

From high level business rules to an implementation on an event-based platform to integrate applications

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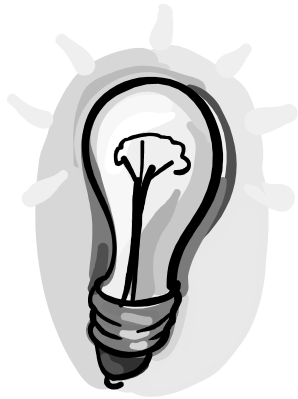
Agenda

- **Introduction**
- EAI-Rules Metamodel
- EAI-Rules Profile
- CIM model
- Transformation to a PIM model
- Transformation to a PSM model
- Conclusions

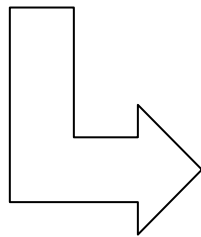
Introduction

- High difficulty involved in the definition of business rules that imply integration of various applications.
- This definition must:
 - Achieve a common understanding of domain concepts.
 - Clearly identify information exchanges between applications.
 - Clearly define the behavior and restrictions of each rule.
 - Allow validation of the rules with business users.

Introduction (2)



- As response to these needs the OMG defined the *UML profile for EAI*, whose objective is defining a standard mechanism to model the integration of applications
- The *EAI Profile* has weaknesses that make its understanding and use difficult in a real context.



