Java Workflow Tooling (JWT)

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Outline

Java Workflow Tooling (JWT):

- JWTs place in the Business process development life cycle
- Addressing the BPM „Babel Tower“ issue
- Achieving a unified approach to BPM design
- JWT for SOA – Targeting an SOA platform
- JWTs general purpose, structure and APIs
- Specific focus: JWT Workflow Editor (WE)

JWT – A complete, flexible BPM platform

- To provide a comprehensive, flexible BPM platform
  - Addresses and (hopefully) solves the BPM „Babel Tower“ issue, that has plagued the BPM field for years
  - Allows for „Distribution“-like releases with specific extensions targeting specific platforms or problems (e.g.) JWT for SOA
- To provide a complete and usable BPM solution
  - Business View, Technical View
  - Deployment View, Monitoring View
  - Tooling and integration with runtime
- JWT consists of
  - Set of generic (Eclipse-based) plugins
  - Extensible APIs
  - Extensions allowing support for specific business representations, process language formats, process engines, service platforms…

The BPM „Babel Tower“ issue

- Problems in BPM
  - Many modeling languages (e.g. BPMN, EPCs, UML Activity diagrams)
  - Many process languages and technical formats (ex. XPDL, WSBPEL and extensions)
  - Even more process engine implementations; each with different features
    - e.g. open source process engines like jBoss jBPM, OW2 / Bull Bonita & Orchestra, Apache ODE, …
- Origins of the BPM Babel Tower issue
  - Vendors first and foremost develop and „sell“ process engines
  - Only then they start developing tools for their engines
  - And in order to showcase their engine‘s specific features, their tooling is usually bound to their engine
    - Engine specific implementation, etc.

The BPM „Babel Tower“ issue

- On the other side
  - Many tools for many modeling languages and process engines, but most of them are not compatible
- What the user(s) would like
  - Being able to use the best technology and the best tools for all of their needs
  - For instance
    - BPMN used by a business analyst to design a first high, business-level process description using a full blown BPMN editor
    - Help the developer from there to an XPDL implementation
    - XPDL used for workflow needs, BPEL for orchestration, with minimal hindrance in the must-have knowledge about engine integration

Addressing the BPM „Babel Tower“ issue

- Solution 1: an extensible metamodel
  - JWT‘s core metamodel is simple
  - Forms a good basis for such an extensible metamodel
- Solution 2: a pivotal metamodel
  - A metamodel for which exists a bijective transformation with the JWT core metamodel is granted the full set of features that JWT provides
  - This solution allows a unified approach to BPM tooling and especially design, since any BP-related language can to some point be integrated this way

  Possible example: the STP-Intermediate Model (IM):
  - Bridges different SOA platforms:
    - Workflow / process: e.g. BPMN, BPEL
    - Architecture specification: e.g. SCA, JBI
    - Service Creation: e.g. JAX-WS
  - Mapping between STP-IM and JWT considered
- Solution 3: the Process Virtual Machine (PVM)
  - abstraction layer above existing process engines

Achieving a unified approach to BPM design

- First workflow editor available on the Eclipse web site
  - based on the open-source toolsuite AgilPro
- Unified approach still under development
  - Scheduled for the end of the year
  - Two way BPMN to JWT transformation
  - JWT to XPDL transformation
  - JWT to BPEL transformation
- Planned work:
  - Mapping with other metamodels (such as STP-IM)
  - PVM interoperability

JWT for SOA - Benefits of SOA for BPM

- SOA acts as a „protective shell“ over the enterprise information system
  - Ensuring business processes won‘t be impacted by unmanaged evolutions of the information system
- SOA platforms provide services that are natural candidates for JWTs process execution
  - Therefore, integrating JWT with SOA platforms at development- and runtime definitely makes sense!
- Looking at BPM the SOA way
  - BPM engines may be seen as exposing services
    - BPM engine administration service, Process start service, Process Activity Lifecycle service…
  - BPM tooling may be integrated to SOA platforms development, deployment or management tooling

