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Execute your Processes

with Eclipse JWT

Workflow and Business Process Management

Current situation in BPM:



Workflow and Business Process Management

Current situation in BPM:

- Many graphical modeling languages

- BPMN, BPDM



- EPCs



- UML Activity diagrams



- ...



Workflow and Business Process Management

Current situation in BPM:

- Many graphical modeling languages

- BPMN, BPDM  

- EPCs 

- UML Activity diagrams 

- ...

- Many process languages and technical formats

- XPDL  

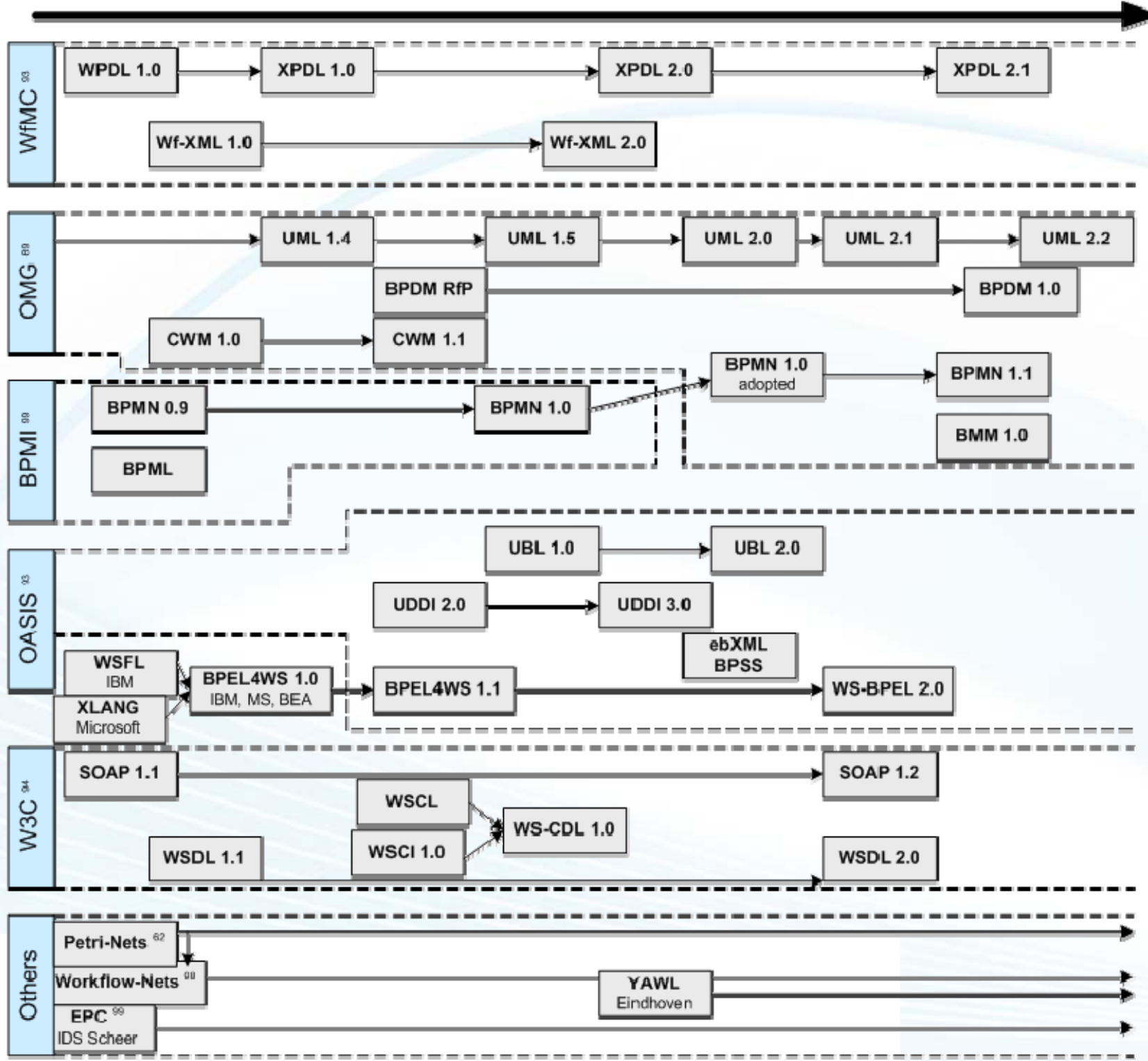
- jPDL 

- BPEL 

- ...



2000 2001 2002 2003 2004 2005 2006 2007 2008 2009



Workflow and Business Process Management

Current situation in BPM (2):

- Even more process engine implementations



Workflow and Business Process Management

Current situation in BPM (2):

- Even more process engine implementations



and a lot of others...

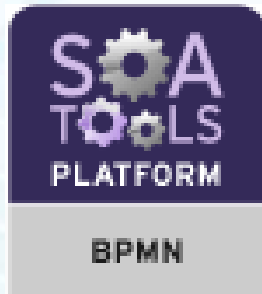
compare e.g. <http://java-source.net/open-source/workflow-engines>



Workflow and Business Process Management

Current situation in BPM (3):

- Many tools for modeling, but most of them are not compatible



and a lot of others...

compare e.g. http://www.bpmn.org/BPMN_Supporters.htm



Java Workflow Tooling

Goals of JWT:

- Support for workflow and business process modeling, deployment, execution and monitoring inside Eclipse
- Provide a complete, flexible, interoperable and usable BPM toolkit



