

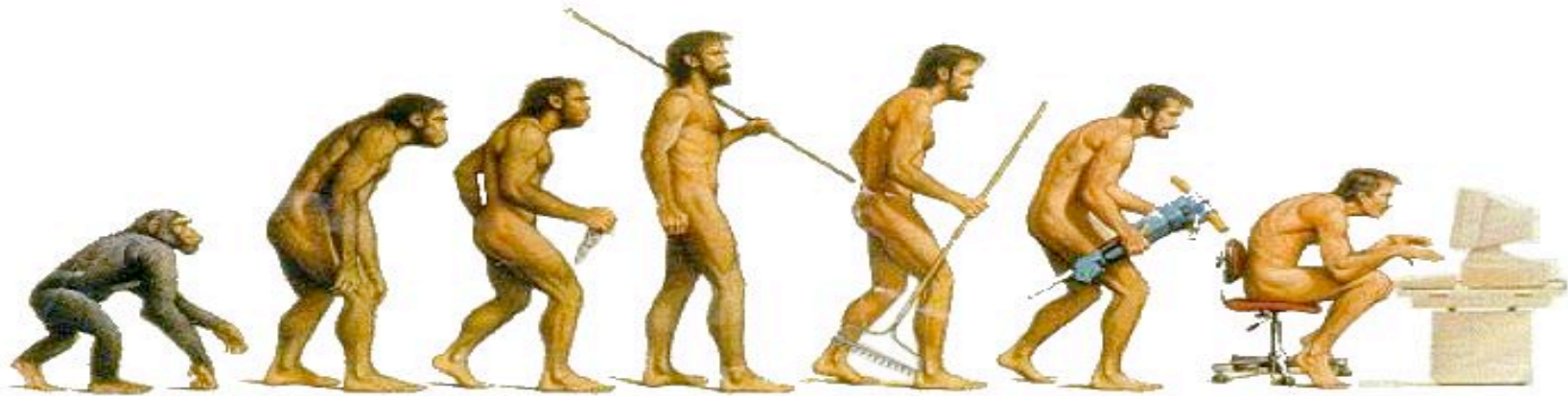
# SOA Tooling

Dr Mark Little

Red Hat

Origins

# Evolution



(OR is it?)

## What we have now

- jBPM GPDS
  - With JBossESB support (thanks to Koen)
  - BAM console (almost there)
- JBossESB Service Activity Monitor
- BRMS (not fully supported)
- RuleFlow editor (not supported)
- Drools “rule debugger” (not supported)
- jUDDI browser (well ...)

## What we need short term

- Service-action composition tool
  - XML editor
- DroolsIDE supported
- Smoother integration of the existing (supported) toolsets

Edit Diagram Navigate Search Project Run Window Help

Java EE

Project Explorer

- DemoSpagic
- JavaPolis
- JBoss
  - Bpel
  - IntegrationProcess
    - A\_service.bpmn
    - A\_service.bpmn\_diagram
  - Mappings
  - Scripts
  - SemanticRules
  - SyntaxRules
  - WsdFiles
- SpagicProcesses

A\_service.bpmn\_diagram

```
graph LR; SOA_P((SOA P)) --> Transformer[Transformer]; Transformer --> Action[Action]; Action --> EJB_Call((EJB Call));
```

Palette

- Select
- Basic BPMN ...
- Task
- Start Events
- Empty Start
- Intermediar...
- Empty Intermediate
- End Events

Problems Properties IntermediateModel Error Log Observable Attributes Outline

Appearance

- Rulers & Grid
- Advanced
- Annotations
- IM-Model
- Technology

Fonts and

- Arial
- B

```
graph LR; SOAP[SOAP] --> Action[Action]; Action --> EJB[EJB]; EJB --> DB[(DB)];
```

A red arrow points from the EJB Call event in the BPMN diagram to the EJB component in the A\_Service diagram.

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A\_service.bpmn\_diagram Demo2.bpmn\_diagram

CompositeApplication

Diagram showing a CompositeApplication with four services: B\_Service, A\_Service, C\_Service, and D\_Service. B\_Service is connected to A\_Service and C\_Service. C\_Service is connected to D\_Service.

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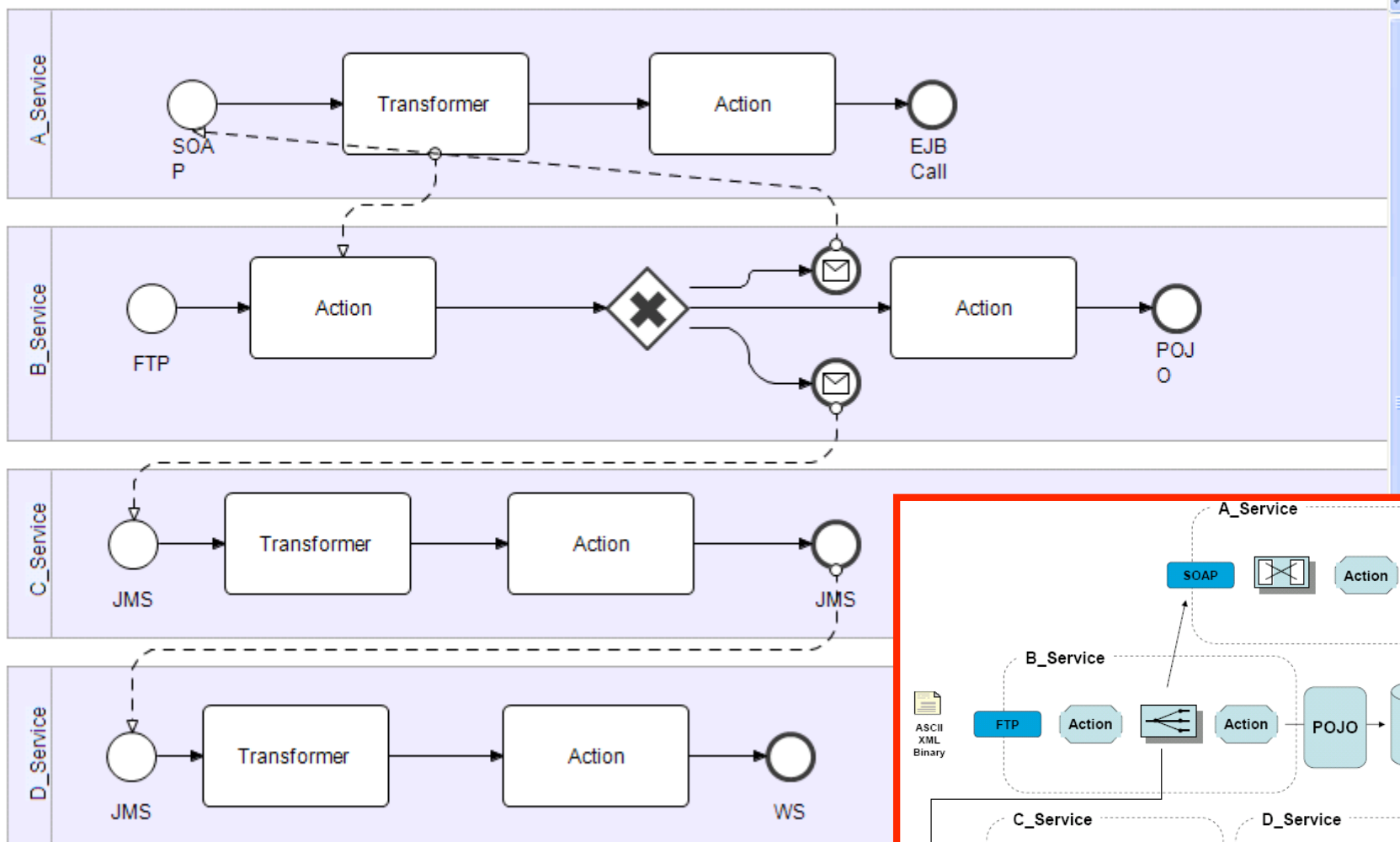
ASCII XML Binary

Detailed diagram showing the implementation of the services:

- A\_Service:** SOAP (Input) → Action → EJB → DB
- B\_Service:** FTP (Input) → Action → POJO → DB
- C\_Service:** JMS (Input) → Action → WS → DB
- D\_Service:** JMS (Input) → Action → WS → DB