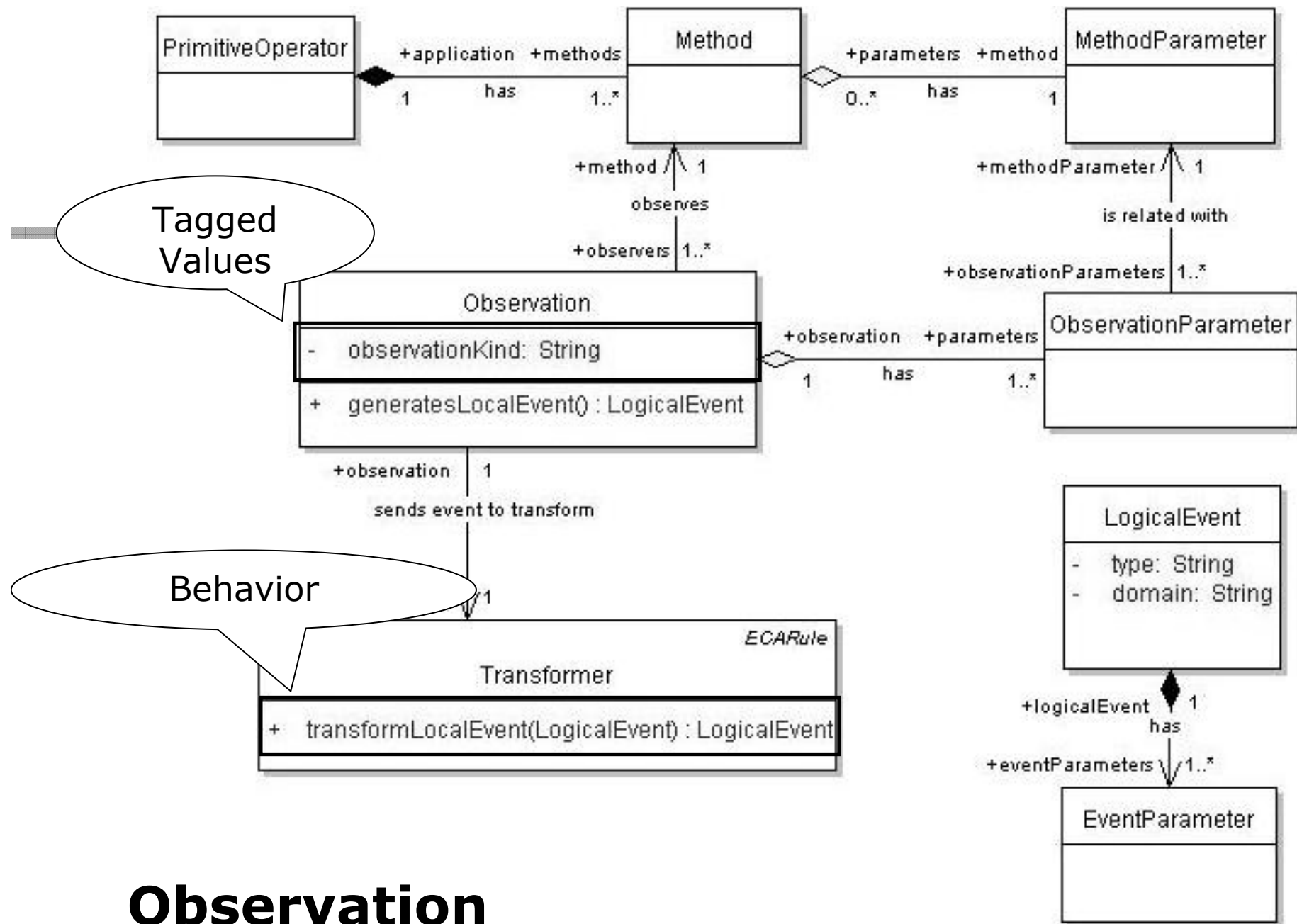
EAI-RULES PROFILE

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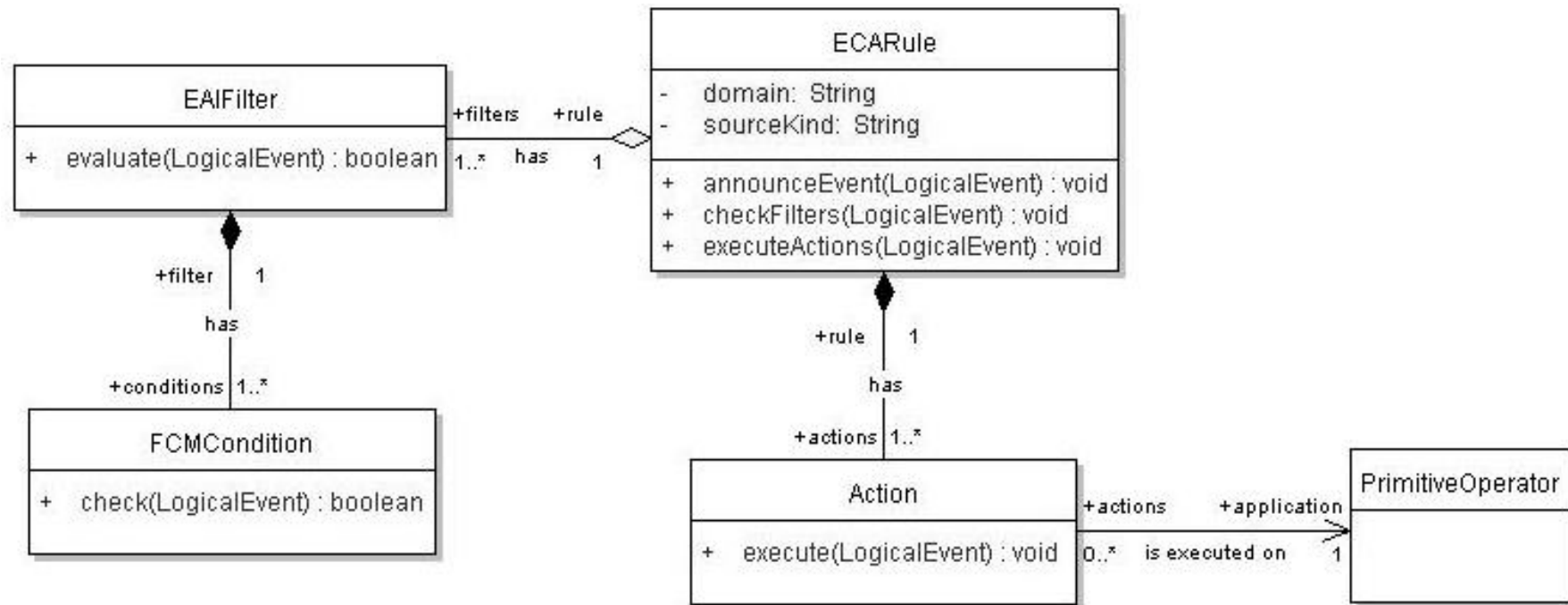
EAI-Rules Metamodel

- Defines the semantics, responsibilities and restrictions of elements necessary to model the asynchronous integration of applications.
- Elements
 - Specification (Behavior of each element)
 - Tagged values
 - OCL restrictions