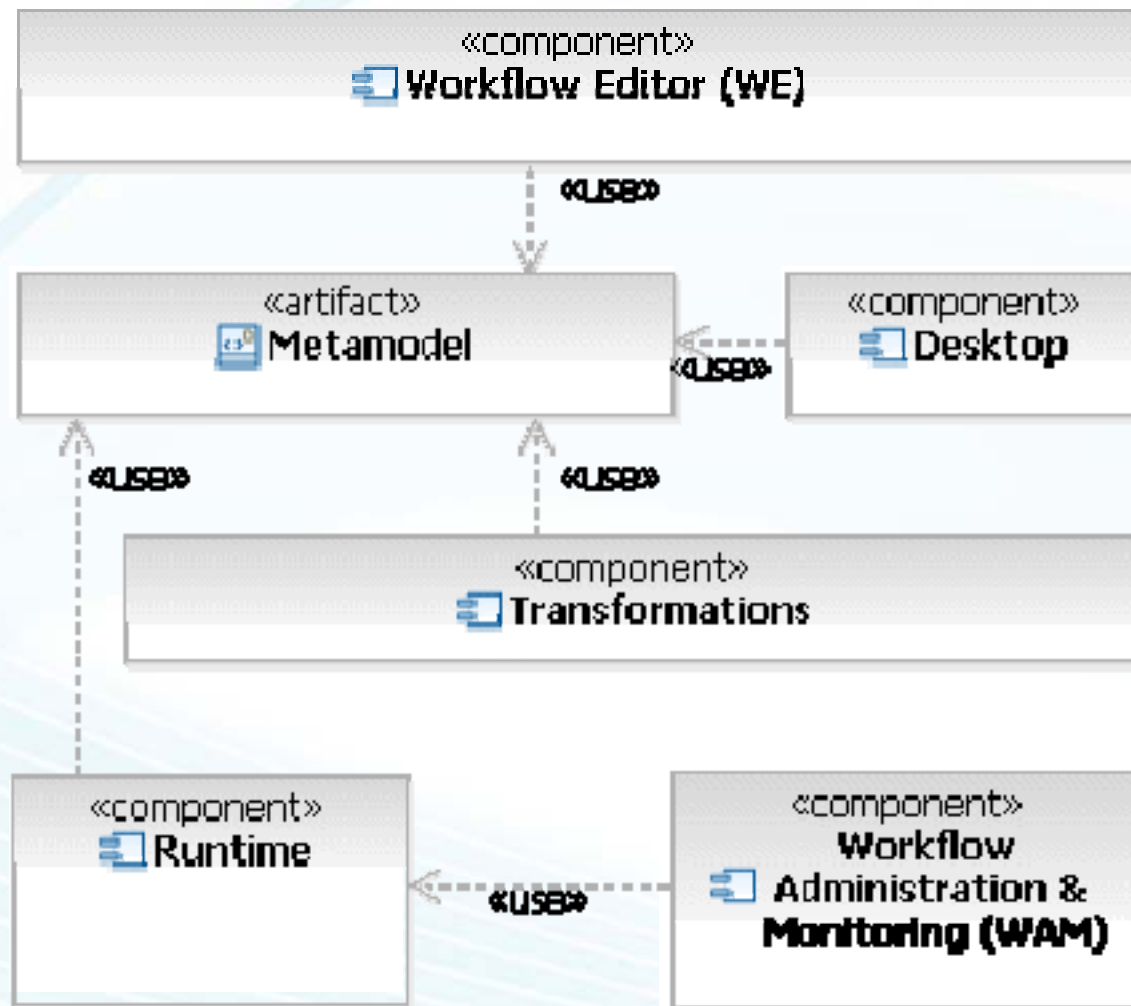
Java Workflow Tooling

Goals of JWT (2):

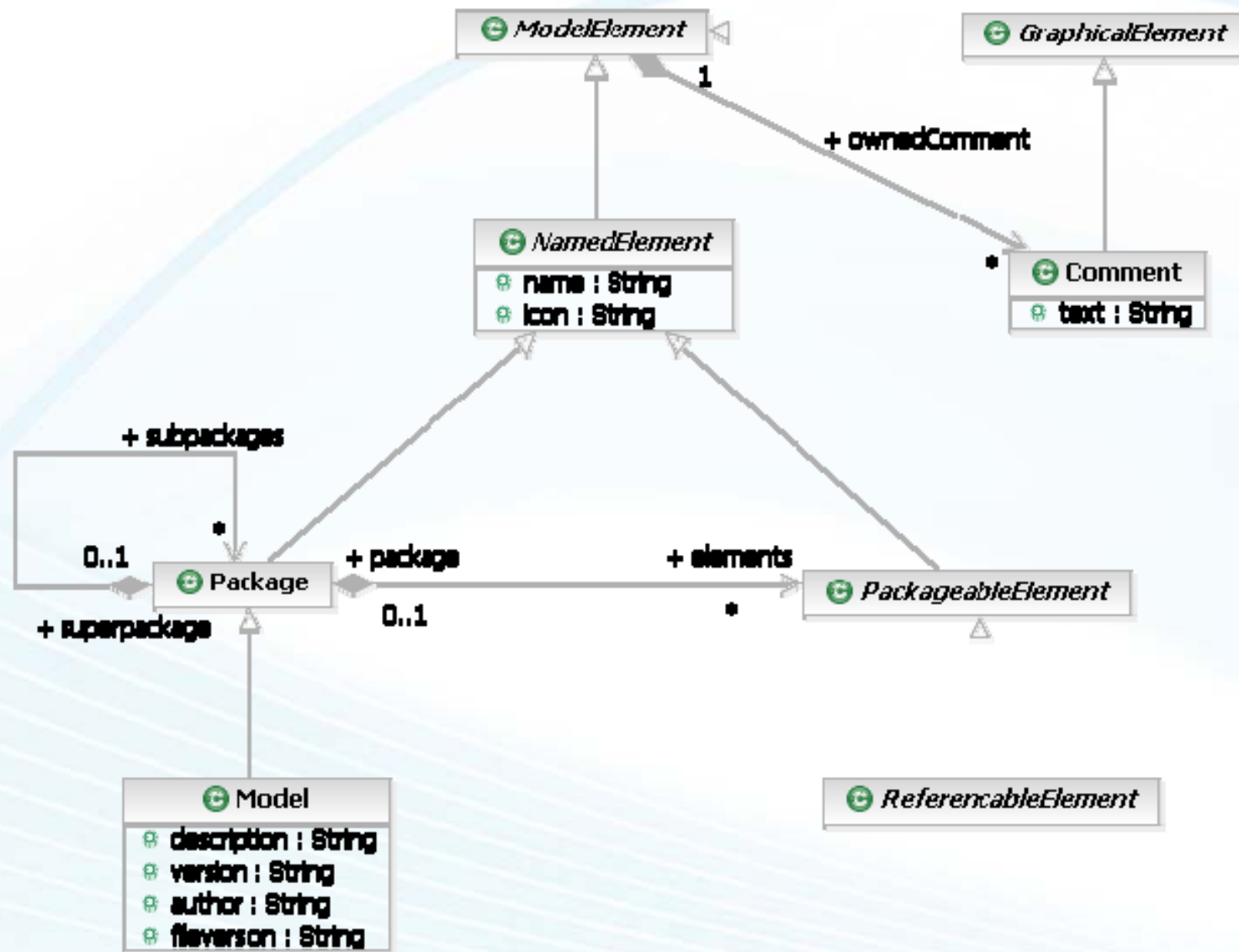
- Set of generic and extensible plugins and APIs
- Extensions allowing support for specific business representations, process language formats, process engines, service platforms, etc.
- Targeting and supporting SOA in close collaboration with the Eclipse STP project



