

Year 2 Review
Paris, November 8, 2006

Activity

Joint Programme of Integration Activities

Platform for Component Modeling and Verification

Activity leader : Susanne Graf (Verimag)

Platform participants

Main partners

CEA

EPFL

France Telecom R&D

IRISA

OFFIS

Parades

Uppsala

Verimag

Affiliated

Cantabria

Dortmund

EADS

Aims of the component platform

Long term effort on component-based development for embedded systems:

- To build useful pieces for embedded systems design & development
- To obtain connectivity through the promotion of common formats
- To share development effort
- Not to develop an integrated tool-set (commercial tool providers)

Integrated techniques

User level Modeling languages: Marte UML profile, Persiform UML profile, SafeUML, Rich Component model (HRC),

Related to standards: SysML, Autosar, AADL,...

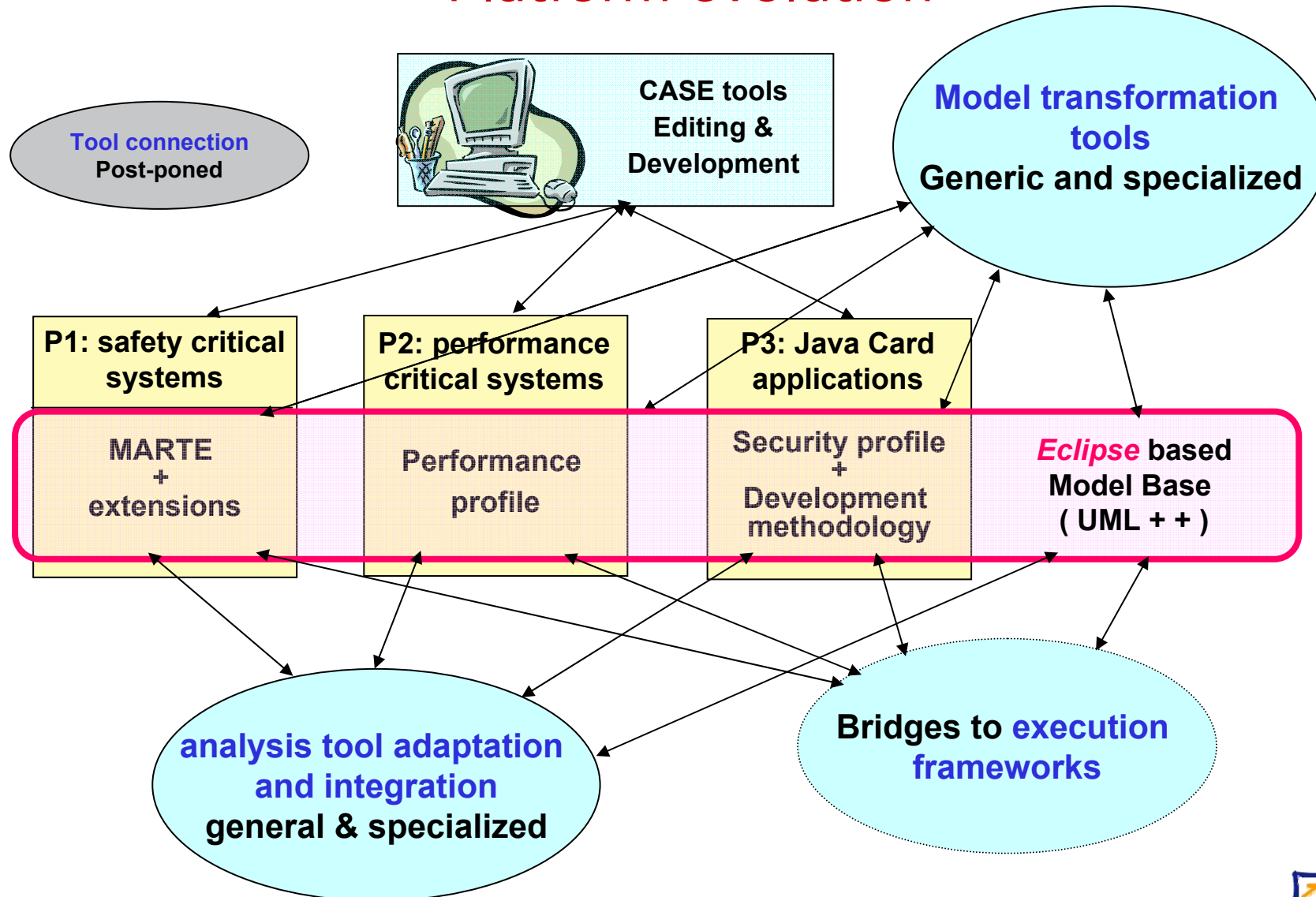
Meta-modeling and model-transformation techniques: Kermeta, ATL (*INRIA*)

Integration of existing analysis, verification and testing methods & tools: Agatha (*CEA*), BIP/IF (*Verimag*), MAST (*Cantabria*), Metropolis (*Parades*), OFFIS analysis toolset, Times (*Uppsala*), RT-Builder (*INRIA*)...

