

Requirements Engineering and Management with Eclipse

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Agenda

- ✦ Context & Motivation
- ✦ Technologies
- ✦ Live-Demo
- ✦ Conclusion & Next Steps

How is it?

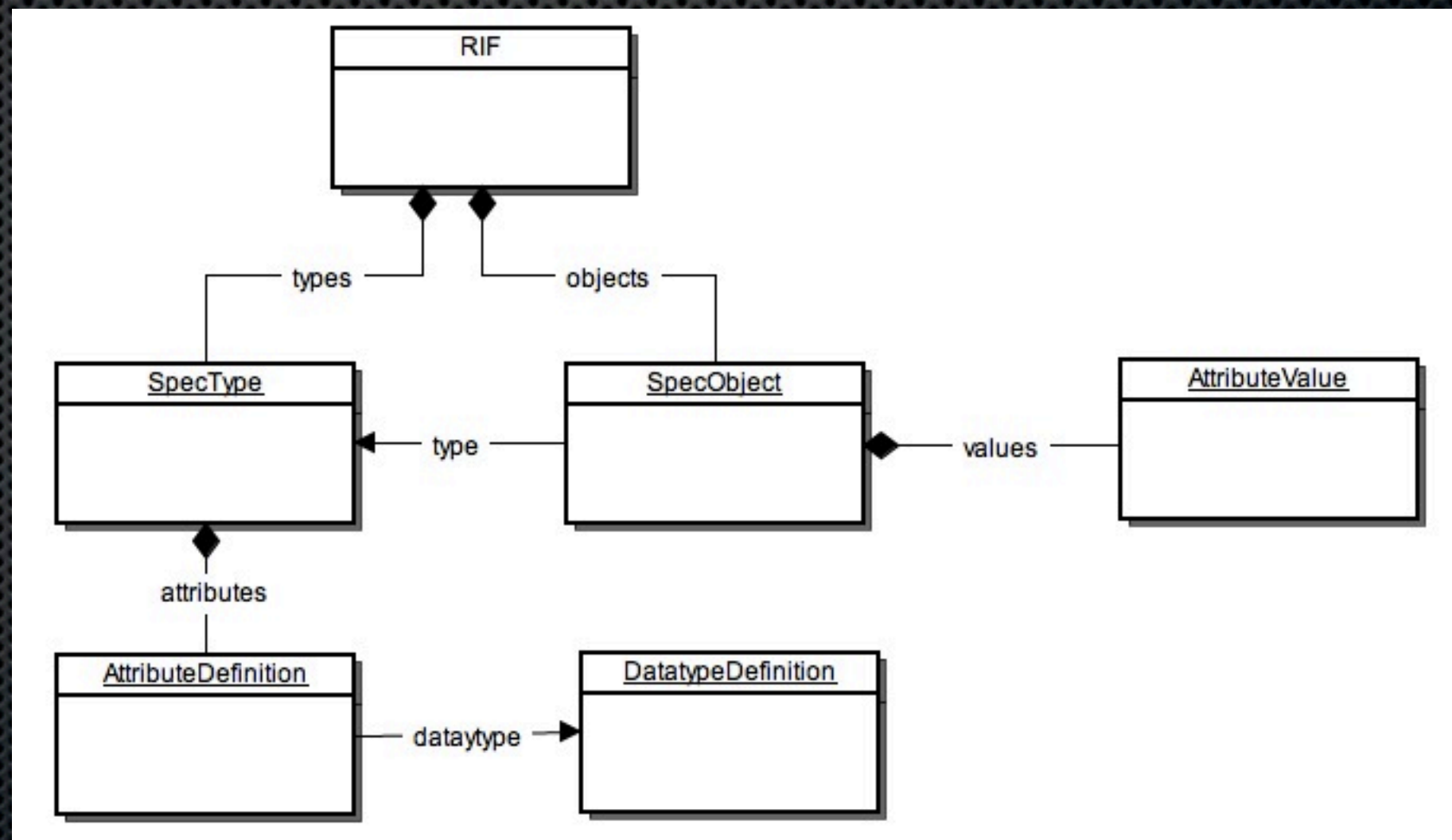
- ✦ Heterogeneous tools & artefacts are usual
- ✦ Bundled/integrated requirements engineering solutions address only parts of the overall landscape
- ✦ Quality: Tracing is important to do good Requirements Management
- ✦ Weak tool support: Requirements-Tracing throughout the complete development chain is difficult and is not a favourite development activity

