Notes on the RT components based framework for FRESCOR: modelling, verification, and run-time support

Julio Medina
medinajl@unican.es

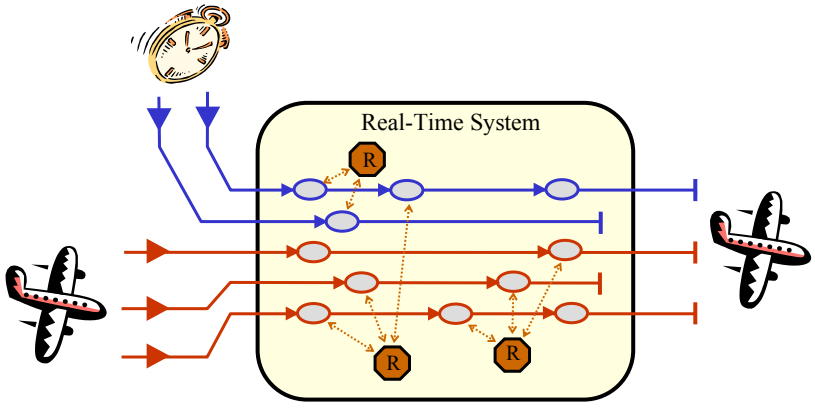
CEA-List / LLSP Saclay

Universidad de Cantabria

Outline

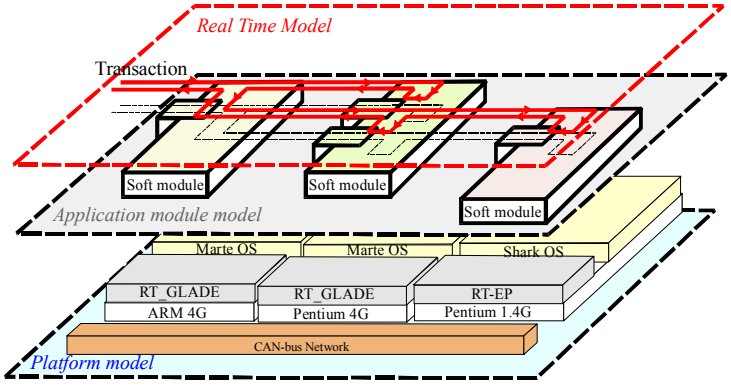
- Modelling for real-time systems verification
- The FRESCOR components
- Methodological issues
- Practical issues

Transactional approach for analysis and design



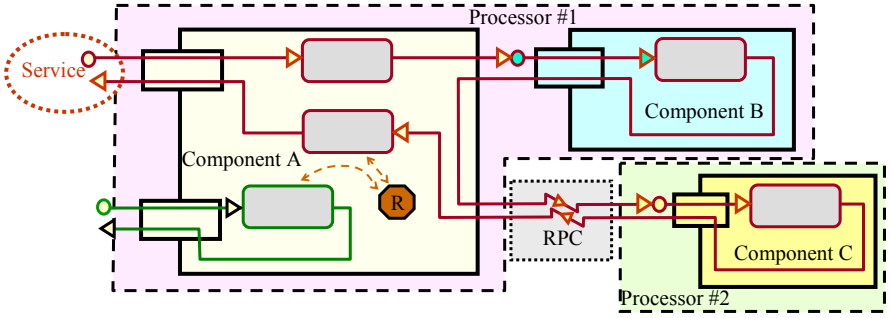
Instance based (Classic RMA, MAST, SPT, MARTE,…)

Components as structural elements

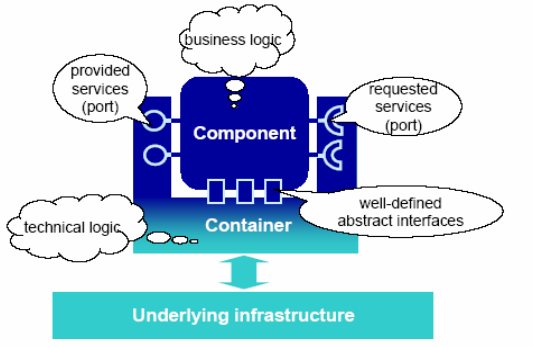


Real-Time modelling of components

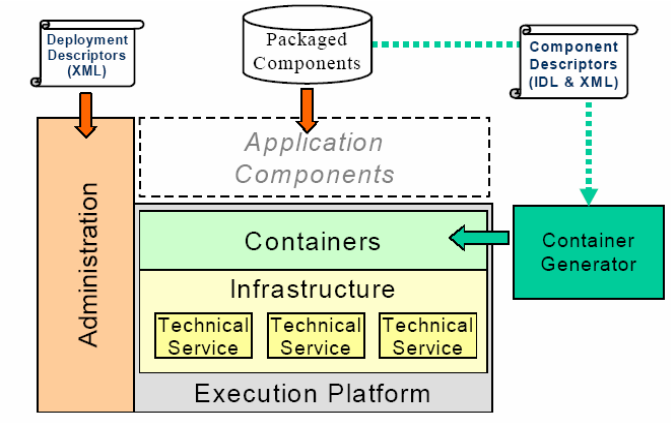
- **The RT Behaviour of an instance of a service in a component depends on:**
  - The RT behaviour of the services of instances of other components that it uses.
  - The RT behaviour of the processor that executes it, as welll as the communication & other resources required.



The FRESCOR components



The FRESCOR components



Methodological issues

- **Since "componentization" means reuse & structuring of architecture and design decisions, to**
  - Components highly decoupled (Large) or
  - Assistance to create Contracts from the RT Situations
- **Support for quantification of the needed budget on the target platform**
- **Component identification mechanism→ Inerface/Service**

Practical issues

- Group the retrieval of information of the servers
- Signal sent when budget/period change
- Net_id → Resource_id Groups of contracts including multiple resources on it
- Synch. Object may be organized in a kind of data base used to get the naming_service

Good Luck !