Using Eclipse in a Concurrent Approach to SOA-BPM Development

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INRIA: Technology Excellence and Innovation

French National Institute of Research in Computer Science and Control

- A public scientific and technological institute under the authority of the Ministry of Research and the Ministry of Industry

Mission

- Fundamental and applied research in information and communication science and technology (ICST)
- Technology transfer to industry

Some figures

- 2007
- ~4000 scientists
- State budget of 160M€
- 152 joint research project-teams in 8 locations in France
- 730 active research contracts
- 83 spin offs
- 100 actions selected in FP6

Started in 1992
- 500 people
- 350 researchers & students
- 26 research teams

http://www.inrialpes.fr/
SOA: an iterative and collaborative view

- **FUNCTIONAL REQUIREMENTS & BEST PRACTICES**
  - BPM
  - BPEL

- **ENTERPRISE SERVICE BUS**
  - BPMN
  - BPEL
  - WSDL

- **TECHNOLOGY Views**
  - TECHNOLOGY GROUP
  - Architecture modeling & technology & state-of-art
  - UML
  - Java classes
  - MDA, UML
  - Java
  - WSDL

- **ESB**
  - Standard-based
  - XML - WS-*
  - JBI - SCA

- **Iterative Cycle**
“Enterprise Architecture” with SOA, by OMG

Success Requires Business and IT Collaboration

Achieving the benefits of SOA requires significant changes for both IT and business executives – SOA Consortium Premise 2

With SOA
Multi-Layer Perspectives and Spaces in SOA

Design Space
- Infrastructure
- SOA @ IT Level
- SOA @ Business Level

Runtime Space
- Infrastructure
- SOA @ IT Level
- SOA @ Business Level

Modelling
- Modelling Information

Monitoring
- Automatic Correlation
SOA Design Space

Progressive specification, design and development of SOA concepts

Services and Processes
Tooling and methodological support
Transformation / Mapping / Communication cross Layers

Business Layer

High-level business-oriented definitions
BPMN & Business Services
High-level choreography

IT Layer

Modelling refinements with a technical contribution
Service Registries & Repositories
Orchestration processes (such as BPEL)
Component and composite definition (SCA)
Expressive architectural language (SCA)

Infrastructure Layer

ESB (JBI), SCA container, JEE middleware
SOA Runtime Space

SOA vision revolves agility at all layers in the IT stack
Changes in business requirements => quickly resolved in the IT system
Changes in the IT system => quickly visible in the Business layer
Monitor components at all layers
Conceptual mapping of the events to the upper layer entities
Inject specific information (“tracking” data”) to high-level components and then propagate them
Transformation, mapping, generative tooling
BPM tools to compare the execution trace with the upper-layer models
Aid and support tooling to the application and business designer
Apply BPM management principles across the different layers
  A unified vision of a SOA platform
INRIA Sample: SCA-based Forge
Conclusion

A vision for a complete SOA stack

Three conceptual layers at design-time and run-time

Important challenges for the Eclipse community

  Tooling and methods for defining proper abstractions for each layer
  Tooling and methods for mapping between the different layers
  Bridging different conceptual platforms in SOA using appropriate design-time tools

A first step is Eclipse STP-IM

BPM approach for managing SOA architectures
Any Questions?

http://ow.inrialpes.fr
http://www.eclipse.org/stp