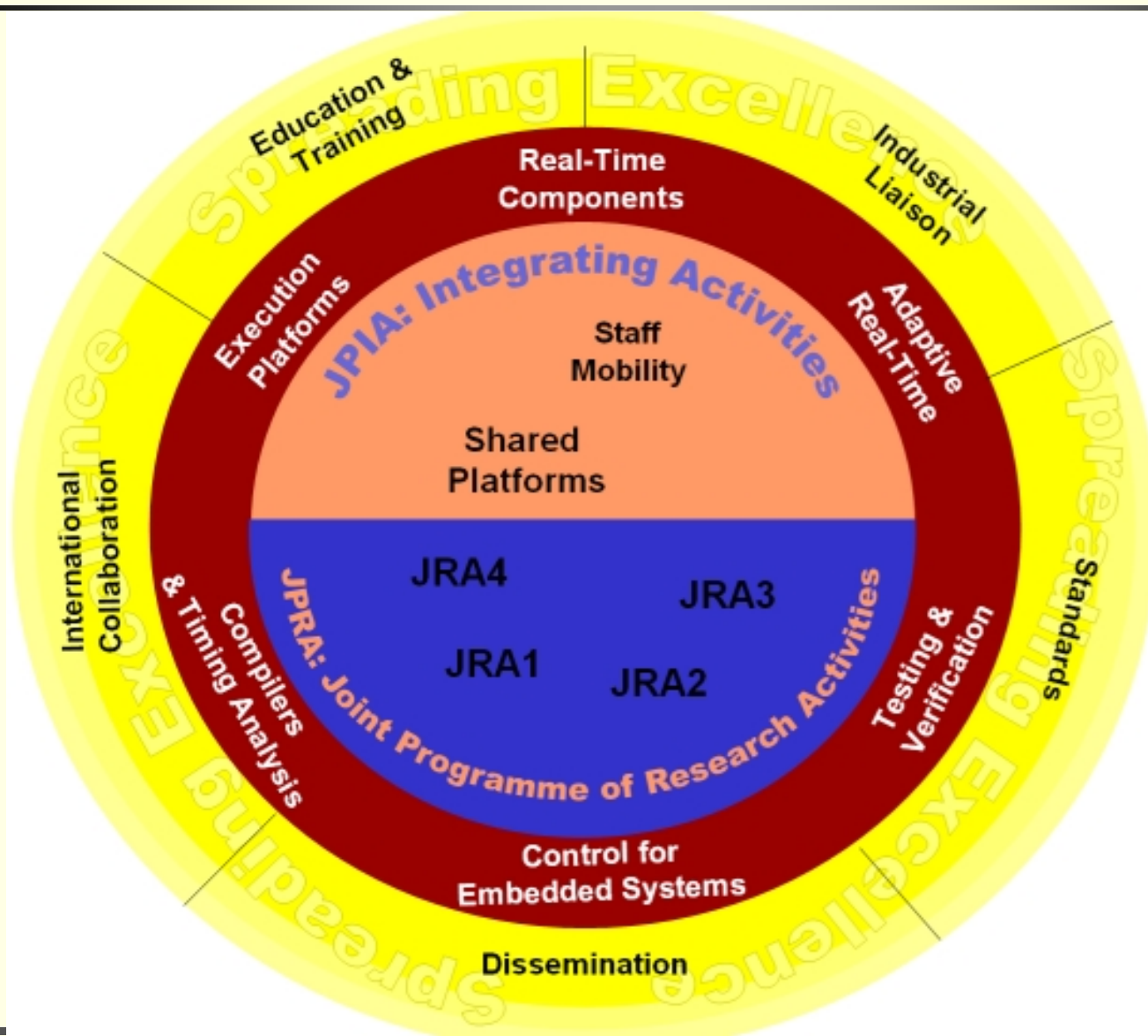
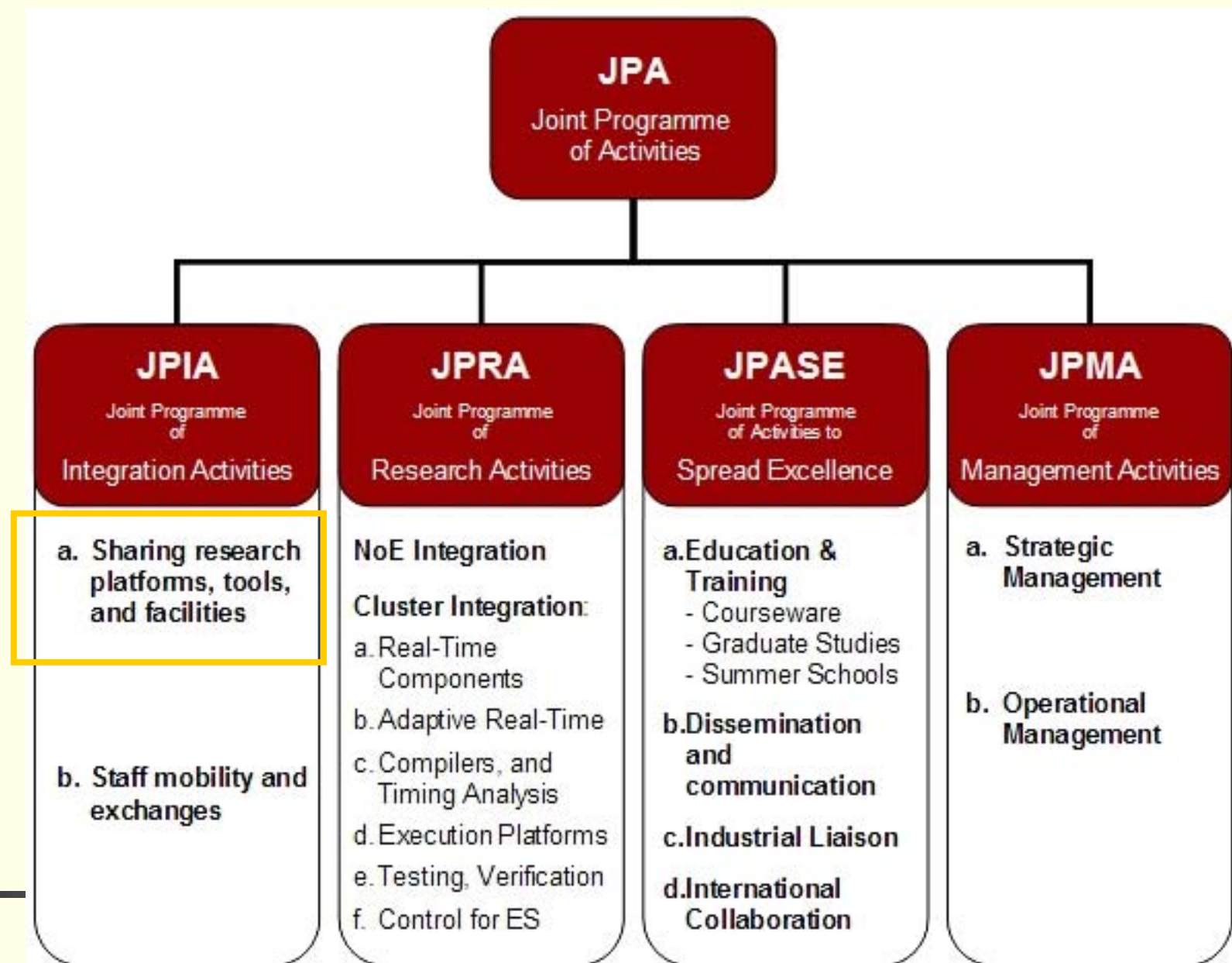

