

Einführung in das Graphical Modeling Framework

von Andreas Schuster

ex|Xcellent
solutions

**Erstellung grafischer DSL Editoren
mit Hilfe von Eclipse GMF**



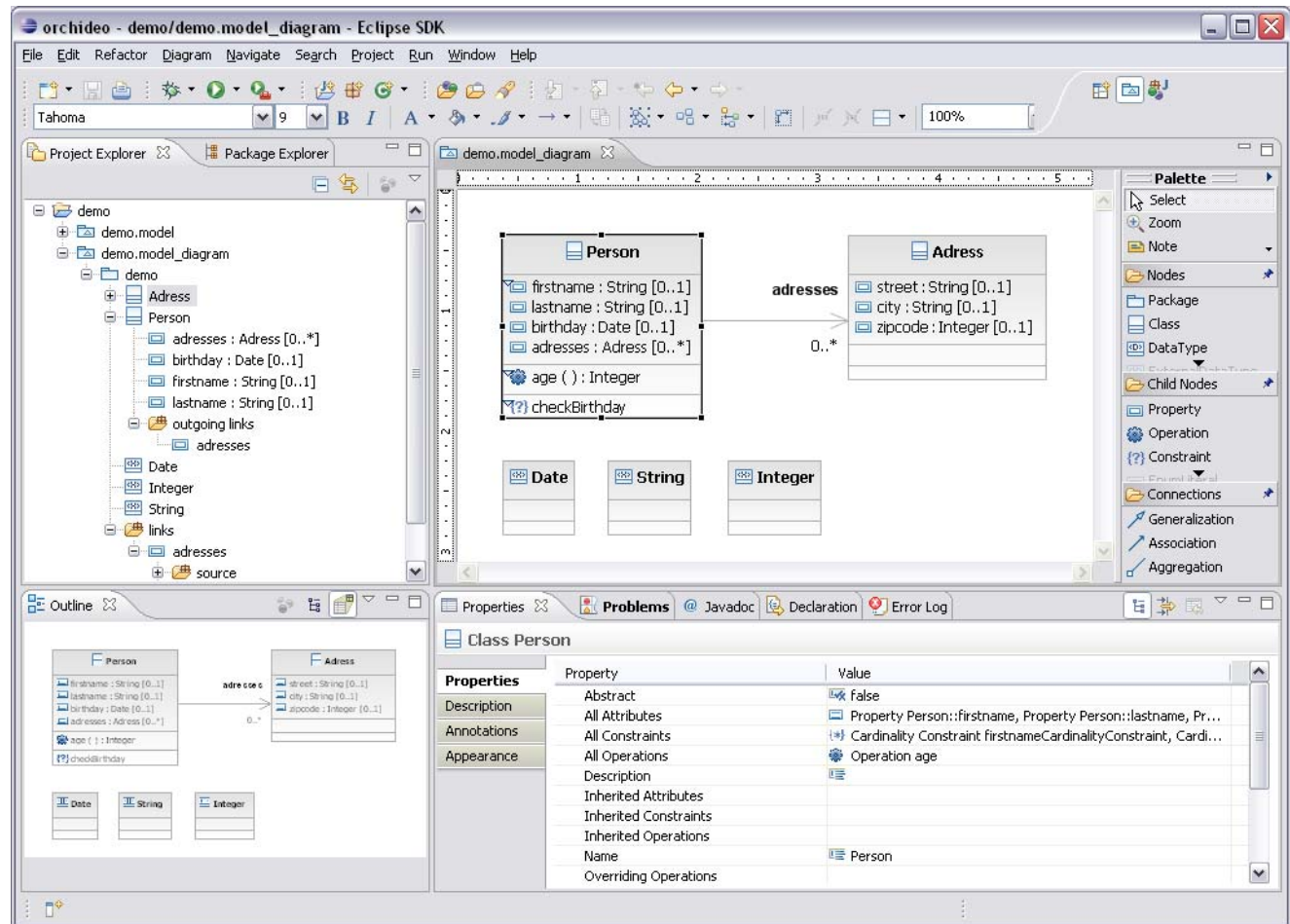
- x|** Der GMF Baukasten
 - | Überblick
 - | Einzelteile

