itemis

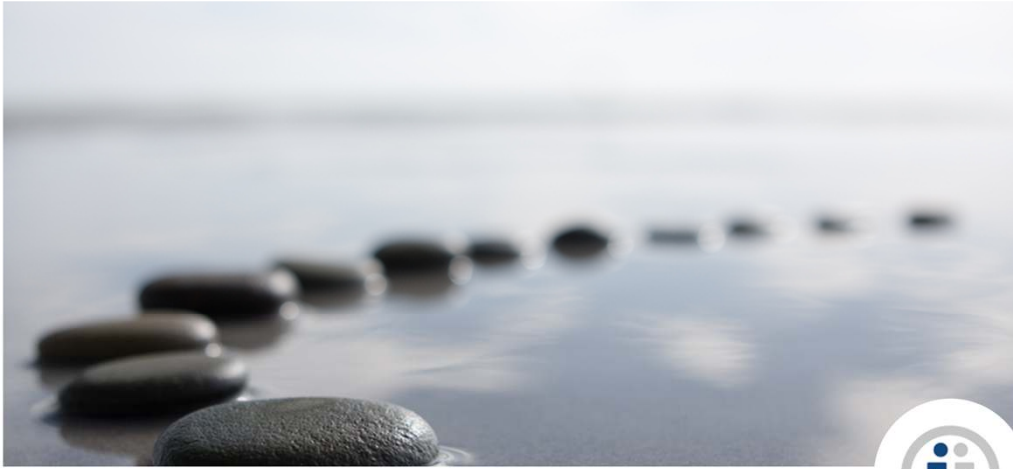## Implementer Company News

New and noteworthy and what's cooking @itemis

MPWG F2F Meeting @EclipseCon Europe 2011

Agenda

- Xtext 2.1

- Xtend 2.1

- Xcore

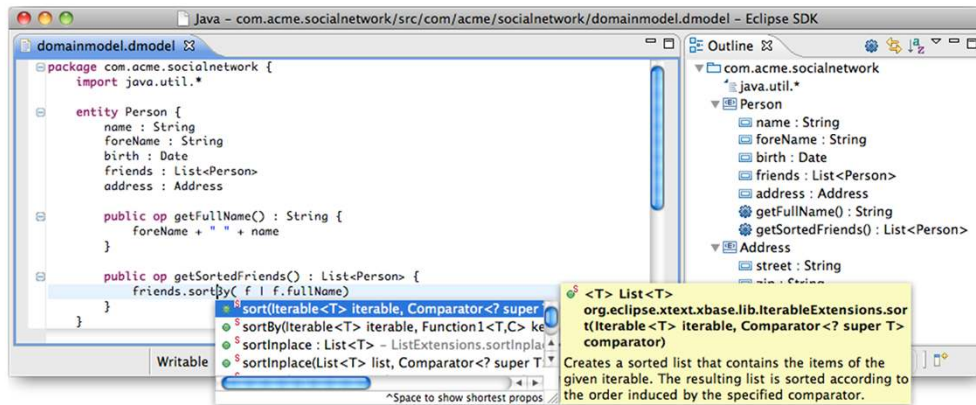- Requirements Modeling Framework (RMF)

- Artop & Sphinx

2

Xtext 2.1

Create textual DSLs with embedded Java-like syntax and semantics

- Framework for textual domain-specific languages (DSL)
- Special support for languages targeting the Java virtual machine (JVM) enabling to embed Java-like syntax and semantics in textual DSLs
- Requires only a grammar definition and a Java concept mapping to be provided
- Generates language infrastructure and sophisticated Eclipse-based tool support providing editing experience known from modern Java IDEs including syntax coloring, code completion, validation and quick fixes and much more

Xtext talks @ECE 2011

Thursday, 09:30, Theater Stage:

"Programming Refrigerators with Eclipse Xtext"

(Klaus Dörfler, Markus Völter)

Friday, 15:00, Silchersaal:

"Test-Driven Development of Xtext DSLs"

(Moritz Eysholdt)

Xtend 2.1

Advanced successor of Xpand/Xtend with powerful Xtext-based tooling

- Statically-typed template language for developing code generators and model transformers
- Syntax is similar to Java but much less verbose
- Developed with Xtext and based on Xbase
- Incremental compilation to readable Java code at design time
- Interacts with pure Java code and may be called from pure Java code in a completely transparent way
- Runs as fast as pure Java at runtime
- Rich Eclipse-based IDE being closely integrated with the Java Development Tools (JDT)