Observation

ECA Rule



An ECARule can have various associated actions

context ECARule

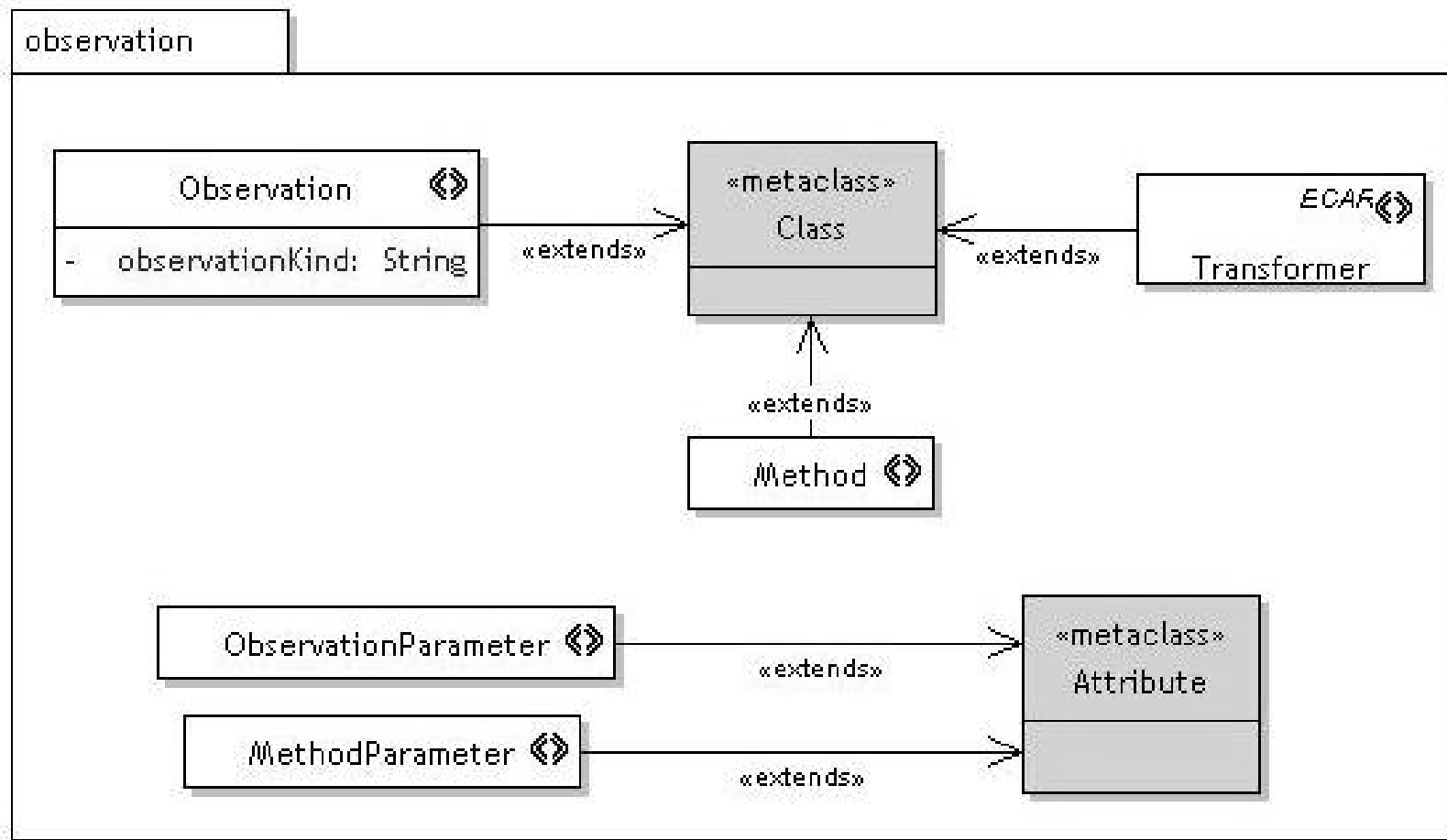
inv: self.actions->size() >= 1