- x|** Die GMF Spielwiese
 - | Tooling Workflow
 - | Erweiterungsmöglichkeiten

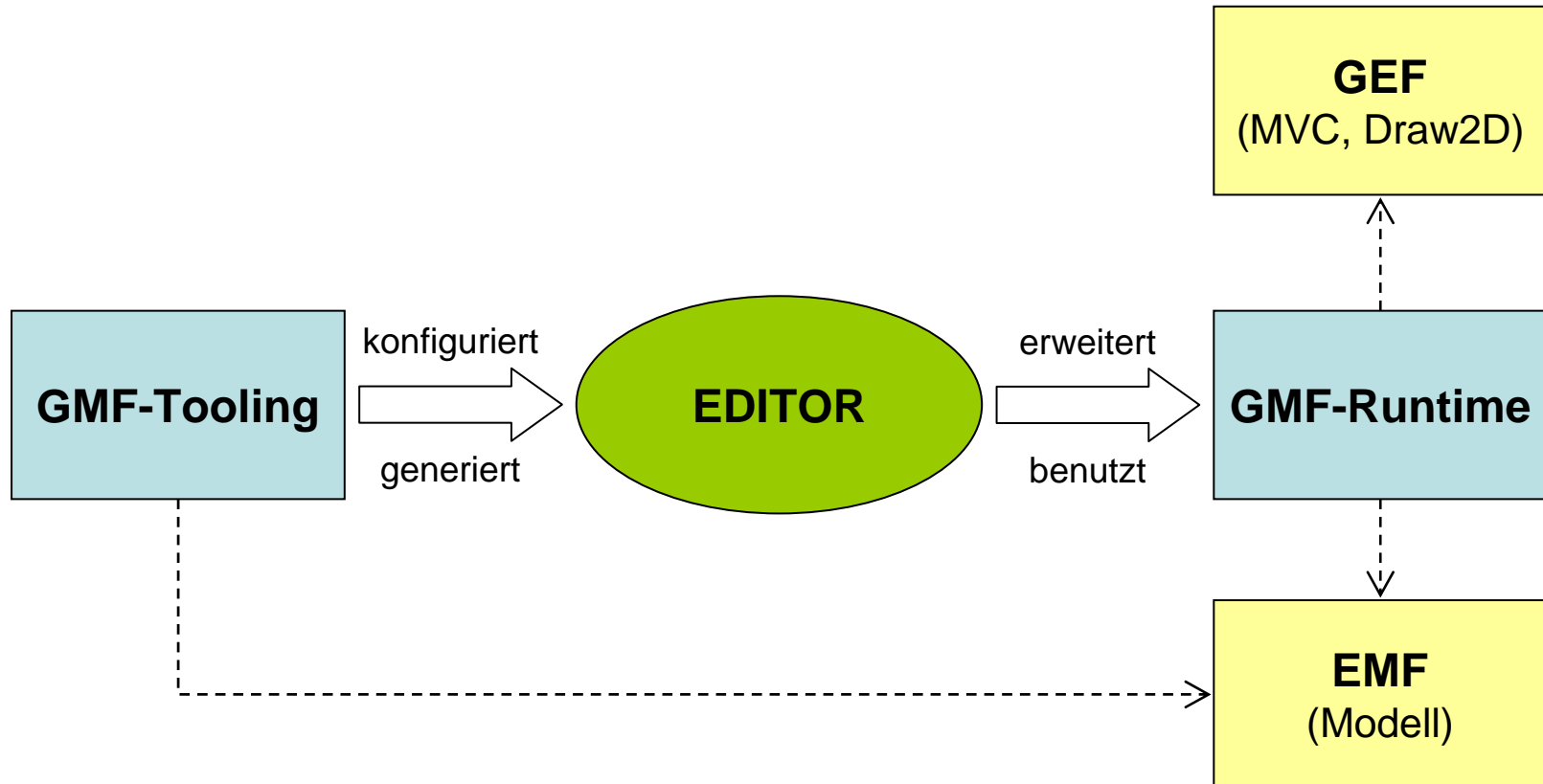
- x|** Live Demo

- x|** Fragen und Antworten

x| MDSD- und Generator-Framework zur Erstellung grafischer DSL Editoren



x| Überblick



x| GEF (Graphical Editing Framework)

- | Model-View-Controller
 - EditPart

- | Runtime (only)
 - Werkzeugpalette
 - Outline View
 - Regler und Lineale
 - Snap-to-Grid
 - Properties View
 - etc.

- | Low-Level-Komponenten
 - Draw2D Lightweight Toolkit

x| EMF (Eclipse Modeling Framework)

| Tooling

- Metamodell (Ecore)
- Code Generator

| Runtime

- Modell Listener
- Reflection
- Persistenz (XMI)
- Metamodell Integration
- Commands (Undo/Redo)
- Workbench Integration

