



# **JBoss Enterprise BRMS**

## **Business Rules Management System**

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# Agenda

- **Introduction**
  - who am I?
- JBoss BRMS
  - overview
  - future directions
- Lab overview
- Questions?



# Who am I?

- American
  - in NL since 1992
  - MSc VU in Amsterdam
- Professional
  - 13 yrs SW engineering / lead development / architect
  - Open Source
  - IBM / SNS Bank / Red Hat
  - EMEA SME jBPM / BRMS



# Agenda

- Introduction
  - who am I?
- **JBoss BRMS**
  - overview
  - future directions
- Lab overview
- Questions?



# JBoss BRMS v5

- **Declarative Business Rules**
  - Avoids hard-coding business rules in business logic
  - Rules can change without Java code changes or re-compilation
  - Expert system allowing solution of complex problems
- **Multiple Authoring Options:** DRL, DSL, CSV and Programmatic Rules Definition
  - Application objects (facts) mixed with conditions (rules) – similar to HQL
  - POJO and Declarative Fact Model
  - Decision Tables in Excel/Open Office
  - DSL Natural Language Extensions
- **Rule Repository**
  - Versioning of business rule-related artifacts (e.g. Fact models, enumerations, functions, DSL definitions, rules, tests, etc.)
- **Rule Manager**
  - RIA for creation & maintenance of business rule artifacts



# JBoss BRMS

## What is a rule engine?

- **A rule engine at its core is an environment/shell for capturing knowledge**
  - Applying that knowledge to specific data (facts)
  - Uses production rules
    - IF <conditions> THEN <actions>
    - rules express logic
- **Has roots in AI research**
  - Success of “expert” systems in the past triggered popularity of rule engines



# JBoss BRMS

What is it going to do for me?

- **Externalize business logic**
  - Logic that is complex
  - Logic that changes often
  - Logic that just doesn't fit neatly in code
  - Logic that means more to domain experts than it does programmers
- **Keep application and user interface logic in your application**
  - Business logic in the rule engine
- **Use domain objects as interface to rule engine**



# **JBoss BRMS**

**When should I use a rules engine?**

- **When there is no satisfactory “traditional” solution**
- **The problem becomes too complex to express using traditional methods**
- **No known algorithms for solving the problem traditionally**
- **Too hard**
- **Too “fluid”**





# JBoss BRMS

## What is a rule?

```
when
  <conditions>
then
  <actions>
```

- **In short, a rule is an premise and conclusion**
  - *If it is raining, then the ground must be wet*
- **A rule is made of conditions and actions. When all the conditions are met, a rule may “fire”.**
- **The conditions are collectively referred to as the LHS (left hand side) and the actions are referred to as the RHS (right hand side, or consequence).**
- **A rule operates on facts (data). In our case, these facts are instances of objects in our application.**



# JBoss BRMS

## What is inferencing?

- We want to take all of our data (facts) and combine it with our knowledge (rules) and come up with some conclusions (inferencing)



# JBoss BRMS

## What is inferencing?

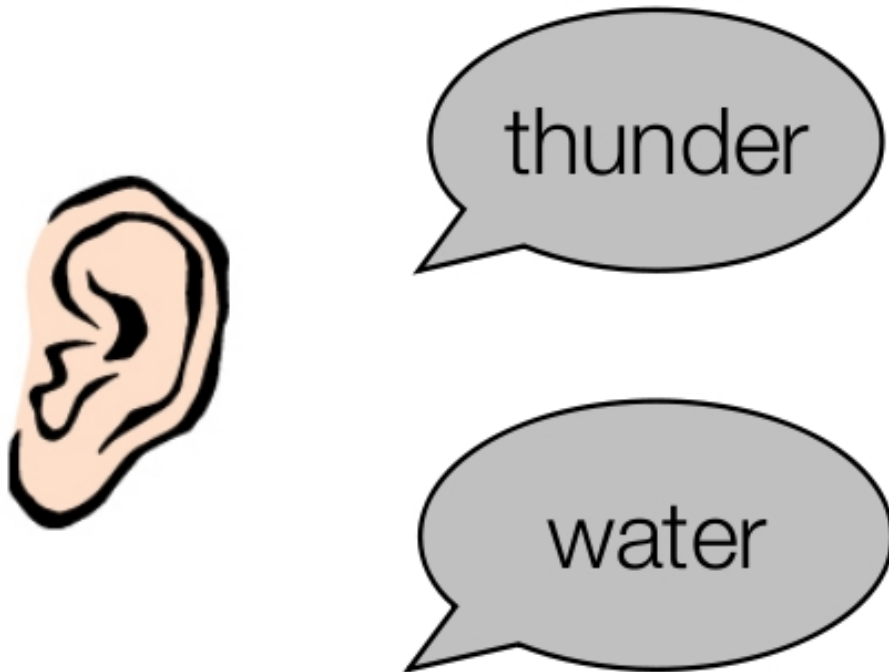
- We want to take all of our data (facts) and combine it with our knowledge (rules) and come up with some conclusions (inferencing)



# JBoss BRMS

## What is inferencing?

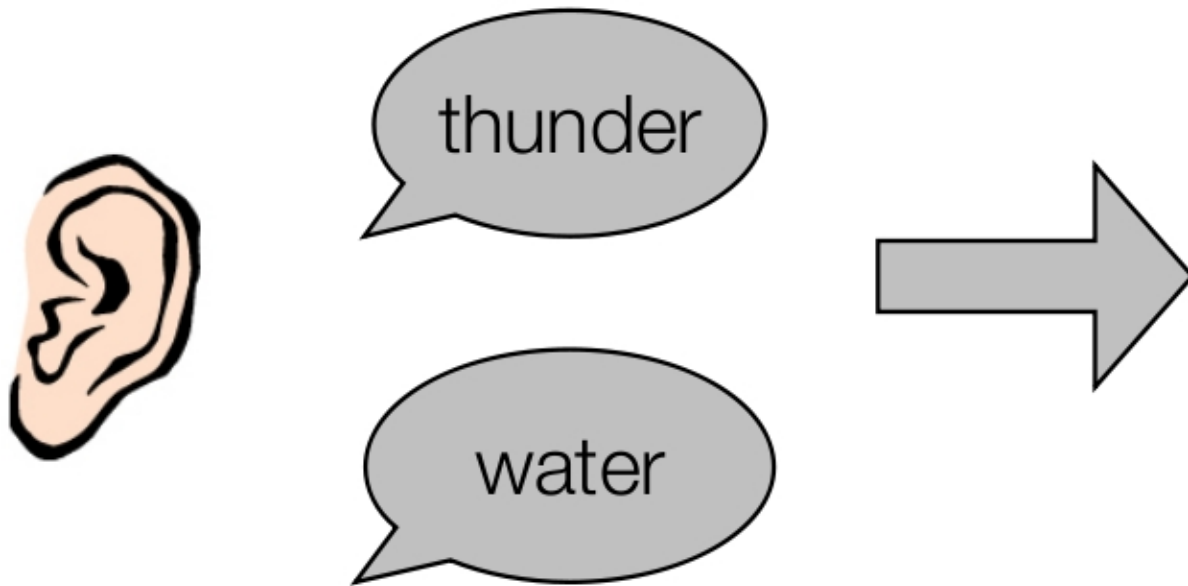
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# JBoss BRMS