VERDE

- ✦ „VERification- oriented & component-based model Driven Engineering for real-time embedded systems“
- ✦ Aim of providing a generic tool platform for the verification- and validation-orientated development of embedded systems
- ✦ Verde develops new tools and methods in the areas where there are gaps in existing tool-chains and procedures

RIF/ReqIF

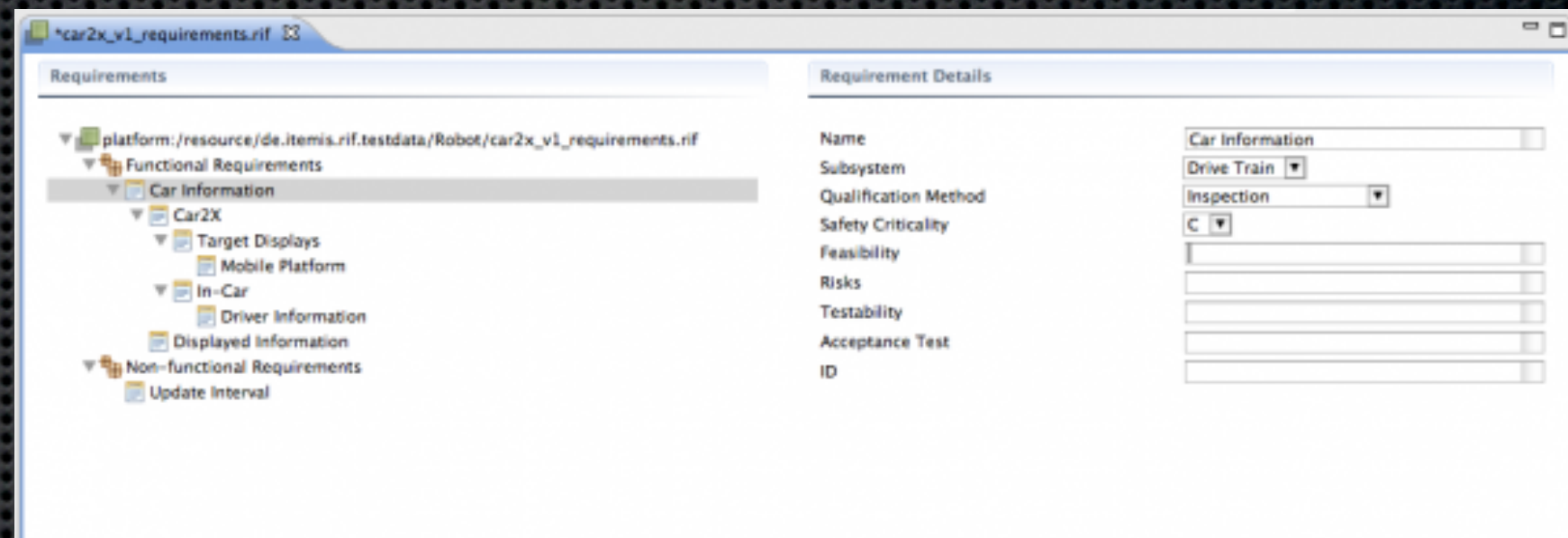
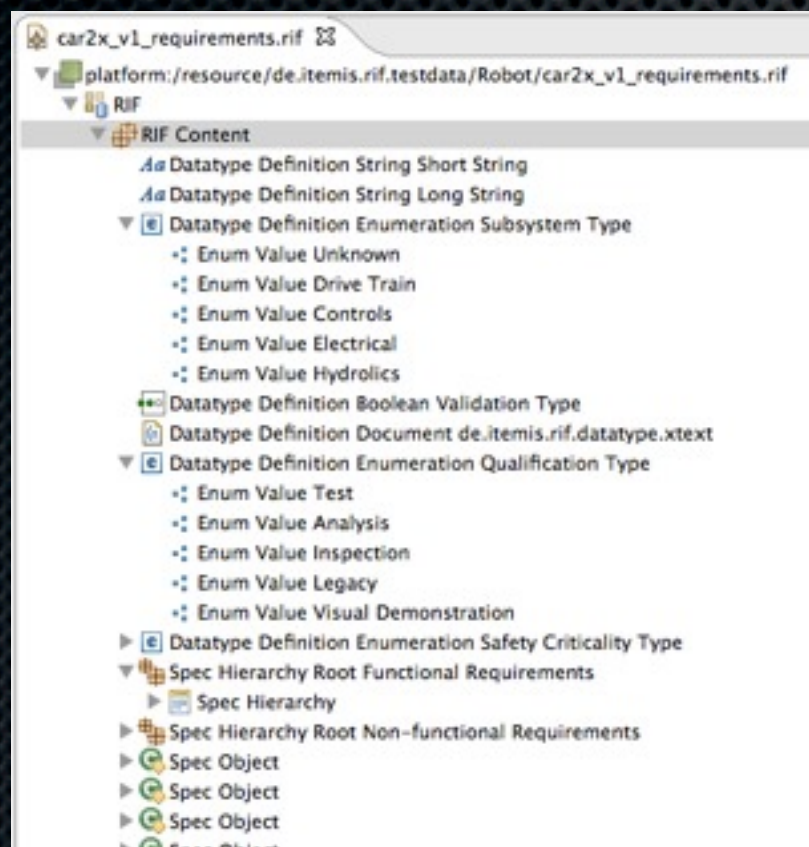
- ✧ Modular
- ✧ Internal DSL