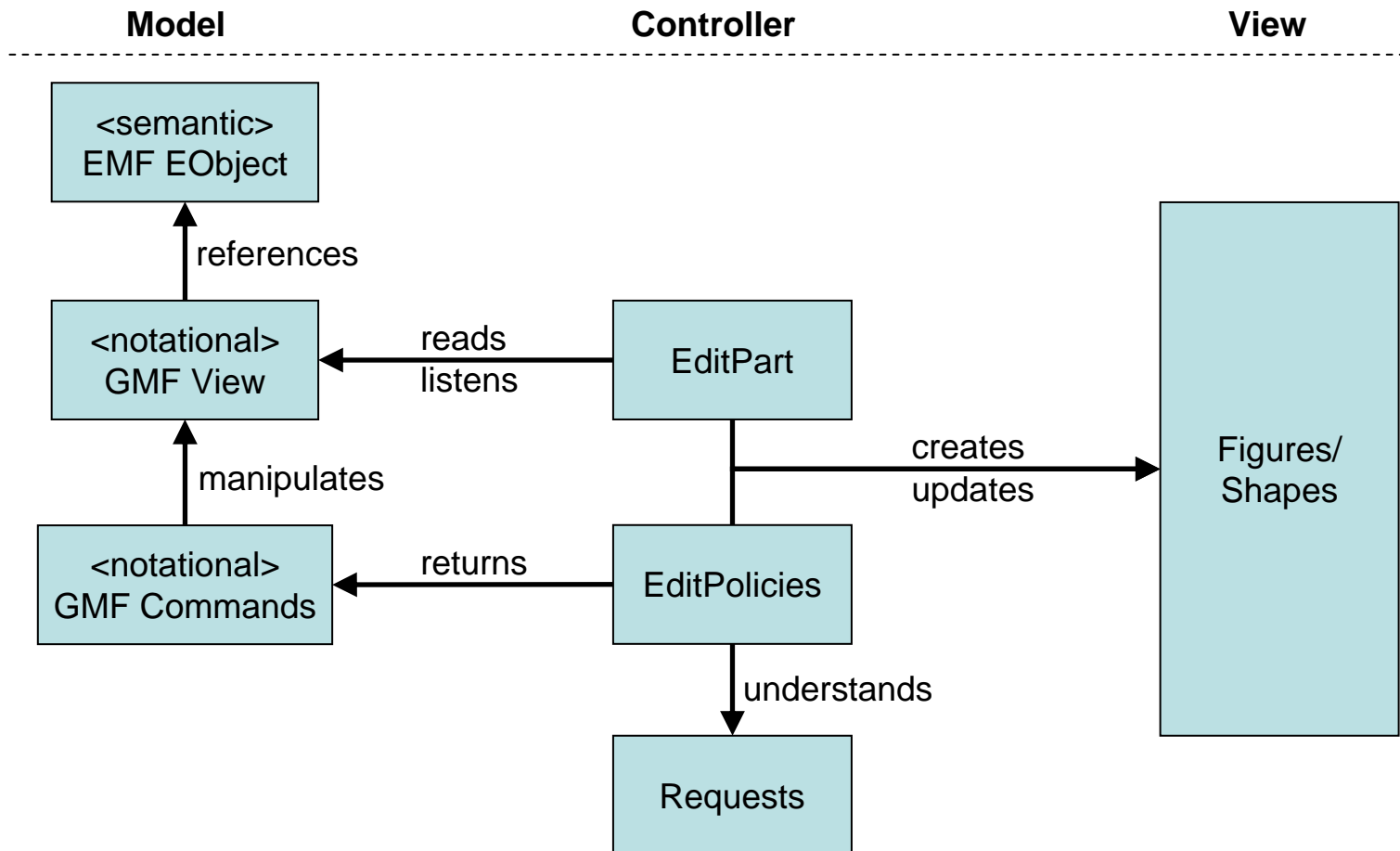
x| GMF - Runtime

- | Brücke zwischen GEF und EMF
 - MVC
 - Request → Command

- | Modelle
 - Domäne (semantic)
 - Diagramm (notational)

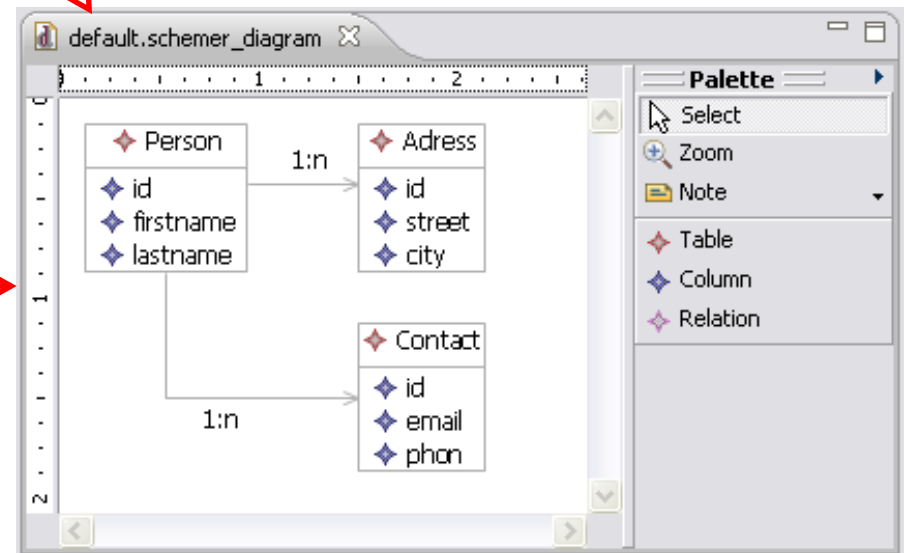
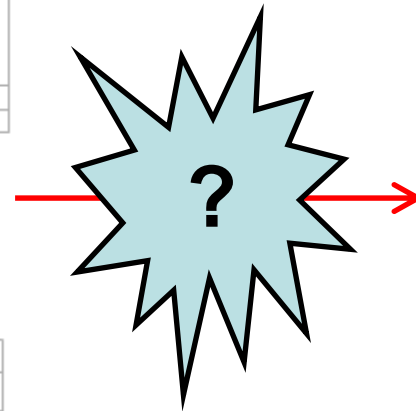
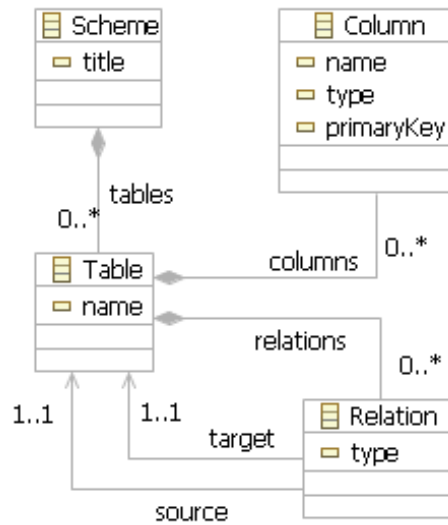
- | Wiederverwendbare Komponenten
 - Menüs / Action Bars
 - Views
 - Editor Komponenten
 - etc.

