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jBPM5: Bringing more Power to your Business Processes

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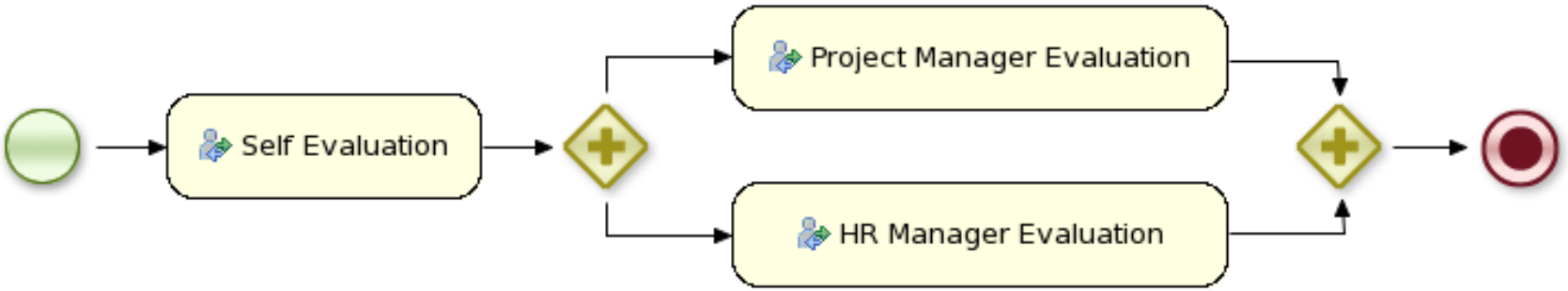
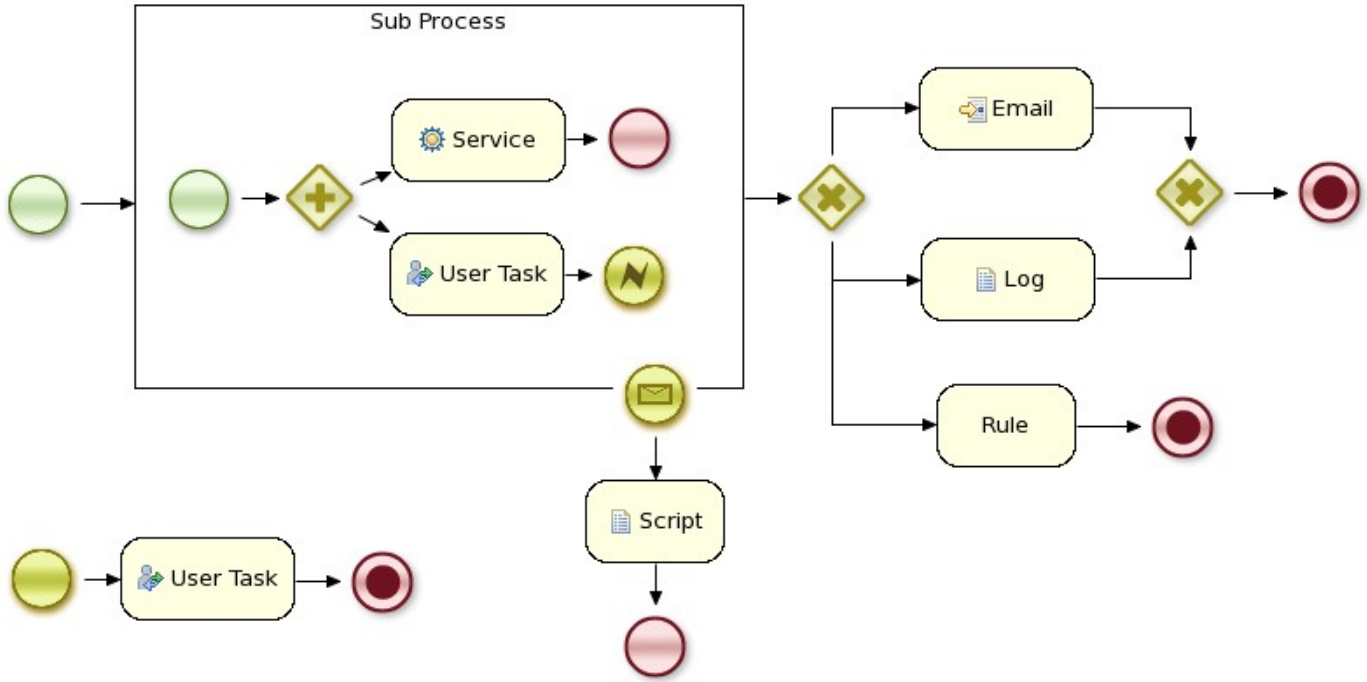
What is BPM?