RIF/ReqIF Core

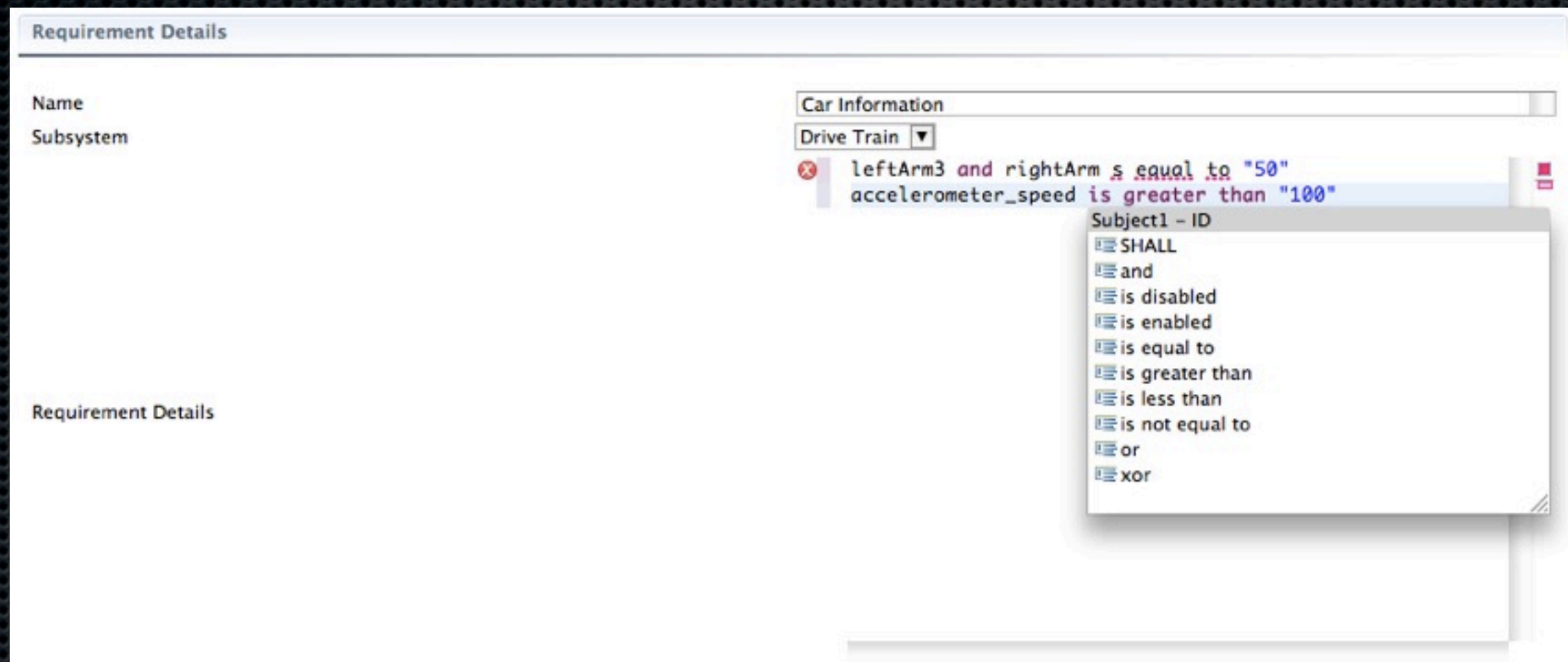
- ✦ Ecore Model, including serialisation to XML
 - ✦ RIF 1.1a - planned
 - ✦ RIF 1.2 - done
 - ✦ ReqIF Beta2 - almost done
- ✦ Derived from the specification by model transformation
- ✦ Driven by itemis
- ✦ EPL (Eclipse Public License)
- ✦ Currently submitting an Eclipse project proposal