OCLE
Restrictions

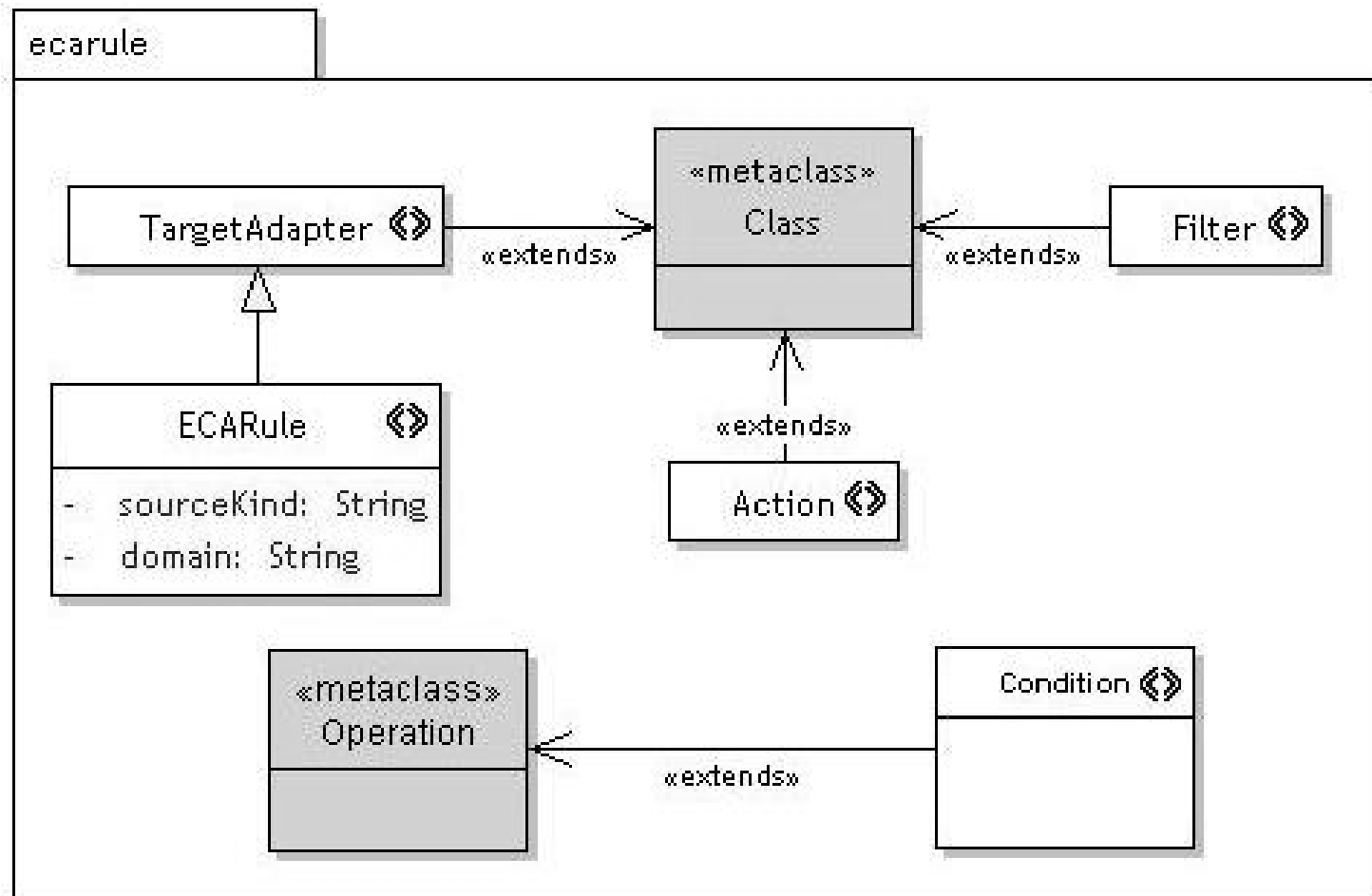
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EAI-Rules Profile (1)