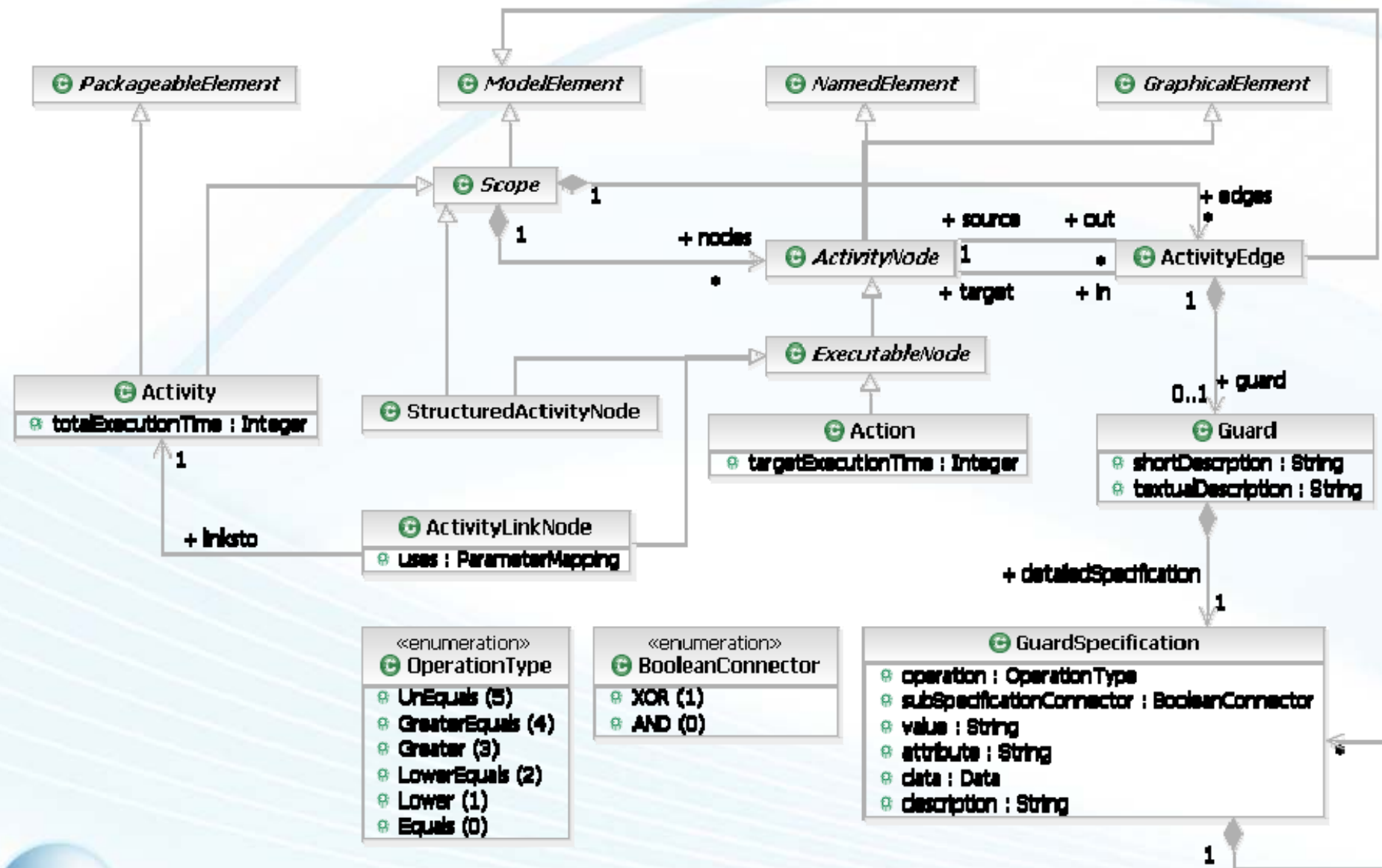
Components of JWT



JWT Metamodel

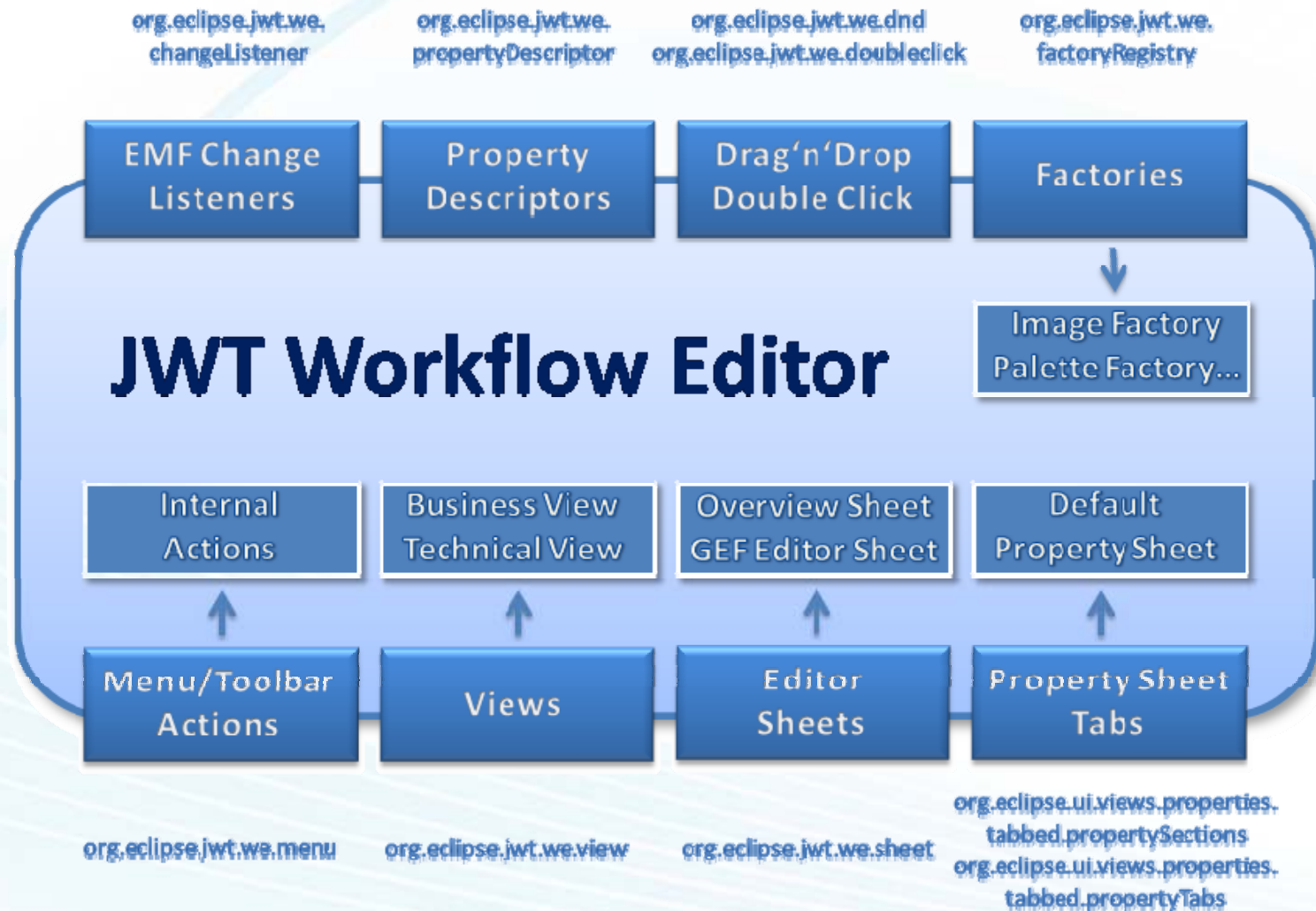


JWT Metamodel (2)