## What is inferencing?

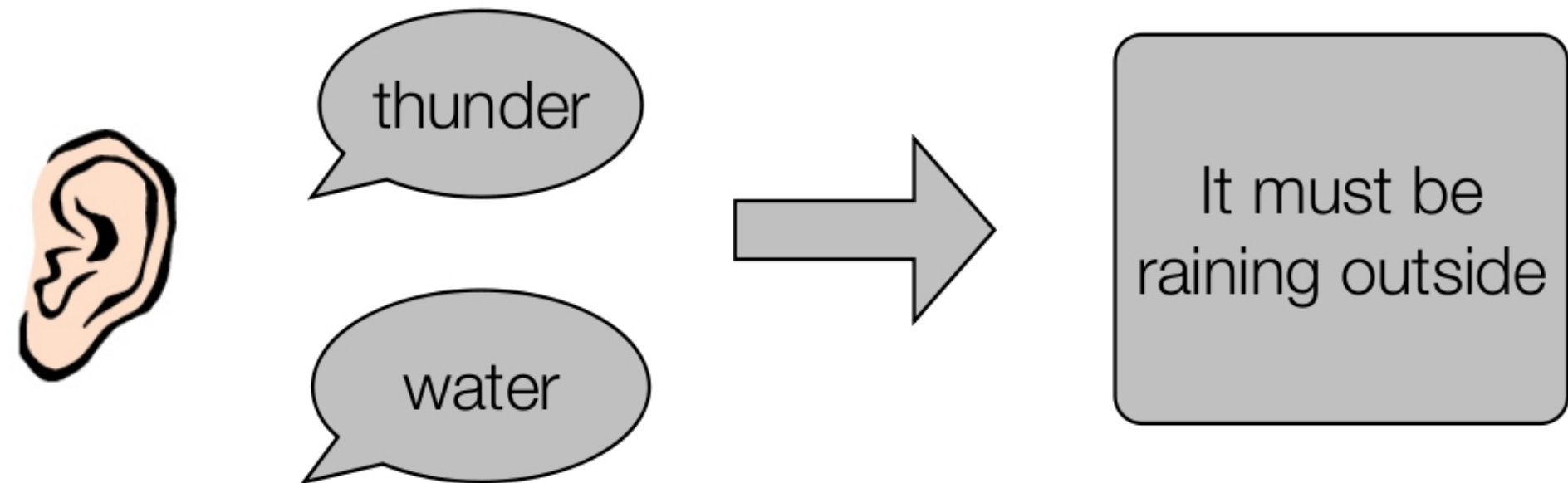
- We want to take all of our data (facts) and combine it with our knowledge (rules) and come up with some conclusions (inferencing)



# JBoss BRMS

## What is inferencing?

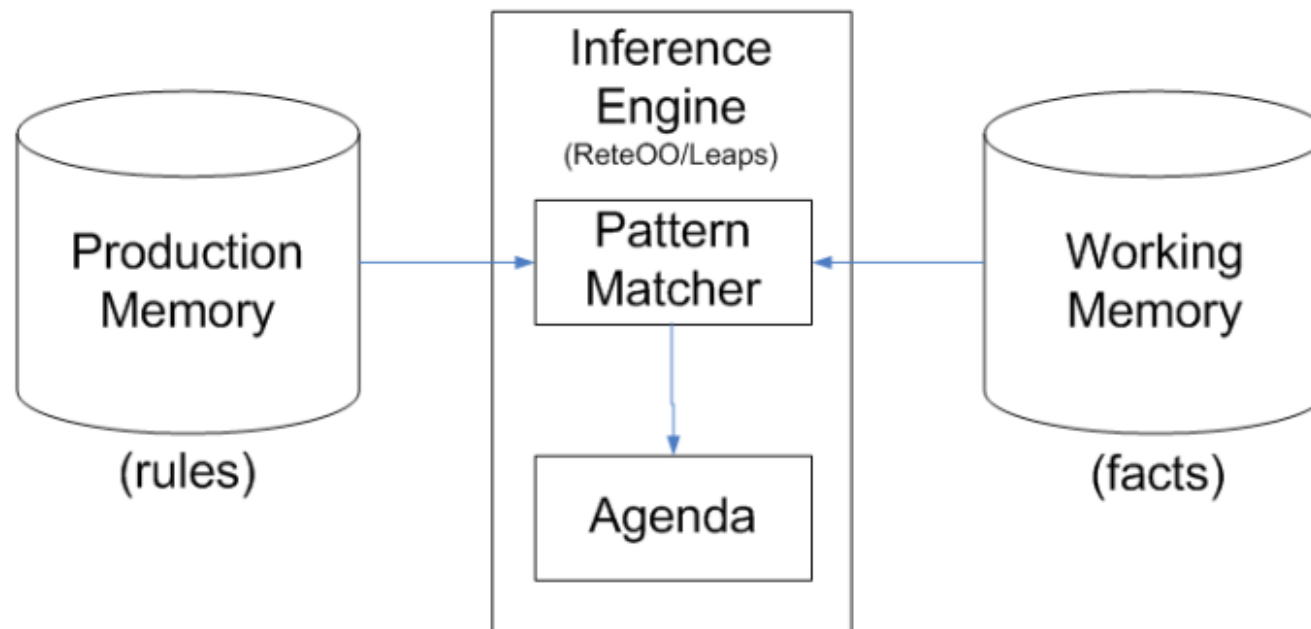
- We want to take all of our data (facts) and combine it with our knowledge (rules) and come up with some conclusions (inferencing)



