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Introducing Collaboro: Collaborative DSL/DSML Definition

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Introducing Collaboro: Collaborative DSL/DSML Definition

Hugo Bruneliere

AtlanMod team (Inria, Mines Nantes & LINA)

EclipseCon France 2013 – Ignite Talks
Wednesday 5th of June 2013

Defining DSLs/DSMLs...

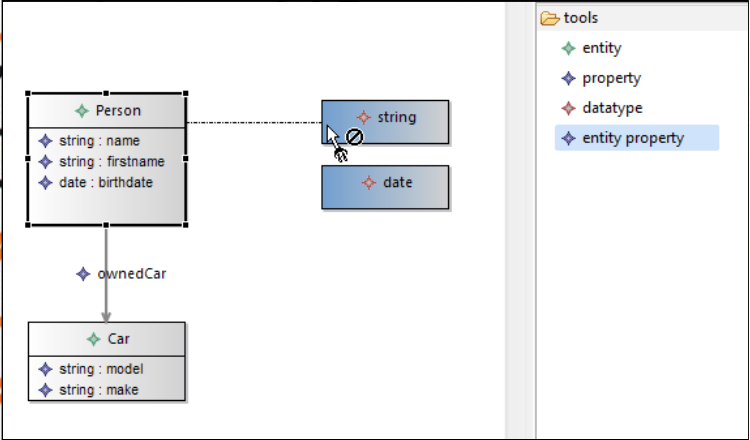
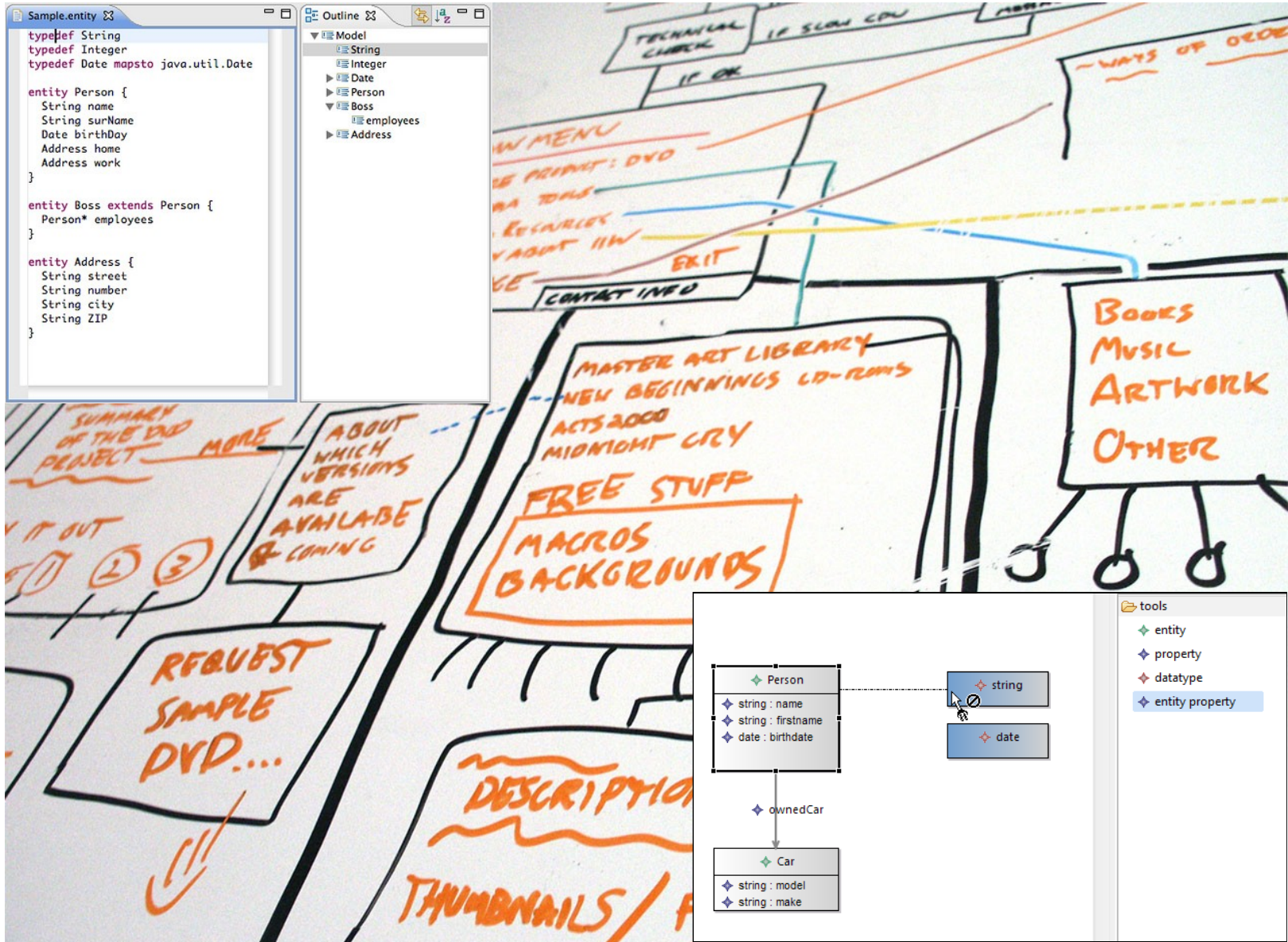
```
Sample.entity  Outline  100%  1/2
```

```
typedef String
typedef Integer
typedef Date mapsto java.util.Date