Workshop on Tool Platforms for Embedded Systems Modeling, Analysis and Validation

An initiative of the platform activities within the
Artist Network of Excellence





Artist Embedded System Design NoE



“Sharing Research Platforms, Tools, and Facilities”

State of the art research platforms, composed of competencies, resources, and tools targeting specific technical and scientific objectives around a chosen topic. These are made available to the R&D community for experimentation, demonstration, evaluation, and teaching.

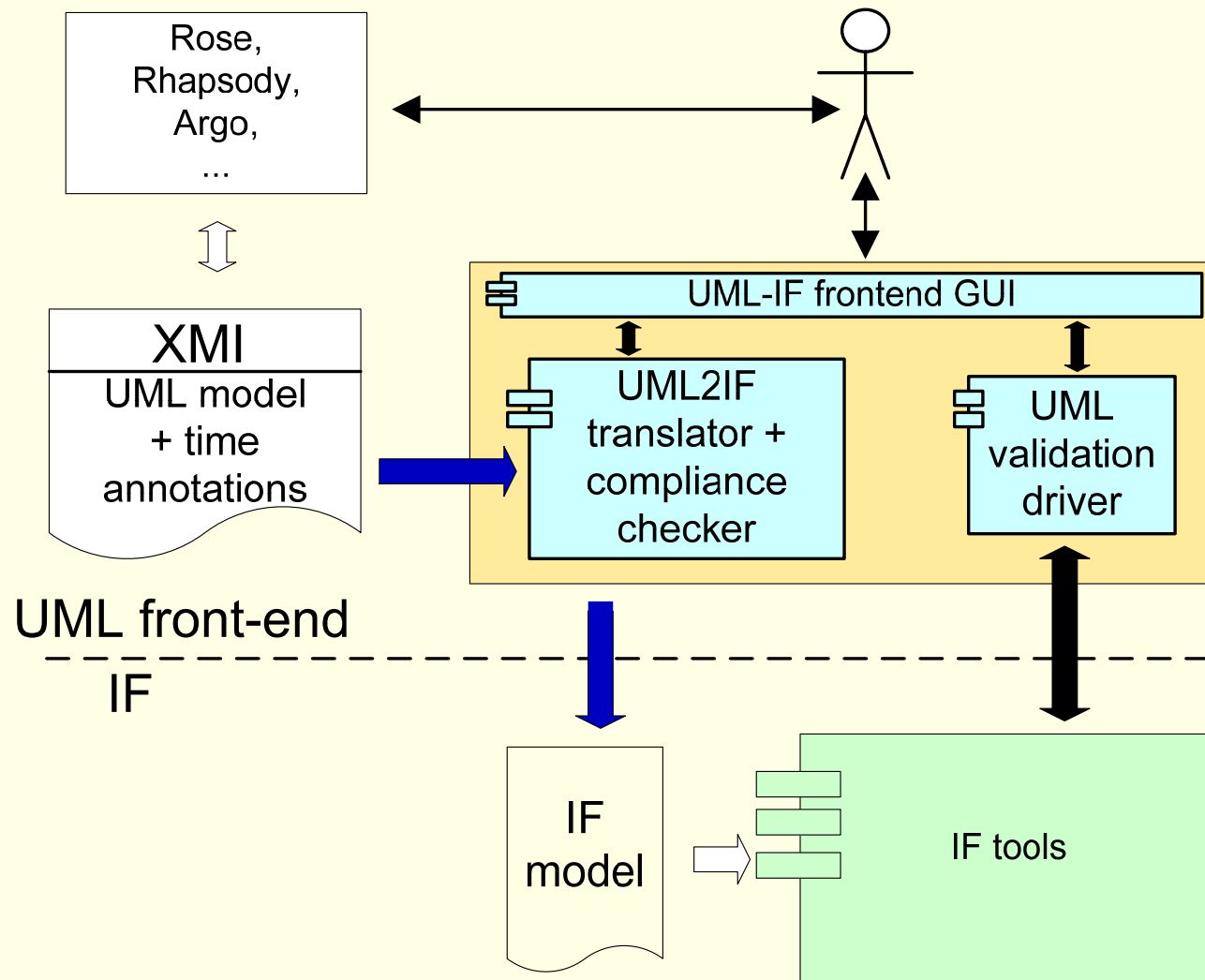