Friday, 14:00, Theater Stage:

"Xtend - A Powerful Tool For Everyday Programming"

(Sebastian Zarnekow)

Xcore

Textual syntax for Ecore with built-in expression statement language


```
Package Expl 23                *Node.xcore 23
                                package org.example.node
org.example.node
  src                           class Node
  JRE System Library [J.        {
  Plug-in Dependencie               String label
  META-INF                          contains Node[] children opposite parent
  model                             container Node parent opposite children
    Node.xcore                      derived NodeKind nodeKind get
    Node.xmi                        {
                                        if (parent == null)
                                            if (children.empty) NodeKind::SINGLETON else Nodek
                                    }
                                }

                                enum NodeKind
                                {
                                    SINGLETON
                                    ROOT
```

- Textual syntax for Ecore
- Similar to EMFactic but with expression statement language for expressing logic for operations, derived features, datatype converters
- Also supports configuration of GenModel via annotations
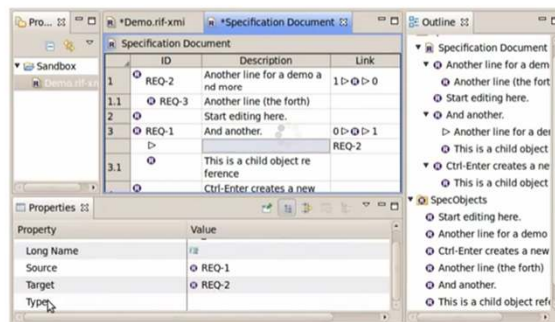- Live (and later on also on demand) code generation

Xcore talk @ECE 2011

Thursday, 13:30, Theater:

"Xcore: Ecore Meets Xtext"

(Ed Merks, Sven Efftinge)

Requirements Modeling Framework (RMF)

Implementation of OMG ReqIF standard in Ecore plus dedicated editor

- Implementation of the OMG ReqIF standard in Ecore
- Special (de)serializers that map the ReqIF models to standard-conform XML formats
- Table-based editor front end that facilitates working with ReqIF data

Thursday, 16:30, Silchersaal:

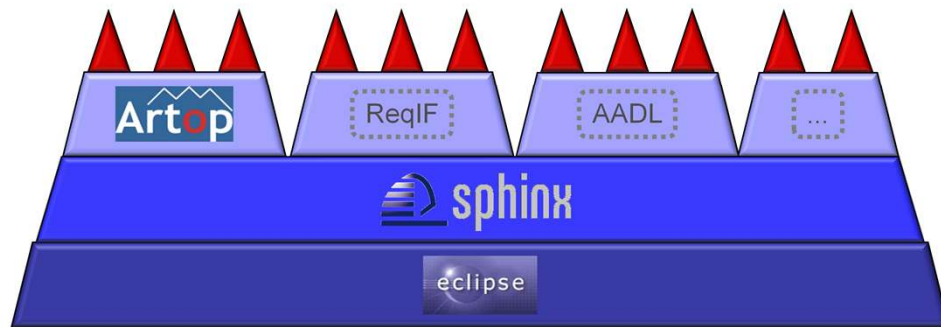*"Requirements Modeling Framework: a Game-Changer"*

(Andreas Graf)

Artop

Platform for IDE-like AUTOSAR design tools

11

Sphinx

Platform for IDE-like tooling for any sort of modeling language/standard

- Model-oriented viewing and editing
- Shared model instances and common load-edit-save-unload lifecycle
- Automatic synchronization of shared model instances with workspace resource changes
- Multi-model support
- Extensible scoping of resources belonging to same model instance
- Migration of models between different metamodel revisions

Sphinx

IDE integration for code generation/model transformation with Xpand/Xtend

13

Artop & Sphinx

Future plans

- CDO Integration for

  - Improved scalability

  - Transparent handling of models from files/repositories

- Implementation of other system engineering standards on top of Sphinx

  - EAST-ADL (functional architecture)

  - IP-XACT (hardware description)

MPWG F2F Meeting @EclipseCon Europe 2011

itemis

Stephan Eberle

+33 6 64 18 39 10

stephan.eberle@itemis.com

itemis AG | Am Brambusch 15-24 | D-44536 Lünen | www.itemis.de