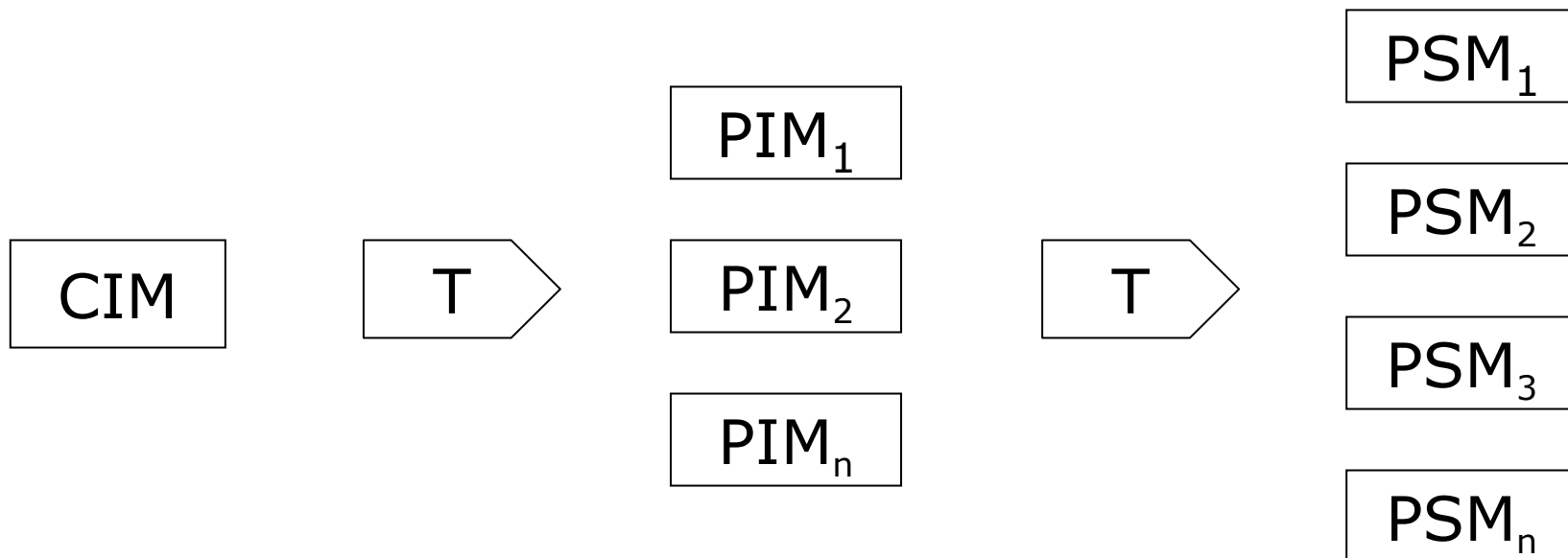


EAI-Rules Profile (2)



EAI-Rules Profile (3)

- CIM: Computation Independent Model
- PIM: Platform Independent Model
- PSM: Platform Specific Model