# JBoss BRMS

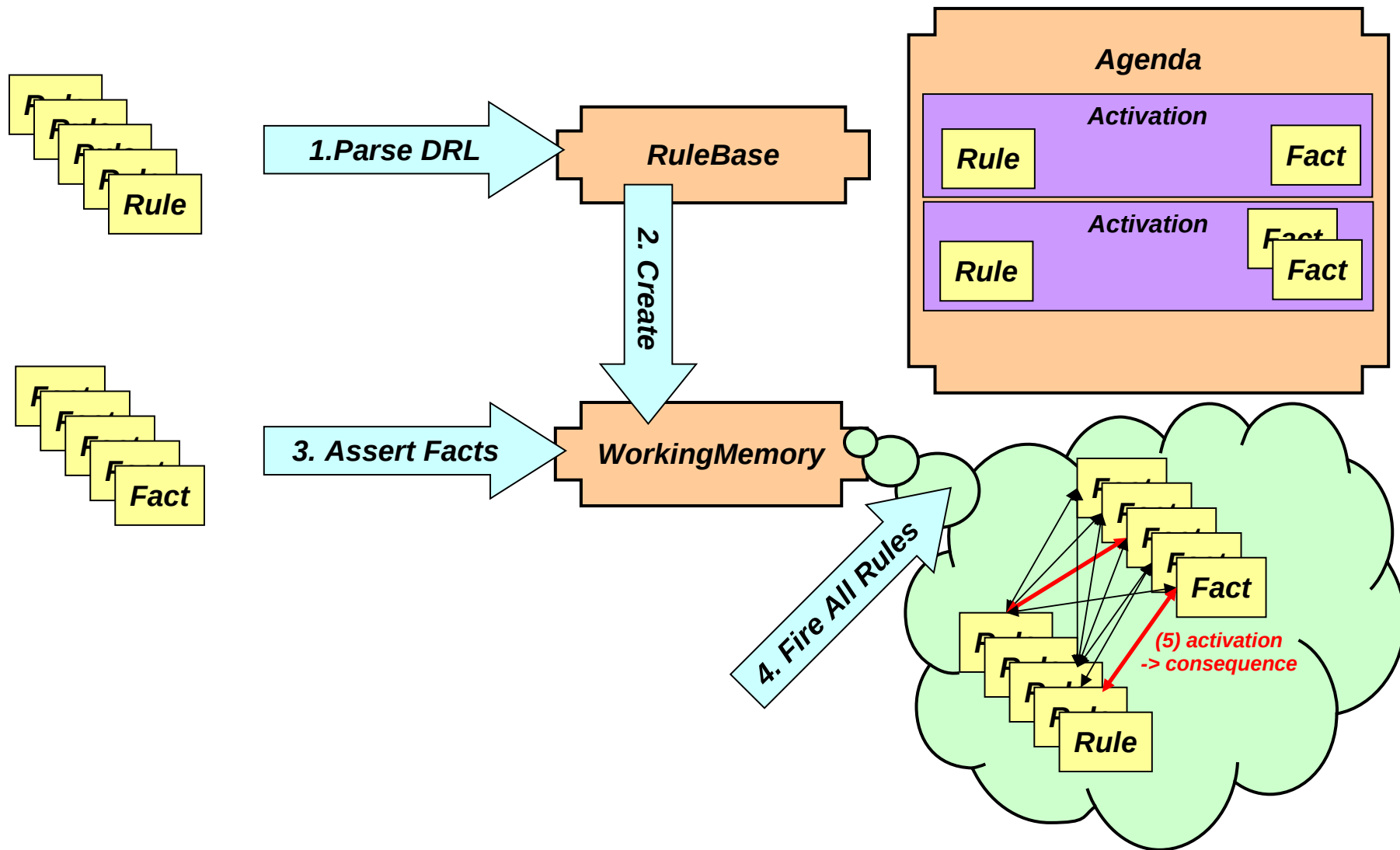
## Inference Engine

- The brain of a Production Rule System is an Inference Engine which matches facts against Production Rules.
- When matches are found, the rules actions are fired.
- Actions most often change the state of the facts, or perform some external action on the application.



# JBoss BRMS

## How it Works





# BRMS – Rich UI for Business Rules

The screenshot displays the JBoss BRMS (Business Rule Management System) interface, which is a rich UI for managing business rules. The interface is divided into several sections:

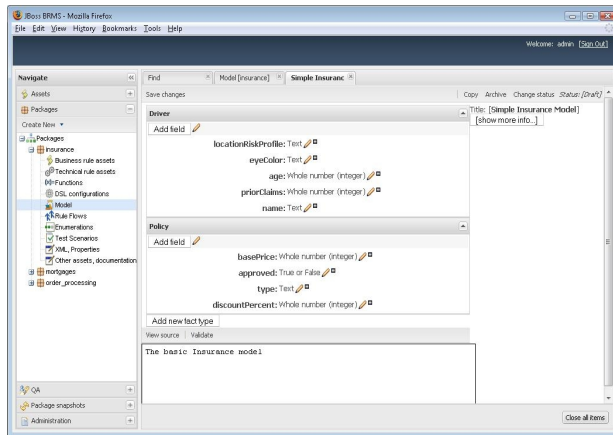
- Left Panel (Navigation):** Contains a tree view of the project structure, including Packages, Assets, Business rule assets, Technical rule assets, Functions, DSL configurations, Model, Rule Flows, Enumerations, Test Scenarios, XML, Properties, Other assets, documentation, mortgages, and order\_processing.
- Top Panel (Rule Editor):** Shows the 'Simple Insurance Model' with a 'Driver' and 'Policy' section. The 'Driver' section includes fields for locationRiskProfile, eyeColor, age, priorClaims, and name. The 'Policy' section includes fields for basePrice, approved, type, and discountPercent.
- Bottom Panel (Test Scenarios):** Displays the 'THEN' clause of a rule, which sets the value of 'policy' basePrice to 455. Below this, there is a section for 'View source' and 'Validate'.
- Right Panel (Test Results):** Shows the results of a test scenario. It includes a 'Run scenario' button, a 'Results' section with a red bar indicating 100% success, and a 'Summary' section. The 'Summary' section lists the test results for the 'Adv scoring sanity test'.
- Bottom Right Panel (Test Results Summary):** Provides a detailed summary of the test results, including the overall result (FAILURE), the number of failures (1 out of 23 expectations), and a list of uncovered rules.

The interface is designed to be user-friendly, allowing users to easily manage and test their business rules. The 'Test Scenarios' section is particularly useful for verifying the correctness of the rules, while the 'Test Results Summary' provides a clear overview of the test outcomes.

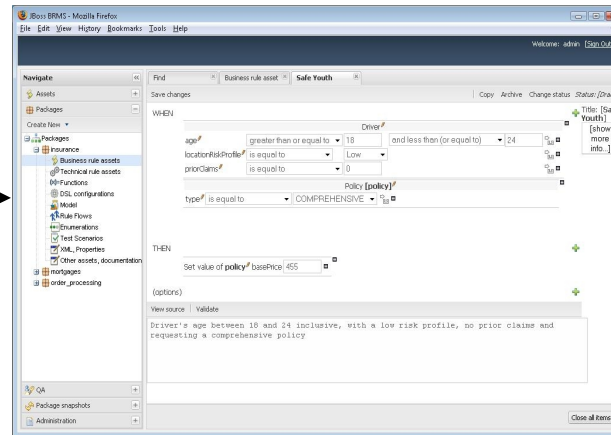


# Analysis Perspective

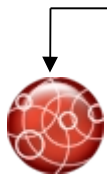
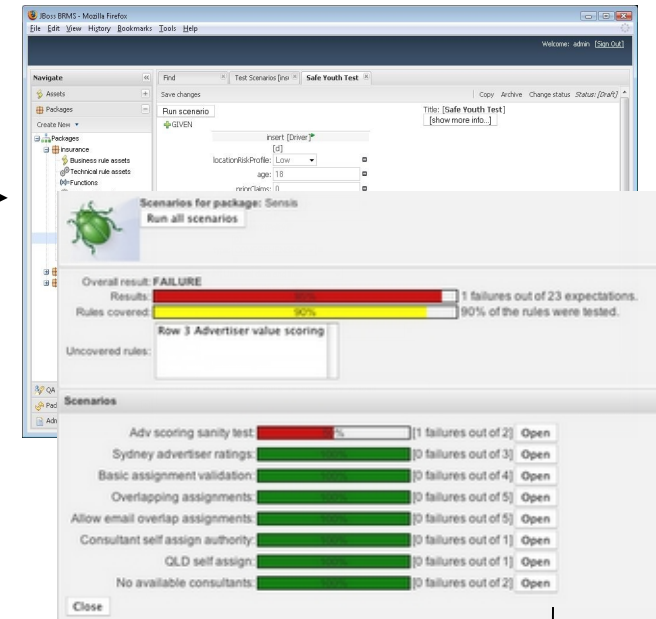
Test the Rules



JBoss BRMS Web Manager  
Model the Facts

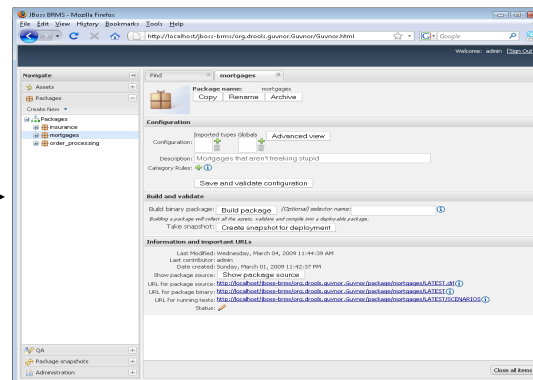


Prototype the Rules



JBoss Developer Studio

Check-Out Artifacts from Repository  
Build & Test Application  
Check-In changes to Repository



JBoss BRMS Web Manager  
Create Package

Deployment

J2SE

EAP-WS,WAR,EAR

SOA-P, Mediated Services



# Fact Model Editor

The screenshot shows the JBoss BRMS Fact Model Editor interface within a Mozilla Firefox browser window. The title bar reads "JBoss BRMS - Mozilla Firefox". The menu bar includes "File", "Edit", "View", "History", "Bookmarks", "Tools", and "Help". A status bar at the top right says "Welcome: admin [Sign Out]".