Implementation techniques for components: Fractal/Think (*FTRD*), Giotto (*EPFL*)

Integration Frameworks: Eclipse, jETI (*Dortmund*)

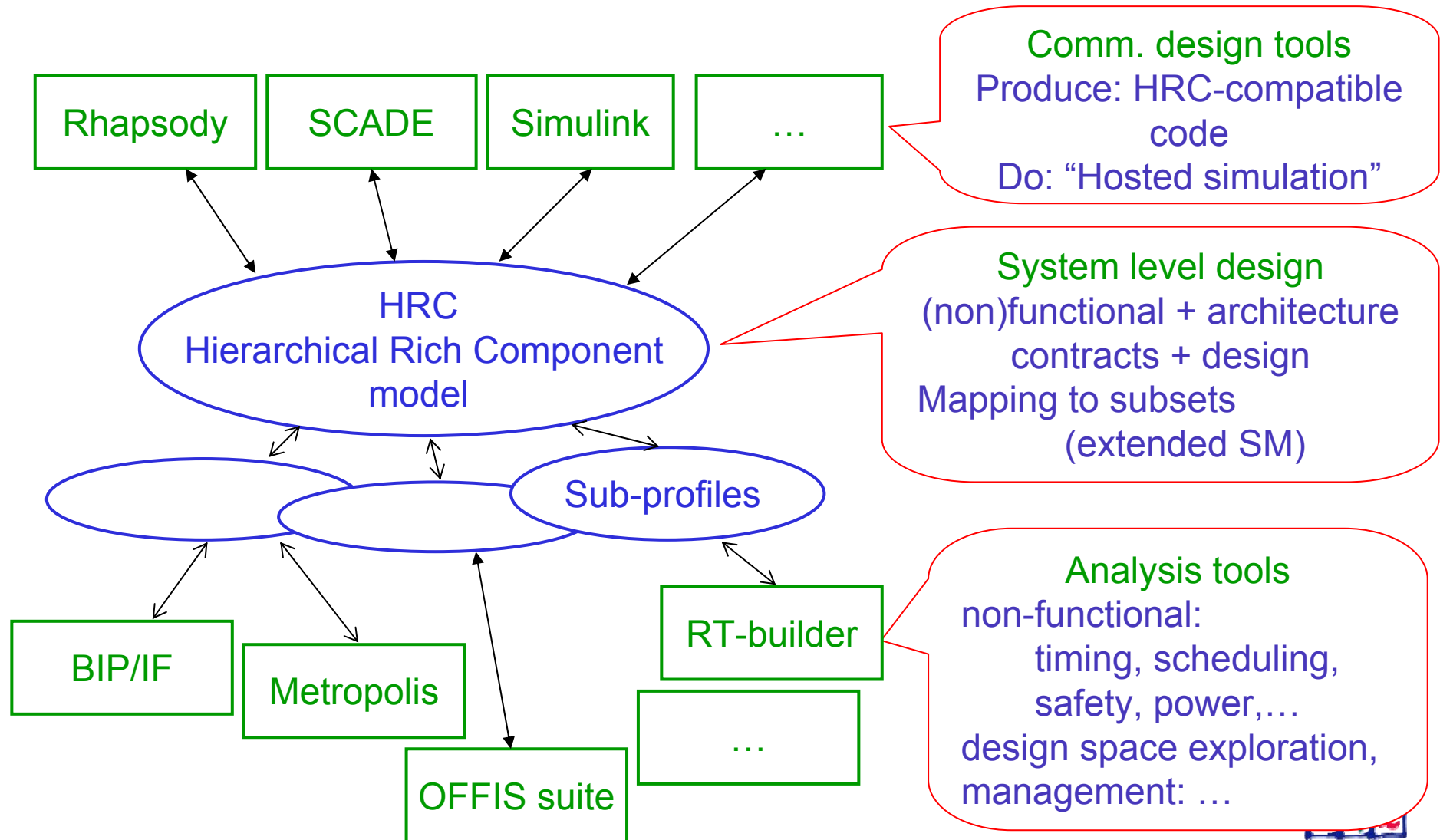
Platform evolution



1. Safety Critical: (a) SPEEDS – tool chain