The ARTIST2 platforms integrate the results of long-term efforts, and are meant to be durable, evolving with the state of the art. The partners are committed to durability, and have invested significant resources into their development.

Tool support for Embedded Systems Design & Analysis

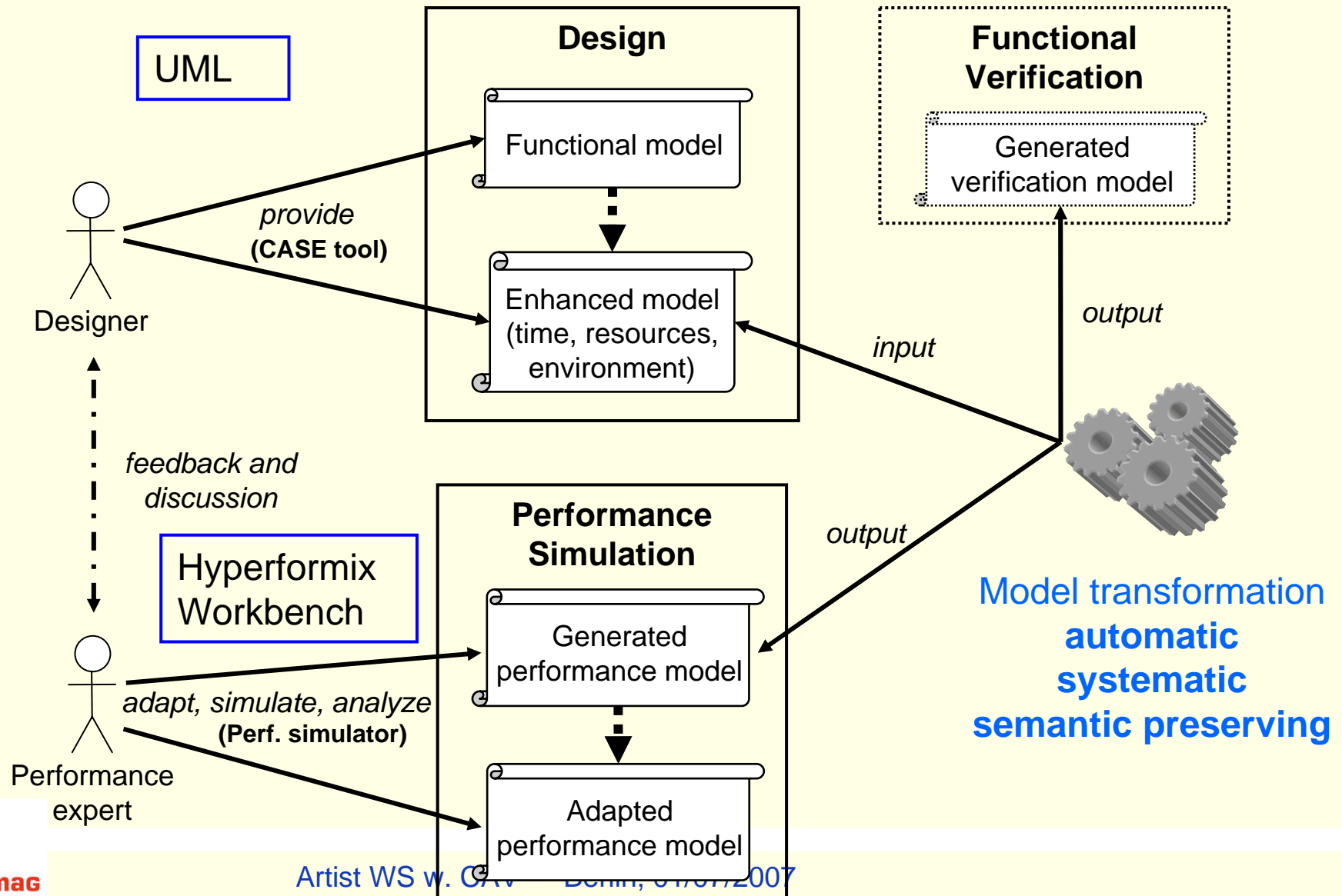
- Integration of design and validation
 - Hidden verification versus specialists approach
 - Model-transformation, compilation
- Addressing the heterogeneity
 - Heterogeneity of modeling paradigms
 - Heterogeneity of abstraction
- Platform and Architecture design
 - RTOS
- Specific analysis problems
 - Timing analysis, schedulability, performance
 - Design space exploration
 - Analysis of hybrid systems