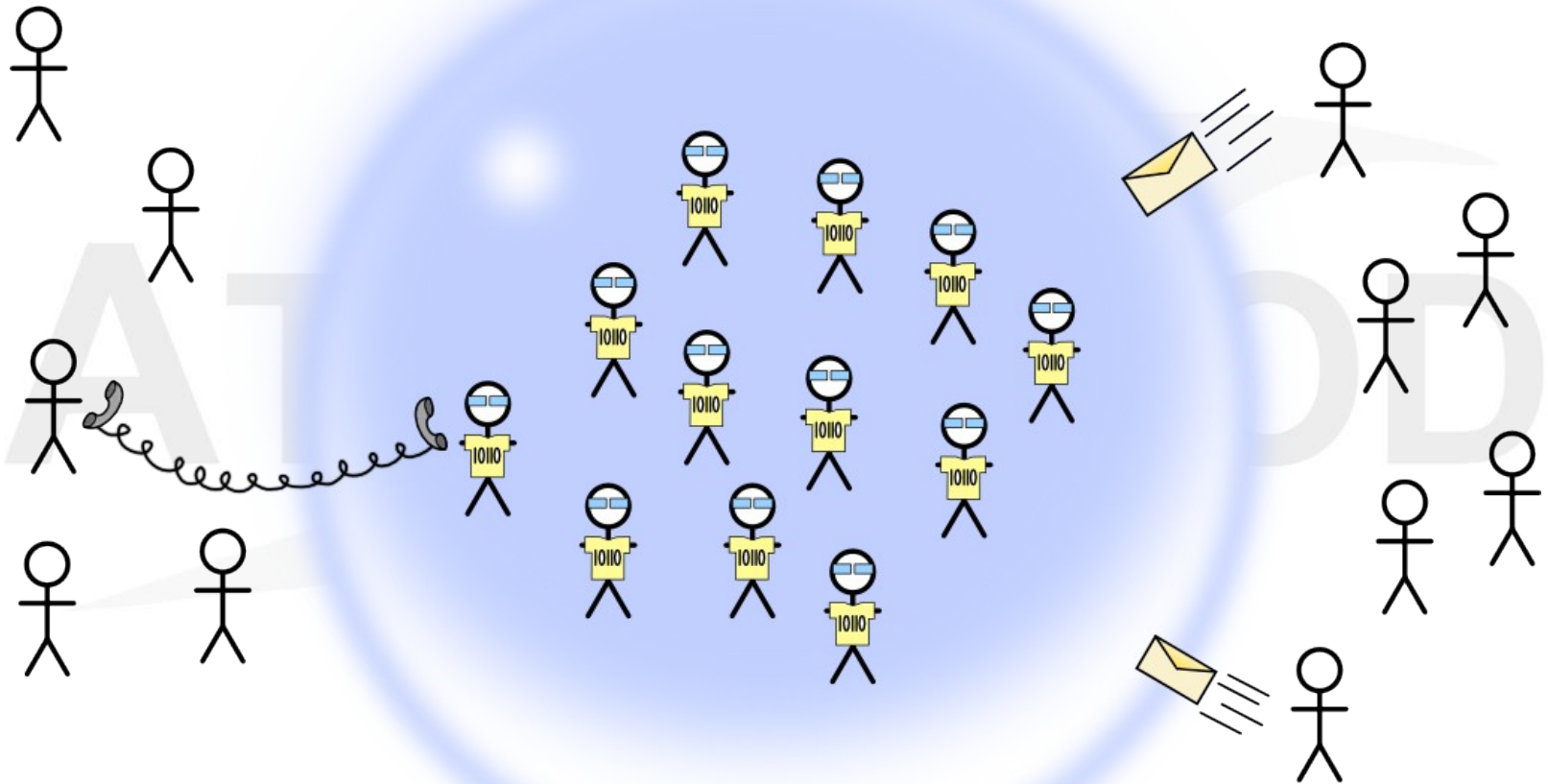
entity Person {
  String name
  String surName
  Date birthDay
  Address home
  Address work
}

entity Boss extends Person {
  Person* employees
}

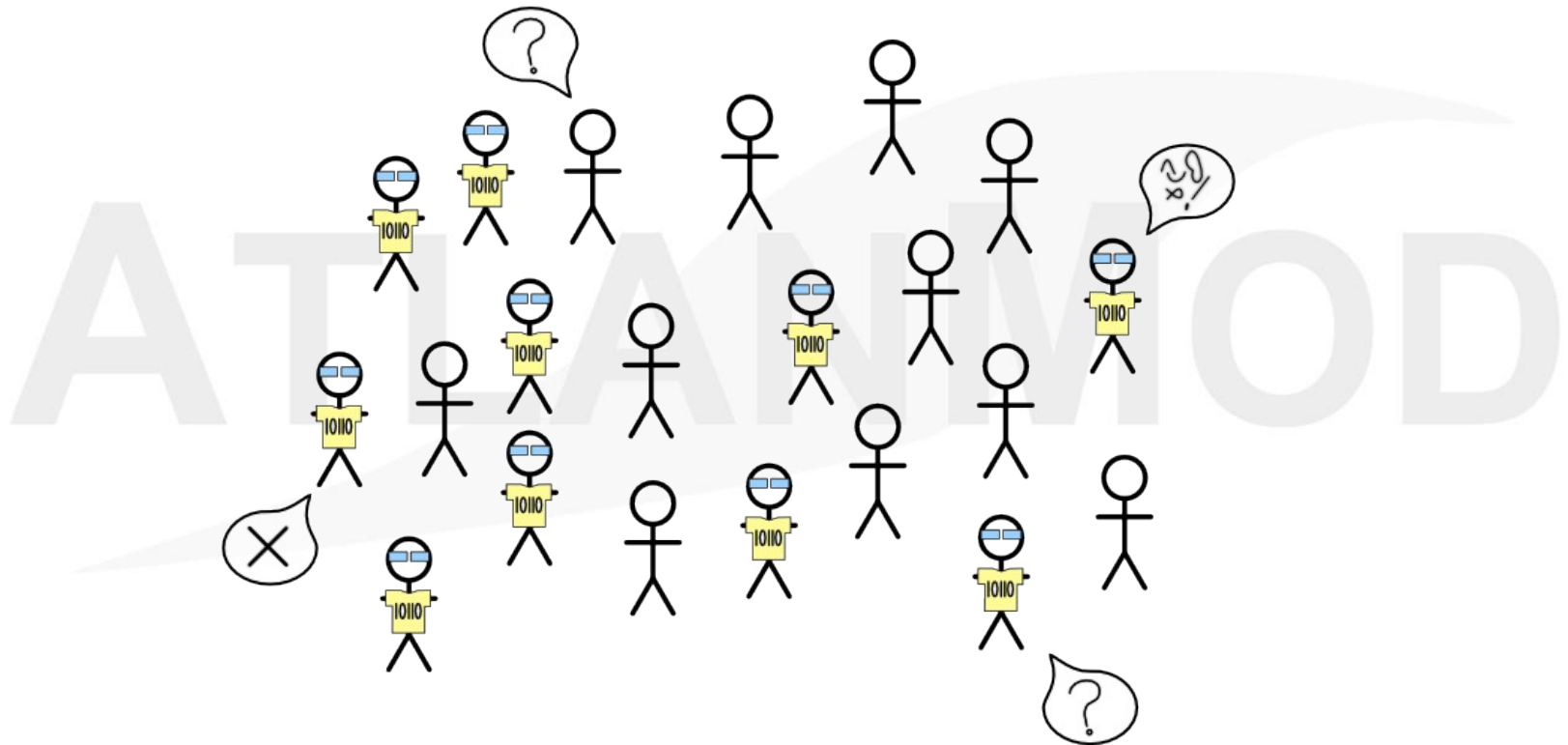
entity Address {
  String street
  String number
  String city
  String ZIP
}
```



