ReFFlow
Reusable Flexible WS-flows

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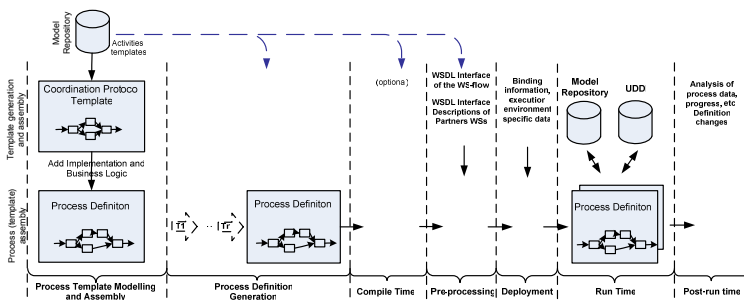
Databases and Distributed Systems Group

■ ReFFlow & WS-Flows:

- ■ Methodology, based on Web Service Flow (WS-flow) life-cycle
  - ■ Each phase prescribes an approach addressing different aspects of a process definition
- ■ Promotes the creation of unified WS-flows meta-model with built-in adaptability
- ■ Fosters automation of WS-flows development using templates

Methodology

■ Process template modeling and assembly

- ■ Model and assemble templates and parameterized processes
- ■ Use meta-model constructs
- ■ Produce abstract process definitions
  - ■ Avoid any references to WS instances and to WSs portTypes
- ■ Add additional business logic

■ Process definition generation phase

- ■ Transform the templates and parameterized processes into executable process definitions
- ■ Use meta-programming applications
  - ■ Code generators, XML transformations

■ Compile and pre-processing time

- ■ Optional
- ■ Depend on the targeted definition language

■ Deployment

- ■ Enrich WS-flow definitions with
  - ■ Execution environment specific data
  - ■ Details about the participating WSs

■ Execution time

- ■ Process instances are created and executed

■ Post-run time

- ■ Analyze the process progress and logic
- ■ Use information gathered during run time
- ■ Change process schema accordingly

ReFFlow Project

■ Build time

- ■ Development automation
- ■ Based on common WS-flow model
- ■ Reuse of process definitions
- ■ WS-flow templates
  - ■ Design patterns, domain-specific templates, coordination protocols roles

■ Run time

- ■ Desired features:
  - ■ Process adaptability and flexibility

■ Model Constructs:

- ■ Dynamic selection and invocation of WS instances
- ■ Dynamic changes of process schema
  - ■ WS types
  - ■ Process logic
- ■ Selection policies
- ■ QoS parameters
- ■ Accommodate multiple implementation approaches
- ■ Provide for WS-flow standardization and portability

■ Tools

- ■ Make use of model repository and
- ■ WS-flows templates
- ■ Support coordination protocols
- ■ Transform definitions into multiple languages

Platform