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MPWG F2F Meeting @EclipseCon Europe 2011

# Agenda

- Xtext 2.1
- Xtend 2.1
- Xcore
- Requirements Modeling Framework (RMF)
- Artop & Sphinx



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#### Xtext 2.1

(ii) Create textual DSLs with embedded Java-like syntax and semantics Xte 🔀 t Java – com.acme.socialnetwork/src/com/acme/socialnetwork/domainmodel.dmodel – Eclipse SDK 00 🌐 😂 🖡 🗸 🖓 🗖 - D 🗄 Outline 🛙 domainmodel.dmodel 83 ⊜package com.acme.socialnetwork { import java.util.\* com.acme.socialnetwork 🖹 java.util.\* V 🖭 Person entity Person { name : String foreName : String birth : Date friends : List<Person> address : Address name : String
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- ٠ Framework for textual domain-specific languages (DSL)
- ٠ 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:

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"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



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- 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)

## Xtend talk @ECE 2011

#### Friday, 14:00, Theater Stage:

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"Xtend - A Powerful Tool For Everyday Programming" (Sebastian Zarnekow)

#### Xcore

Textual syntax for Ecore with built-in expression statement language

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- 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:

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"Xcore: Ecore Meets Xtext" (Ed Merks, Sven Efftinge)



- 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

## RMF talk @ECE 2011

Thursday, 16:30, Silchersaal:

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"Requirements Modeling Framework: a Game-Changer" (Andreas Graf)



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- 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

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#### 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)

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