JWT for SOA – Targeting an SOA platform

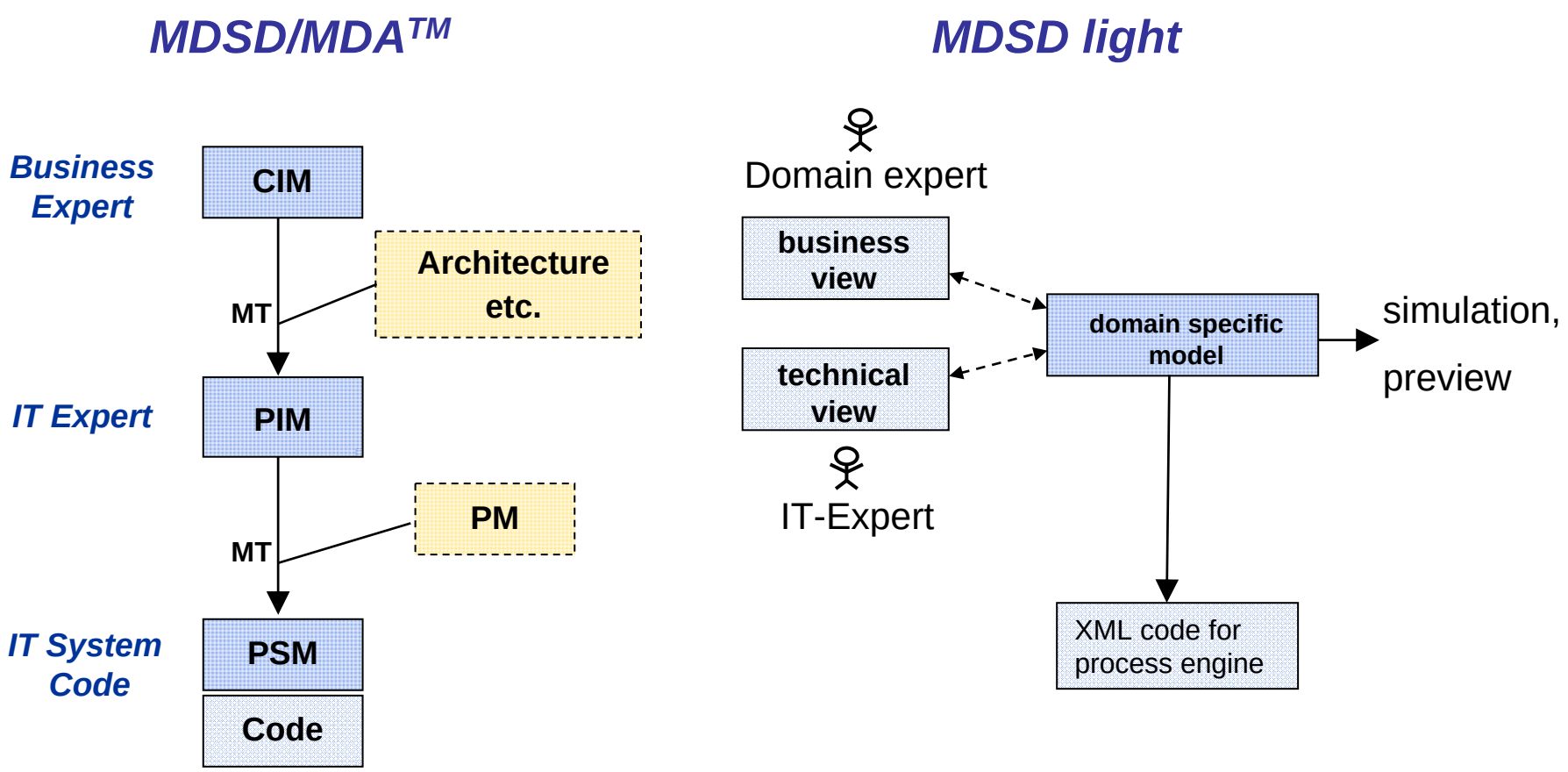
- Again: still under development
  - Scheduled for the end of the year
- Generic service registry API
  - With a first simple implementation
- Generic service registry Browsing and Search UI
  - Basic browsing UI
  - Advanced semantic search UI
- Integrated in the JWT workflow editor
  - Allows to graphically create JWT actions targeting a service that is known by the registry

- Planned work :
  - Process registry
  - SCA integration (within the public-funded project SCOrWare)