RIF/ReqIF Editor



Requirement Details	
Name	Car Information
Subsystem	Drive Train
Qualification Method	Inspection
Safety Criticality	C
Feasibility	
Risks	
Testability	
Acceptance Test	
ID	

Be more formal with Xtext



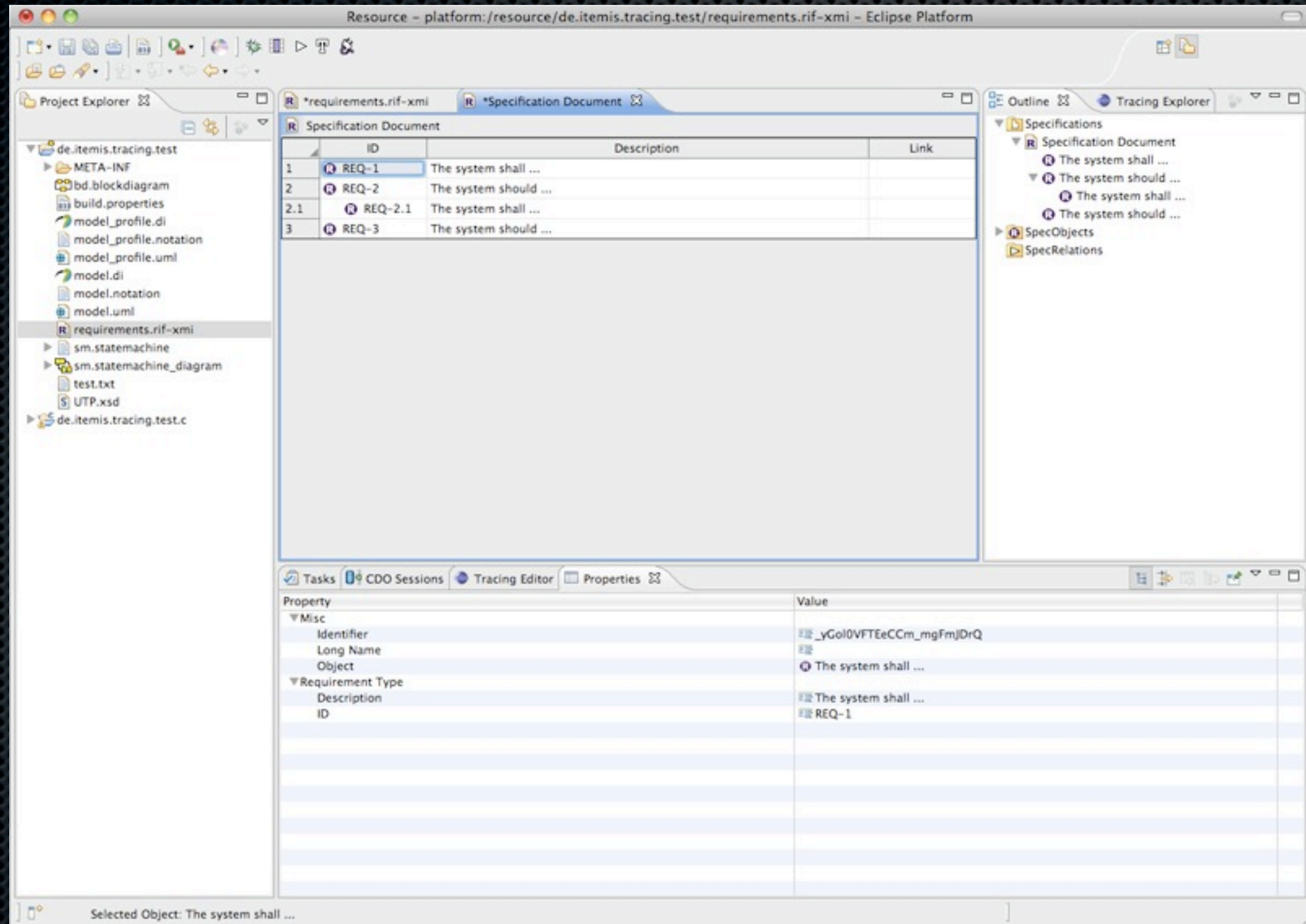
Alternative UI



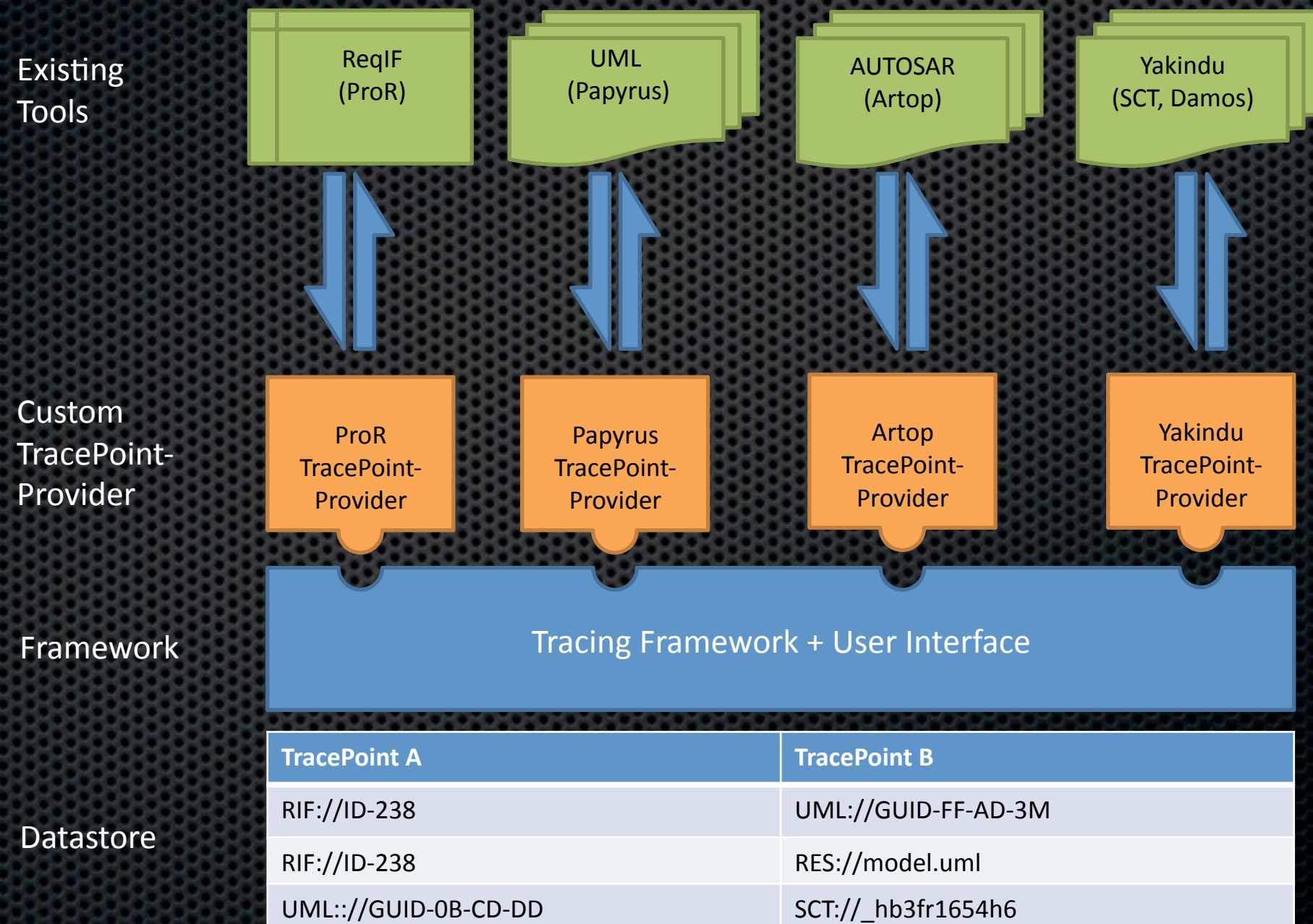
- ✦ Deploy-sponsored project
- ✦ Cooperation of itemis and Heinrich Heine University Dusseldorf
- ✦ Uses the Verde RIF/ReqIF Core
- ✦ Xtext feature integrated