Business Process Management



A ***business process*** is a process that describes the order in which a series of steps need to be executed, using a flow chart.

Why BPM?



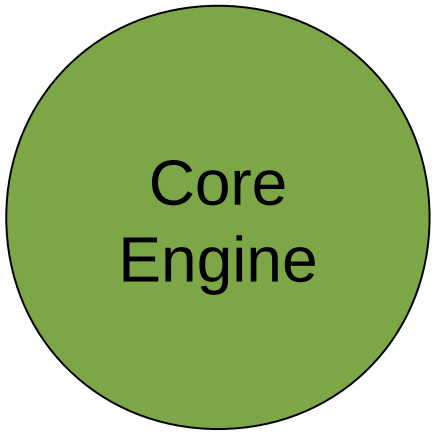
- Visibility
- Monitoring
- Higher-level
- Continuous improvement
- Speed of development
- Increased agility

Key Characteristics of jBPM5

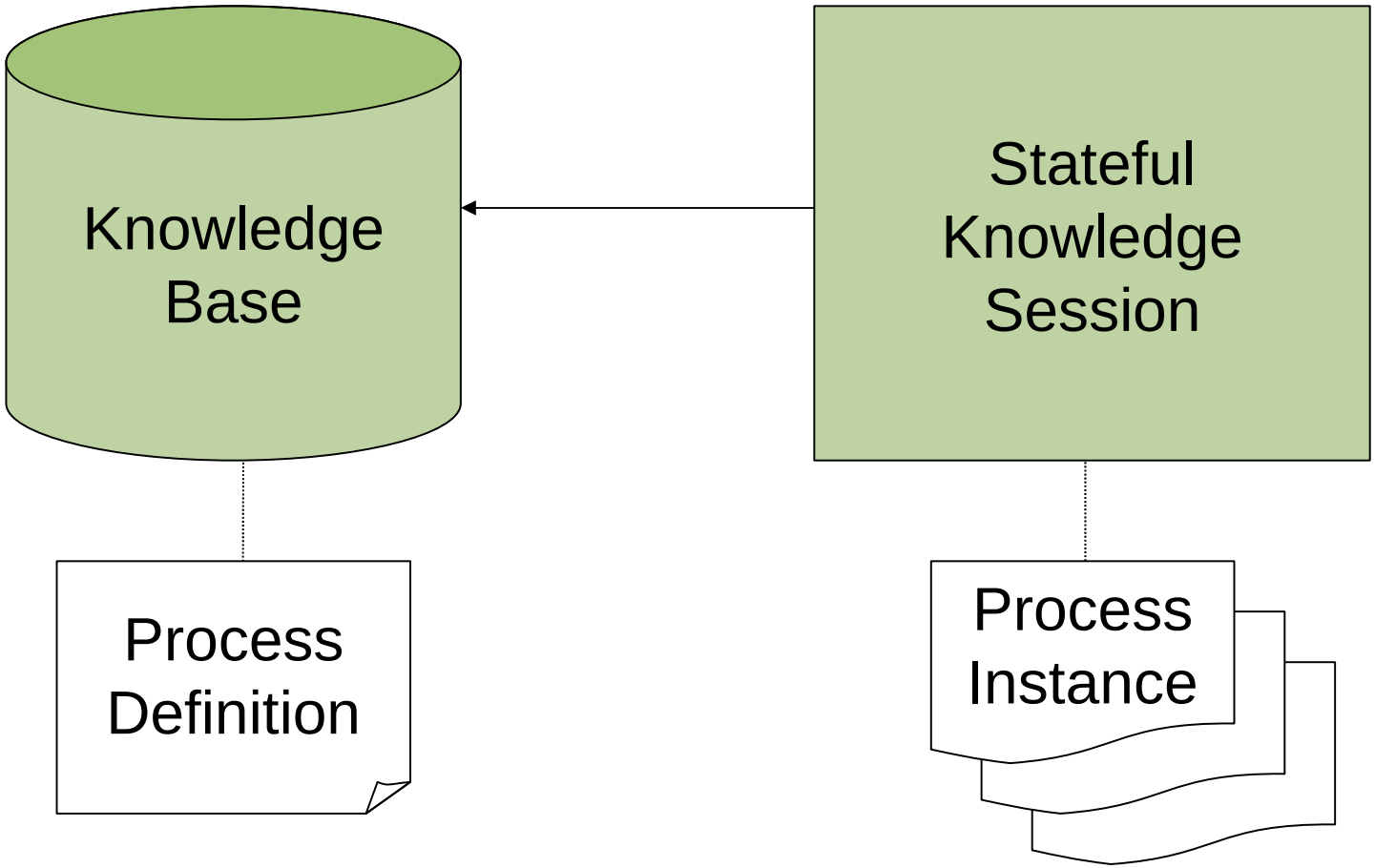
- Open-source business process management project offering:
  - generic process engine supporting native BPMN 2.0 execution
  - targeting developers and business users
  - collaboration, management and monitoring using web-based consoles
  - powerful rules and event integration