The interface is divided into several sections:

- Navigate:** A sidebar on the left with a tree view showing the project structure. It includes "Assets", "Packages", and "Create New". Under "Packages", there is a list of assets: "insurance", "Business rule assets", "Technical rule assets", "Functions", "DSL configurations", "Model" (selected), "Rule Flows", "Enumerations", "Test Scenarios", "XML, Properties", "Other assets, documentation", "mortgages", and "order\_processing".
- Find:** A search bar at the top with tabs for "Model [insurance]" and "Simple Insuranc".
- Save changes:** A button to save the current model.
- Copy Archive Change status Status: [Draft]:** A set of buttons to manage the model's status.
- Driver:** A section for defining the driver, containing a list of fields: "locationRiskProfile: Text", "eyeColor: Text", "age: Whole number (integer)", "priorClaims: Whole number (integer)", and "name: Text". Each field has an edit icon.
- Policy:** A section for defining the policy, containing a list of fields: "basePrice: Whole number (integer)", "approved: True or False", "type: Text", and "discountPercent: Whole number (integer)". Each field has an edit icon.
- Add new fact type:** A button to add a new fact type.
- View source | Validate:** Buttons to view the source code or validate the model.
- The basic Insurance model:** A text area containing the text "The basic Insurance model".
- Close all items:** A button at the bottom right to close all items.



# Guided Rule Editor (Web)

The screenshot shows the JBoss BRMS Web Guided Rule Editor interface. The browser window title is "JBoss BRMS - Mozilla Firefox". The menu bar includes File, Edit, View, History, Bookmarks, Tools, and Help. The top right corner displays "Welcome: admin [Sign Out]".

**Navigate Panel:** Located on the left, it shows a tree structure of assets. The "insurance" package is expanded, showing "Business rule assets" (selected), "Technical rule assets", "Functions", "DSL configurations", "Model", "Rule Flows", "Enumerations", "Test Scenarios", "XML, Properties", and "Other assets, documentation". Below this are "mortgages" and "order\_processing".

**Find Panel:** At the top, it shows "Business rule asset" and "Safe Youth".

**Save changes:** A button at the top right of the main editor area.

**WHEN Section:** Contains conditions for the rule. The "Driver" section includes:

- age: greater than or equal to 18 and less than (or equal to) 24
- locationRiskProfile: is equal to Low
- priorClaims: is equal to 0

The "Policy [policy]" section includes:

- type: is equal to COMPREHENSIVE

**THEN Section:** Contains the action:

- Set value of policy basePrice 455

**(options) Section:** Contains a text box with the following text:  
Driver's age between 18 and 24 inclusive, with a low risk profile, no prior claims and requesting a comprehensive policy

**Buttons:** "View source" and "Validate" are located below the (options) section. "Close all items" is at the bottom right.

**Tooltip:** A tooltip for the "Safe Youth" asset is visible, showing "Title: [Safe Youth]" and "[show more info...]".



# Guided Rule Editor (Web)

The screenshot shows the JBoss BRMS Web Guided Rule Editor interface. The browser window title is "JBoss BRMS - Mozilla Firefox". The menu bar includes File, Edit, View, History, Bookmarks, Tools, and Help. The top right corner displays "Welcome: admin [Sign Out]".

**Navigate Panel:** Located on the left, it contains a tree view of assets. The "insurance" package is expanded, showing "Business rule assets" selected. Other visible packages include "mortgages" and "order\_processing".

**Find Panel:** At the top, it shows "Business rule asset" and "Safe Youth".

**Save changes:** A button with options "Copy", "Archive", "Change status", and "Status: [Draft]".

**WHEN Section:** Contains conditions for the "Driver" object:

- age: greater than or equal to 18 and less than (or equal to) 24
- locationRiskProfile: is equal to Low
- priorClaims: is equal to 0

**Policy [policy] Section:** Contains a condition:

- type: is equal to COMPREHENSIVE

**THEN Section:** Contains an action:

- Set value of policy basePrice 455

**(options) Section:** Contains a text box with the following text:

Driver's age between 18 and 24 inclusive, with a low risk profile, no prior claims and requesting a comprehensive policy

**Buttons:** "View source", "Validate", and "Close all items" are located at the bottom right.



# Web Decision Table Editor

JBoss BRMS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Welcome: admin [Sign Out]

**Navigate**

- Assets
- Packages
- Create New
- Packages
  - insurance
    - Business rule assets
    - Technical rule assets
    - Functions
    - DSL configurations
    - Model
    - Rule Flows
    - Enumerations
    - Test Scenarios
    - XML, Properties
    - Other assets, documentation
  - mortgages
    - Business rule assets
    - Technical rule assets
    - Functions
    - DSL configurations
    - Model
    - Rule Flows
    - Enumerations
    - Test Scenarios
    - XML, Properties
- QA
- Package snapshots
- Administration

Find **Pricing loans**

Save changes

**Decision table**

Modify...

|                               | Des | amount min | amount max | period | income | deposit max | Loan approved | LMI |
|-------------------------------|-----|------------|------------|--------|--------|-------------|---------------|-----|
| <b>income: Asset (1 Item)</b> |     |            |            |        |        |             |               |     |
| 3                             |     | 131000     | 200000     | 30     | Asset  | 20000       | true          | 0   |
| <b>income: Job (2 Items)</b>  |     |            |            |        |        |             |               |     |
| 1                             |     | 10000      | 100000     | 20     | Job    | 2000        | true          | 0   |
| 2                             |     | 100001     | 130000     | 20     | Job    | 3000        | true          | 10  |

Close all items





# Test Scenario Editor

The screenshot shows the JBoss BRMS Test Scenario Editor interface within a Mozilla Firefox browser window. The title bar reads "JBoss BRMS - Mozilla Firefox". The menu bar includes "File", "Edit", "View", "History", "Bookmarks", "Tools", and "Help". A status bar at the top right says "Welcome: admin [Sign Out]".

The interface is divided into several sections:

- Navigate:** A sidebar on the left with a tree view showing the project structure. The "Test Scenarios" package is selected. Other packages include "insurance", "mortgages", and "order\_processing".
- Find:** A search bar at the top of the main workspace.
- Test Scenarios [ins]:** A tab for the current scenario.
- Safe Youth Test:** The title of the scenario being edited.
- Save changes:** A button to save the scenario.
- Copy Archive Change status Status: [Draft]:** A row of buttons for managing the scenario's state.
- Run scenario:** A button to execute the scenario.
- Given:** A section for defining initial conditions. It includes:
  - insert [Driver]:** A block with fields for "locationRiskProfile" (set to "Low"), "age" (set to "18"), "priorClaims" (set to "0"), and "name" (set to "Joe Blogs").
  - insert [Policy]:** A block with a "type" field set to "COMPREHENSIVE".
- Expect:** A section for defining expected outcomes. It includes:
  - Use real date and time:** A checkbox that is checked.
  - Expect rules:** A section with a "Safe Youth" field set to "fired at least once".
  - Policy [p] has values:** A section with a "basePrice" field set to "equals" and a value of "450".
- More...:** A button to expand the configuration options.
- (configuration) All rules may fire:** A dropdown menu.
- (globals):** A section for global variables.
- Verifies that a Safe Youth is correctly priced:** A text field describing the scenario's purpose.
- Close all items:** A button at the bottom right.