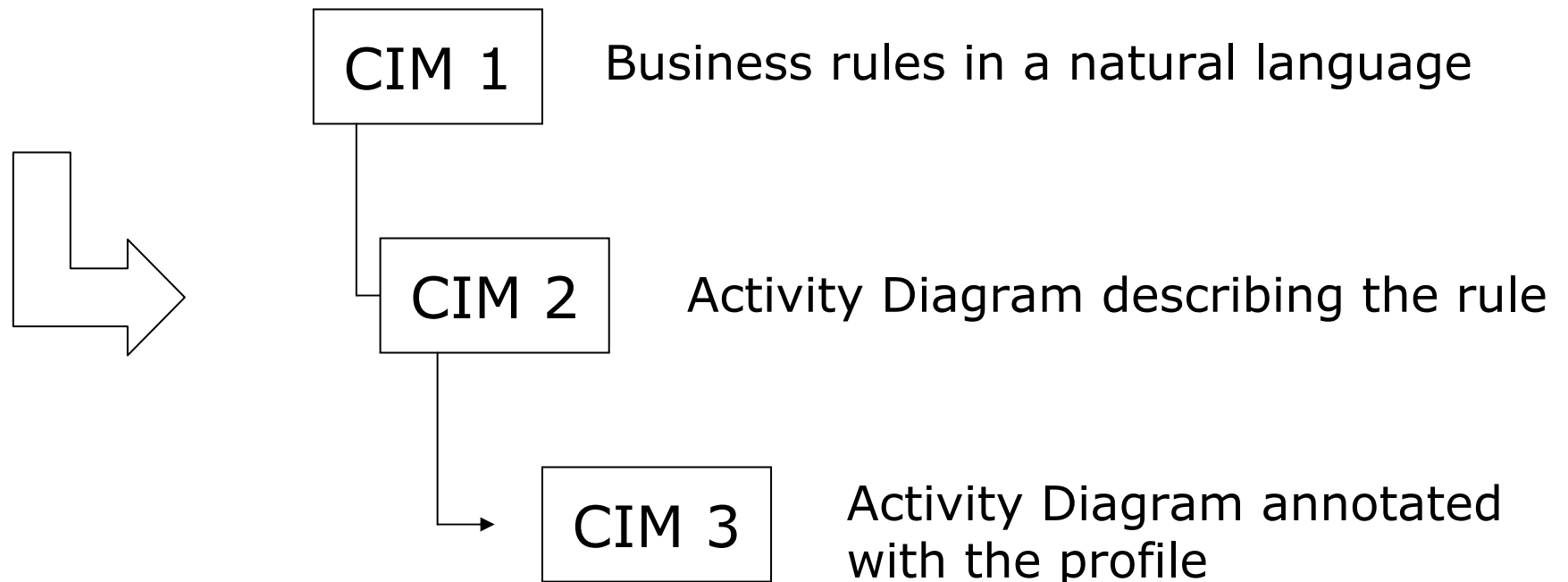


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CIM Model (1)

- The user can define integration business rules at a high level by applying the EAI-Rules profile



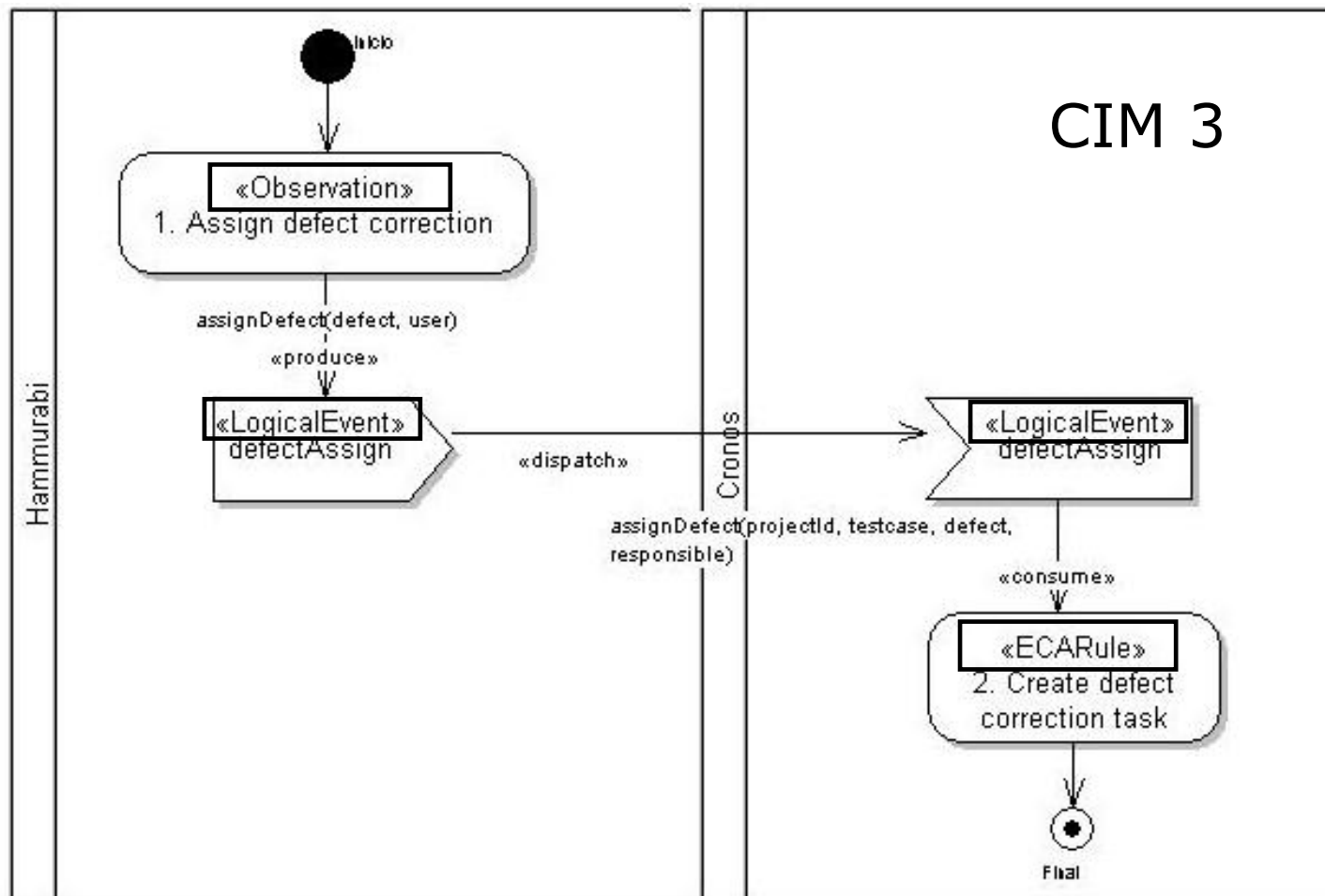
CIM Model (2)