From Workflow to BPM

- Core engine is a workflow engine in pure Java
  - state transitions
  - lightweight
  - embeddable
  - generic, extensible



Core Engine


Knowledge Base
Stateful Knowledge Session
Process Definition
Process Instance

Java Interface

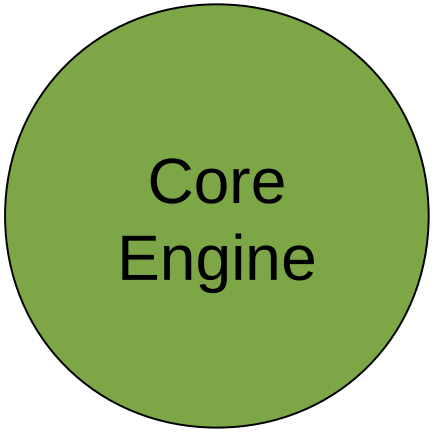
ProcessRuntime interface

- startProcess(processId)
- startProcess(processId, parameters)
- signalEvent(type, event)
- signalEvent(type, event, instanceId)
- abortProcessInstance(instanceId)
- getProcessInstance(instanceId)
- …

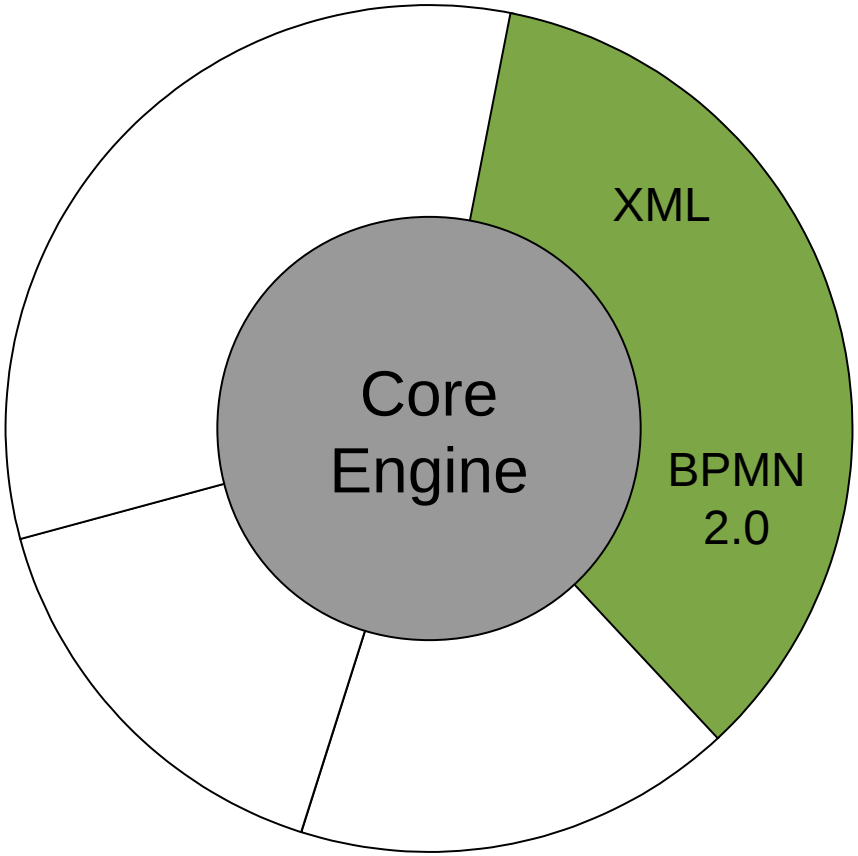
Java Example

```
// (1) Create knowledge base and add process definition
KnowledgeBuilder kbuilder = ...
kbuilder.add( ..., "sample.bpmn", ResourceType.BPMN2);
KnowledgeBase kbase = kbuilder.newKnowledgeBase();
// (2) Create new stateful knowledge session
StatefulKnowledgeSession ksession =
      kbase.newStatefulKnowledgeSession();
// (3) Start a new process instance
ksession.startProcess(“com.sample.bpmn.hello”);
```