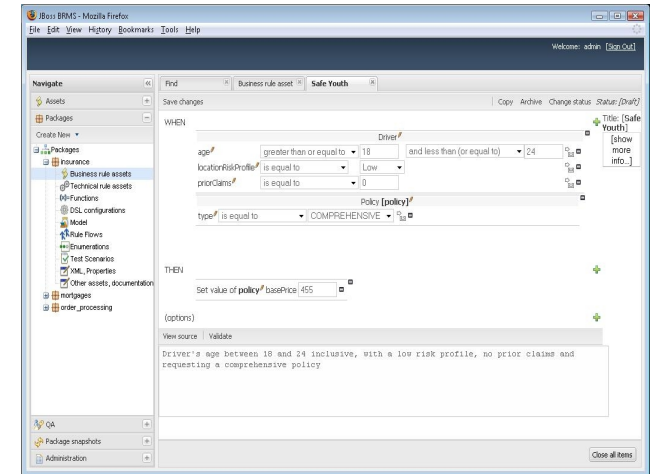
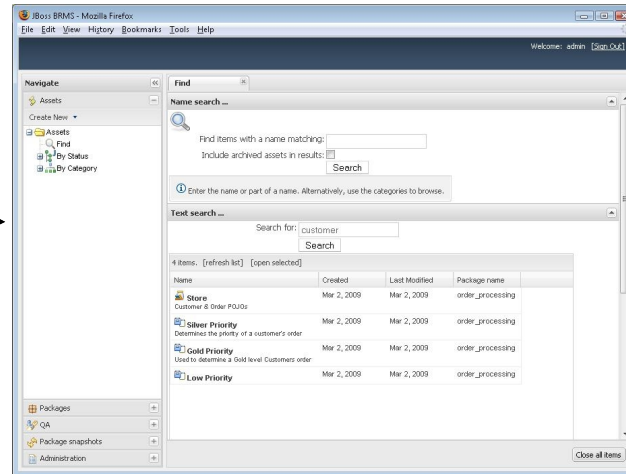


# Developer Perspective

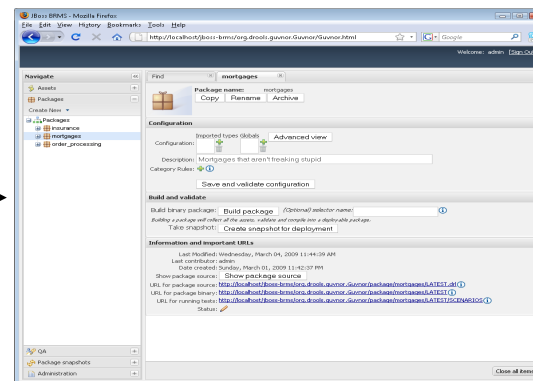
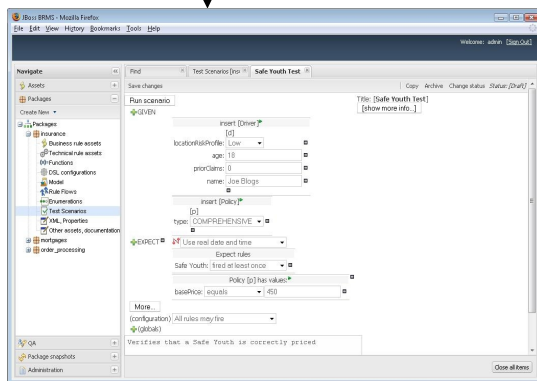


JBoss Developer Studio  
Fact Model  
DSL Template

Check-In Artifacts to  
Repository



JBoss BRMS Web  
Manager  
Use Facts & DSL  
to create Business Rules



Deployment

J2SE

EAP-  
WS,WAR,EAR

SOA-P,  
Mediated  
Services

JBoss BRMS Web  
Manager  
24 Create Test Scenarios

JBoss BRMS Web  
Manager  
Create Package





# Eclipse – Developer Perspective

**Debug Console:**

```
StateExampleUsingSaliency [Drools Application]
org.drools.examples.StateExampleUsingSaliency at localhost:4861
Thread [main] (Suspended (breakpoint at line 8 in Rule_A_to_B_0))
Rule_A_to_B_0.consequence(KnowledgeHelper, State, FactHandle) line: 21
Rule_A_to_B_0ConsequenceInvoker.evaluate(KnowledgeHelper, WorkingMemory) line: 22
DefaultAgenda.fireActivation(Activation) line: not available
DefaultAgenda.fireNextItem(AgendaFilter) line: not available
ReteooWorkingMemory(AbtractWorkingMemory).fireAllRules(AgendaFilter) line: not available
ReteooWorkingMemory(AbtractWorkingMemory).fireAllRules() line: not available
StateExampleUsingSaliency.main(String[]) line: 47
```

**Variables:**

| Name    | Value                           |
|---------|---------------------------------|
| b       | State (id=1268)                 |
| changes | PropertyChangeSupport (id=1297) |
| name    | "B"                             |
| state   | 1                               |

**Properties:**

| Property   | Value                          |
|------------|--------------------------------|
| General    |                                |
| Constraint | [LiteralConstraint fieldExtra] |
| Evaluator  | Integer ==                     |
| Field Name | state                          |
| Name       | Alpha BaseVertex               |
| Value      | 1                              |

**Outline:**

- org.drools.examples
  - A to B
  - B to C
  - B to D
  - Bootstrap
- org.drools.examples.State

**Text Editor (StateExampleUsingSaliency.drl):**

```
import org.drools.examples.State;

rule Bootstrap
when
    a : State(name == "A", state == State.NOTRUN )
then
    System.out.println(a.getName() + " finished");
    a.setState( State.FINISHED );
end

rule "A to B"
when
    State(name == "A", state == State.FINISHED )
    b : State(name == "B", state == State.NOTRUN )
then
    b.setState( State.FINISHED );
    System.out.println(b.getName() + " finished");
end

rule "B to C"
salience 10
when
    State(name == "B", state == State.FINISHED )
    c : State(name == "C", state == State.NOTRUN )
then
    System.out.println(c.getName() + " finished");
end
```

**Rete Tree:** A diagram showing the Rete network structure with nodes and connections.

**Global Data View:**

The selected working memory has no globals defined.

**Audit View:**

- Object asserted (1): A[NOTRUN]
- Activation created: Rule Bootstrap a=A[NOTRUN](1)
- Object asserted (2): B[NOTRUN]
- Object asserted (3): C[NOTRUN]
- Object asserted (4): D[NOTRUN]
- Object modified (1): A[FINISHED]
- Activation created: Rule A to B b=B[NOTRUN](2)
- Activation executed: Rule A to B b=B[NOTRUN](2)
- Object modified (2): B[FINISHED]
- Activation created: Rule B to C c=C[NOTRUN](3)
- Activation created: Rule B to D d=D[NOTRUN](4)
- Activation executed: Rule B to C c=C[NOTRUN](3)
- Object modified (3): C[FINISHED]
- Activation executed: Rule B to D d=D[NOTRUN](4)
- Object modified (4): D[FINISHED]

**Agenda View:**

- MAIN[focus]= AgendaGroupImpl (id=1259)
  - [0]= AgendaItem (id=1262)
    - ruleName="B to C"
    - c= State (id=1269)
    - [1]= AgendaItem (id=1263)
      - ruleName="B to D"
      - d= State (id=1270)

**Working Memory View:**

- [0]= State (id=1268)
- [1]= State (id=1269)
  - FINISHED= 1
  - NOTRUN= 0
  - changes= PropertyChangeSupport (id=1294)
  - name= "C"
  - state= 0
- [2]= State (id=1270)
- [3]= State (id=1271)



# Debugging

## Debug Views

The screenshot displays four panels from a debugging interface:

- Global Data View:** Shows a message: "The selected working memory has no globals defined."
- Audit View:** A log of events including object assertions (A, B, C, D), activation creation for rules (Bootstrap, A to B, B to C, B to D), activation execution, and object modifications (A, B, C, D) to FINISHED.
- Agenda View:** A tree structure showing the current state of the agenda, including a MAIN group and several AgendaItem objects with associated rule names and state objects.
- Working Memory View:** A list of state objects (State) with various attributes like FINISHED, NOTRUN, changes, name, and state.