Alternative UI

Pro³



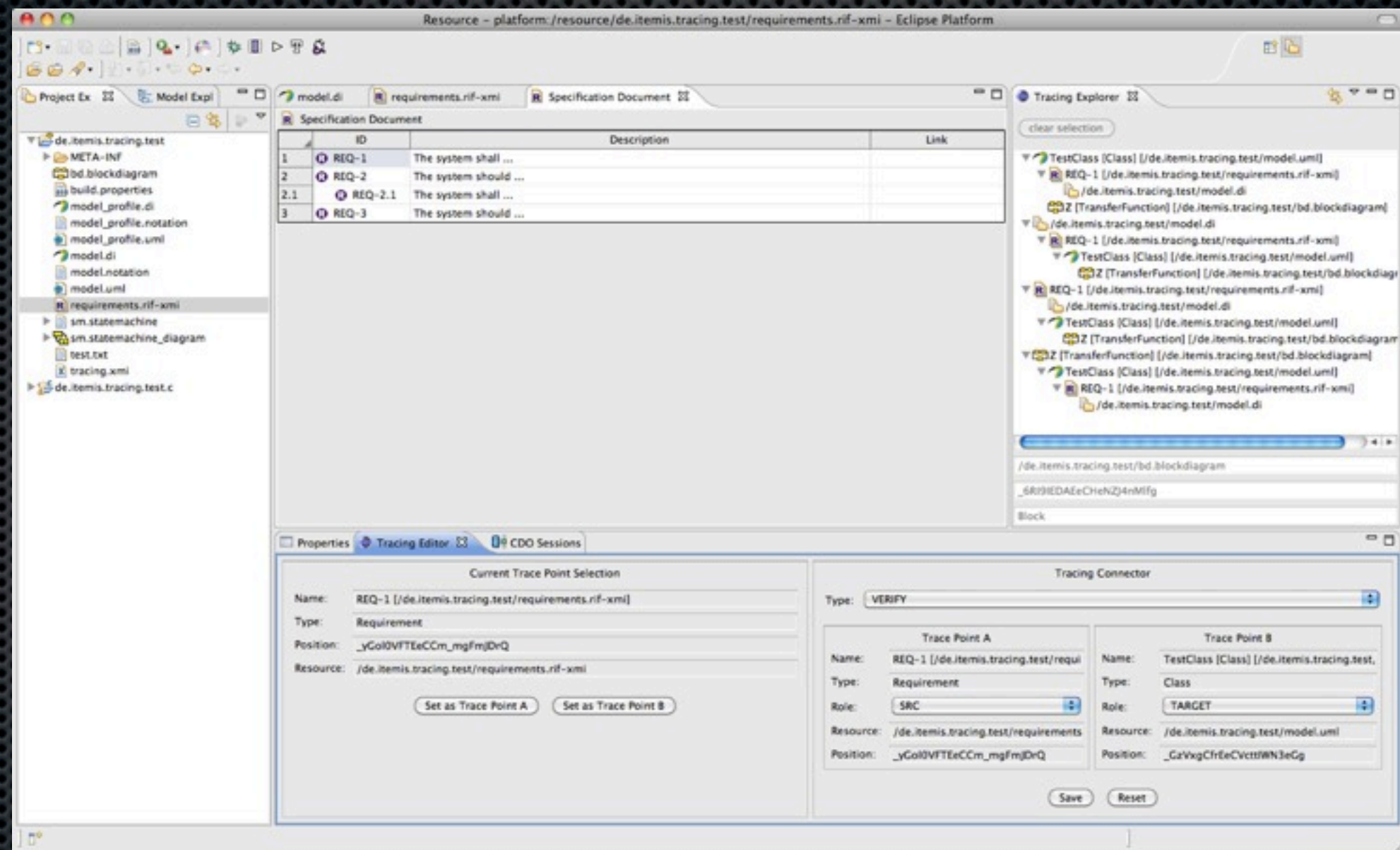
Tracing



Tracing



- ✦ Editor
- ✦ Navigator
- ✦ Reports
- ✦ EPL



The screenshot displays the Eclipse IDE interface with the following components:

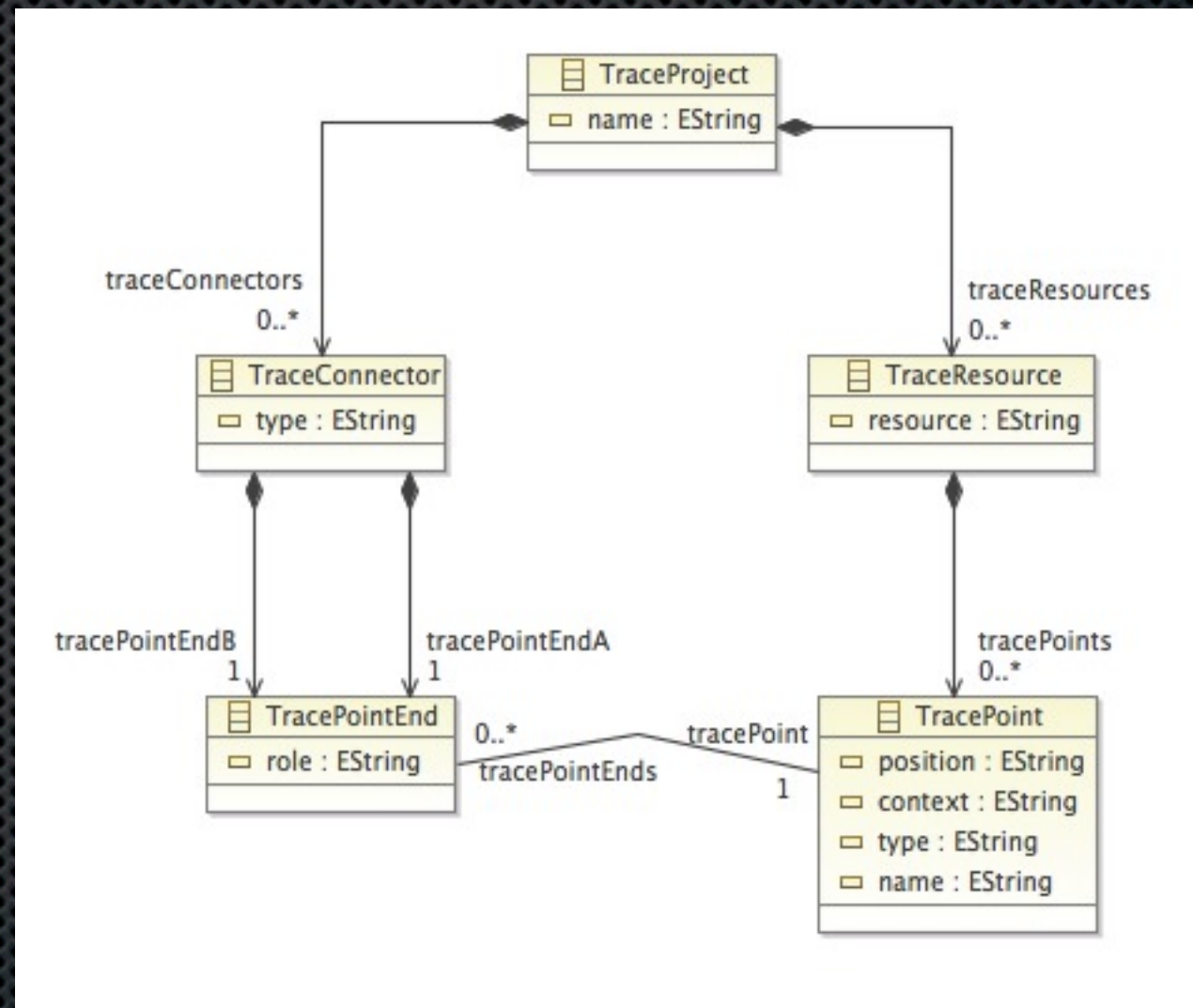
- Project Explorer:** Shows the project structure for 'de.itemis.tracing.test', including files like 'META-INF', 'bd.blockdiagram', 'build.properties', 'model_profile.di', 'model_profile.uml', 'model.di', 'model.notation', 'model.uml', 'requirements.rif-xmi', 'sm.statemachine', 'sm.statemachine_diagram', 'test.txt', and 'tracing.xml'.
- Specification Document:** A table listing requirements with columns for ID, Description, and Link.