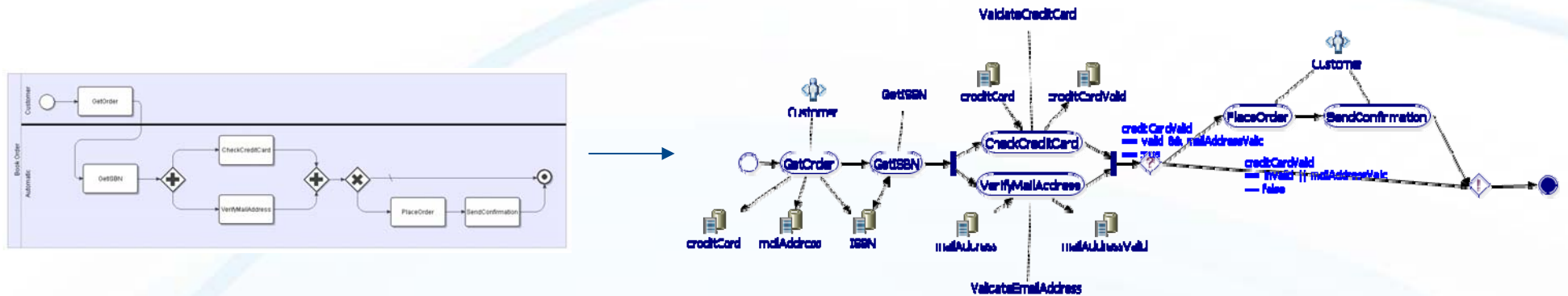


Workflow Editor (WE)

- Extension points overview



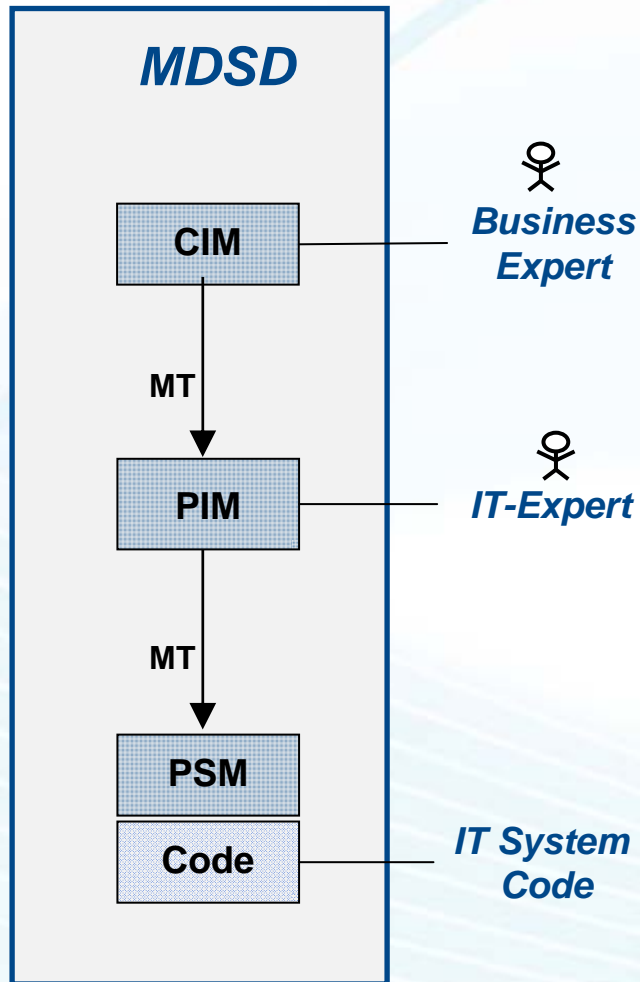
Demo Part 1: From BPMN to JWT



- Demo
 - Start with a model in BPMN
 - Transform it into JWT
 - Add technical details

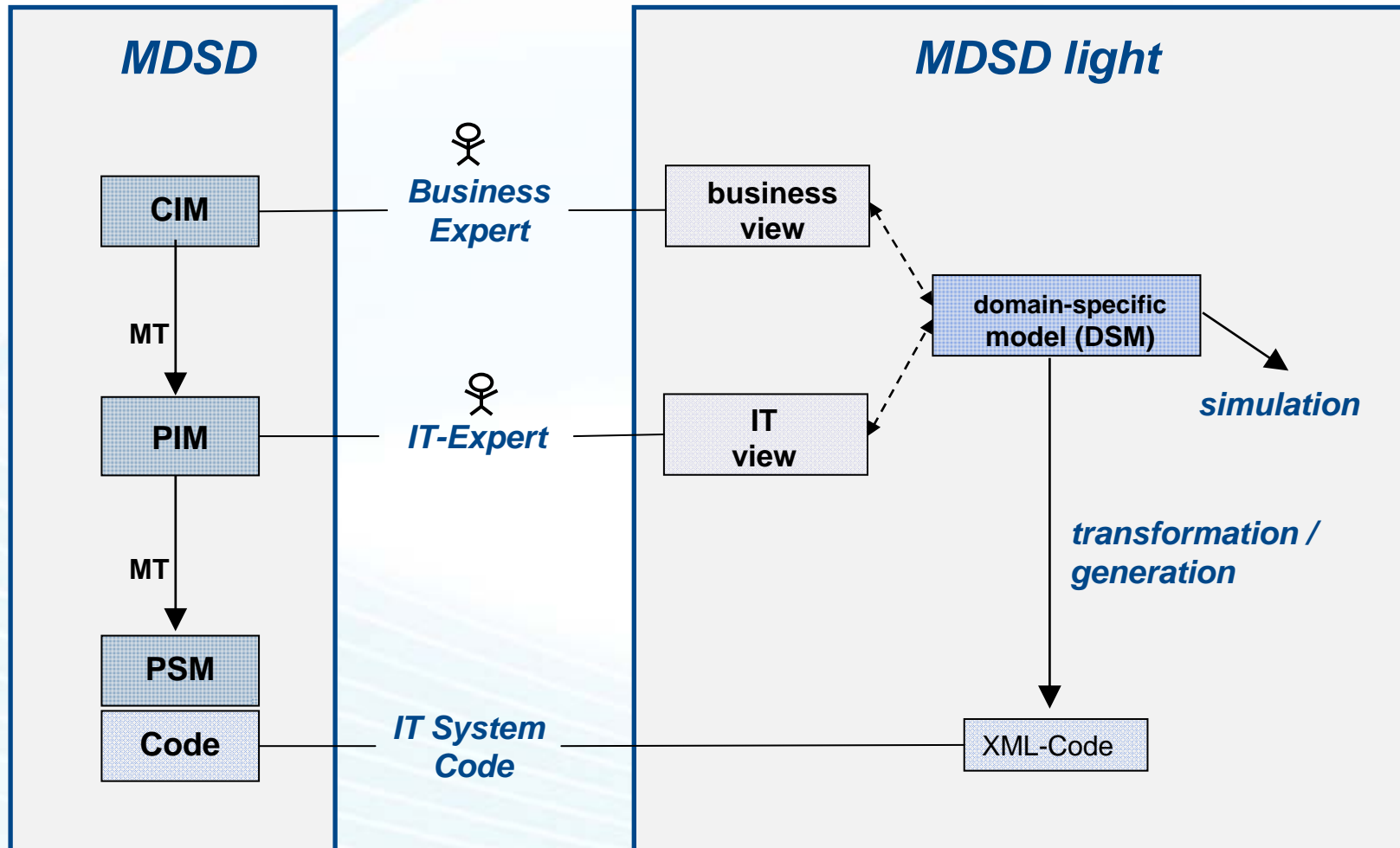
Views in the Workflow Editor

- Based on the „MDS D light“ - principle:



Views in the Workflow Editor

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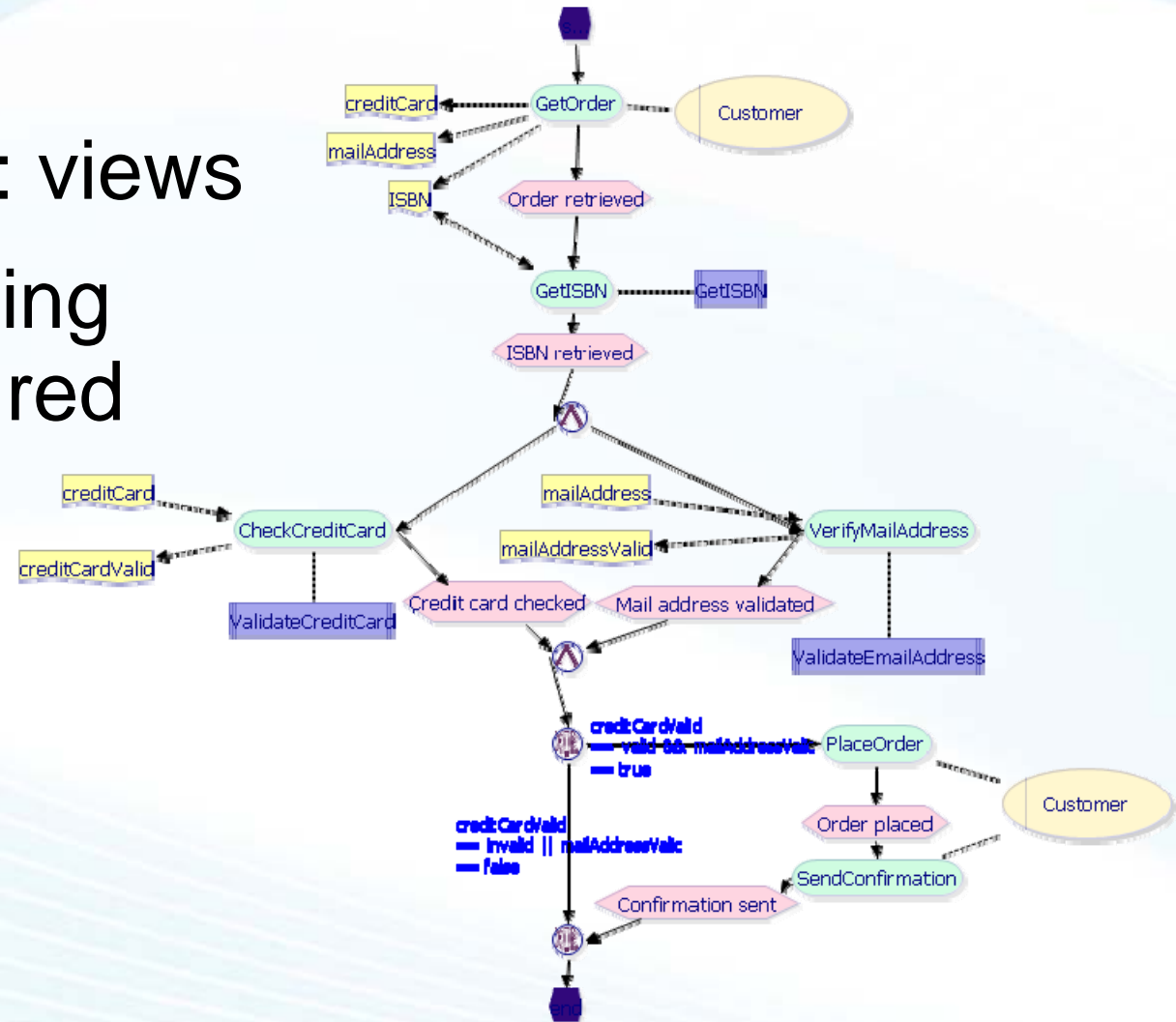
Aspect-oriented extensions of the Workflow Editor

- Why extending the editor via aspects?
 - Provide additional nodes that don't exist in the original metamodel
 - Call vendor specific custom actions for specific model elements
 - Have additional properties on already existing metamodel elements



Aspect-oriented extensions of the Workflow Editor

- Concrete example: views
- Not existing modeling elements are required
- e.g. EPC Event



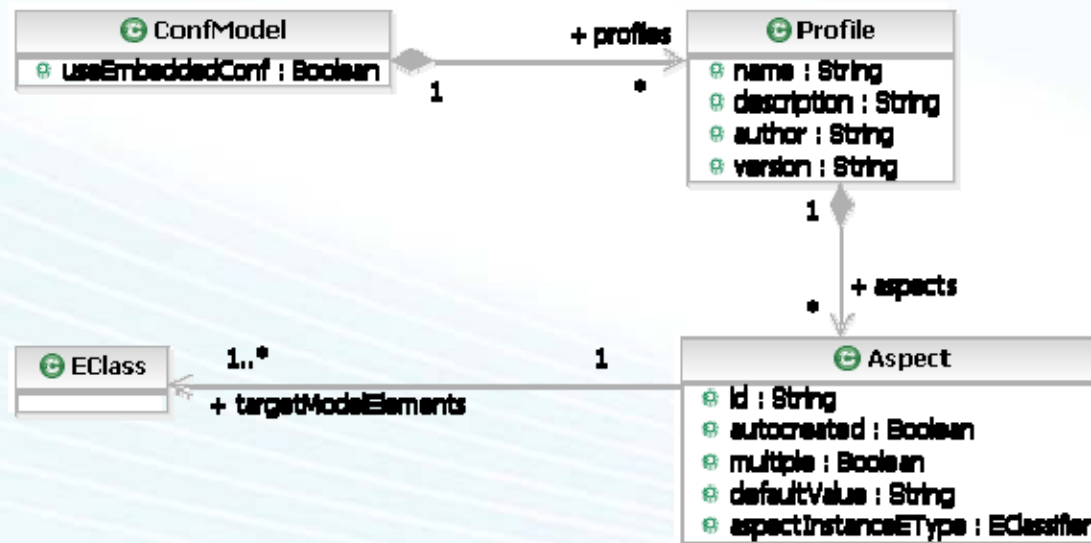
Aspect-oriented extensions of the Workflow Editor

- Why not using EMF annotations?
 - EMF annotations are not typed (risks of conflicts)
 - Adding custom information to an element in EMF means subclassing it
 - Several such custom extensions (e.g. from different vendors) would mean to create a new node type that extends all of them
 - Neither flexible nor open to the end user