- New rule “perspective” to configure IDE for rules as needed



# Guided Rule Editor (Eclipse)

## Eclipse Guided Editor

The image displays two windows from the Eclipse IDE's Guided Rule Editor.

**Left Window: Rule Builder**

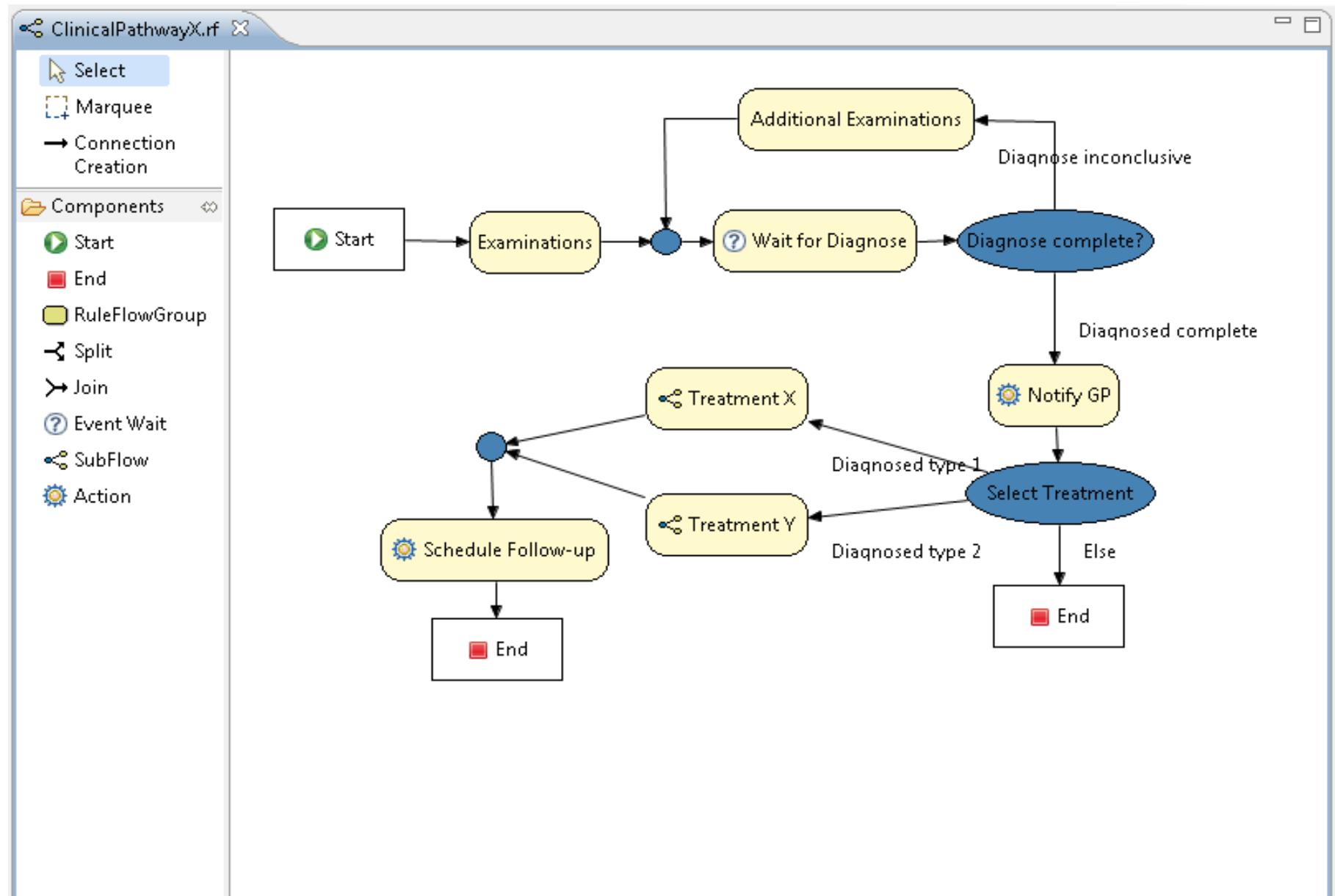
- WHEN** section:
  - Condition: "There is no" (with a red 'X' icon).
  - Person** (with a red 'X' icon):
    - age: [dropdown] (x)= [text box]
    - [checkbox] [dropdown] (x)= [text box]
    - age: [checkbox] [dropdown]
    - gender: [checkbox] [dropdown] (x)= [text box]
    - gender: [checkbox] [dropdown]
    - gender: [checkbox] [dropdown]
  - Elephant** (with a red 'X' icon):
    - nickname: [checkbox] [dropdown]
    - All of: (red 'X' icon) [checkbox] age: [checkbox] [dropdown]
    - weight: [checkbox] [dropdown]
  - Animal** (with a red 'X' icon):
    - (x)= [text box]
    - name: [checkbox] [dropdown] (x)= [text box]
  - Person**:
    - + age: [checkbox] [dropdown]
- THEN** section: (empty)

**Right Window: Business Rule XML Editor**

- Rule Builder** section:
  - IF** section:
    - Person age is less than 42 (with a red 'X' icon)
    - Person name is equal to Bob (with a red 'X' icon)
    - Vehicle [car1] type is not equal to [text box] (with a red 'X' icon)
    - There is a Storm alert of type (code here)
    - severity rating is not more than (code here)
  - THEN** section: (empty)
- Bottom tabs: Rule Builder | DRL Preview



# Rule Flow



# Decision Tables

## Decision Tables – Excel/Open Office

|    | B                  | C           | D                     | E                      | F                        | G           | H                    |
|----|--------------------|-------------|-----------------------|------------------------|--------------------------|-------------|----------------------|
| 1  |                    |             |                       |                        |                          |             |                      |
| 4  |                    |             |                       |                        |                          |             |                      |
| 9  | Base pricing rules | Age Bracket | Location risk profile | Number of prior claims | Policy type applying for | Base \$ AUD | Record Reason        |
| 10 | Young safe package | 18, 24      | LOW                   | 1                      | COMPREHENSIVE            | 450         |                      |
| 11 |                    |             | MED                   |                        | FIRE_THEFT               | 200         | Priors not relevant  |
| 12 |                    |             | MED                   | 0                      | COMPREHENSIVE            | 300         |                      |
| 13 |                    |             | LOW                   |                        | FIRE_THEFT               | 150         |                      |
| 14 |                    |             | LOW                   | 0                      | COMPREHENSIVE            | 150         | Safe driver discount |
| 15 | Young risk         | 18,24       | MED                   | 1                      | COMPREHENSIVE            | 700         |                      |
| 16 |                    | 18,24       | HIGH                  | 0                      | COMPREHENSIVE            | 700         | Location risk        |
| 17 |                    | 18,24       | HIGH                  |                        | FIRE_THEFT               | 550         | Location risk        |
| 18 |                    | 25,30       |                       | 0                      | COMPREHENSIVE            | 120         | Cheapest possible    |
| 19 | Mature drivers     | 25,30       |                       | 1                      | COMPREHENSIVE            | 300         |                      |
| 20 |                    | 25,30       |                       | 2                      | COMPREHENSIVE            | 590         |                      |
| 21 |                    | 25,35       |                       | 3                      | THIRD PARTY              | 800         | High risk            |