x| GMF - Runtime








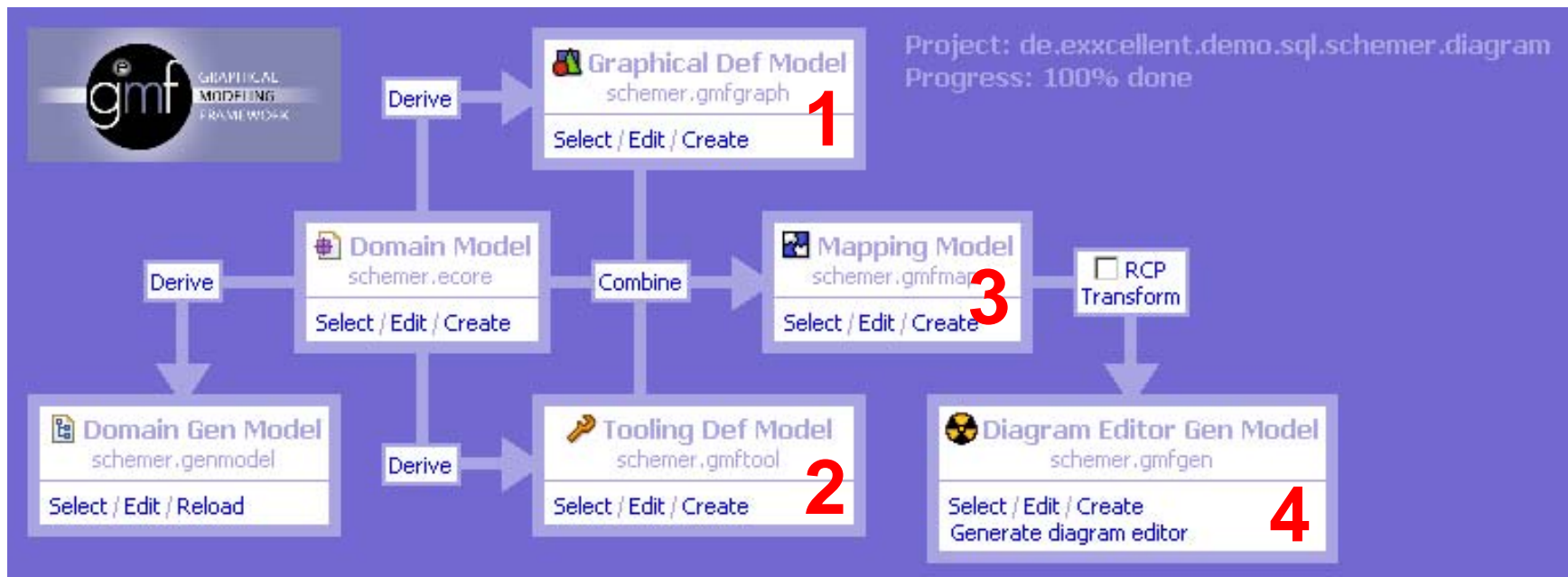
x| Motivation: von der Domäne über das Modell zum Editor

	Feld	Typ	Kollation	Attribute	Null
<input type="checkbox"/>	id	bigint(20)			Nein
<input type="checkbox"/>	firstname	varchar(255)	latin1_general_ci		Nein
<input type="checkbox"/>	lastname	varchar(255)	latin1_general_ci		Nein

