SCIENCESPRINGDAY

FCT FACULDADE DE CIÊNCIAS E TECNOLOGIA UNIVERSIDADE NOVA DE LISBOA

Department of Electrotechnical Engineering

Professor

Luís Gomes

Associate Professor at DEE and researcher at CTS-UNINOVA. Coordinator of GRES. His current research interests include the usage of Petri nets and other concurrency models applied to reconfigurable and distributed embedded systems co-design.
http://www.uninova.pt/lugo

Research Unit: CTS - Centre of Technology and Systems

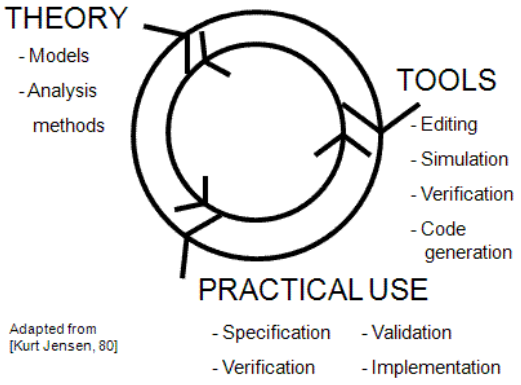
CTS UNINOVA

Team: GRES – R&D Group on Reconfigurable and Embedded Systems

GRES R&D Group on Reconfigurable and Embedded Systems

Objectives

- ✓ Petri nets modeling issues emphasizing structuring mechanisms, model composability and model partitioning issues.
- ✓ Hardware-software co-design of embedded systems using Petri nets and other models of concurrency (namely hierarchical and concurrent finite state machines based formalisms).
- ✓ Distributed execution of models (using Petri nets and other models of concurrency), emphasis on GALS (Globally-Asynchronous-Locally-Synchronous) and NoCs (Network-on-Chip) paradigms.
- ✓ Reconfigurable computing platforms (FPGA-based platforms).



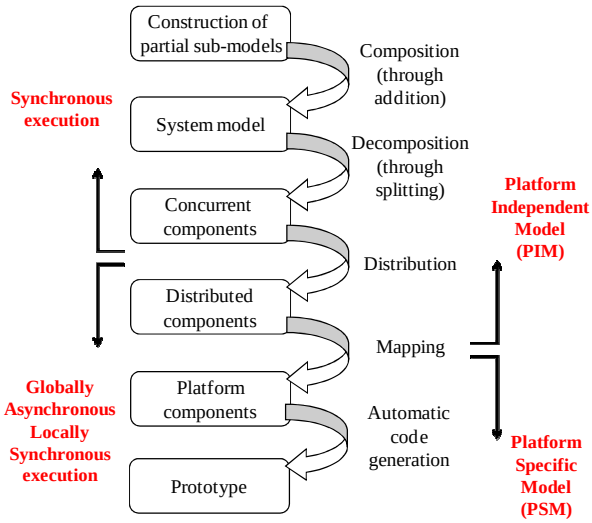
Methodology

Open issues and challenges

- How to reduce the productivity gap?
- How to reduce the verification gap?
- How to support reliable distributed execution?

Contribution to the answers:

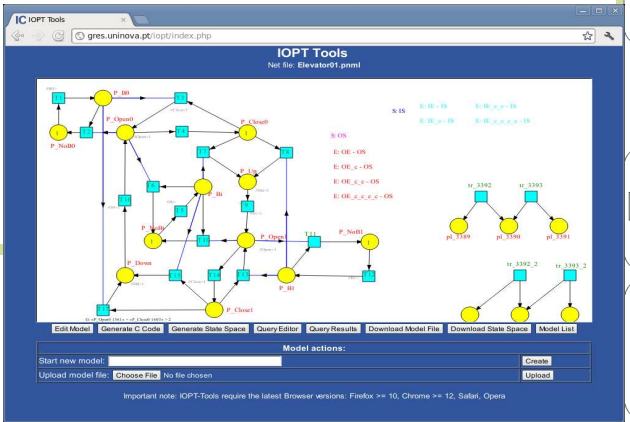
- Relying more and more on Model-based Development
- Increasing usage of design automation tools (including specification, simulation/validation, verification, code generation, and test)

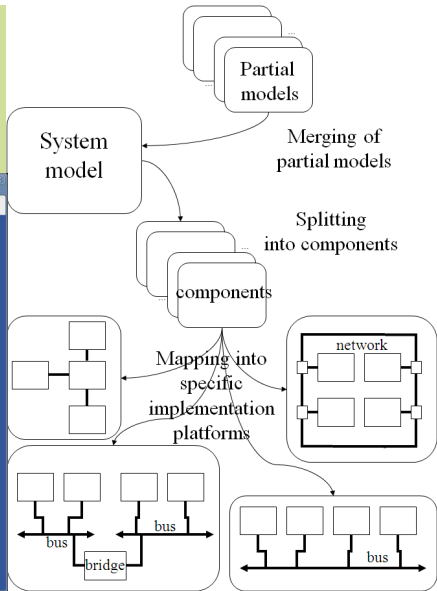


Expected Results

Effective use of Petri nets as the reference modeling formalism within a model-based development methodology of distributed/networked embedded systems and cyber-physical systems:

- Definition of a non-autonomous high-level Petri net class amenable to support the whole development flow;
- Development of dedicated design automation tools framework





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