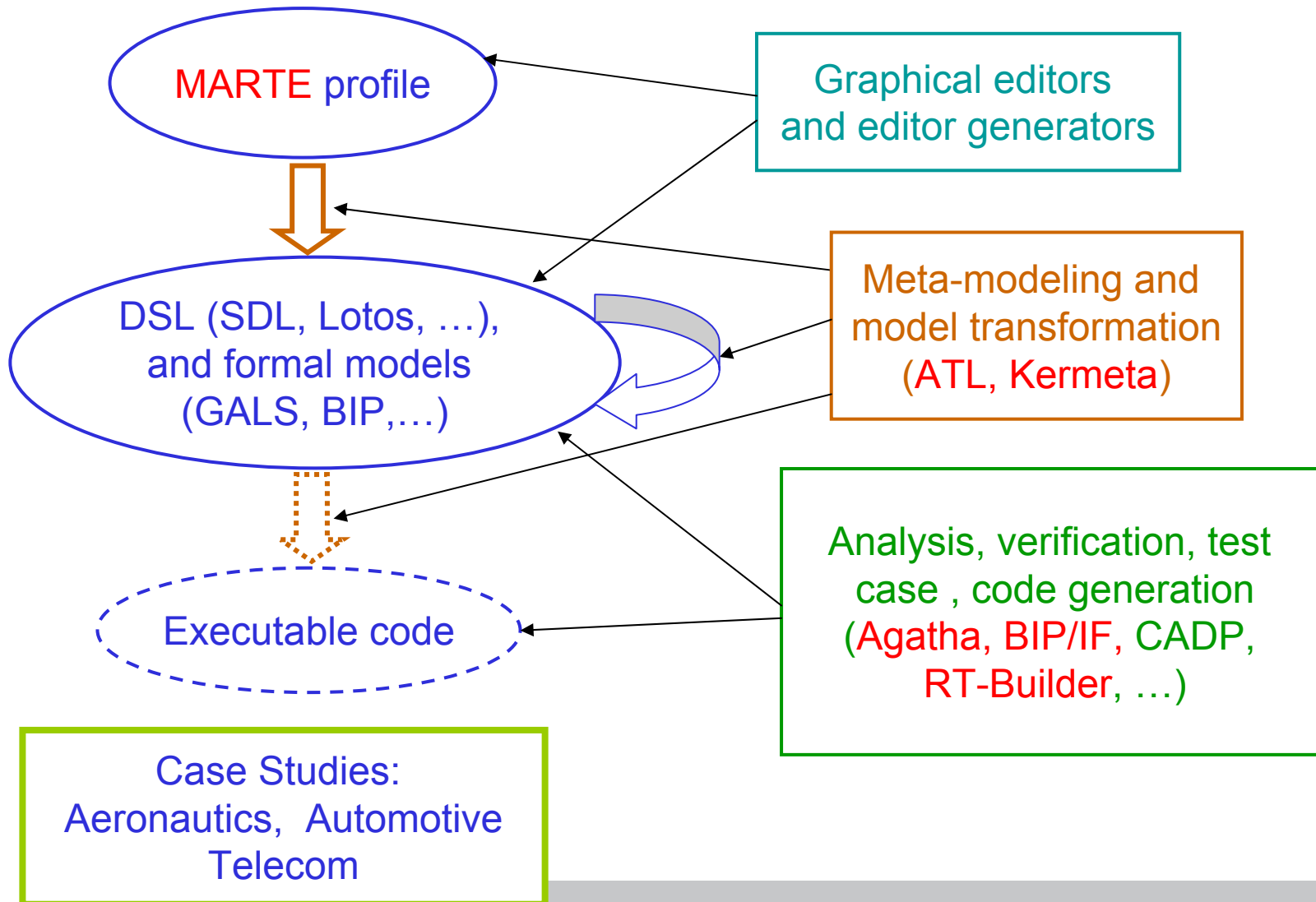
IP: Emerged from convergence between Artist partners (started May 2006)

Partners: IRISA, Parades, OFFIS, Verimag, Airbus, Daimler, Esterel Tech, Telelogic