EXAMPLE SCENARIO

- Organization: Software development house
- Business Rule 1: For each defect detected in the execution of a test plan an activity is created for its correction for a user responsible of this task.
 - Business Rule 2: The time invested in the defect correction must be registered for evaluation of quality metrics.

CIM 1

CIM Model (3)



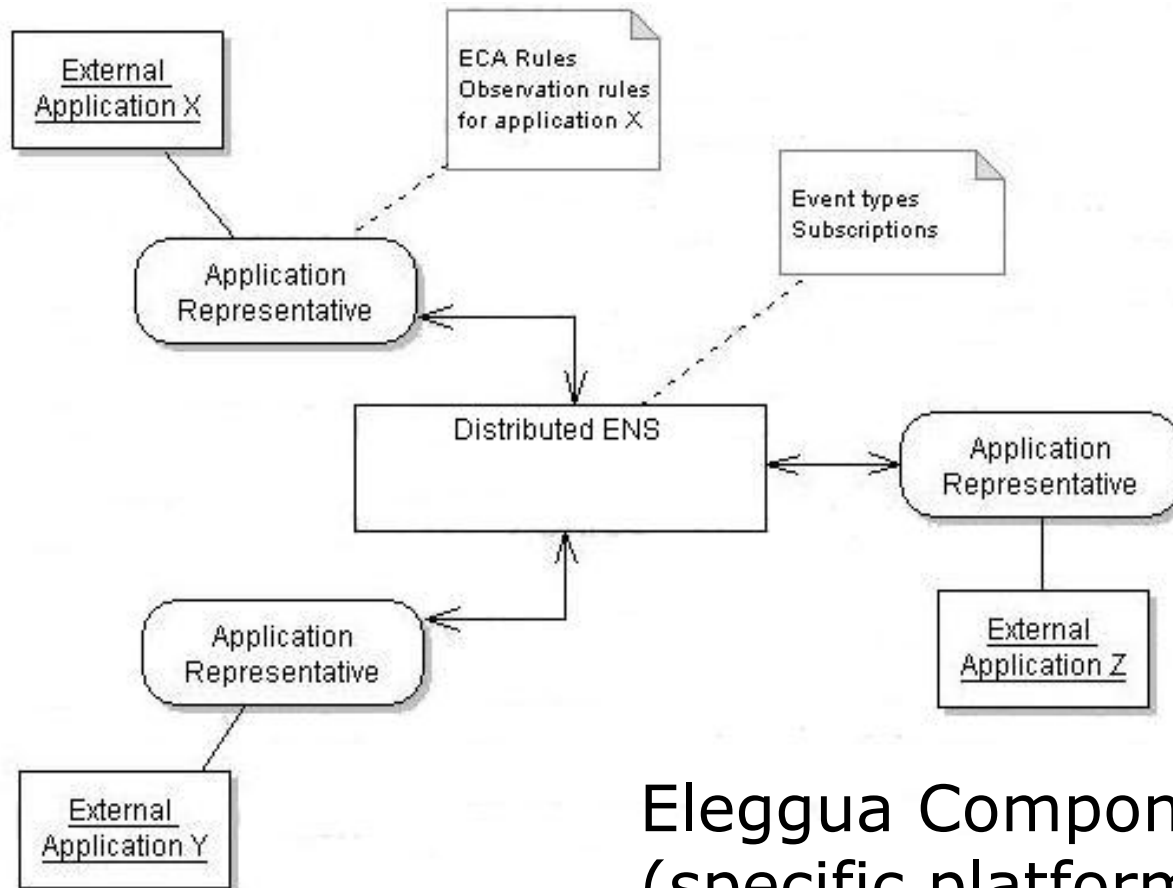
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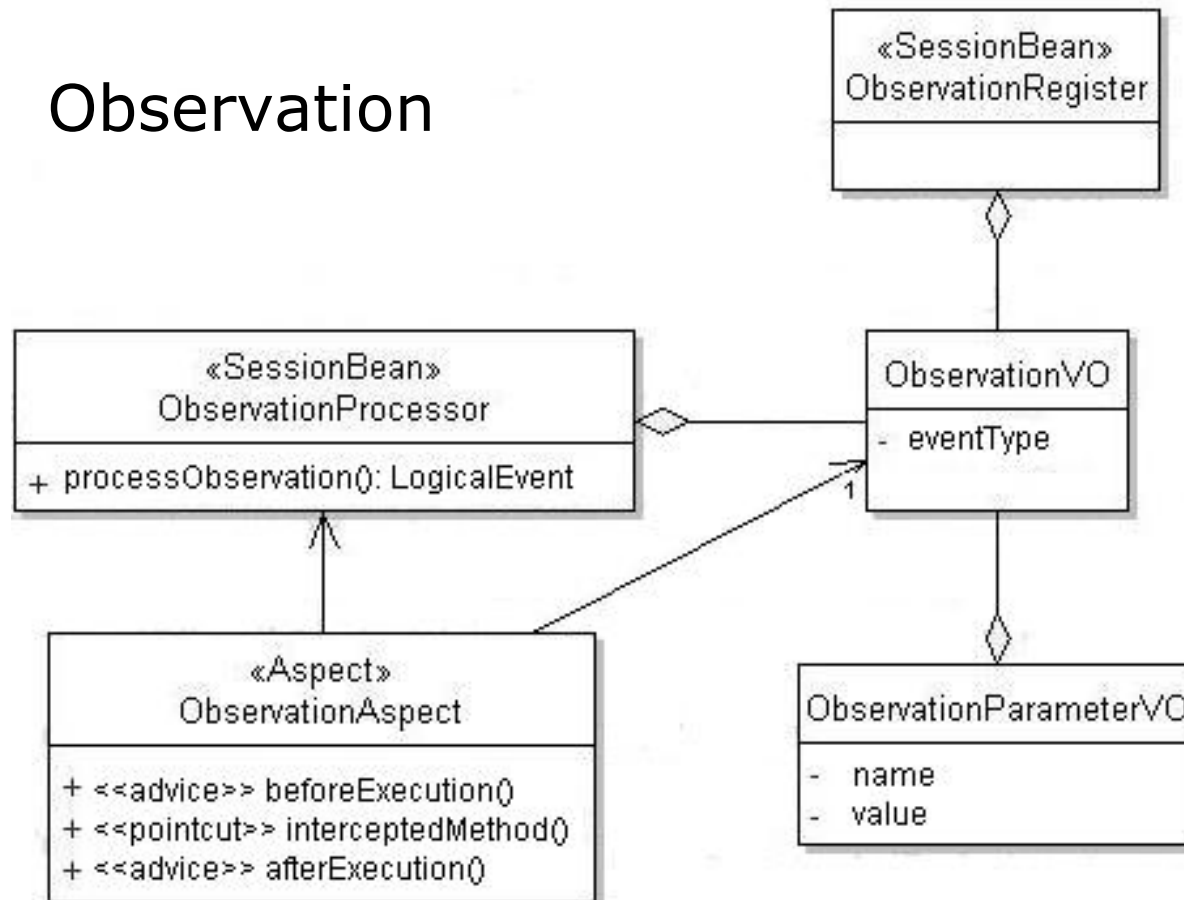
PSM Model(1)



Elegua Components
(specific platform)

PSM Model(2)

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Conclusions

- EAI Rules enables the definition of high level business rules that involve the integration of applications easing their definition and validation.
- A transformation is proposed from a high level model (CIM) to a PSM (Eleggua). Currently the process is assisted (not fully automated).
- We are currently working on a simulation tool for validation of a PIM before transforming it to the PSM. This simulation uses executable UML.