

## ECLIPSE MODELING PROJECT

### Objectives

- ✓ Learning how to model with EMF / Ecore
- ✓ Generating and managing the EMF generated code
- ✓ Generating specific code with Xtend 2 or Acceleo
- ✓ Using Xtext or EMF Forms to edit a model
- ✓ Creating a graphical model editor (GMF, Sirius)

### Target Audience

- ✓ Developers
- ✓ Project managers
- ✓ Software architects

### Pre-requisites

- ✓ Modeling concepts
- ✓ Knowledge of Java/Eclipse



Duration  
3 days

### Modeling / Eclipse Modeling Framework (EMF)

- Project history, introduction to Modeling project
- EMF / Acceleo/ Xtend / EMFForms / Xtext / GMF / Sirius

#### Ecore

- Language and components description
- Defining relationships
- The different Ecore editors (text based, tree, graphical)
- Creating and managing your own business model
- Model inclusion and binding to other models

#### EMF generation

- The generation model (genmodel) and its parameters
- Using the generated code and annotation principle
- Modifying the generated classes and the default generators
- Setting the validation parameters

#### EMF API

- Reflective model API
- Loading a model, instantiating model objects
- Listening to the changes

#### Custom text generation with Xtend

- Xtend language overview / Use cases
- Model usage and relationship to the meta model
- Writing and launching Xtend templates

#### Custom generation with M2T / Acceleo

- Description of the language and tools
- Model usage and relationship to the meta model
- Writing and launching Acceleo templates

### Advanced UI with EMF Forms

- EMF Forms overview
- The View Model, layouts and elements
- Using EMF Forms in an application
- Specific customization

#### Graphical Editors

- Introduction to the basic technologies :  
GEF, Draw2D, GMF Runtime et GMF Tooling, Eugenia
- Sirius Introduction
- Create a graphical representation for your model
- Editor concepts with Sirius

#### Xtext

- Xtext framework overview
- Grammar definition
- Auto completion, validation and quickfixes
- Generation fragments and workflows
- Use cases: XCore, Spray, XTend
- Integrating Xtend generators in Xtext editors

#### Industrialization

- Using modeling project in a development project
- EMF extension points : validation, factory
- GenModelAddon, to separate generated and user code
- Integrating editors and generators in a Eclipse 4 'studio'

#### Exercises

- About fifteen concrete exercises based on YOUR meta model and developed using the latest Eclipse release.