From Workflow to BPM



From Workflow to BPM

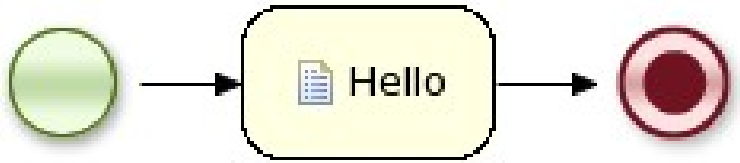


BPMN 2.0

- OMG specification
  - Model
  - Notation
  - Execution semantics
- Understandable by all business users

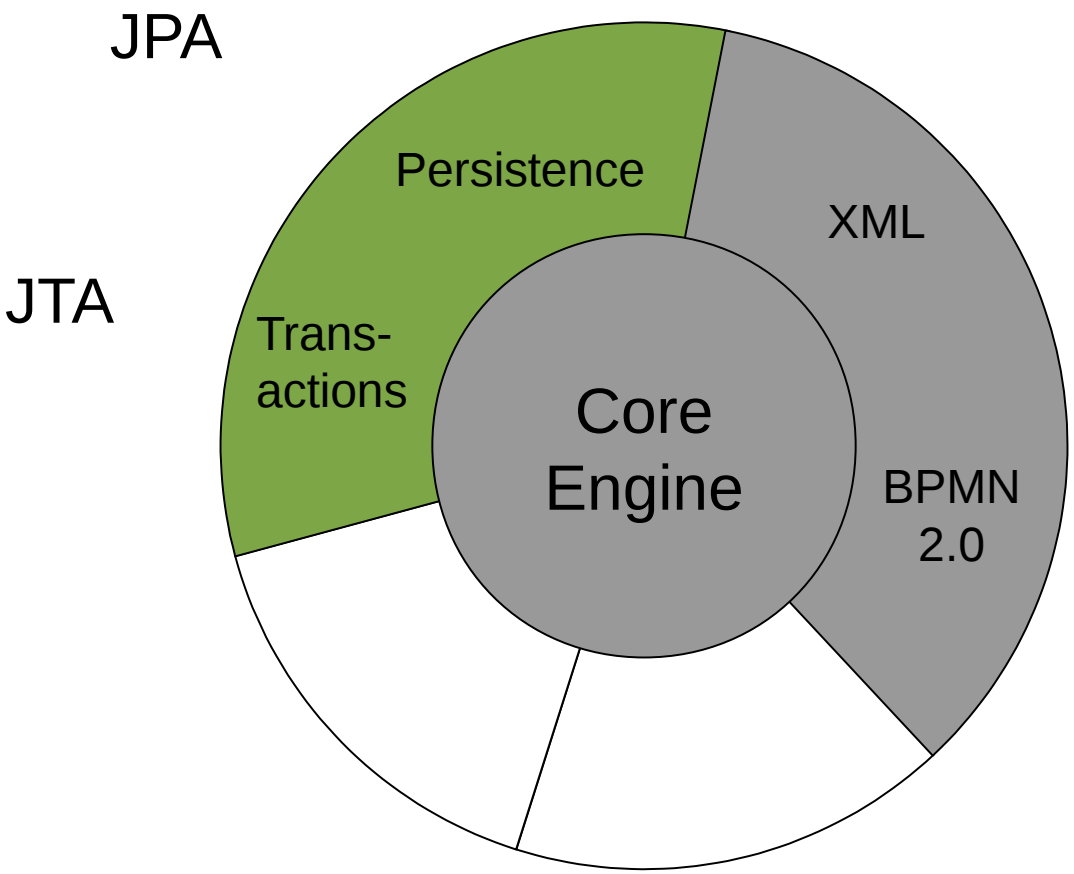
- Process, collaboration, choreography
- Extensible

BPMN 2.0 Example




```
<definitions ... >
   <process id="com.sample.bpmn.hello" name="Hello World" >
      <startEvent id="_1" name="StartProcess" />
      <sequenceFlow sourceRef="_1" targetRef="_2" />
      <scriptTask id="_2" name="Hello" >
        <script>System.out.println("Hello World");</script>
      </scriptTask>
      <sequenceFlow sourceRef="_2" targetRef="_3" />
      <endEvent id="_3" name="EndProcess" />
    </process>
 </definitions>
```