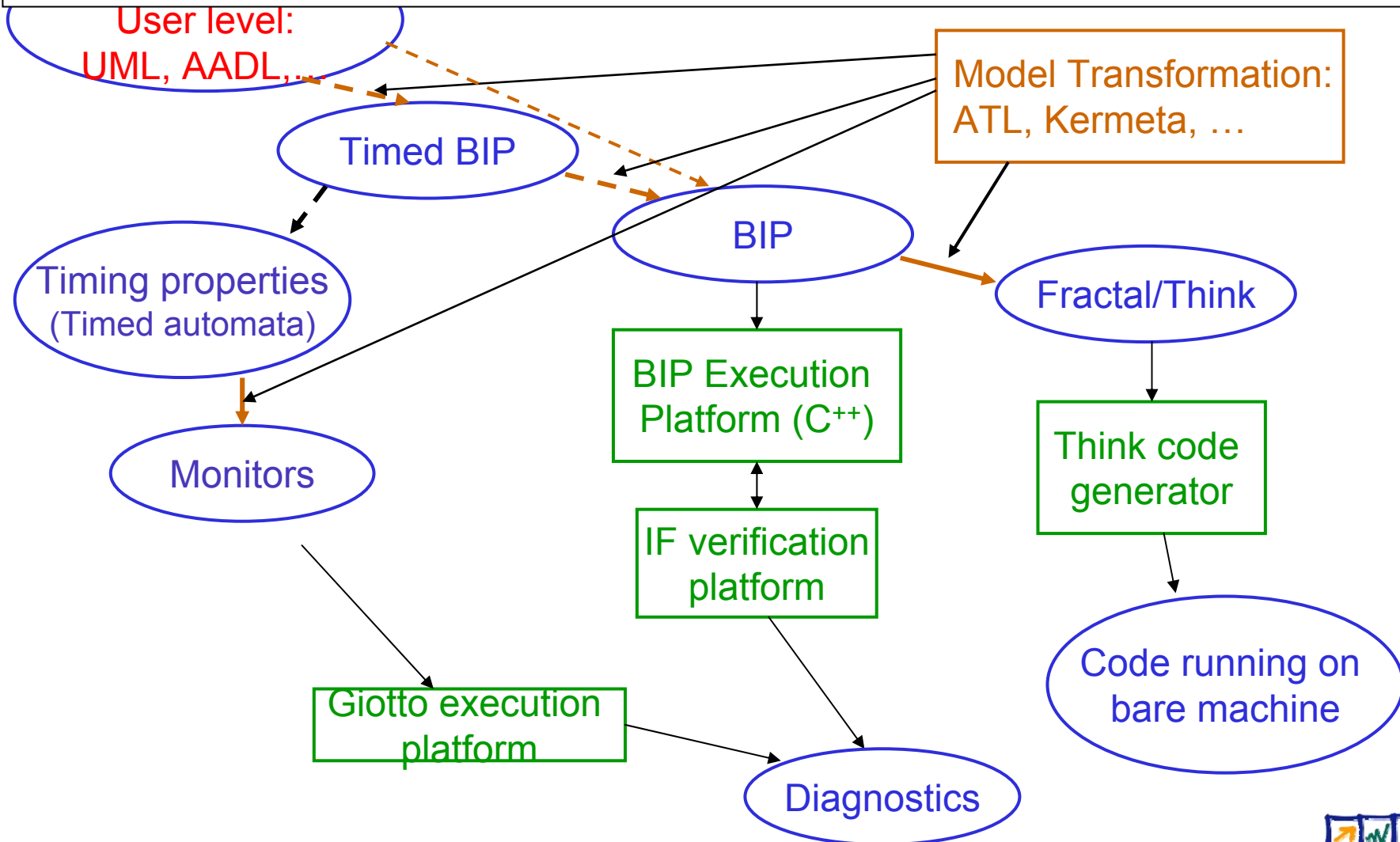
French RNRT project, use case for the MARTE profile (started may 2006)

Partners: CEA, FTRD, INRIA, Verimag, Airbus, Thales, ...