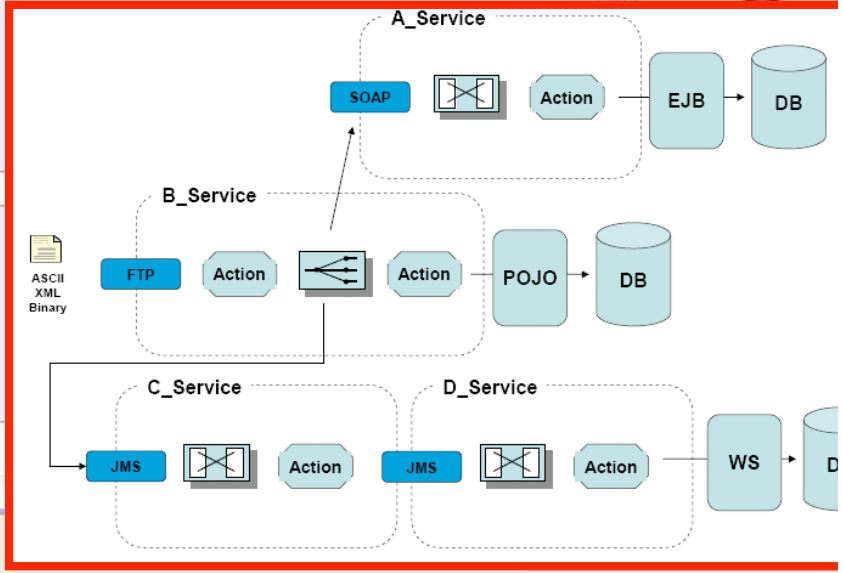
Diagram illustrating the internal implementation of the services:

- A\_Service:** SOAP (Input) → Action → EJB → DB
- B\_Service:** FTP (Input) → Action → POJO → DB
- C\_Service:** JMS (Input) → Action → WS → DB
- D\_Service:** JMS (Input) → Action → WS → DB

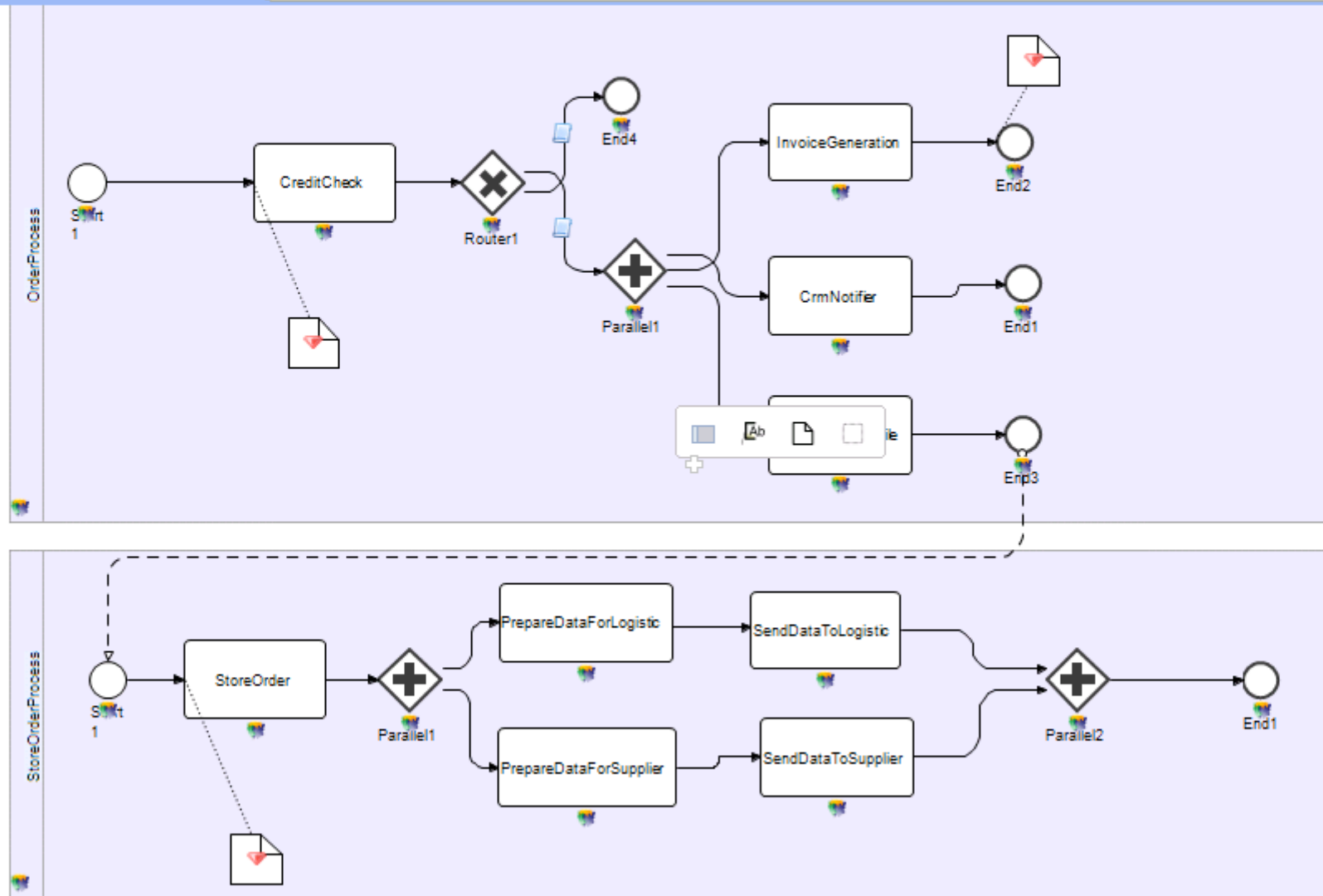


**Palette**

- Select
- Basic BPMN Shapes
- Start Events
- Intermediary Events
- End Events
- Empty End
- Message End
- Error End



order.bpmn\_diagram

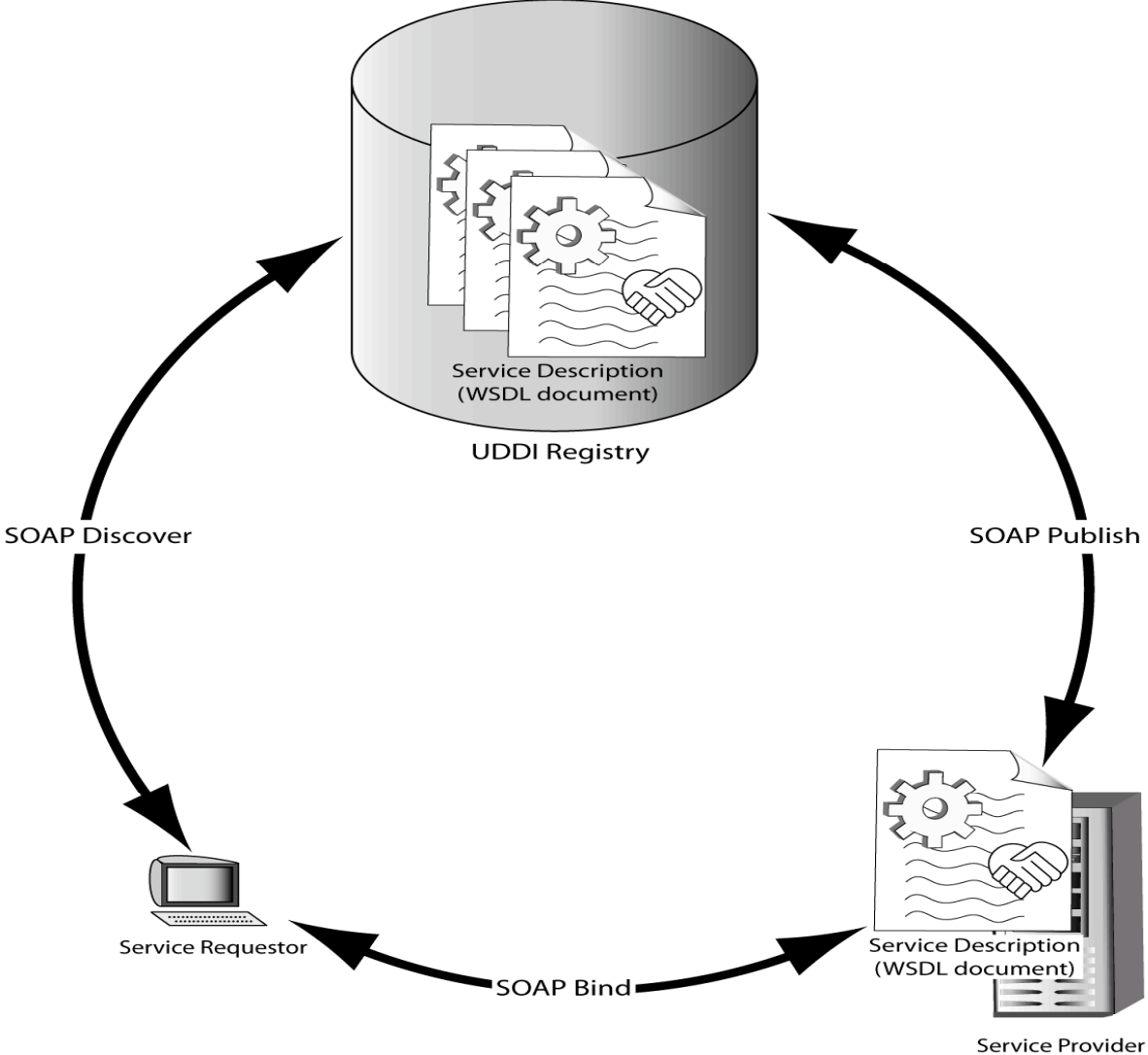


**Palette**

- Select
- Basic BPMN Sha...
- Message Association Connection
- Start Events
  - Empty Start
  - Message Start
- Intermediary E...
  - Empty Intermediate
- End Events
  - Empty End
- Gateway Shapes
  - Exclusive Data-
  - Exclusive Event-
- Artifacts
  - Group
  - Data Object