ID	Description	Link
1	REQ-1 The system shall ...	
2	REQ-2 The system should ...	
2.1	REQ-2.1 The system shall ...	
3	REQ-3 The system should ...	
- Tracing Explorer:** A tree view showing the hierarchy of tracing elements, including 'TestClass [Class]' and 'REQ-1'.
- Tracing Editor:** A panel for configuring trace points. It includes a 'Current Trace Point Selection' section with fields for Name, Type, Position, and Resource, and buttons to 'Set as Trace Point A' and 'Set as Trace Point B'. It also features a 'Tracing Connector' section with fields for Name, Type, Role, Resource, and Position for both 'Trace Point A' and 'Trace Point B', along with 'Save' and 'Reset' buttons.

Tracing

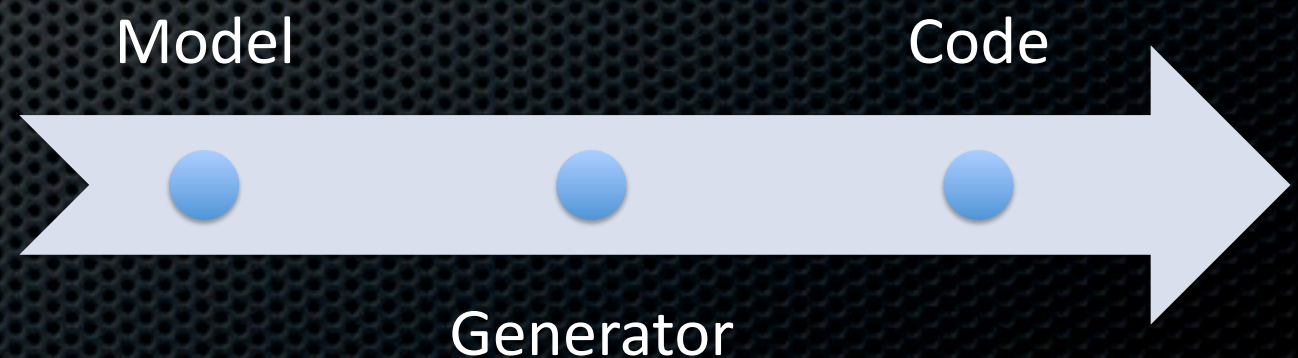


- ✦ Loose coupling
- ✦ EMF serialization
 - ✦ CDO resources
 - ✦ File resources



Next steps

- ✦ Custom Queries
- ✦ Reports
- ✦ Sync features
- ✦ Import features
- ✦ Generator Tracing



A photograph of a young child with blonde hair, seen from behind, wearing a blue shirt. The child's right arm is raised high, with the hand open and fingers spread. In the background, a world map is visible on the left, and a whiteboard with colorful drawings is on the right. The scene is brightly lit, suggesting a classroom environment.

Questions ?

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