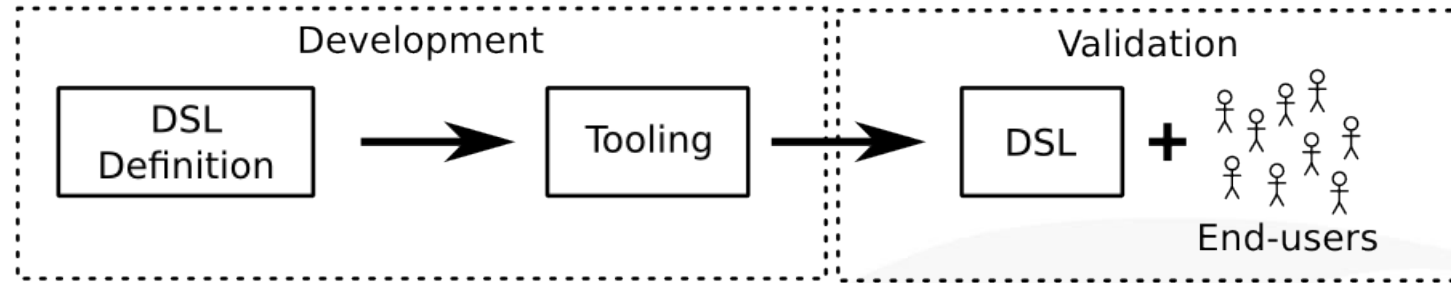
Defining DSLs/DSMLs “separately”