# Web Services implementation

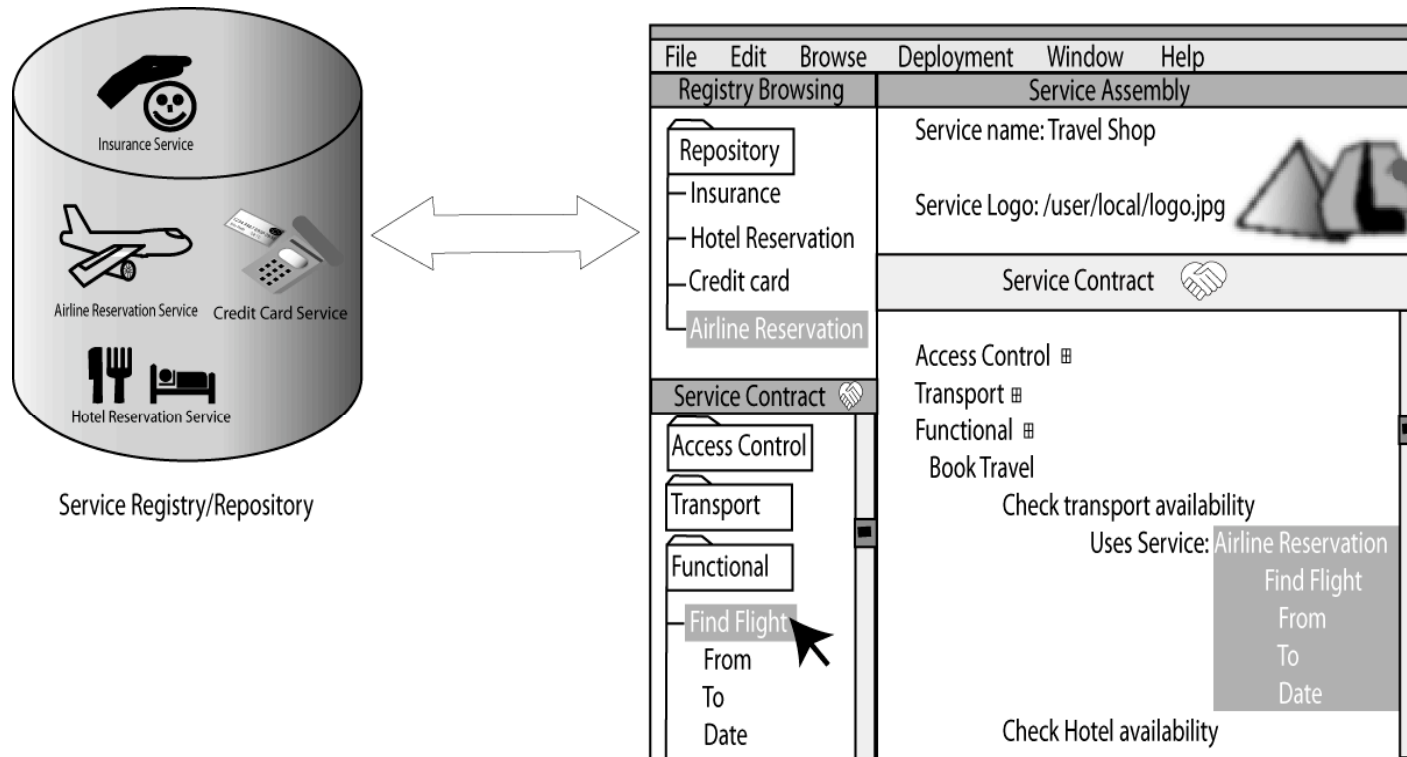


# The BRMS (and old mock-up)

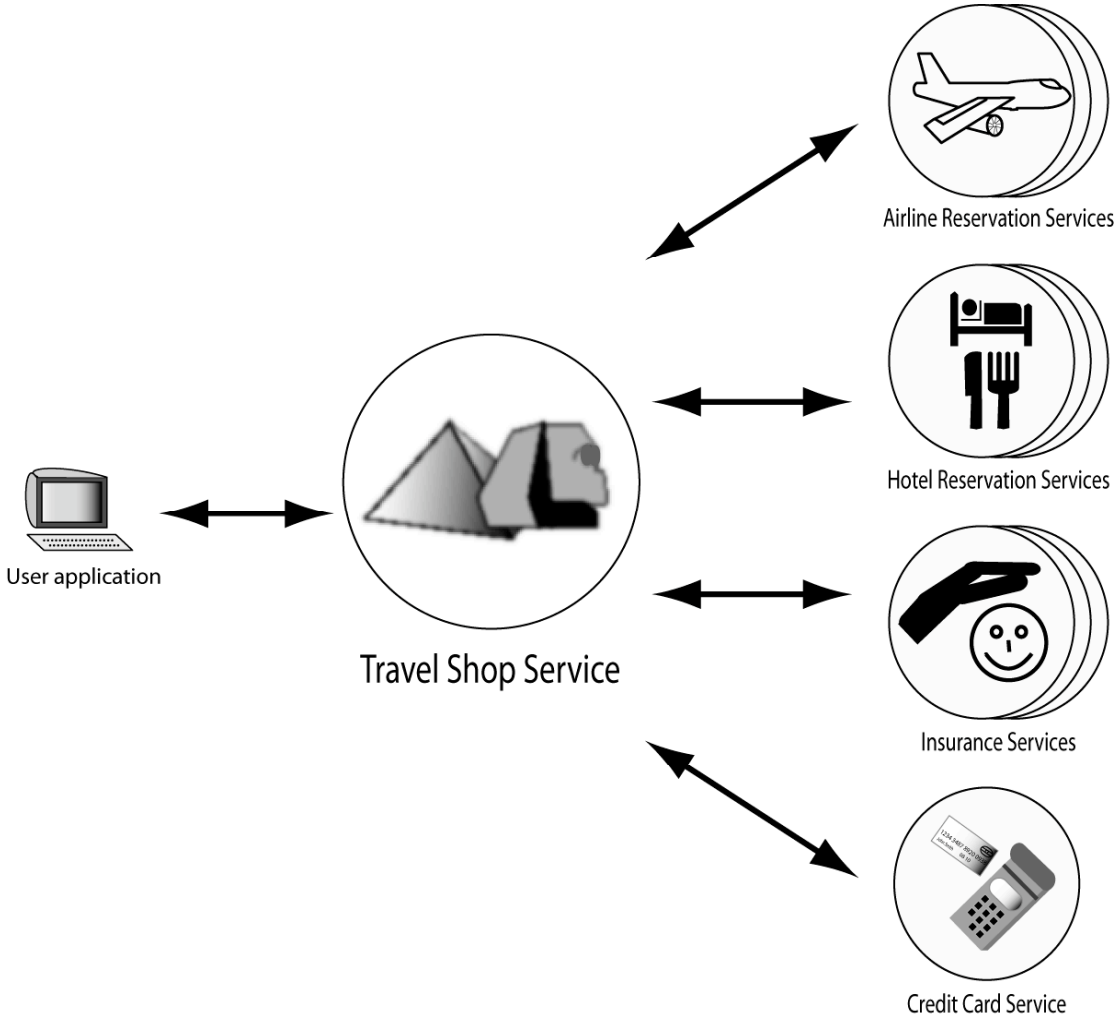
The screenshot displays the BRMS interface with several key components and annotations:

- Policy Explorer:** Located in the top-left pane, it shows a tree view of policies. An arrow labeled "Policies" points to the "flight-validation" folder.
- Facts Explorer:** Located in the middle-left pane, it shows a tree view of vocabularies and functions. An arrow labeled "Vocabularies and Classes" points to the "distance\_to\_destination" function.
- Properties:** Located in the bottom-left pane, it shows the properties for the selected "distance\_to\_destination" function.
- Rule Editor:** The main central pane shows a rule for "Flight - Version 1.0 - flight-validation". It is structured as follows:
  - IF** section:
    - Conditions:** An **AND** condition containing two sub-conditions:
      - "Distance to destination is greater than 10"
      - "Airport.name is equal to JFK"An arrow labeled "Business Rule Condition" points to this section.
  - THEN** section:
    - Actions:** A single action: "assert approval". An arrow labeled "Business Rule Action" points to this section.