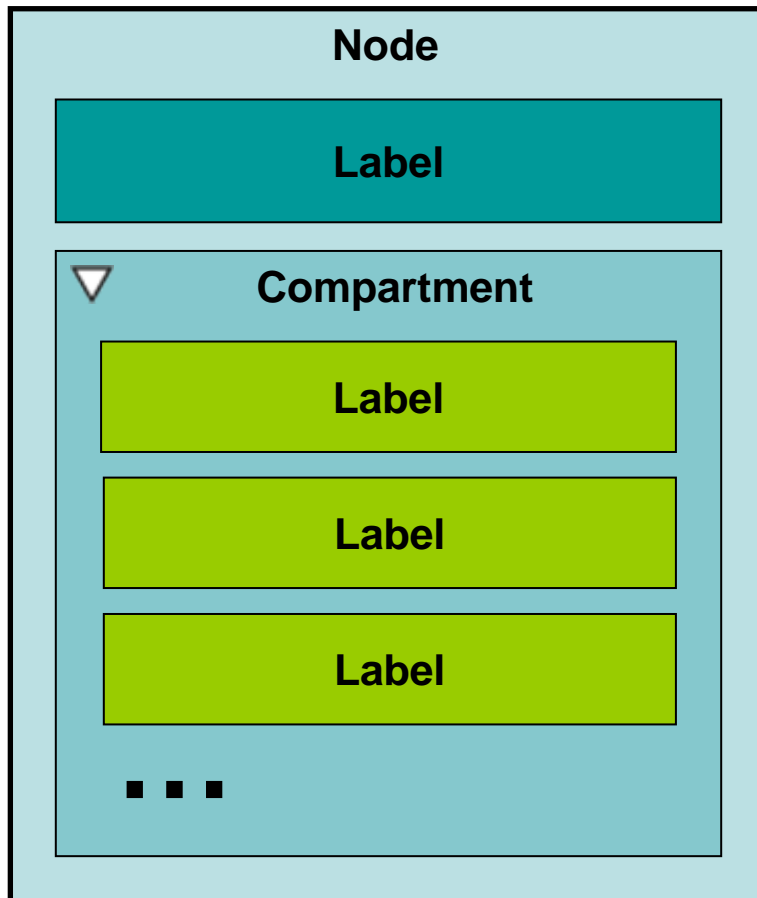


x| GMF – Tooling: Dashboard

- | Metamodell  } EMF
- | 1. Grafische Definition  }
- | 2. Werkzeug Definition  } GMF
- | 3. Mapping Definition  }
- | 4. Generatormodell  }




x| Grafische Definition










platform:/resource/de.excellent.demo.sql.schemer.diagra

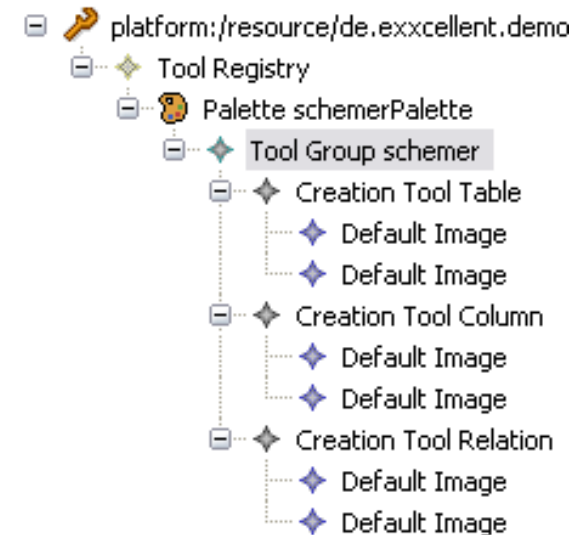
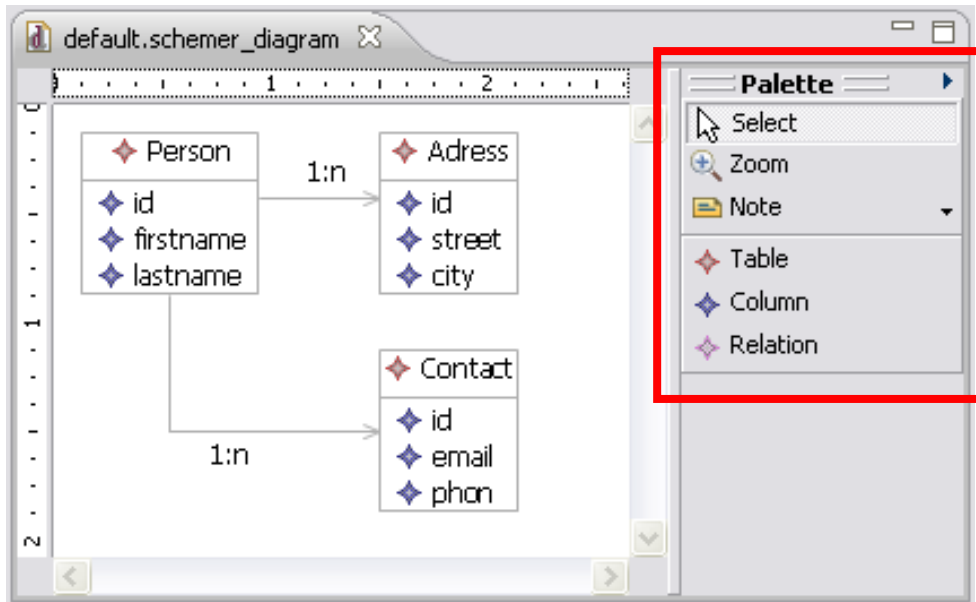
- Canvas schemer
 - Figure Gallery Default
 - Polyline Decoration Arrow
 - Figure Descriptor TableFigure
 - Rectangle TableFigure
 - Flow Layout true
 - Label TableNameFigure
 - Child Access getFigureTableNameFigure
 - Figure Descriptor RelationFigure
 - Figure Descriptor LabelFigure
 - Figure Descriptor CompartmentFigure
 - Node TableNode (TableFigure)
 - Connection RelationLink
 - Compartment Compartment (CompartmentFigure)
 - Diagram Label TableLabel
 - Diagram Label Label