Hidden verification: an example



Persiform tool integration approach: specialists tools integration



Program of Juli 1st

09:15 "MPSoC modeling and simulation techniques" *Torsten Kempf* (RWTH Aachen)

10:00 **Coffee break**

10:30 "Model Driven Engineering and Real-Time Analysis of Embedded Systems: The UML MARTE Standard and its Challenges" *Huascar Espinoza* (CEA, France) :

11:15 "Monitoring your Lego Mindstorms™ with Giotto" *Noël Plouzeau* (INRIA Rennes)

11:35 "Enhancements of Statechart Modelling - The Kiel Environment" *Steffen Prochnow* (Kiel)

12:00 **LUNCH**

13:30 "Model Driven Engineering: Bringing formal validation into the industrial process" *Marc Pantel* (IRIT, Toulouse)

14:15 "A model-based Transformation approach for embedded systems development", *Didier Delanote*

14:35 "Fast Feasibility Tests and Event Dependency Graphs for the Design-Space Exploration of Distributed Real-Time Systems", *Frank Slomka* (Ulm)

14:55 **Coffee Break**

15:25 "SymTA/S - Modeling system timing using abstract event streams, *Arne Hamann* (TU Braunschweig)

16:10 "Functional Design and Behavior Simulation of Wireless Sensor Networks Applications", *Mostafizur R. Mozumdar*

16:30 "OpenComRTOS - Distributed RTOS development using formal modeling methods" *Gjalt de Jong*

16:50 "Contract based modelling with BIP" *Susanne Graf* (Verimag, Grenoble)



Program of Juli 2nd

Session shared with FMICS

09:00 "The Embedded Systems Design Challenge" *Tom Henzinger* (EPFL, Lausanne)

10:00 "Synchronous design and verification of critical embedded systems using SCADE and Esterel" *Gerard Berry* (Esterel Technologies)

11:00 **Coffee break**

11:30 "The DECOS Concepts" *Balázs Polgár*

11:50 "A Coverage-Guided Test Generation Tool for Hybrid Systems", *Thao Dang* (Verimag)

12:10 "Coral --- a tool for compositional reliability and availability analysis", *Pepijn Crouzen*

12:30 **LUNCH**

14:00 "Verification of Optimizing Compilers", *Sabine Glesner* (TU Berlin)

14:45 "Validation of performance properties with Uppaal and applications", *Kim Larsen* (Aalborg U.) and *Michael R. Hansen* (TU Denmark)

15:30 **Coffee break**

16:00 "Methodology and tools for performance analysis of embedded multiprocessor industrial applications", *Ismail Assayad* (Verimag)

16:20 "Bi-Directional Traceability: The Hi-Five Framework Approach to Reliable Validation of Early System Designs", *Martin Ouimet*

16:40 **DISCUSSION**