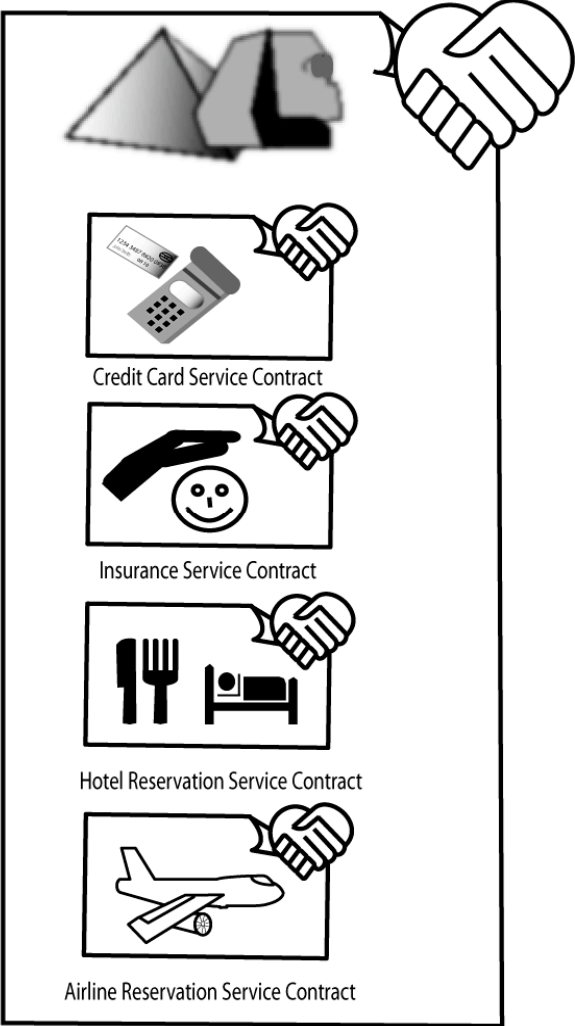
# Design-time service discovery



# Composite service



# Composite SLA

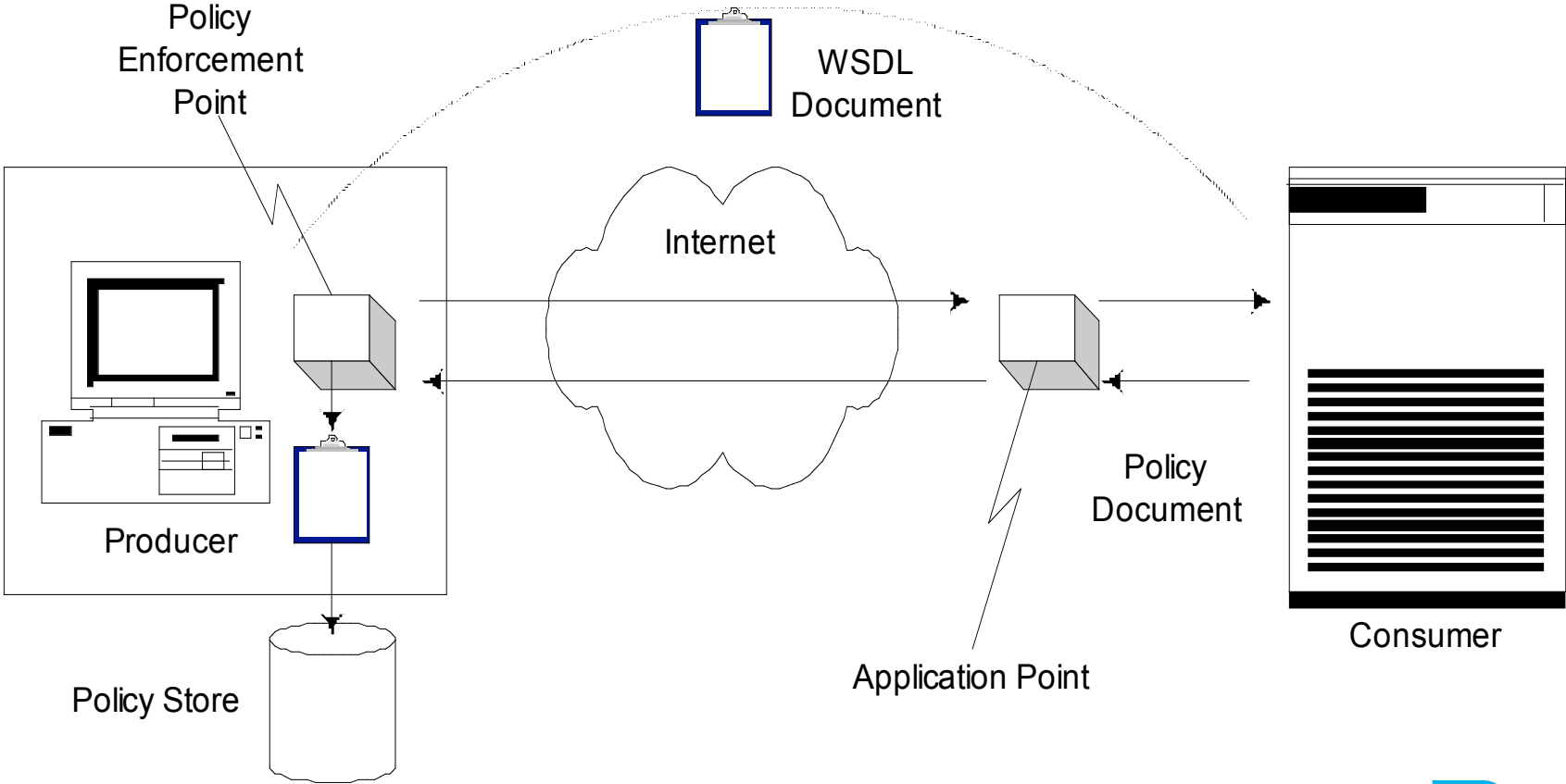


Travel Shop Service Contract

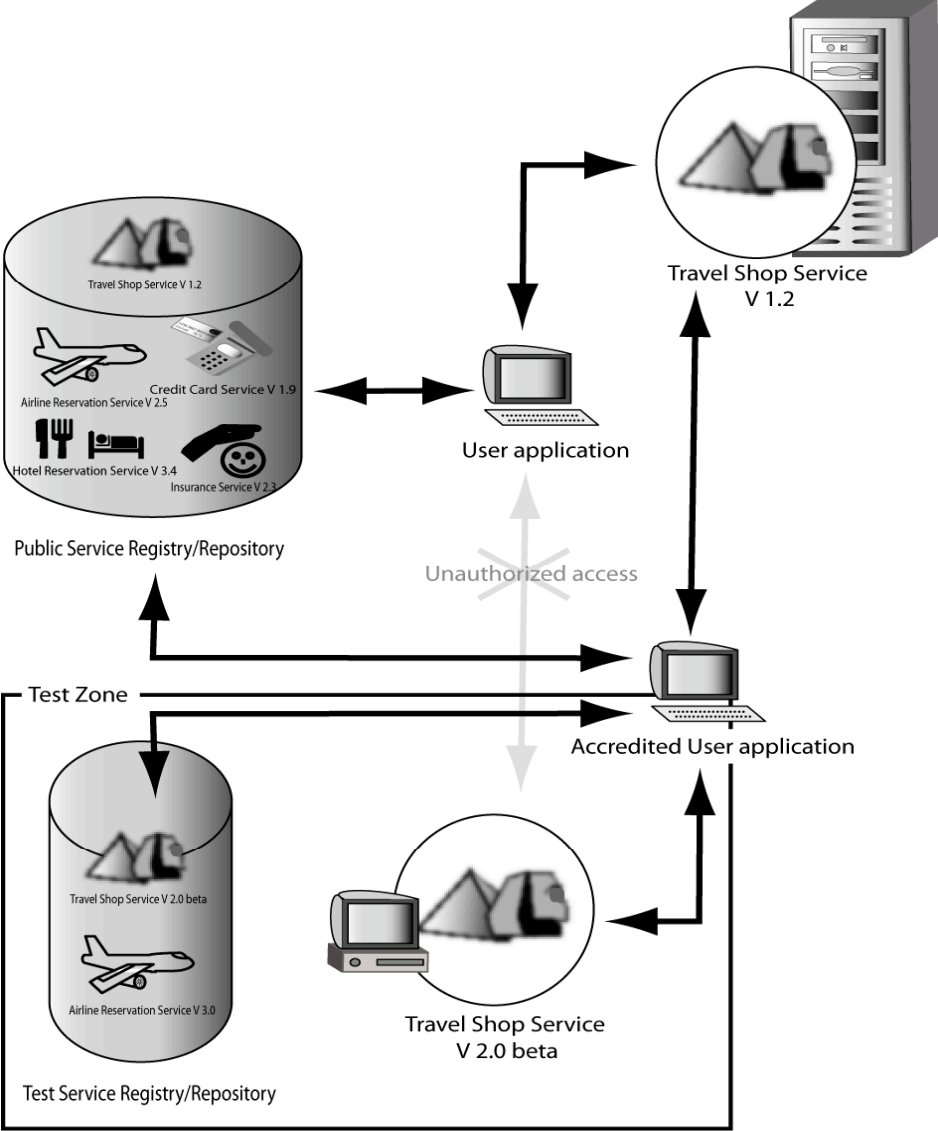
# Policies

- No policy support
  - The need for policies must be defined outside of the ESB and communicated using ad hoc techniques
- Definition of policies
  - Capture and creation of policies at design-time (typically via a graphical interface) and run-time (usually through an intermediary such as a registry)
- Management of policies
  - The policies of services to be viewed (either directly by contacting the running service, or indirectly via an intermediary) and updated
- Enforcement
  - Policies are verified and enforced by the ESB.
- Storage
  - A library of policy types can be built up and shared between services and developers