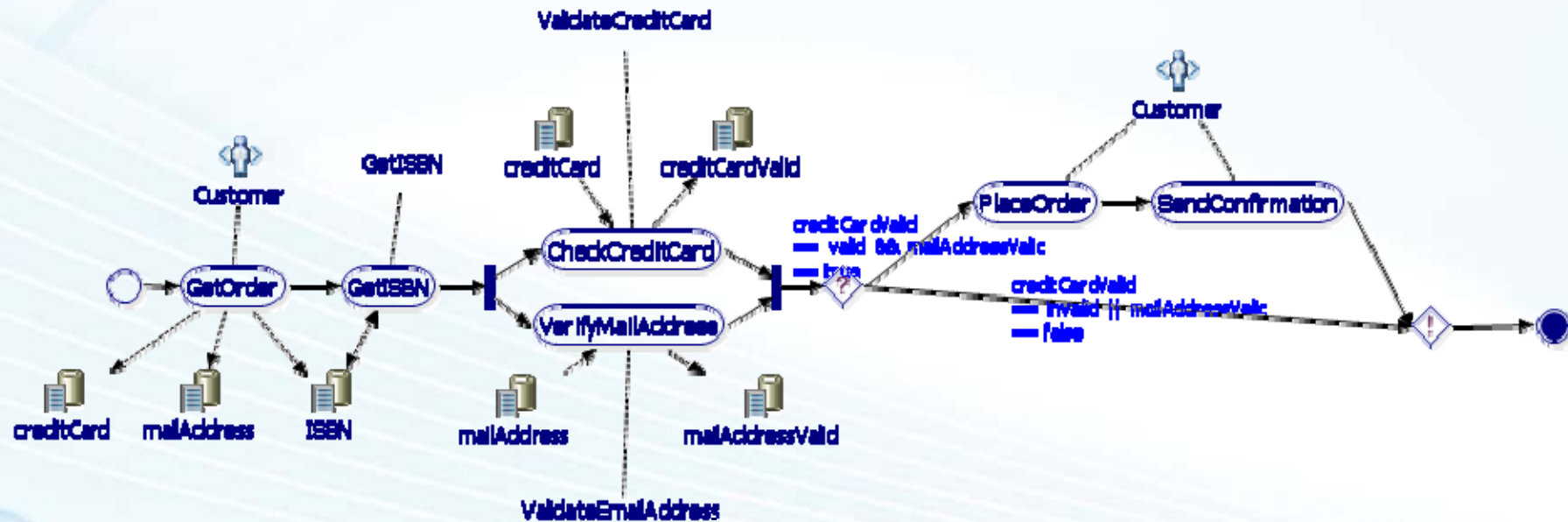
Aspect-oriented extensions of the Workflow Editor

- Any EMF model can have a configuration (ConfModel) including Profiles (features)
- Each Profile specifies its Aspects (typed)
- Instantiated on elements of the decorated model



Using templates in the Workflow Editor

- Export of often required model elements
 - Packages, Applications, Data, Roles, etc.
 - Easy reuse in other process models and workflows



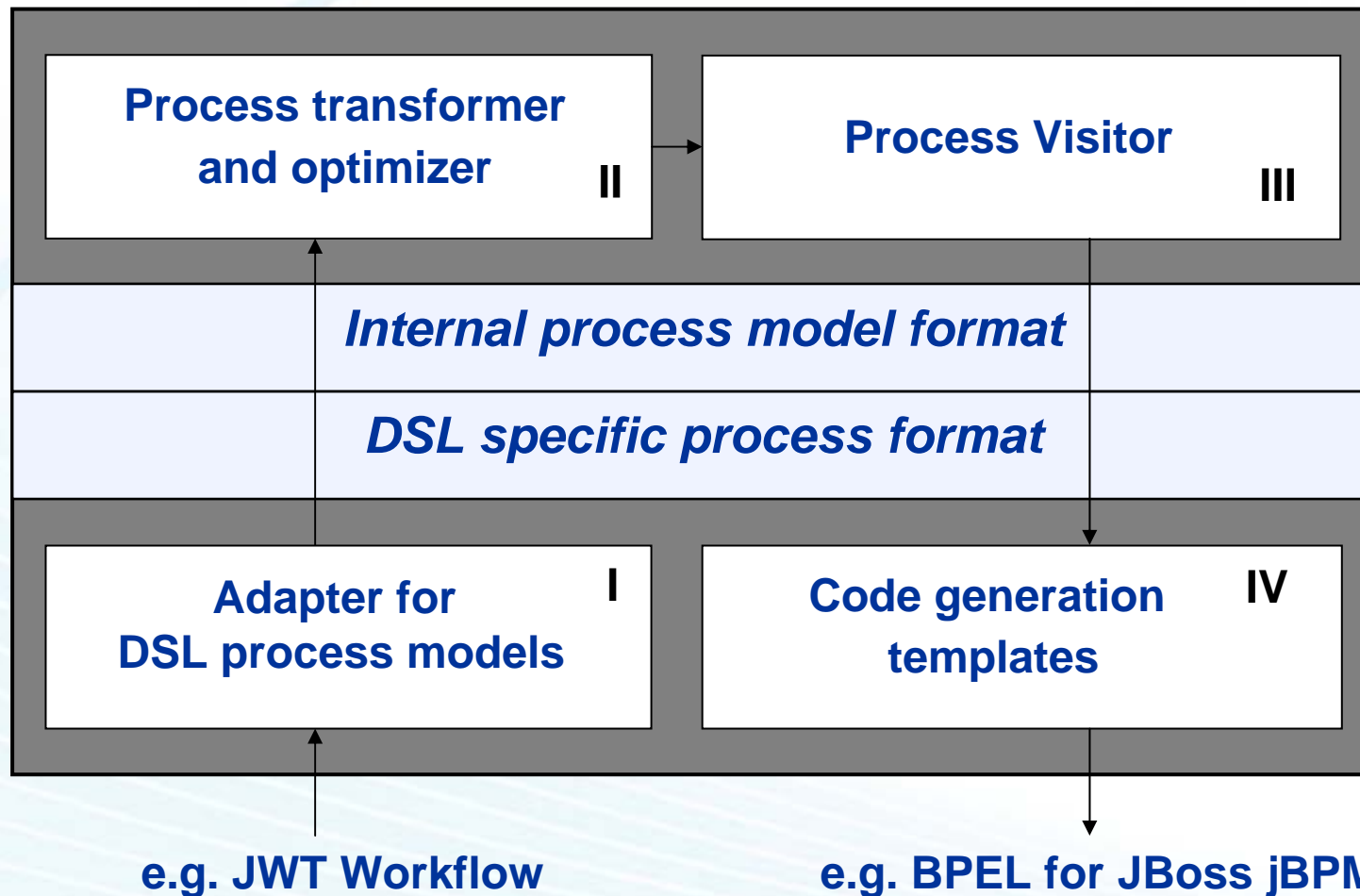
JWT Transformations

- Import (already seen)
- Export:
 - HTML documentation of the modeled processes
 - JWT back to BPMN
 - JWT to STP-IM
 - Both using the ATLAS Transformation Language (ATL)
 - JWT to XPDL (e.g. packed in a Bonita Archive)
 - JWT to jPDL
 - JWT to BPEL

