

# *ARTIST2 – Year 1 Review*

*Grenoble, October 3rd-4th, 2005*

*Activity*

*Joint Programme of Integration Activities*

## Platform for Component Modeling and Verification

*Activity leader : Susanne Graf (Verimag)*

# Outline of the Presentation

## **Industrial Needs and Experience**

### **Year 1 Activities**

- Achievements & Ongoing Work
- Interaction and Building Excellence Between Partners
- Management Perspective

### **18 Month Perspective**

- Work planned for the next 18 months
- Significant events or achievements expected

# Industrial Needs and Experience

- **Artist2 Interaction with Industry**
  - All platform activities are carried out in strong collaboration with
    - industrial users (automotive, aerospace, telecommunication mainly)
    - technology and CASE tool providers
- **Industrial Needs**
  - tighter integration of validation into component based design flow
  - in particular, system level analysis of non functional properties
- **Possible Global Impacts of Research Results**
  - shorter development time, easier maintenance
  - improvement of component reuse and provider independent deployment

*Year 1 activities*

# Achievements & Ongoing Work

- **Brief State of the Art**

- component based design is part of industrial practice
- model-based design starts also to be well adopted
- validation mostly on running implementation or validation models decoupled from the design flow

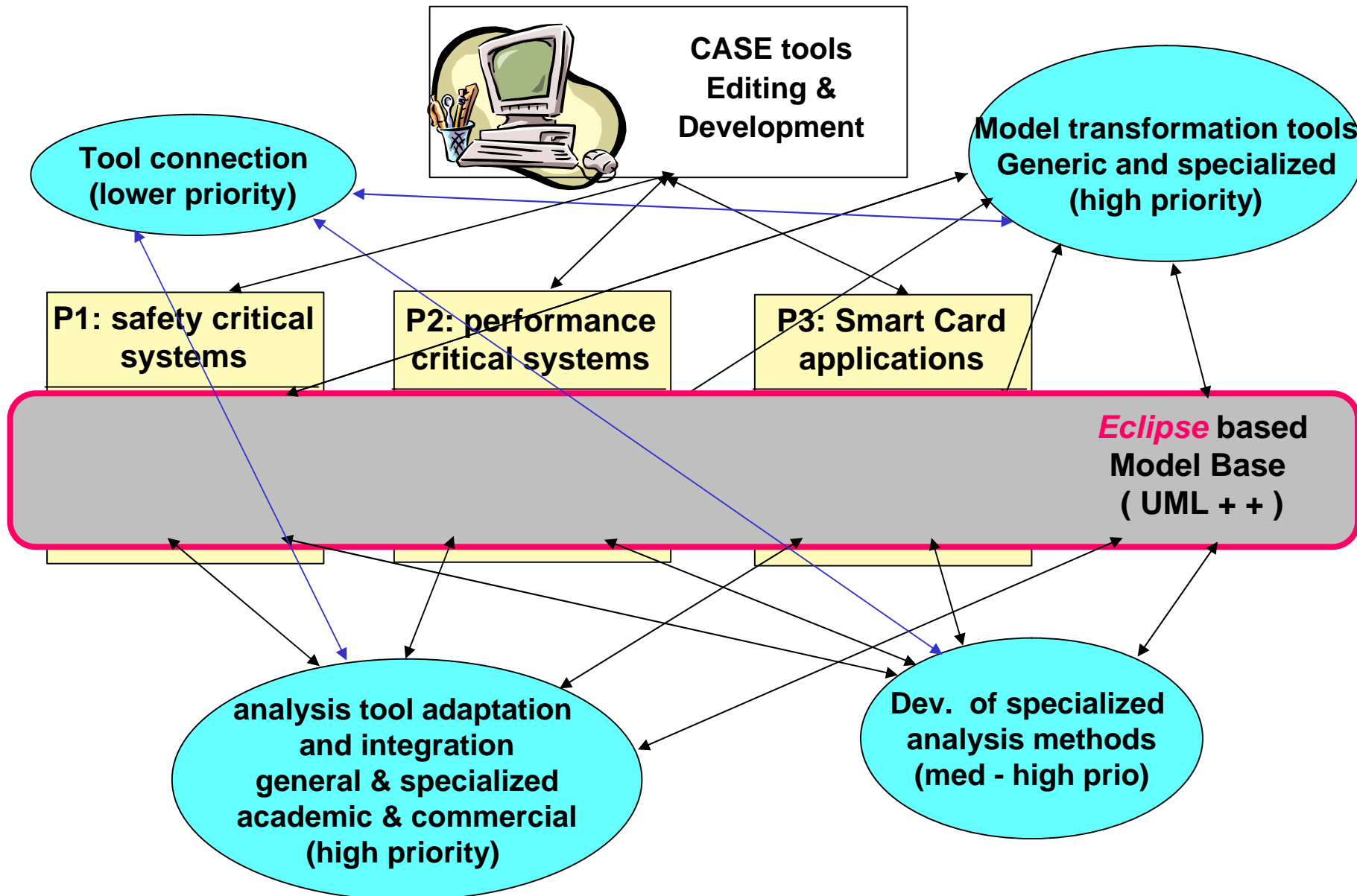
- **Aims**

- better integration of the different design workflows, use of requirement models as a means to validate and maintain system wide consistency

- **Achievements in Year 1**

- definition of the platform architecture: 3 main sub platforms (next slide)
- coordinated progress on individual tools - in other projects (see ongoing work)

# Platform structure & components



*Year 1 activities*

# Achievements & Ongoing Work

- **Ongoing Work: individual coordinated activities**
  - Implementation of *MARTE* profile (Protes Project & Carroll) → JPRA “UML for embedded systems”
  - *KerMeta* model transformation language and tool (INRIA); generic tool; connection with IF
  - *jETI* (Dortmund), a redesign of the Electronic Tools Integration platform for building complex functionalities from individual components
  - *IF* tools (Verimag) for validation and simulation: porting to Eclipse, extension of existing connection to Omega UML-RT profile, use of verification technology for scheduling and performance model extractions (ASSERT, Persiform & future projects)
  - *MAST* environment (Cantabria): extraction of schedulability analysis models, analysis and code generation tools
  - More analysis tools (STACS, CLIPS project): adaptation to UML2/MARTE
  - *TL-FIT* (EDEN project): development of a UML profile for security properties and formal verification of Smart card applications using *IF* and *Agatha*

*Year 1 activities*

# Management Perspectives

- **What worked well**
  - Bridging between tools that provide complementary functionalities
  - lightweight tool integration based on a common meta-model as exchange format
- **Difficulties encountered**
  - not everything can be integrated in a unique framework at a short term perspectives
- **Structural changes in the activity**
  - platform structured into subsets providing complementary functionality or addressing different domains
  - stronger integration with Hard RT activities

*Next 18 Month Perspective*

## Work Planned for the next 18 months

- **Work on platform integration**
  - continue work on currently ongoing tools
  - investigate possibilities for including other interesting work, in particular from Hard RT and Validation cluster
  - produce a runnable version within 18 months
- **Coordination with UML profile evolution**
  - increased interaction within tool builders and evolution of MARTE and semantics profiles
- **Organization of Workshops for dissemination and interaction**
  - MARTES with MoDELS 2006 and possibly the European MDA Conference