Selection Parent List Tree Table Tree with Columns

Properties  GMF Dashboard





Property	Value
Descriptor	Figure Descriptor TableFigure
Fill	 true
Line Kind	 LINE_SOLID
Line Width	 1
Name	 TableFigure
Outline	 true
Xor Fill	 false
Xor Outline	 false

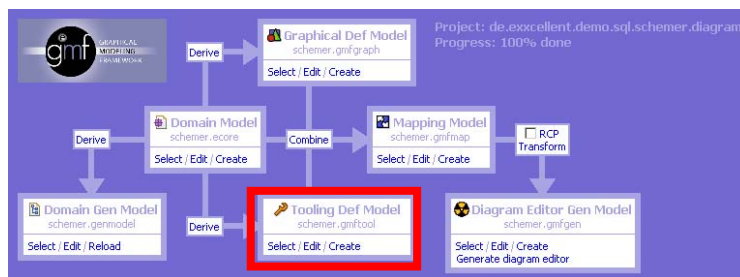
x| Werkzeugpalette



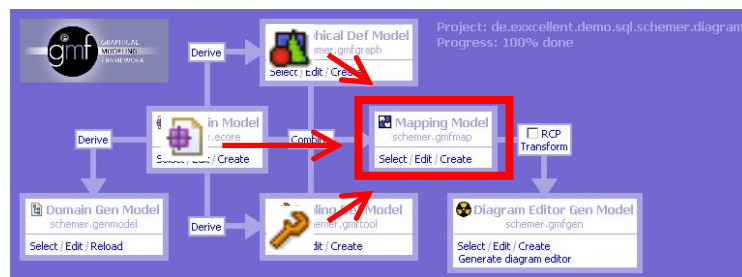
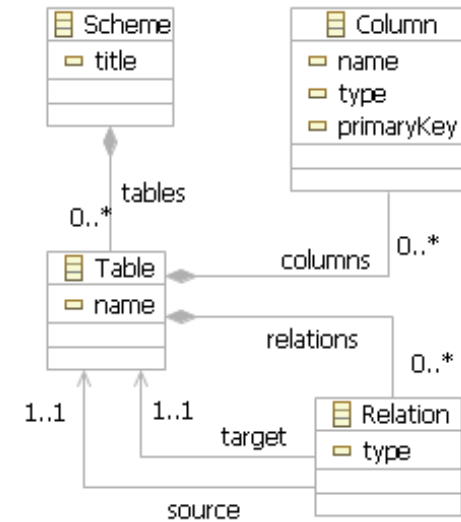
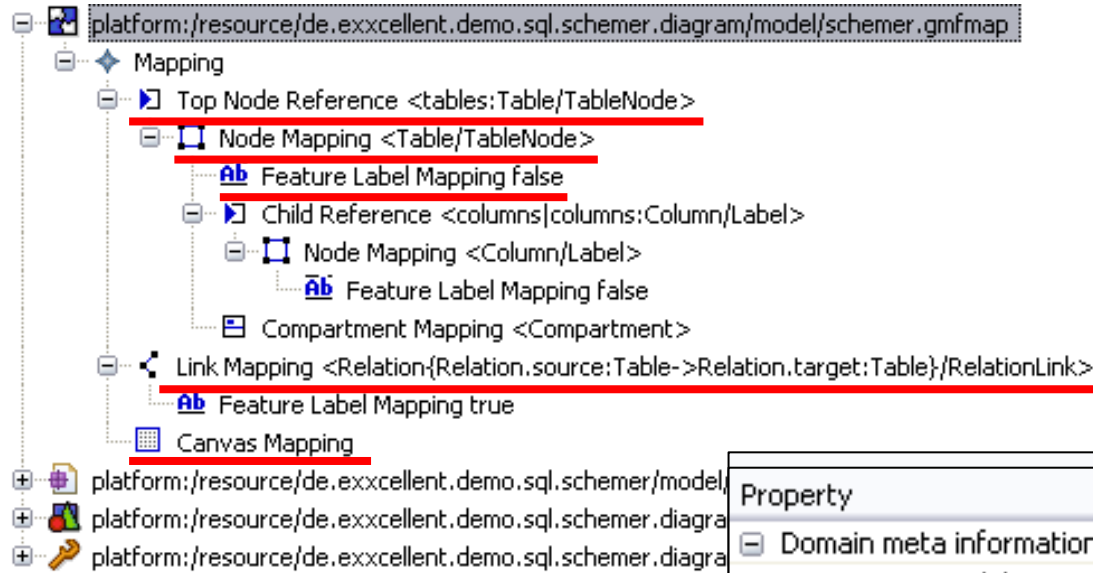
Selection Parent List Tree Table Tree with