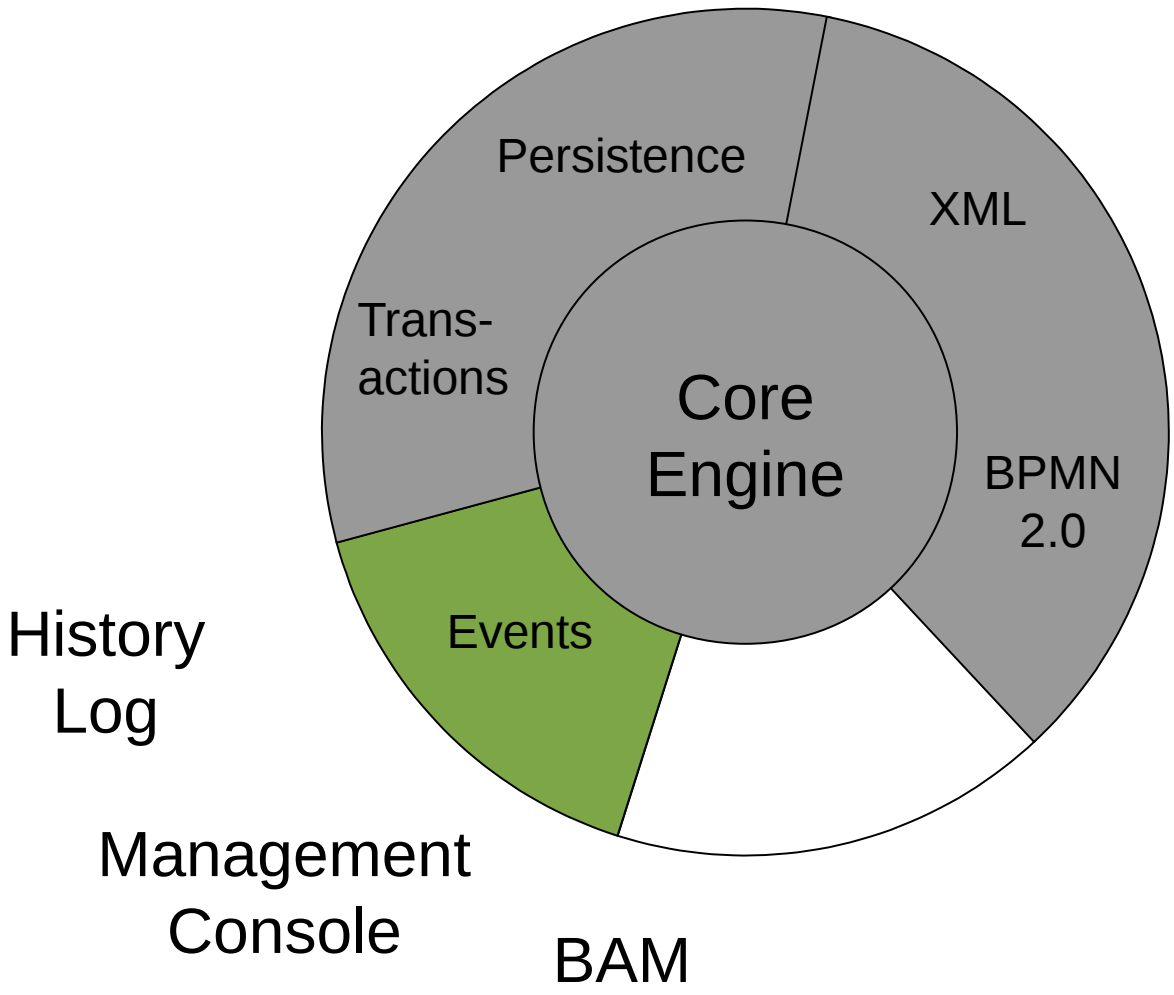
From Workflow to BPM



Persistence and Transactions

- Persistence (JPA, pluggable)
  - Runtime persistence
  - History logging
  - Services
- Transactions (JTA, pluggable)
  - Command-scoped
  - User-defined