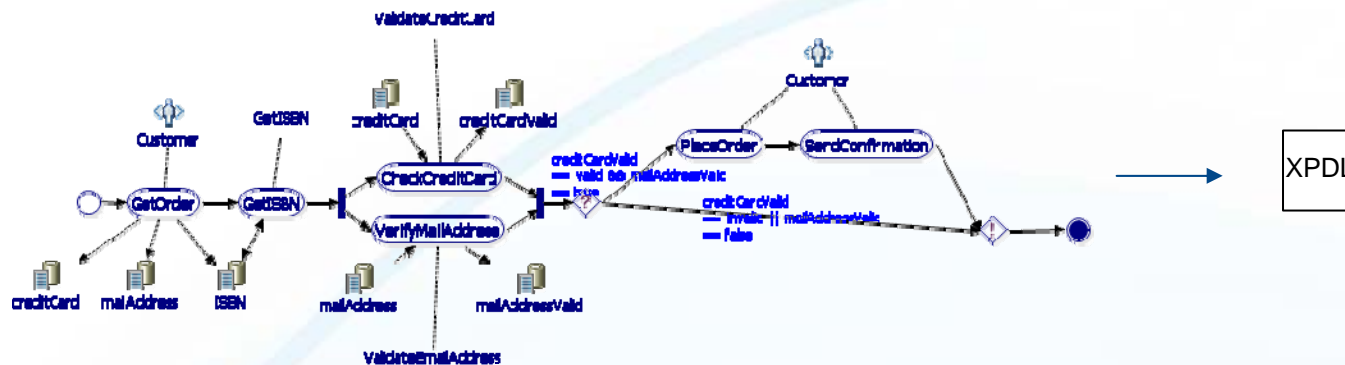


JWT Transformations

- JWT to BPEL: Workflow Codegeneration



Demo Part 2: Views & From JWT to XPDL/BAR



■ Demo

- Show different views of process: UML Activity diagram as well as Event-driven Process Chains (EPCs)
- Export process to Bonita Archive (BAR file with XPDL included)

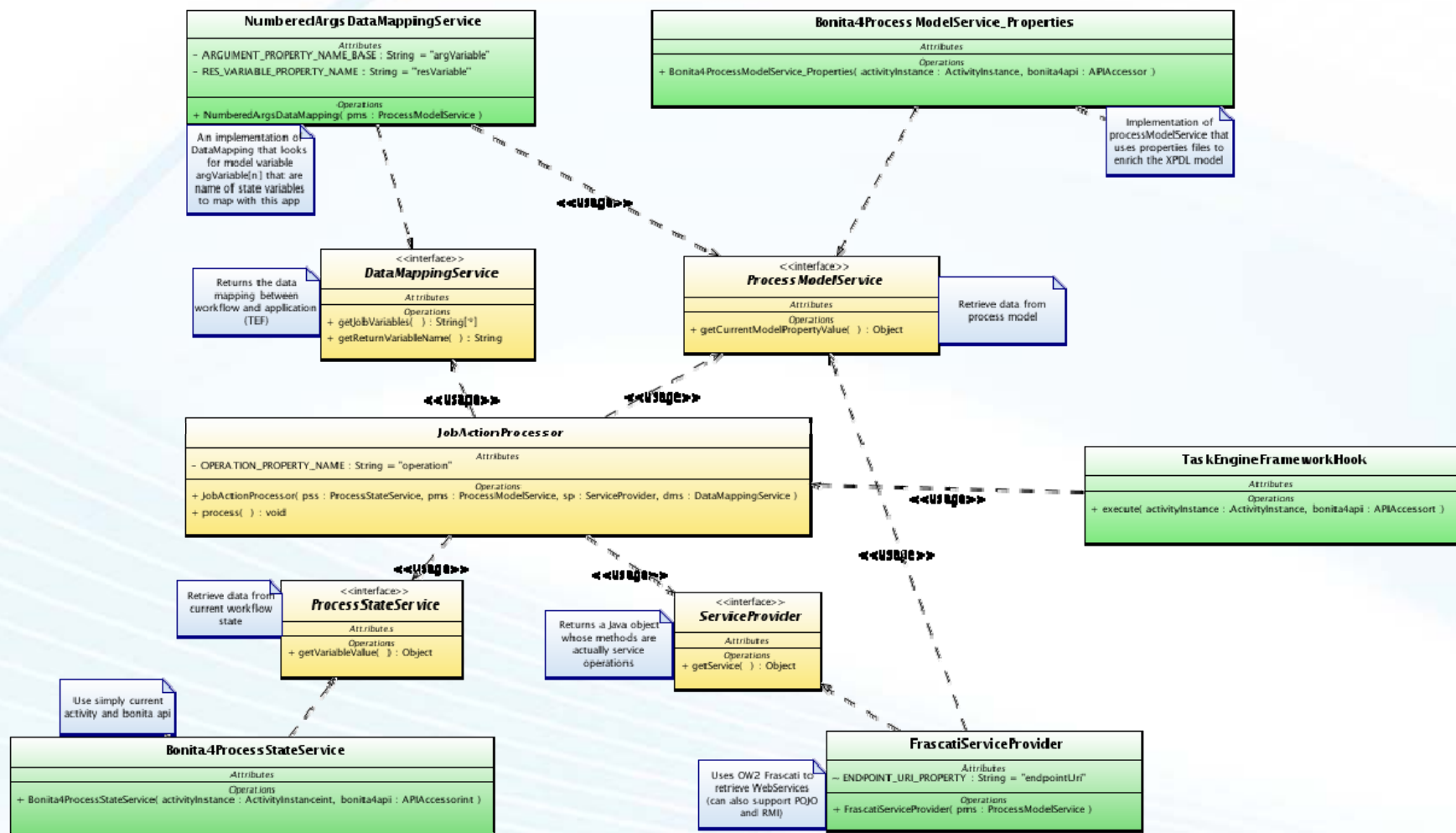
JWT Runtime

- Task Engine Framework
 - API to handle automated tasks at runtime with the same paradigm as the one used at model-time
 - Applications as black boxes
 - Independent from engine
 - Using data mapping
 - Builds a bridge between process engines and human interaction on the one side with automated task implementations on the other



JWT Runtime

Task Engine Framework



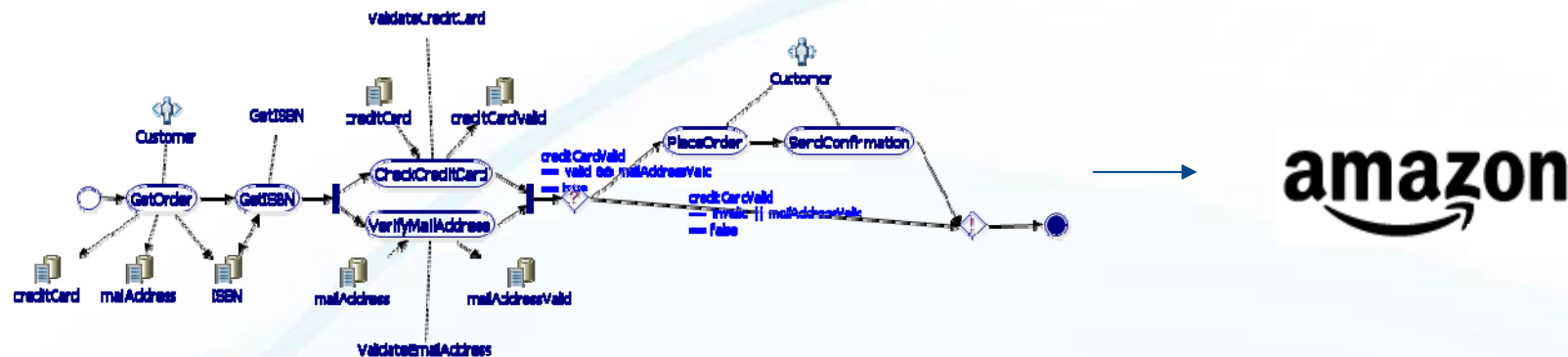
JWT Integration: AgilPro

- AgilPro LiMo for modeling business processes and workflows
 - based on JWT WE, includes JWT Transformations
 - includes Wf-Codegen and other additional plugins
- AgilPro Simulator
 - preview process without process engine
- AgilPro integration framework
 - layer on top of jBPM
 - execute web services in BPEL