# Eclipse to BRMS Synchronization

**JBoss Developer Studio**

**BRMS 5**

**Eclipse IDE - MortgageModel.model.drl**

```
declare LoanApplication
  amount: Integer
  approved: Boolean
  deposit: Integer
  approvedRate: Integer
  lengthYears: Integer
  explanation: String
  insuranceCost: Integer
end

declare Applicant
  age: Integer
  applicationDate: java.util.Date
  creditRating: String
  name: String
  approved: Boolean
end

declare IncomeSource
  amount: Integer
  type: String
end

declare Bankruptcy
  amountOwed: Integer
  yearOfOccurrence: Integer
end
```

**BRMS 5 - Highest Priority Orders**

```
#list any import classes here.
import org.jboss.soa.esb.message.Message;
import org.jboss.soa.esb.message.format.MessageType;
import org.jboss.soa.esb.store.OrderHeader;

#declare any global variables here
global java.util.List destinations;

rule "Highest Priority Orders"
  when
    OrderHeader( orderPriority >= 3)
  then
    System.out.println("HIGHEST PRIORITY");
    destinations.add("SuperSpecialCustomerService");
end
```

**Properties**

| Property      | Value                                       |
|---------------|---|
| Created       | 2008-10-24T00:35:36Z                        |
| Last Modified | 2008-10-22T20:01:14                         |
| Location      | /packages/mortgages/MortgageModel.model.drl |
| Name          | MortgageModel.model.drl                     |
| Revision      | 6   |
| Type          | file  |

**Guvnor Resource History**

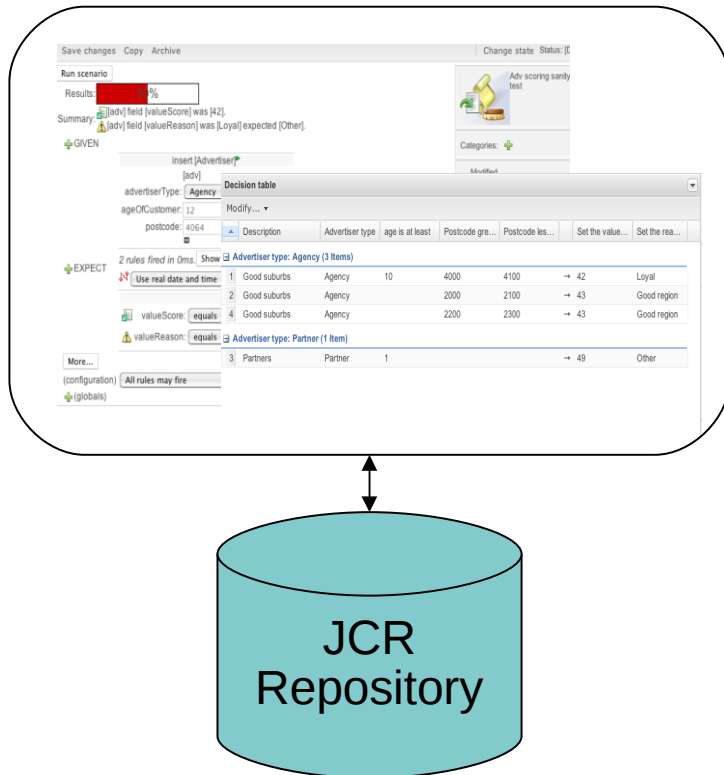
| Revision | Date                | Author | Comment       |
|----------|---------------------|--------|---------------|
| 3        | 2008-07-15T15:37:34 | john   | <from webdav> |
| 2        | 2008-07-15T15:32:03 | john   | <from webdav> |
| 1        | 2008-07-15T15:28:35 | john   | <from webdav> |

**JCR Repository**



# BRMS/Rules Deployment Scenario

BRMS



RuleAgent

J2SE

JBoss Rules Runtime

RuleAgent

EAP 4.3

J2EE use cases  
Seam use cases  
Clustered

RuleAgent

SOA-P 5.0 (future)

Stateless Rule Services  
Stateful Rule Services  
CBR & CBF  
Federated Hot Deployment

Delivery of proper version of a rule package via the ruleagent to any of the above “containers”.

EE and SOA containers allow for hot deployment/reload of the changed rules without component restart and no loss of transactions/messages.



# BRMS v5: Summary of Features

Graphical User Interface and repository for Business Rule Editing, Versioning & Deployment management that is usable by the non-Java Programmer and non-System Administrator.

Manages the following artifacts:

- Rule Packages
- Business Rules (via Guided Rule Editor)
- Business Fact Model
- Technical Rules (sync with Eclipse and/or BRMS UI)
- Technical POJO Fact Model
- Domain Specific Languages – DSL
- Web-based Decision Tables
- Spreadsheet-based Decision Tables
- Rule Categories (for searching)
- Users & Roles associated with rule life cycle states
- Rule Promotion (Dev, QA, Production)
- Test Scenarios