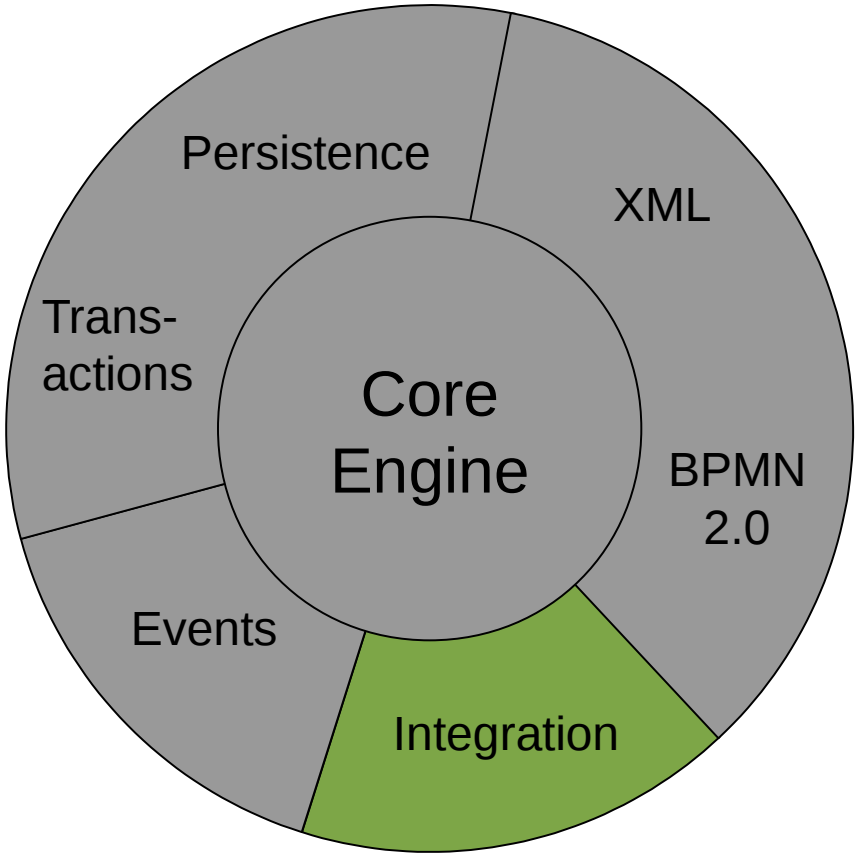
From Workflow to BPM



Console

- Web-based management
- Business user
- Features
  - Process instance management
  - User task lists / forms
  - Reporting