# Policy Enforcement

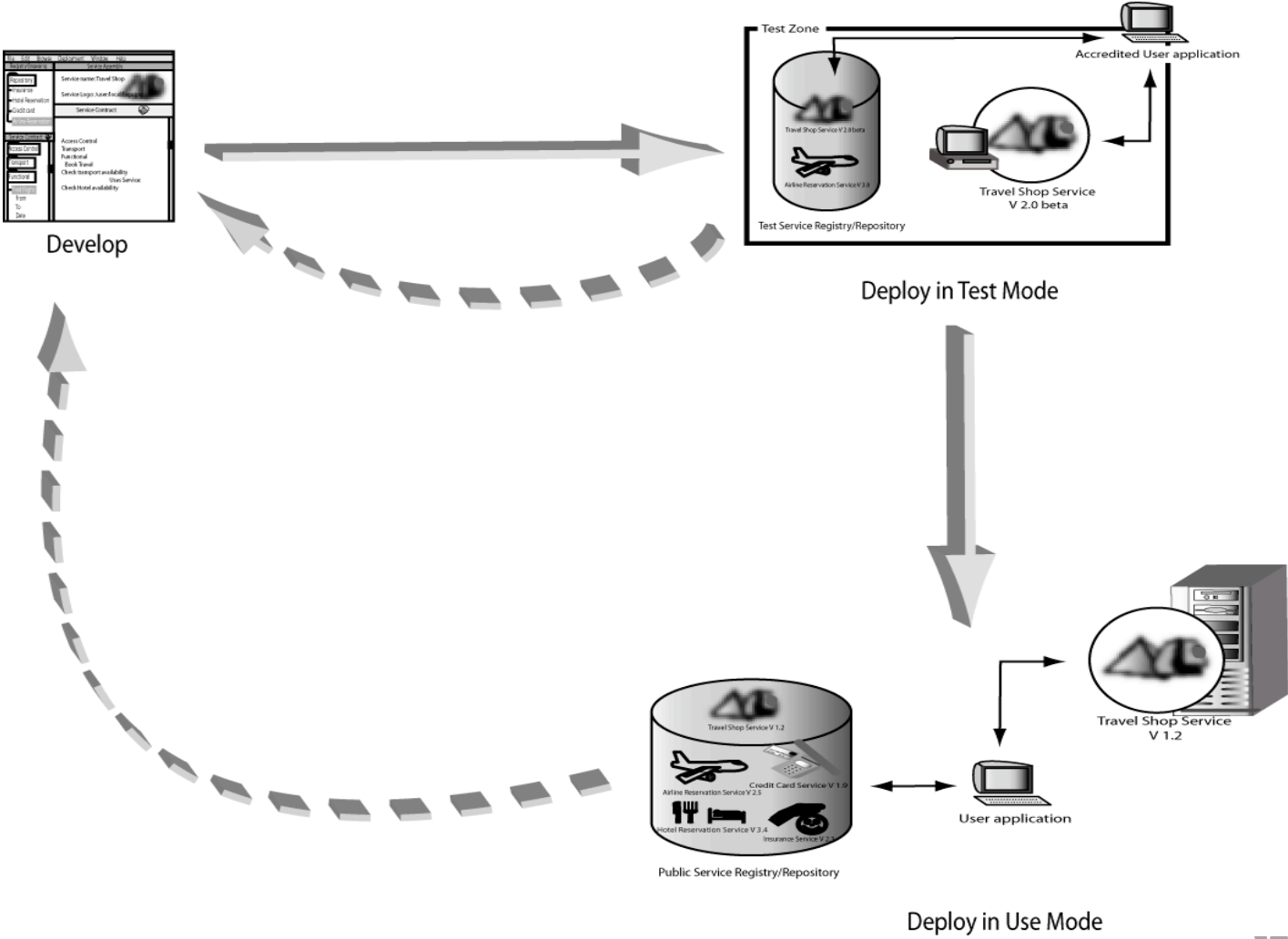


# Service testing

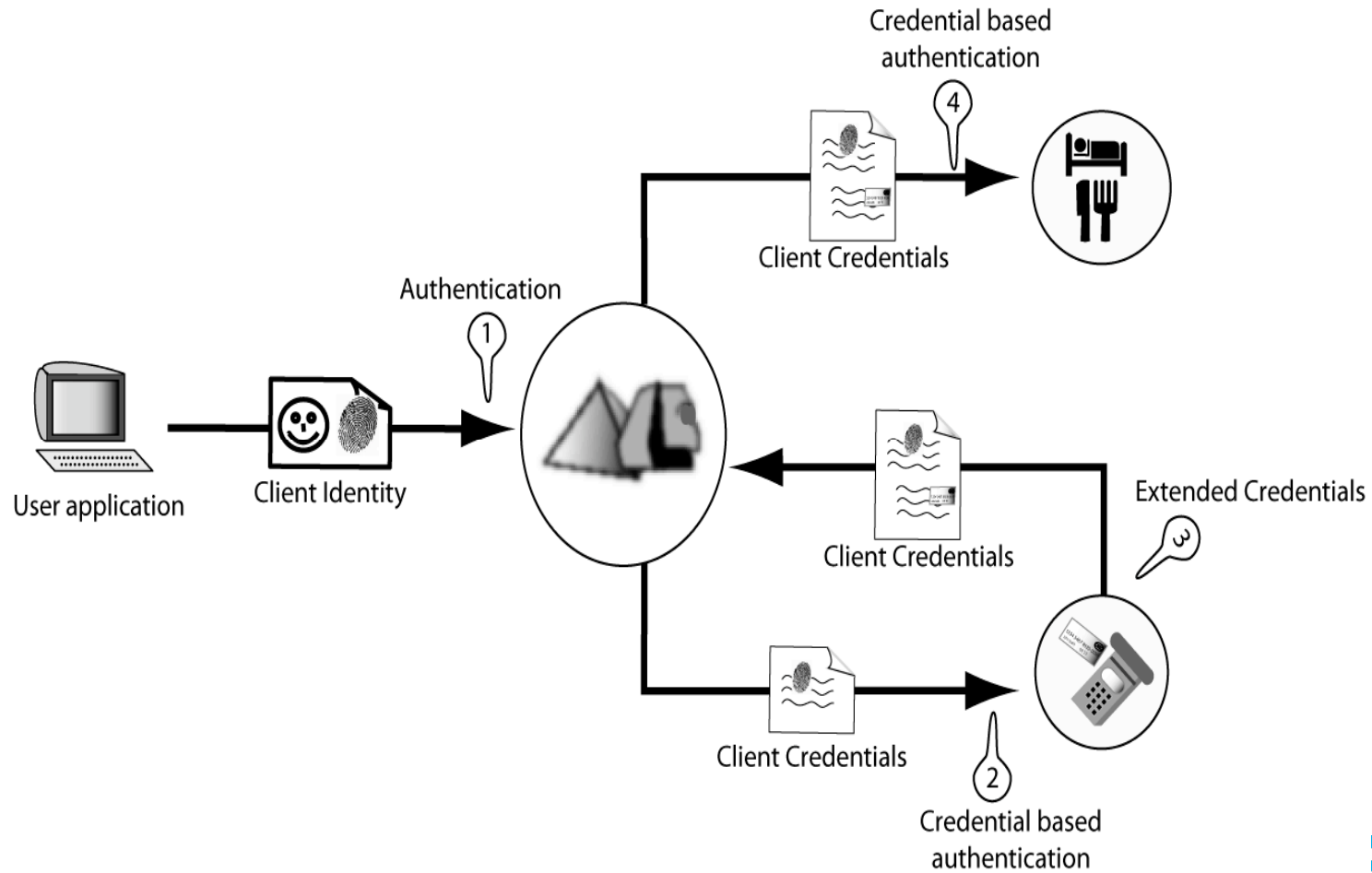




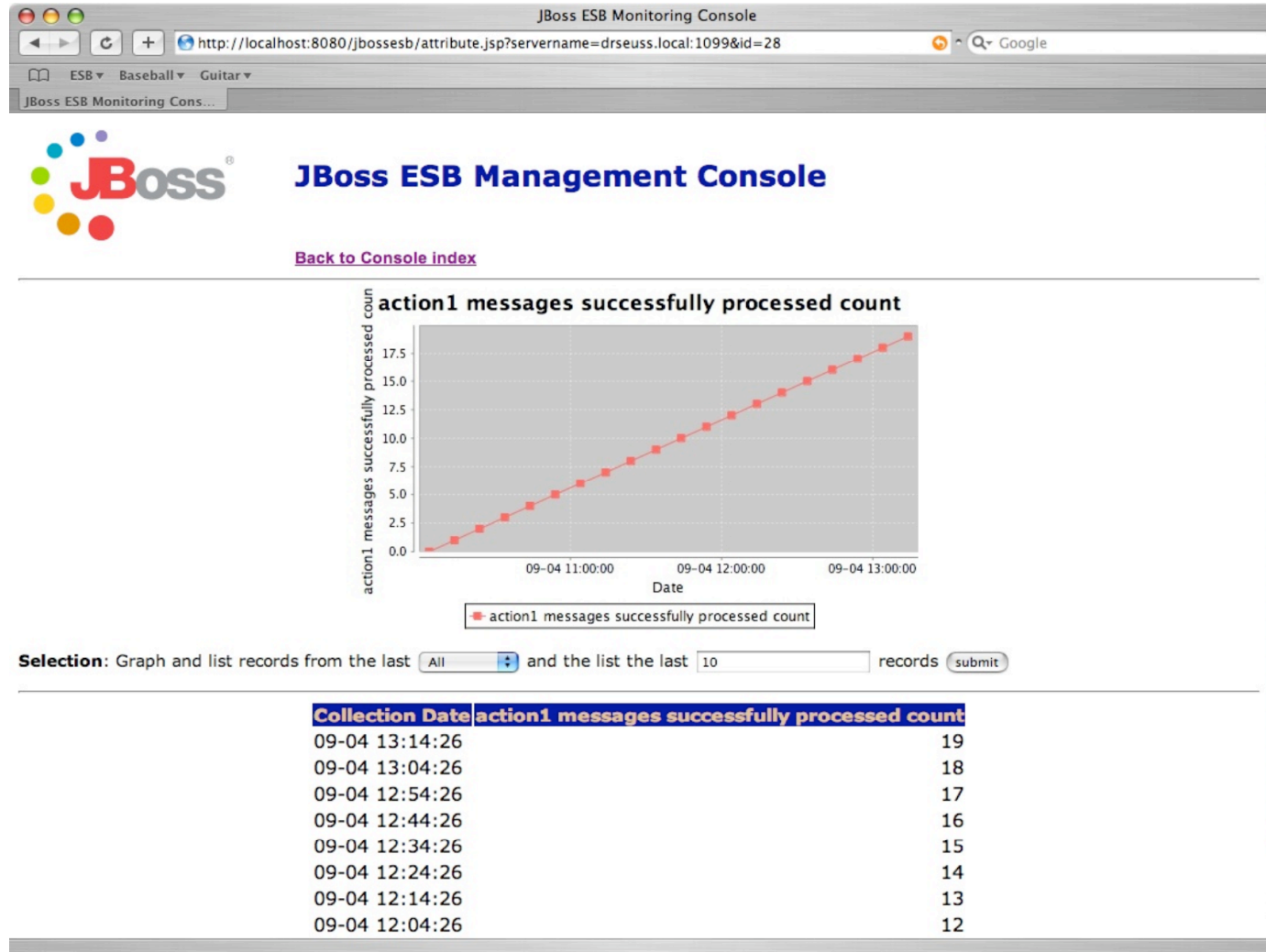
# Service deployment



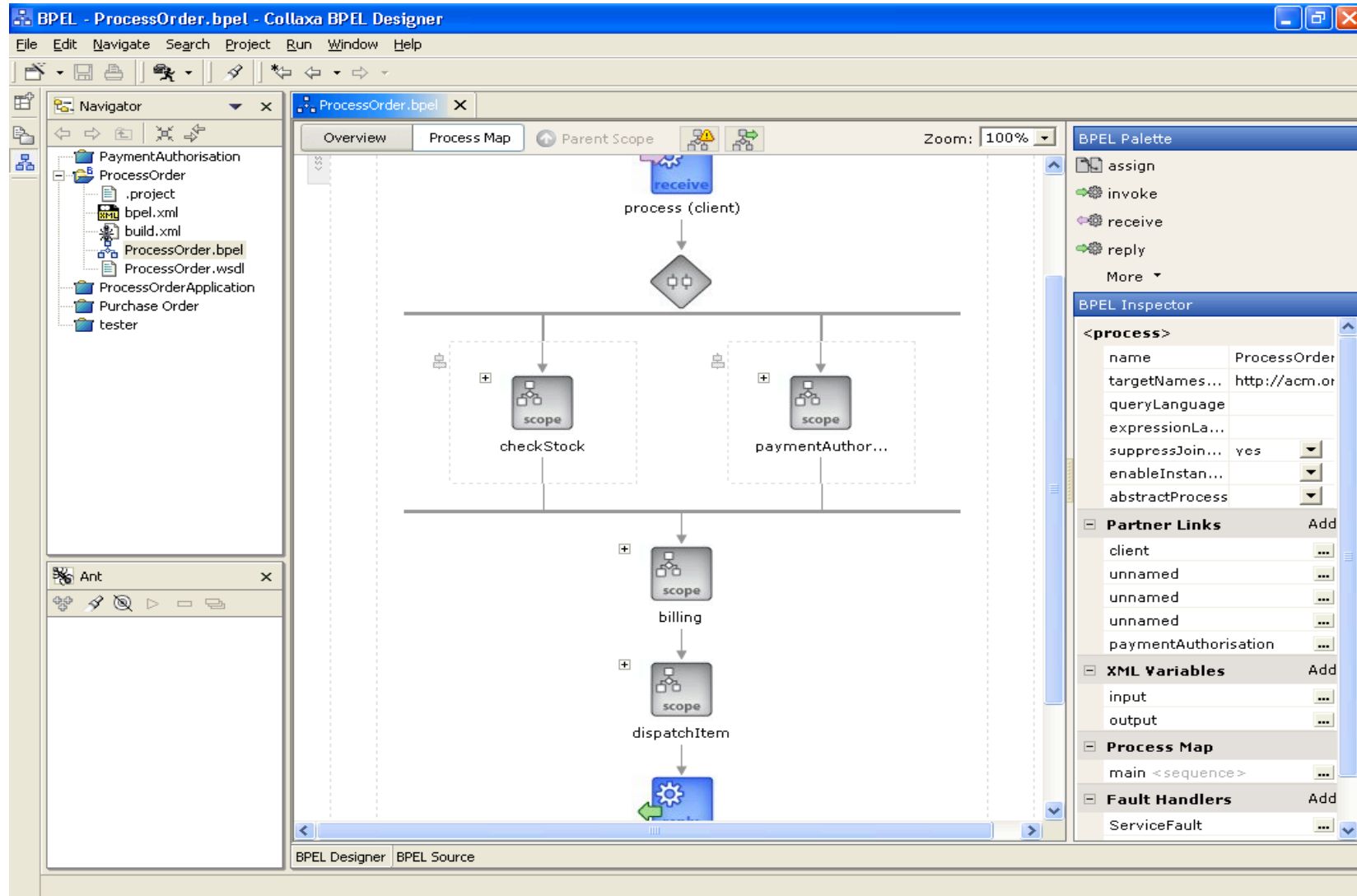
# Identity management



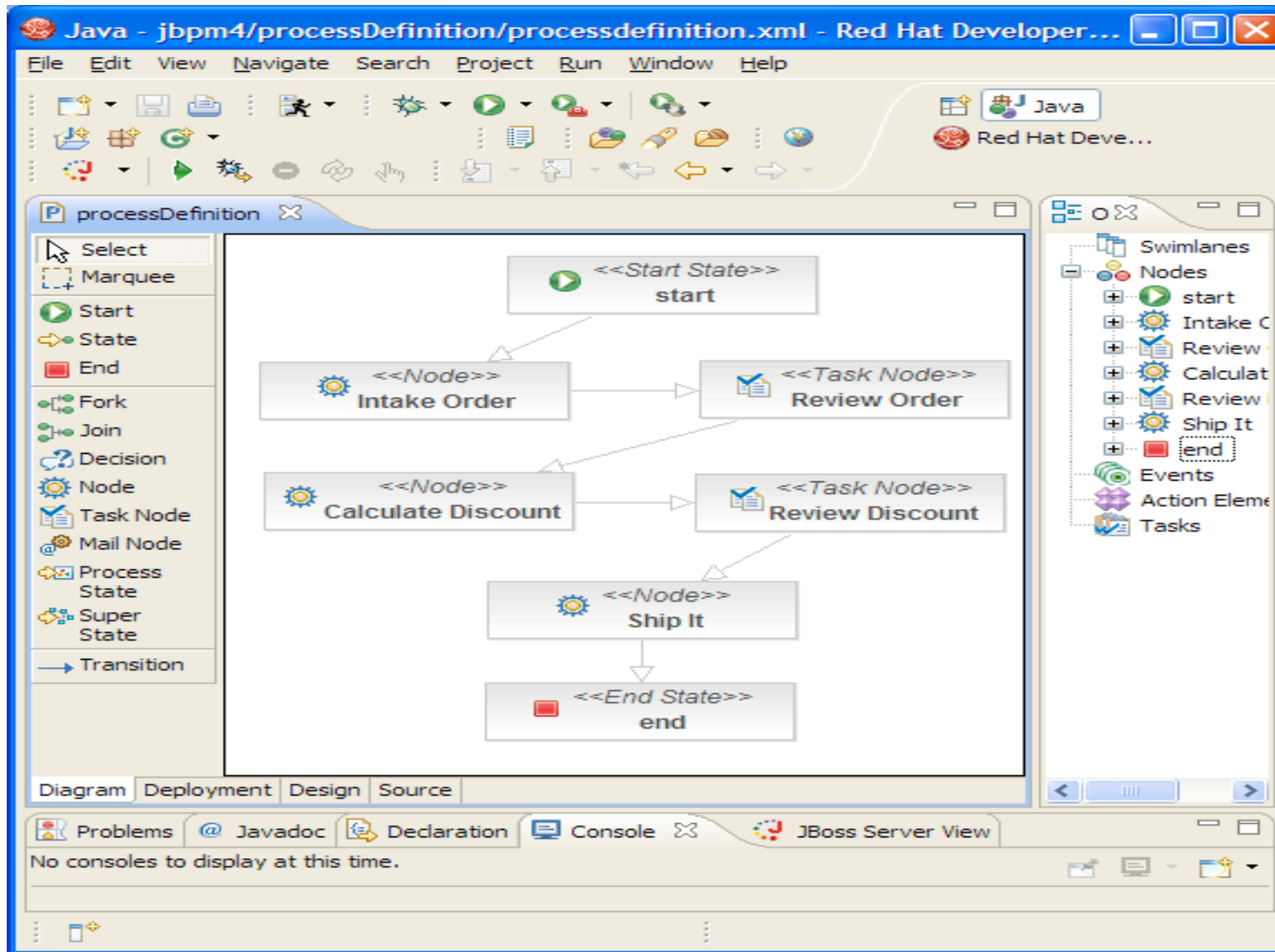
# BAM



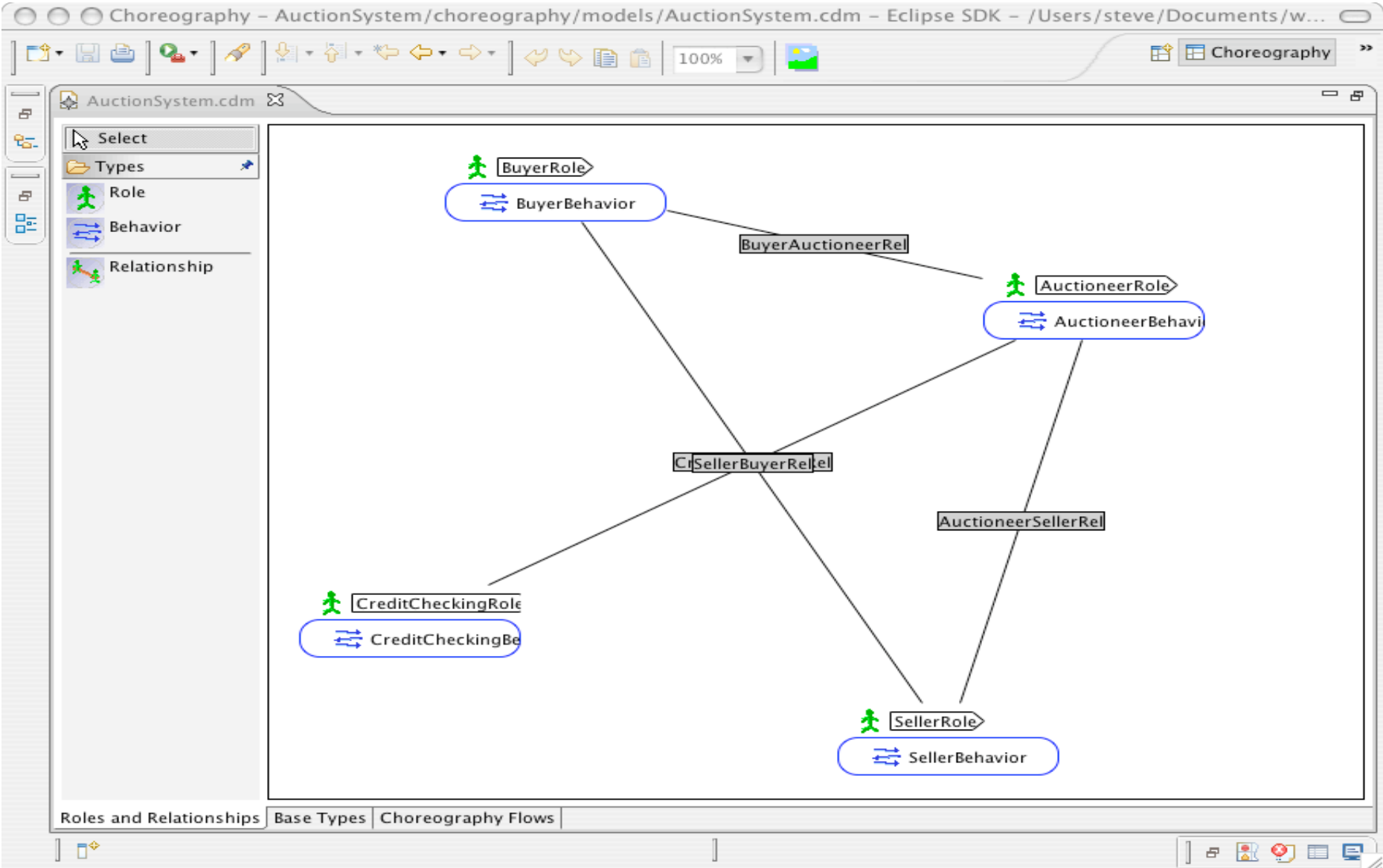
# WS-BPEL example



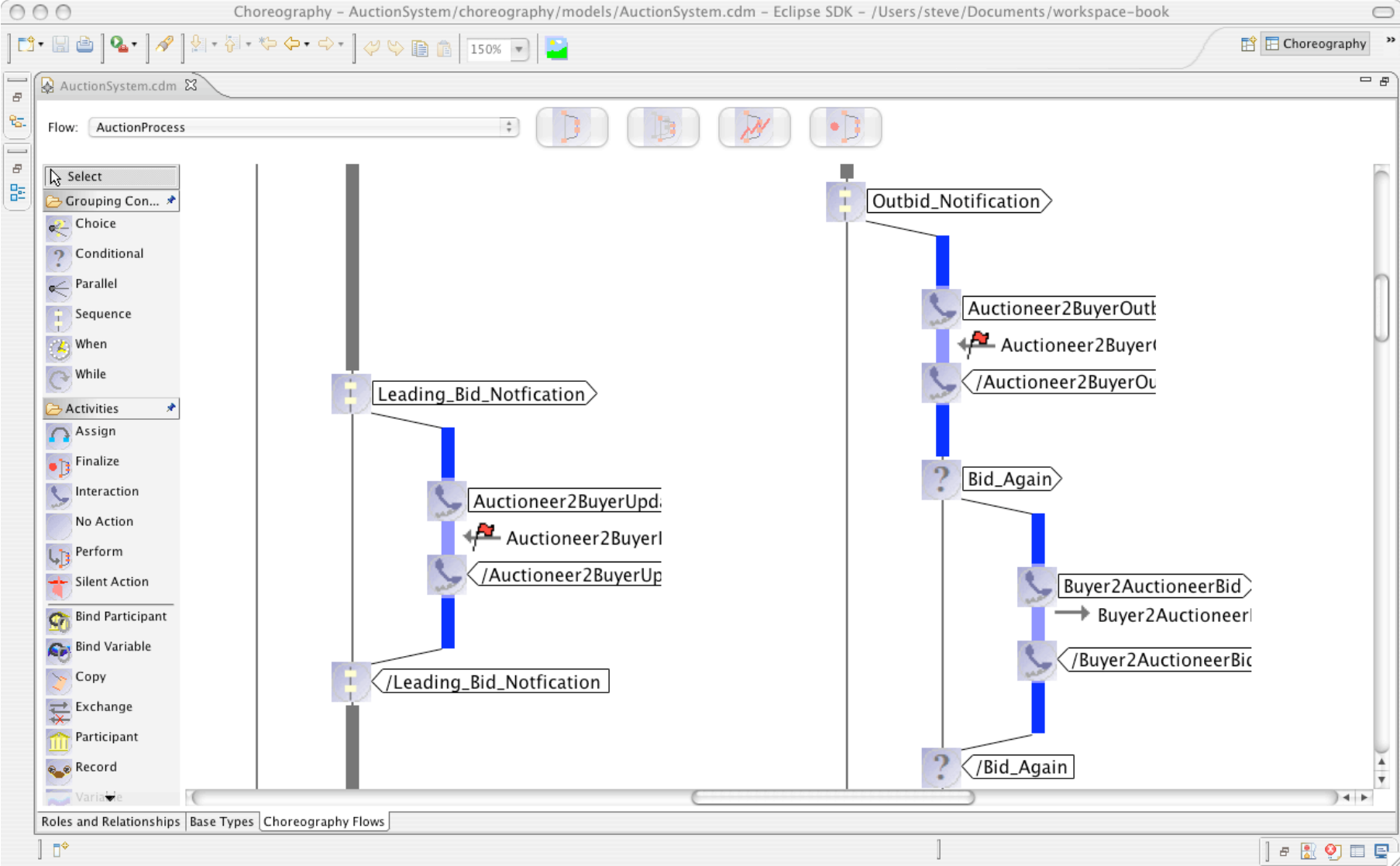
# jBPM example



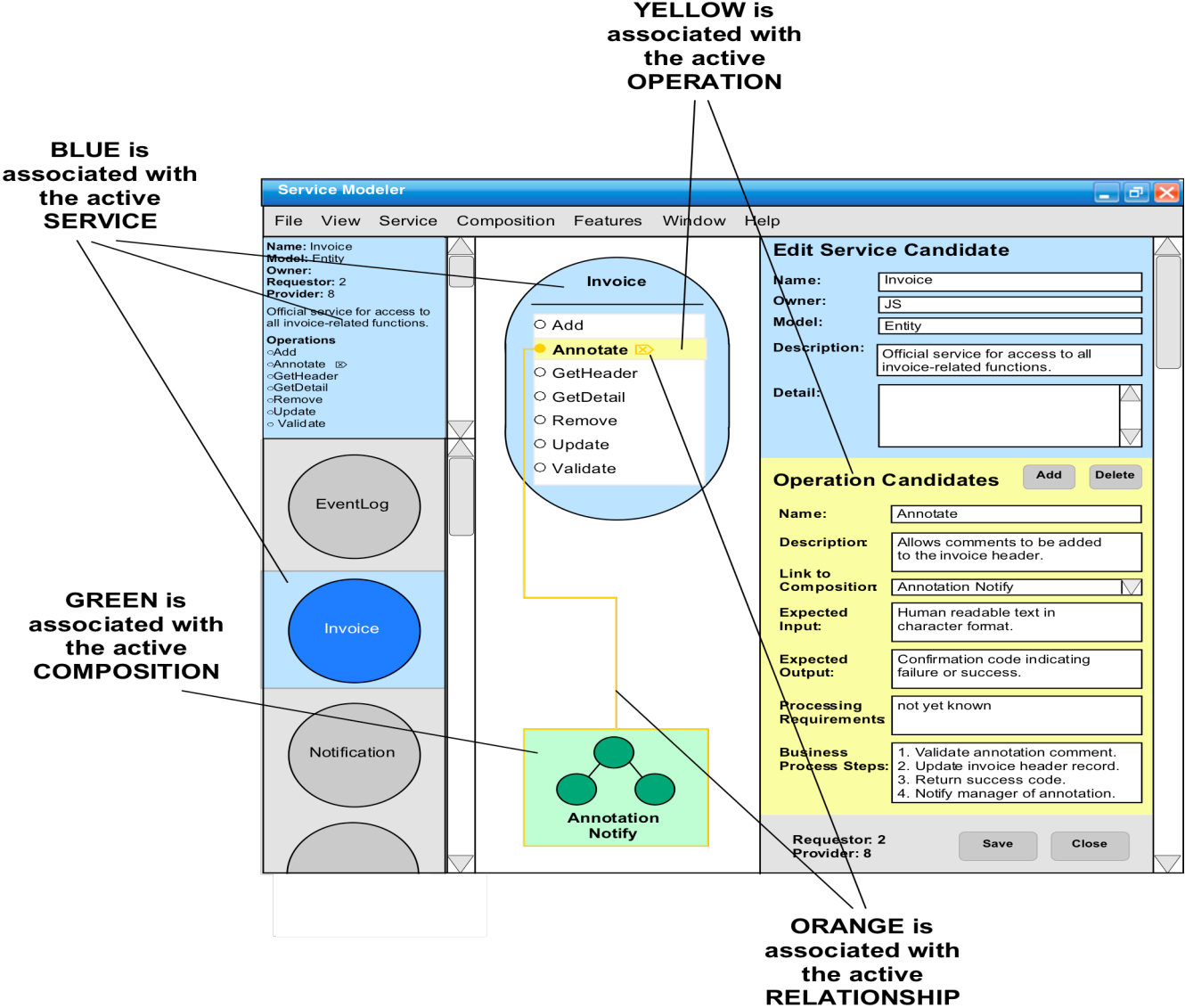
# Roles and relationships



# SOA Blueprint Modeler



# Thomas Erl SOA Modeler





# SOA Modeler

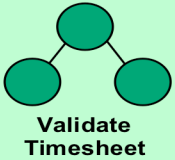