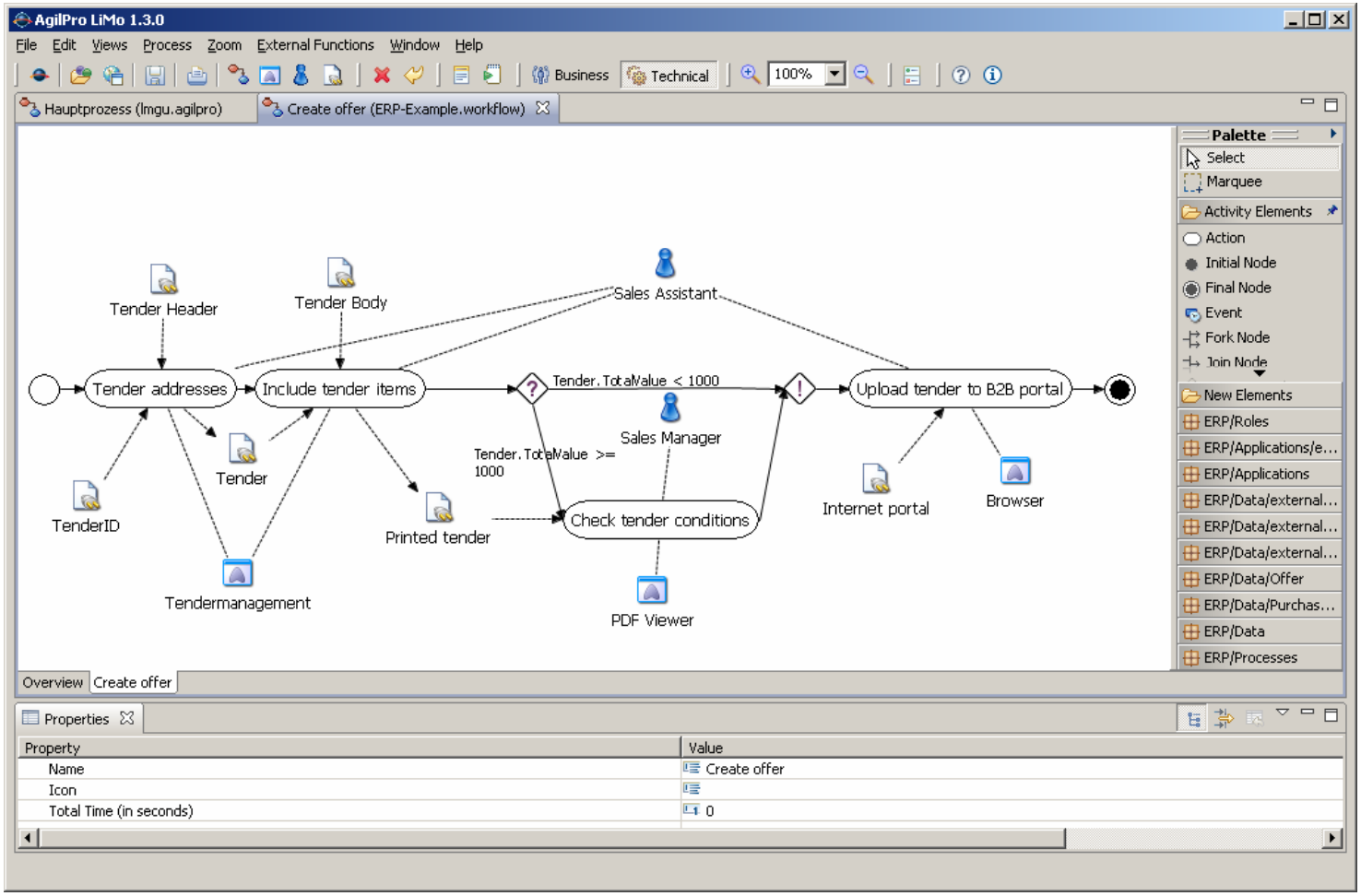
JWT consists of (at least) two related parts

- Workflow Editor (WE)
  - Graphical representation of process definition
  - Export of process definitions to XML (BPEL, XPDL, etc.)
  - Import of valid XML process definition and its graphical representation
- Workflow engine Administration and Monitoring (WAM)
  - Integration with SOA, SCA, etc.
  - Process Definition Management (Repository & Package)
  - Process Execution Management (Instantiation, Monitoring, etc.)
  - Process Runtime Resources Mapping (Application & Users)
  - Worklist Management & out of the box “Desktop BPM” features

JWT WE – Underlying principle



JWT WE – Screenshot



(JWT WE packaged as an RCP application, available on www.agilpro.eu)

JWT WE – extension points

- Possibility to generate code from the workflow models
  - WSBPEL,
  - XPDL,
  - e.g. using the workflow codegeneration framework at http://sf.net/projects/wf-codegen
- Generate a documentation of the modeled processes
  - HTML documentation
  - PDF files
- Create additional views
  - BPMN
  - ITIL
  - ISO 9000
- ... and many others possible!

Thanks for your attention!!

The JWT project team:

- Marc Dutoo (Project Lead) - Open Wide, FR
- Florian Lautenbacher (Project Lead) – University of Augsburg, DE
- Miguel Valdez (Technology Advisor) – Bull, FR
- Alain Boulze (Market Advisor) – INRIA / OW2, FR
- Fabrice Dewasmes (Vision Advisor) – Pragma Consult, LU
- Günther Palfinger (Technical Advisor) – eMundo, DE

- Koen Aers, Tom Baeyens – JBoss corp.
- Pardeep Sood – Independent Consultant
- and many others...

Are there any questions?