# **JBoss Enterprise BRMS**

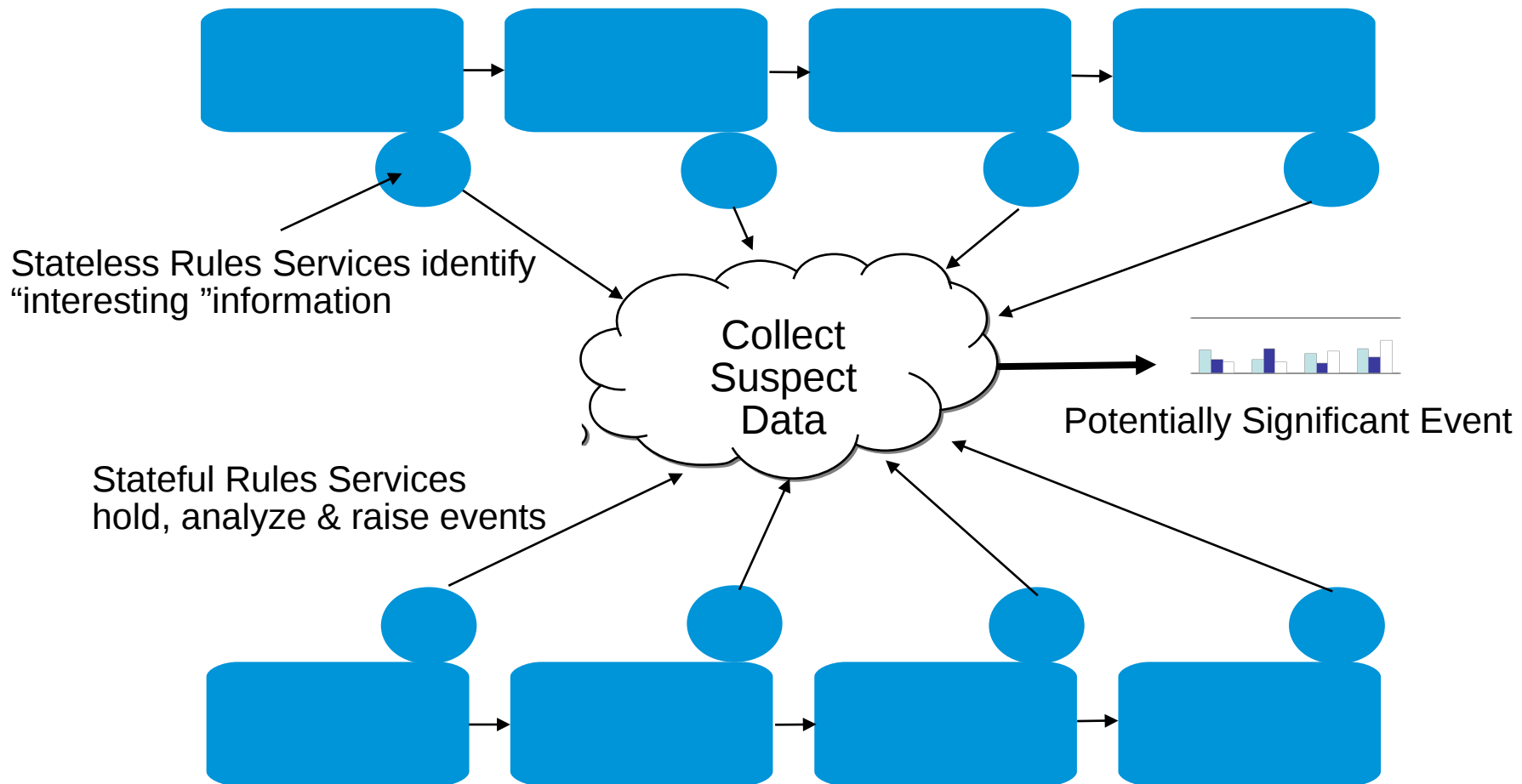
Business Rules Management System

**Roadmap CY 2009 – 20011**

**(Tentative – Subject to Change)**

# Future: Event Stream Processing

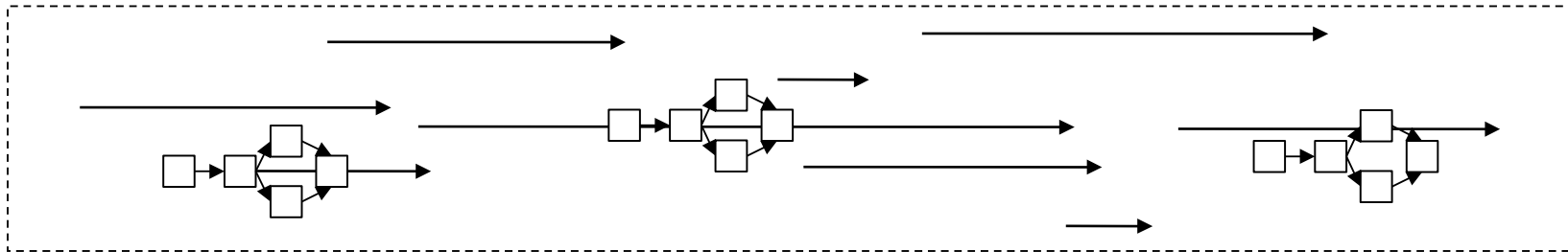
Some Process: Order Fulfillment, Replenishment, Customer Service, Financial Analysis



Other Process also capturing interesting data points and routing them to the "stateful" rules service for keeping and analysis.



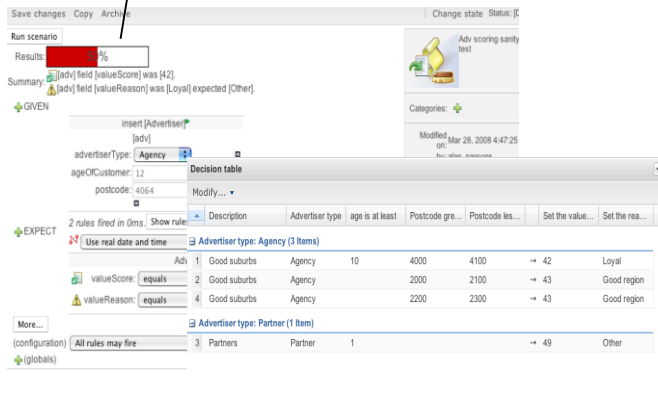
# Features: ESP + CEP via ESB, Rules & JON



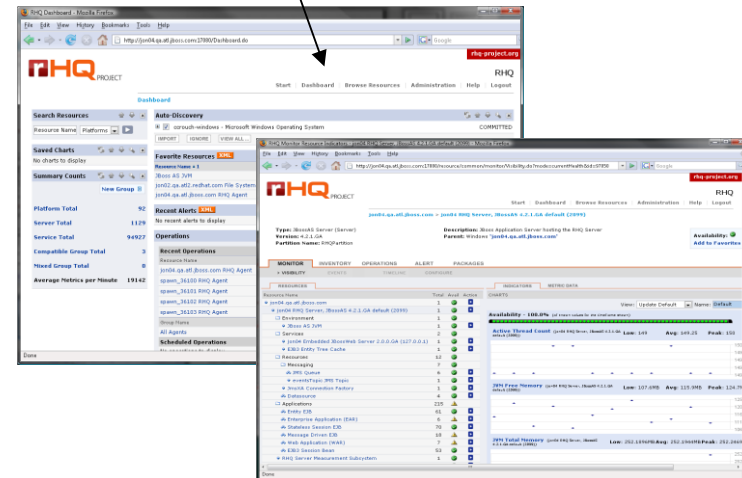
ESB: consumption, capture, transformation, routing, orchestration  
Rules: selection, aggregation, correlation, generation and publication



Governance  
Tools



Repository: for editing, versioning, testing and publishing rules and SOA artifacts



JON: start/stop services, monitor and alert on service and action-level performance, monitor and alert on business metric values



# Agenda

- Introduction
  - who am I?
- JBoss BRMS
  - overview
  - future directions
- **Lab overview**
- Questions?



# Lab overview

- Room HG00.029/HG00.307 1030-1230 hrs
  - Friday, 03 December 2010
  - Friday, 10 December 2010
  - Friday, 17 December 2010
- Lab1
  - start server & login
  - setup knowledge base, categories and model
  - create rules and tests



# Students

|                   |                   |                      |                    |
|-------------------|-------------------|----------------------|--------------------|
| Acun, Mikail      | Arents, Roel      | Schraven, Daan       | Sewuster, Pim      |
| Bebber, Philipp   | Cornelissen, Adam | Speksnijder, Martijn | Sprengers, Martijn |
| Derks, Koen       | Deunk, Jodocus    | Summeren, Rens       | Swinkels, Leon     |
| Devillers, Martin | Dorigo, Sander    | Verhoeven, P         | Verpoort, Jeffrey  |
| Gijssen, Vincent  | Gool, Maarten-Jan | Verpoort, Kevin      | Vervuurt, Willem   |
| Grunberg, S.      | Gök, Tolga        | Özdemir, Orhan       |                    |
| Holweg, Tim       | Huisman, Dimitri  |                      |                    |
| Hulsman, Koen     | Janssen, Robbin   |                      |                    |
| Janssen Lok, Giel | Koning, Edwin     |                      |                    |
| Kussy, Leroy      | Leusink, Bart     |                      |                    |
| Mennen, Gert      | Oberscheven, MF   |                      |                    |
| Pardo Gonzáles    | Scholten, Chris   |                      |                    |





# Questions?

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