<http://sf.net/projects/agilpro>

Demo Part 3: JWT Integration with AgilPro



■ Demo

- Enter book details, search for book at Amazon
- Preview in the AgilPro Simulator

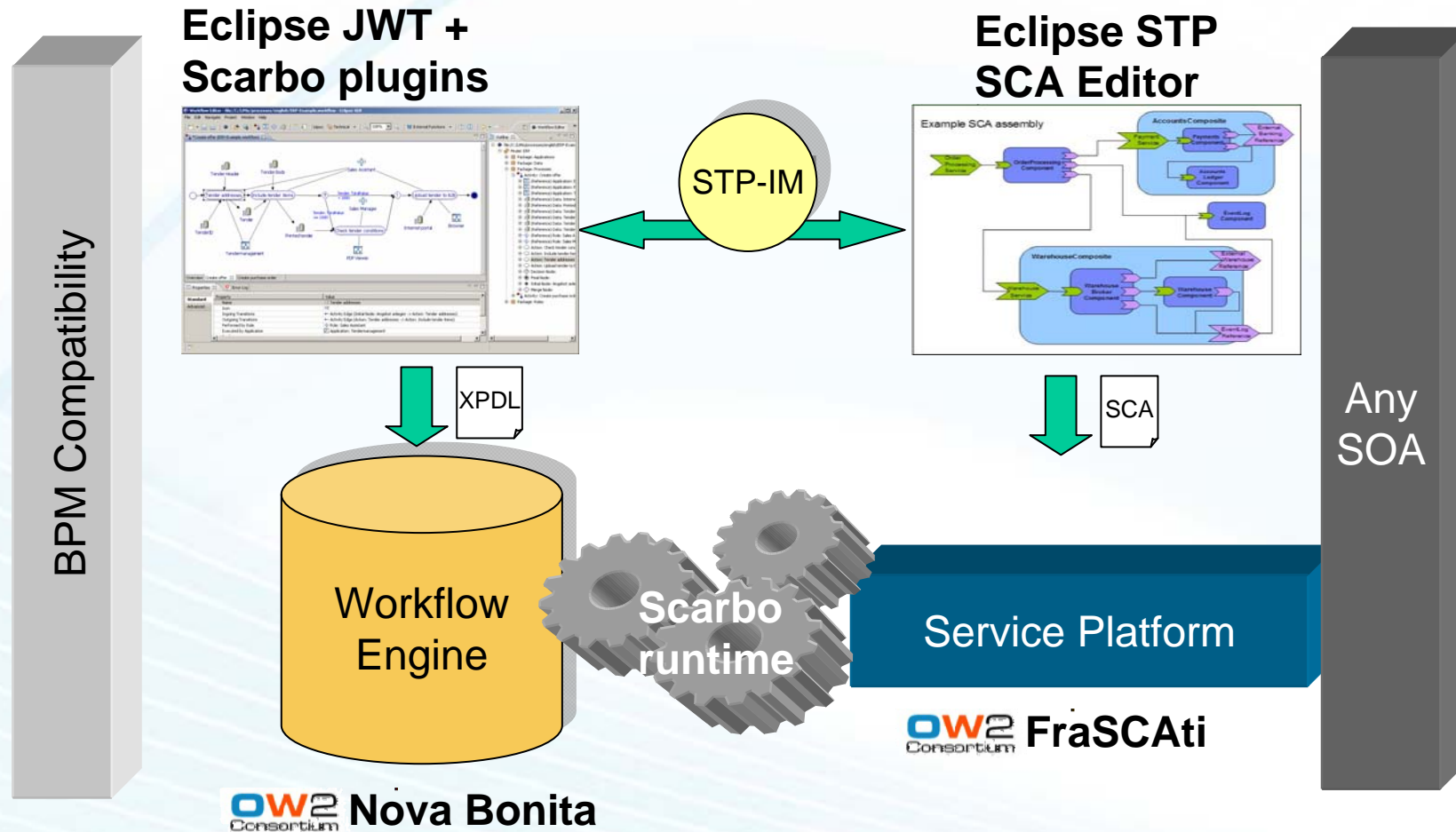


JWT Integration: Scarbo

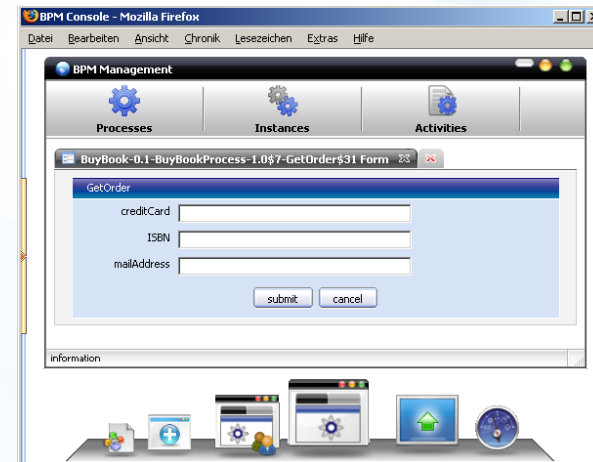
- What is Scarbo (<http://scarbo.ow2.org>)?
 - An open, SOA ready, SCA powered BPM solution built on OW2 and Eclipse
 - Implements the JWT Task Engine Framework on top of Nova Bonita 4 workflow engine
- What can Scarbo do for you?
 - Builds a bridge between workflows and web services
 - Gives the ability to develop and execute processes that
 - Call webservices or SCA defined services (using OW2 Frascati)
 - Run Groovy scripts
 - Send e-mails



JWT Integration: Scarbo (2)



Demo Part 4: Execute the Process



- Demo
 - Deploy process on Nova Bonita, execute it
 - Show final results on Amazon site



Summary and Conclusions

- JWT provides an extensible framework for workflows, business processes and services
- Contains already many plugins for workflow modeling and transformations
- Still work to do for deployment, execution and monitoring support directly in Eclipse
- JWT will be shipped together with Galileo in June



Thanks for your attention!

Any questions???

- website: <http://www.eclipse.org/jwt>
- newsgroup: eclipse.technology.jwt
- email: jwt-dev@eclipse.org



Open Wide

BULL

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Consortium



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