Properties  GMF Dashboard

Property	Value
Active	
Collapsible	 false
Description	
Stack	 false
Title	 schemer



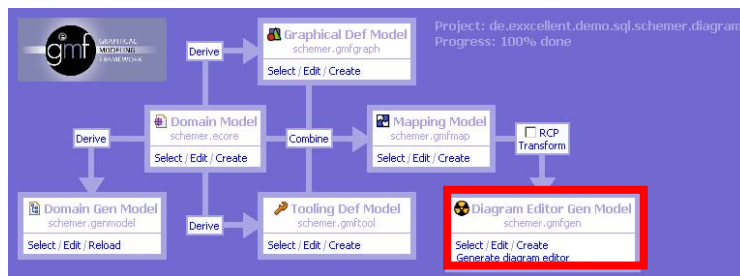
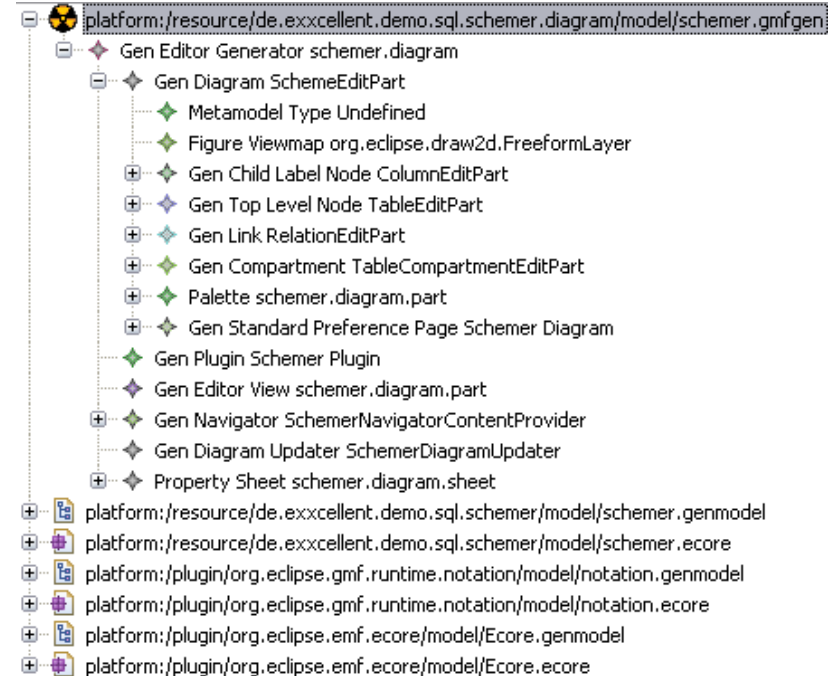
xl Mapping Definition



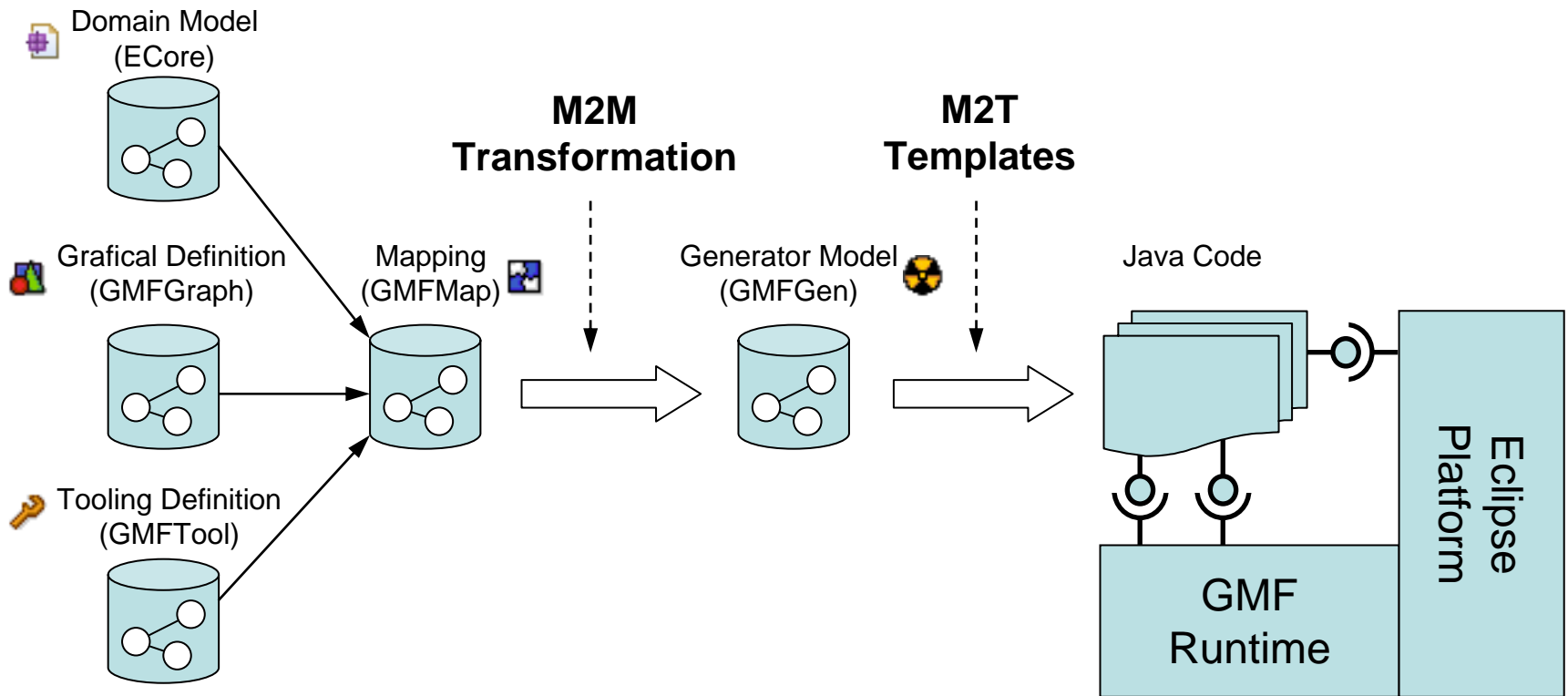
Property	Value
Domain meta information	
Domain Model	schemer
Element	Scheme
Misc	
Menu Contributions	
Palette	Palette schemerPalette
Toolbar Contributions	
Visual representation	
Diagram Canvas	Canvas schemer
Diagram Link	Connection RelationLink
Tool	Creation Tool Relation