Service Modeler
\_ □ ×

File View Service Composition Features Window Help

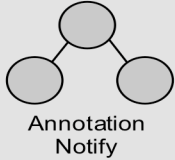
**Name:** Validate Timesheet  
**Owner:** JS  
**Services:** 3  
**Relationships:** 2

Completes the task of validating timesheet hours against billed invoice hours.

**Detailed Description**  
 Timesheets submitted by employees that are outsourced to maintenance clients need to be validated to ensure that the hours logged correspond to the hours



**Validate Timesheet**



**Annotation Notify**

### Edit Composition Candidate

**Name:**

**Owner:**

**Services:** 3

**Relationships:** 2




**Short Description:**

Completes the task of validating timesheet hours against billed invoice hours.

**Detailed Description:**

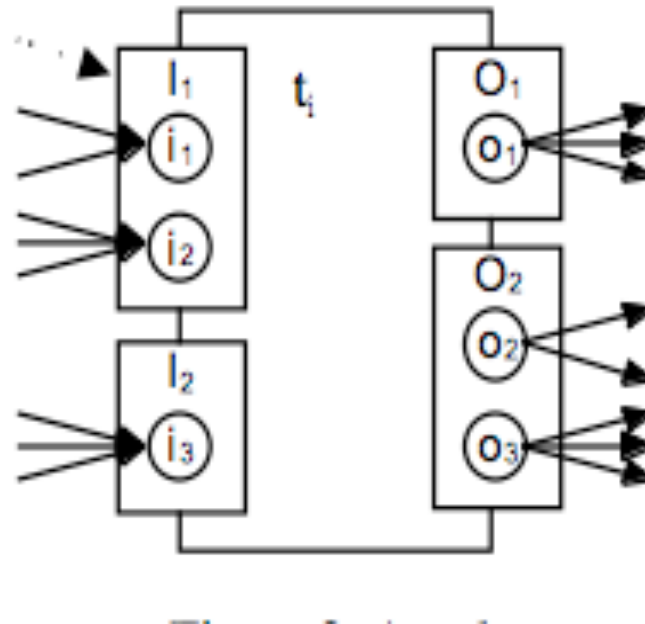
Timesheets submitted by employees that are outsourced to maintenance clients need to be validated to ensure that the hours logged correspond to the hours billed via client invoices. This composition encapsualtes a process that checks billed hours on invoices pior to issuance against logged hours on employee timesheet records. Subsequent to the validation a notifica-

**Composition Members:**

	Name: Validate Timesheet	Description
	<b>Model:</b> Task <b>Owner:</b> MJ <b>Requestor:</b> 2 <b>Provider:</b> 0	The task-centric business controller service solely responsible for the Validate Timesheet process.
	<b>Name:</b> Invoice <b>Model:</b> Entity <b>Owner:</b> JS <b>Requestor:</b> 2 <b>Provider:</b> 9	Official service for access to all invoice-related functions.
	<b>Name:</b> Notification <b>Model:</b> Application <b>Owner:</b> KL <b>Requestor:</b> 0 <b>Provider:</b> 12	Official service for all automated e-mail-based notification functions.

Annotations
Save
Close

# Task Modeler



# OPENflow

