

# J-PRM: A Java Tool for a Process Reengineering *i\** Methodology

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## Using the *i\** framework:

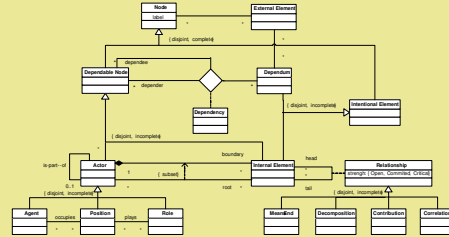
- i\** is useful in:
  - Requirements engineering
  - Organizational analysis
  - Business process reengineering
- Strong points:
  - Visual utility
  - Representation of intentional concepts
  - Easy to understand and use
- For using *i\** we need to:
  - Adopt the most suitable variant of *i\**
  - Establish guidelines for defining the models
  - Use tool support

## Which tool ?

## J-PRM: Tool support for the PRM methodology

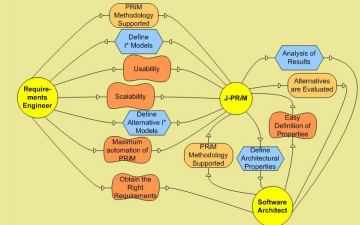
## Which *i\** ?

### The *i\** reference framework used in JPRM:



### Requirements:

- Programming language: JAVA
- Development environment: Eclipse
- Database: MySQL



## PRM: Process Reengineering *i\** Methodology

## Which methodology ?

### Phase 1: Analysis of the Current Process

- Step 1.1. Analysis of the Current Process
- Step 1.2. Documenting the Current Process

Many projects consist of engineering current activities.

### Phase 2: Construction of the *i\** Model

- Step 2.1. Actor Identification and Modelling
- Step 2.2. Building the Operational *i\** Model
- Step 2.3. Building the Intentional *i\** Model
- Step 2.4. Checking the Resulting *i\** Model

*i\** models describe the current process and the intentionality behind the process.

### Phase 3: Generation of Alternatives

- Step 3.1. Reengineering the Current System
- Step 3.2. Adding/Removing System Actors
- Step 3.3. Reallocating Responsibilities
- Step 3.4. Checking Consistency

Alternatives may include new actors and activities.

### Phase 4: Evaluation of Alternatives

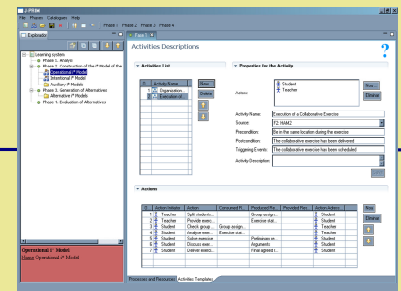
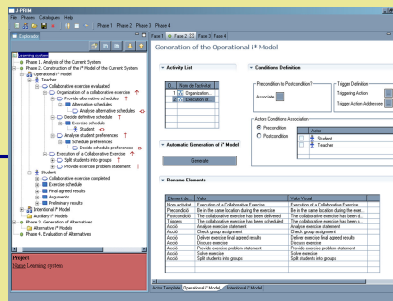
- Step 4.1. Choosing Suitable Properties
- Step 4.2. Defining Property Metrics
- Step 4.3. Evaluating Alternative Models
- Step 4.4. Evaluation Trade-off Analysis

The reengineering process is iterative

### Phase 5: Specification of the New System

### Documenting the activities of the current process

- DIS: Detailed Interaction Scripts
- DIS describe for each activity:
  - Preconditions, postconditions, triggering events
  - Actions undertaken into the activity
  - Actors and resources involved in the actions

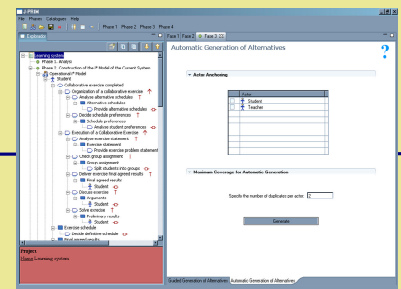


### Automatic generation of the *i\** operational model

- Automatically generated from the DIS information
- i\** Models are represented in a tree-hierarchy
- Different views allowed (by SR, SD or Actor)

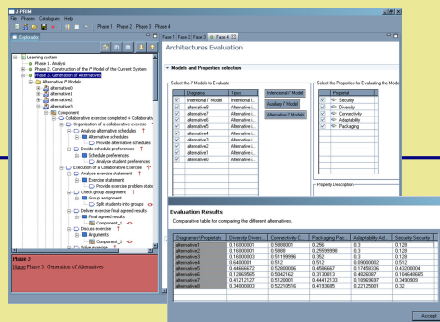
### Automatic generation of alternative *i\** models

- Automatic generation is achieved by distributing activity responsibility among the chosen actors.
- i\** Models and their alternatives can also be built from scratch



### Automatic evaluation of alternatives

- Define the suitable properties
  - according to the structure of the models
  - e.g.: security, availability, modifiability
- Reuse existing properties
- Analyse the results in search of the most convenient alternative.



### Future work:

- Transform *i\** models into its UML specification
- Add a graphical representation of the models
- Support for other *i\** frameworks and methods

### Conclusions:

- ✓ JPRM supports the proposed methodology:
  - ✓ Automatic generation of some of the steps:
  - ✓ Guided generation of some others.
- ✓ JPRM builds models from the scratch
- ✓ The tree-form visualization of the elements:
  - ✓ Improves model definition and management
  - ✓ Facilitates elements location
  - ✓ Allows different views of the model
  - ✓ Addresses scalability

### References:

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