x| Generator Modell

- | Konfiguration des Plugins
- | Diagrammelemente (EditParts)
 - Klassennamen,
 - IDs,
 - Factories, etc.
- | Preference Pages
- | Property Sheets
- | etc.

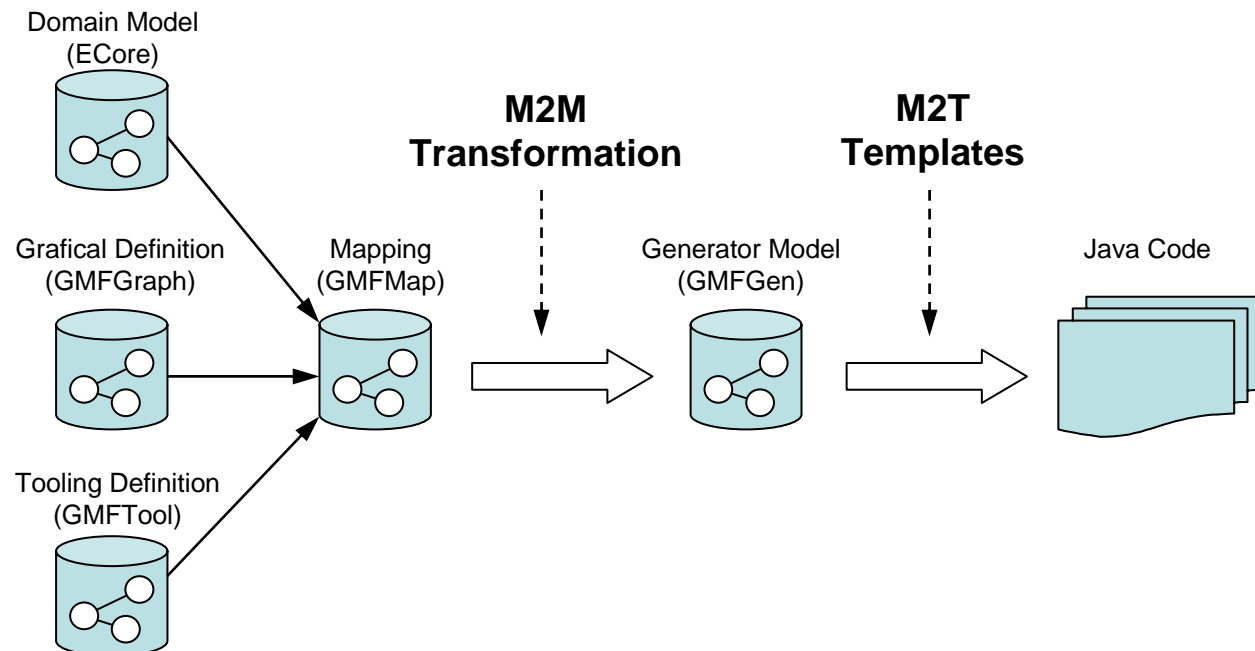


x| GMF – Tooling: Workflow



x| Anpassungs- und Erweiterungsmöglichkeiten

- | Modelle
- | Transformation
- | Templates
- | Code
- | Extensionpoints



Live Demo

x| Diskussion / Fragen

**x| Weiterführende Informationen gerne am Stand
| Ausstellungsbereich**

x| Besten Dank!