From Workflow to BPM



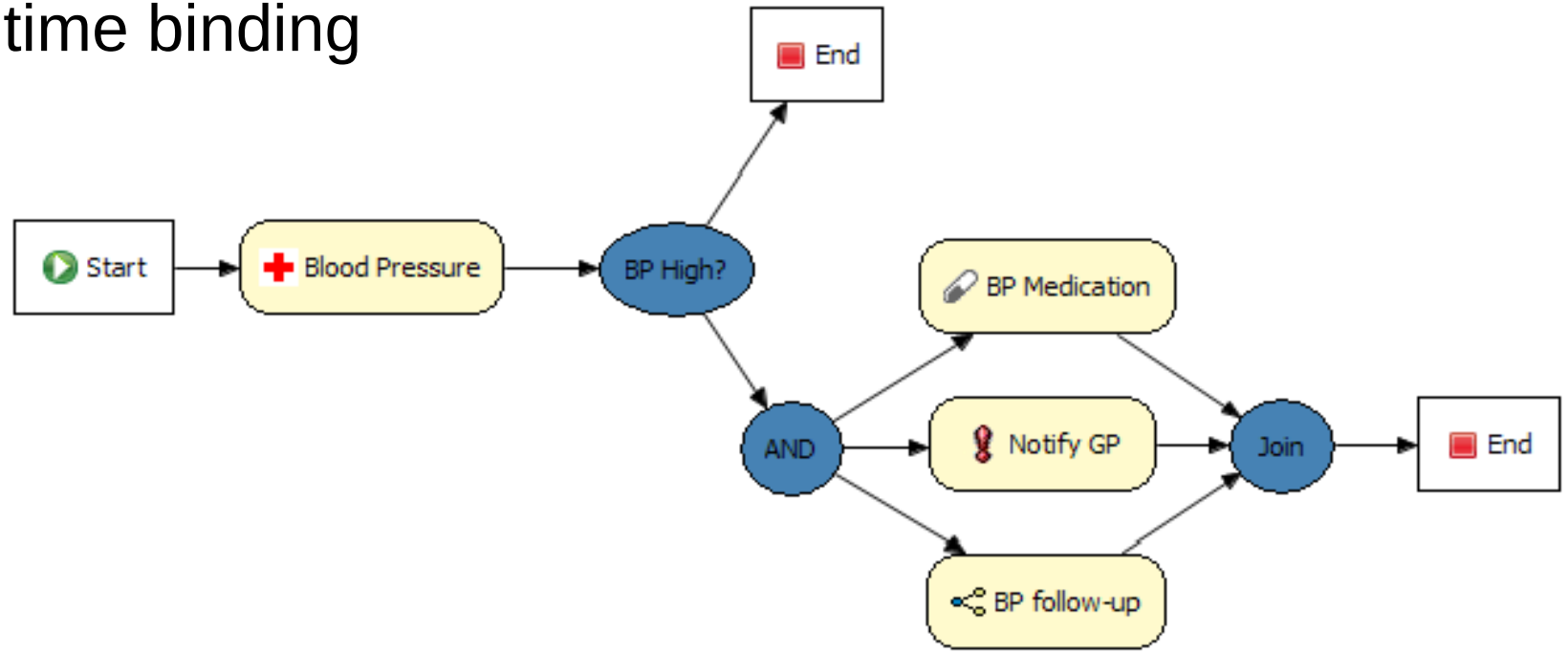
Domain-specific
Processes

Human Task
Service

ESB

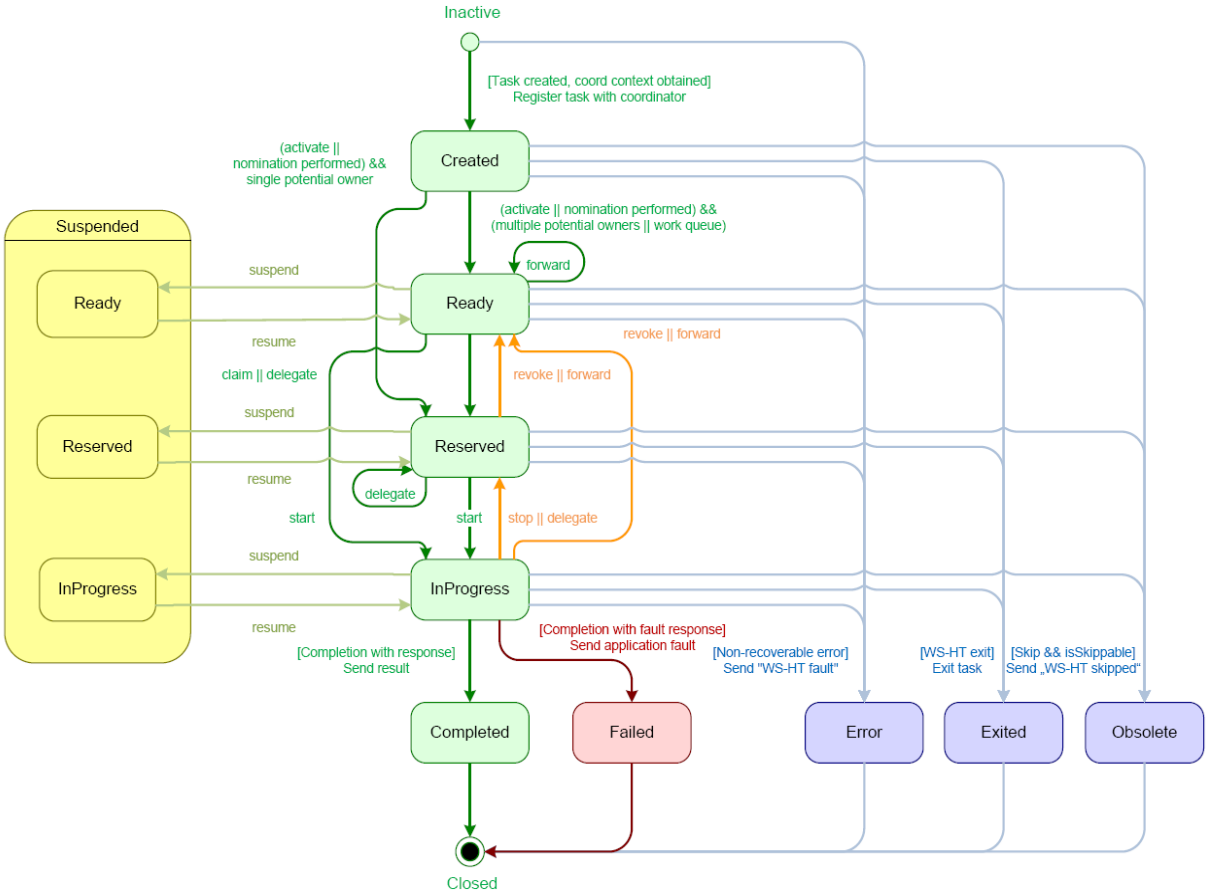
Domain-specific Processes

- Extend palette with domain-specific, declarative service nodes
  - define input / output parameters
  - runtime binding



Human task service

- User task
- Human task service (WS-HT)
  - Task lists
  - Task life cycle
- Task clients
  - Task forms