(b) Artist collaboration

Involved partners: FTRD, IRISA, Verimag, EPFL
 Role: Back-end of other tool chains



2. Performance: Pers

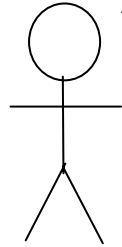
French RNRT: FTRD, IRISA, Verimag, Orpheus

Performance analysis for service-oriented systems

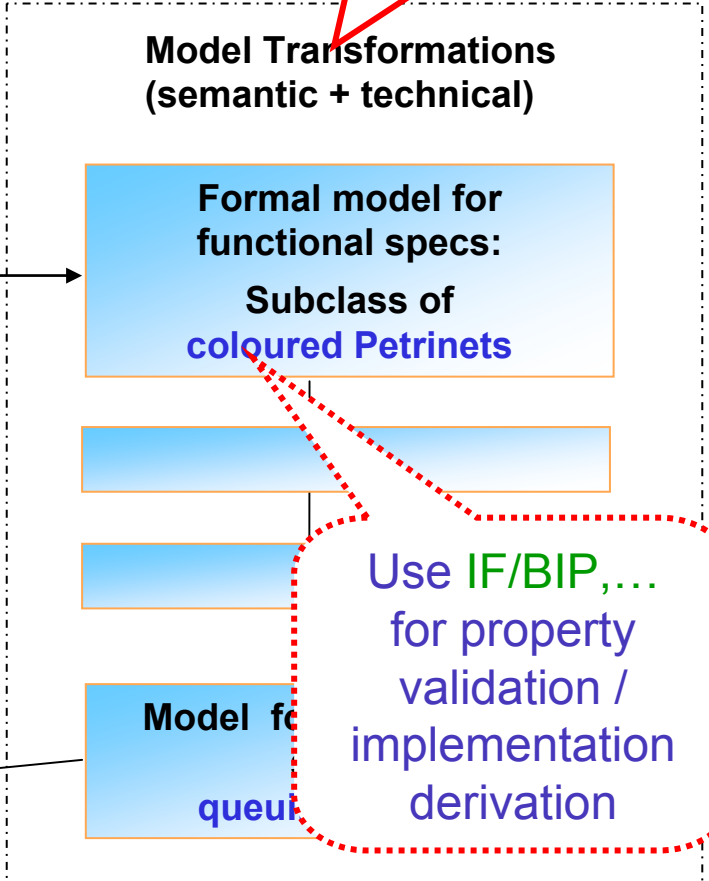
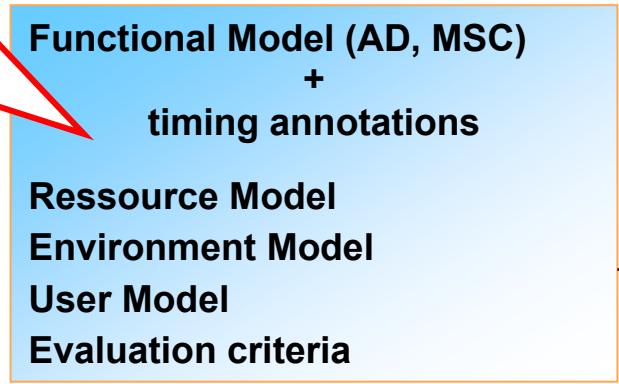
Use **MARTE** profile for timing, resource and performance modelling

Use **ATL**, **Kermeta** for transformations

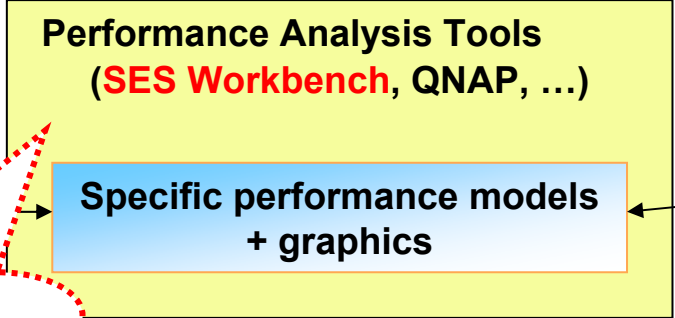
UML-based modelling



Interaction



Use **IF/BIP**,... for property validation / implementation derivation



Use **Tina**, verification platform tools for analytical approach

reservation service, map representation system for Nat. Marine

Future: Collaboration between Artist platforms

Outcome of an inter platform meeting (participants from component PF, control PF, execution PF, timing analysis PF, verification PF)

- Potential convergence points identified
- Inter PF meeting for working out these convergences in April

Platform related inter cluster dissemination meetings:

- Workshop at DATE (April 2007) - focus on applications
- Workshop at CAV (July 2007) – focus : improve awareness of verification community of the opportunity to contribute
- Workshop with embedded Systems week (October 2007) – focus on implementation aspects