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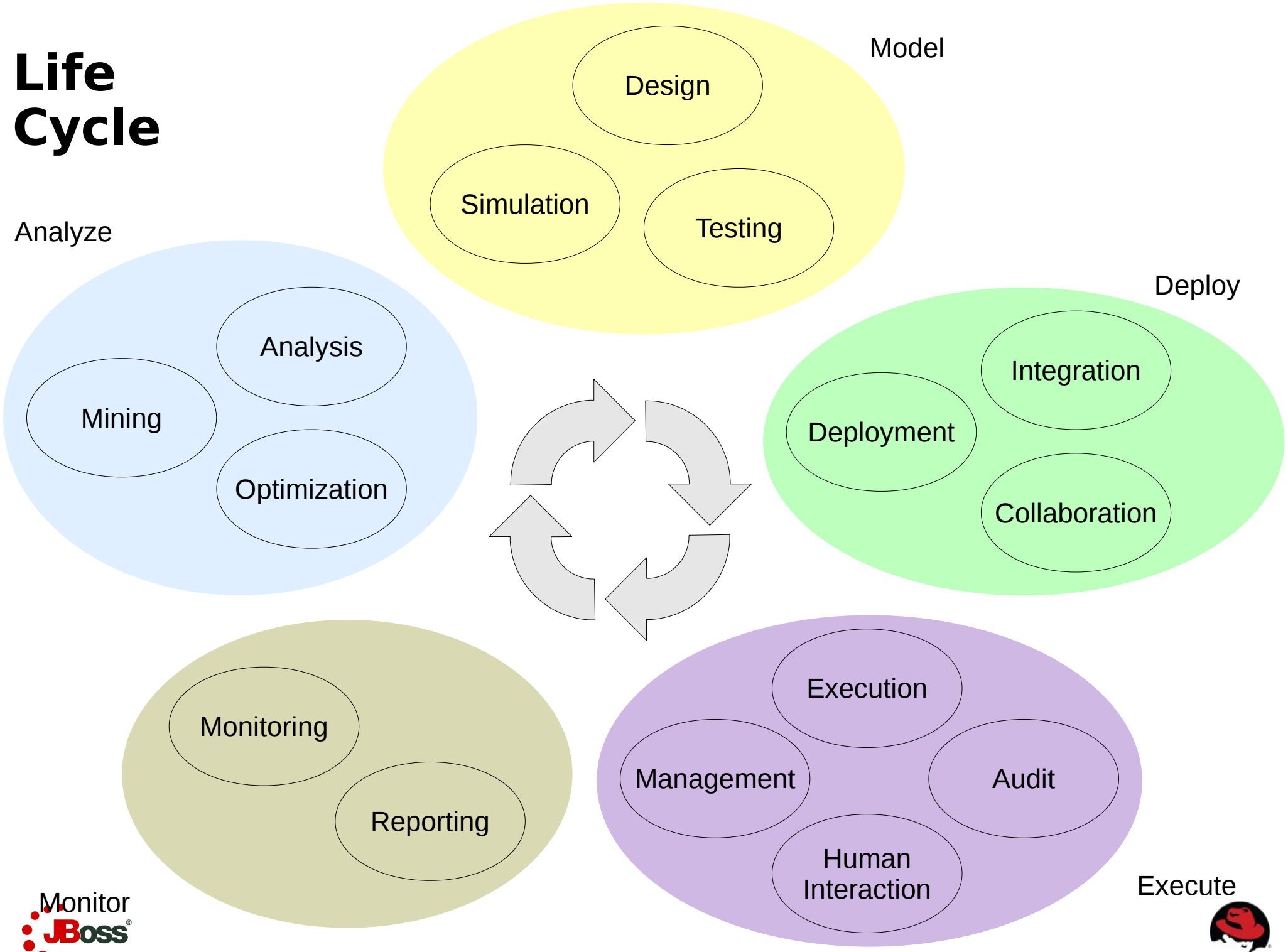
Life Cycle



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Processes + Rules + Events

Combining processes and rules

- Integration
  - From loose coupling (decision services)
  - To advanced integration (process rules)
- Unification
  - Rules and processes are different types of business knowledge assets
  - Tooling (IDE, repository, management)

Knowledge Repository

- Guvnor as knowledge repository
  - Processes
  - Rules
  - Task and process forms
  - Model
- Web-based process editor (Oryx)
- Build, deploy, test, manage and collaboration features

Architecture

- From “embedded” to “as a service”
- Command-based
- Different underlying technologies
  - Java component (embedded, JNDI)
  - REST service
  - Web service
  - EJB
- # of (independent) session

Demo

Roadmap

- jBPM 5.0: Februari 2011
- jBPM 5.1: NOW ...
  - Improve designer to support full round-tripping
  - New Eclipse BPMN2 editor
  - Lots of small feature improvements and bug fixes
- jBPM 5.2 – jBPM 6.x
  - Simulation / testing / replay
  - Flexible, adaptive, goal-oriented processes
  - Integrated “no-code” tooling (form builder, etc.)

jBPM5: What, where?

- jBPM home page
- Source http://github.com/droolsjbpm/jbpm
- Hudson http://hudson.jboss.org/hudson/job/jBPM
- Blog http://kverlaen.blogspot.com/
- #jbpm on irc.codehaus.org
- jbpm-dev@jboss.org
- jBPM user forum

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