Defining DSLs/DSMLs collaboratively

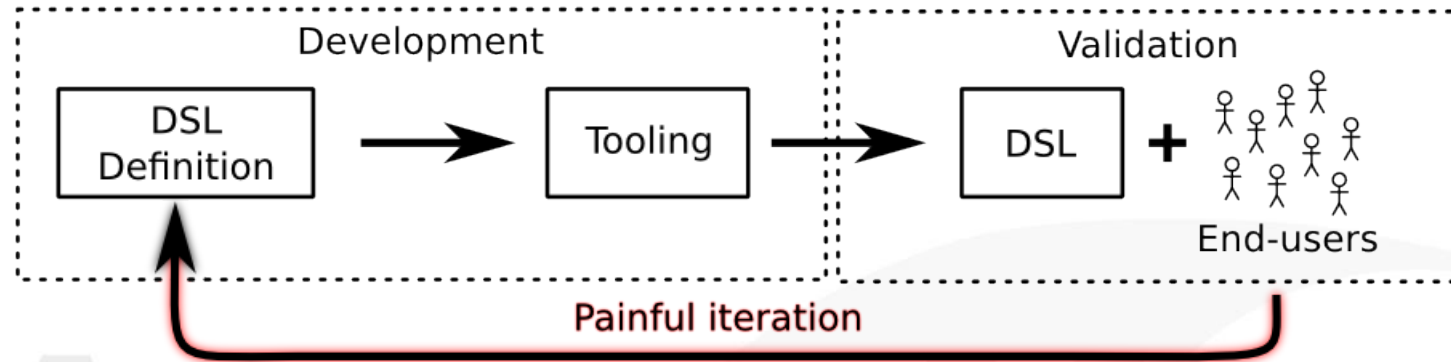


Collaboro: Enabling the collaborative definition of DSLs



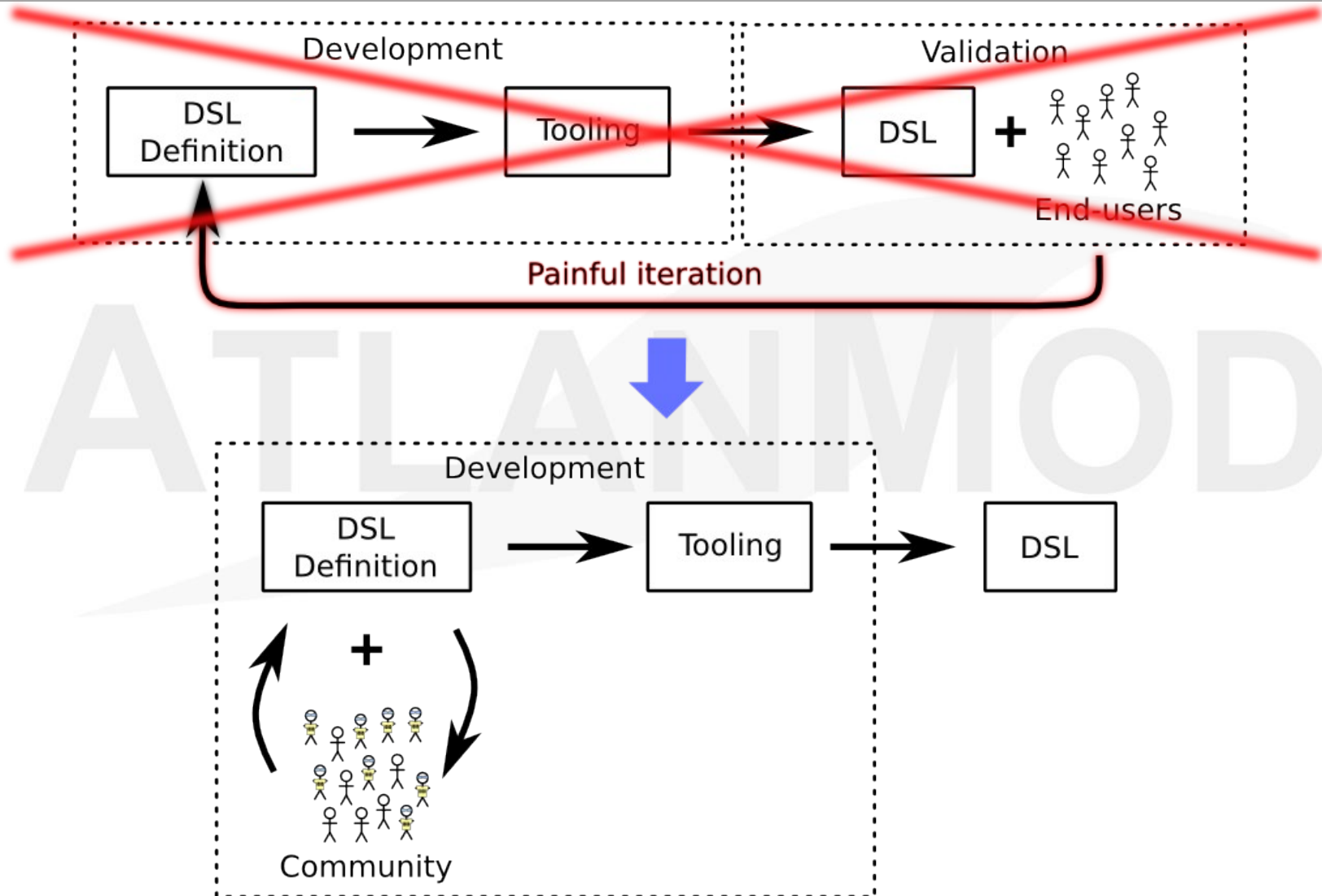
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Collaboro: Enabling the collaborative definition of DSLs

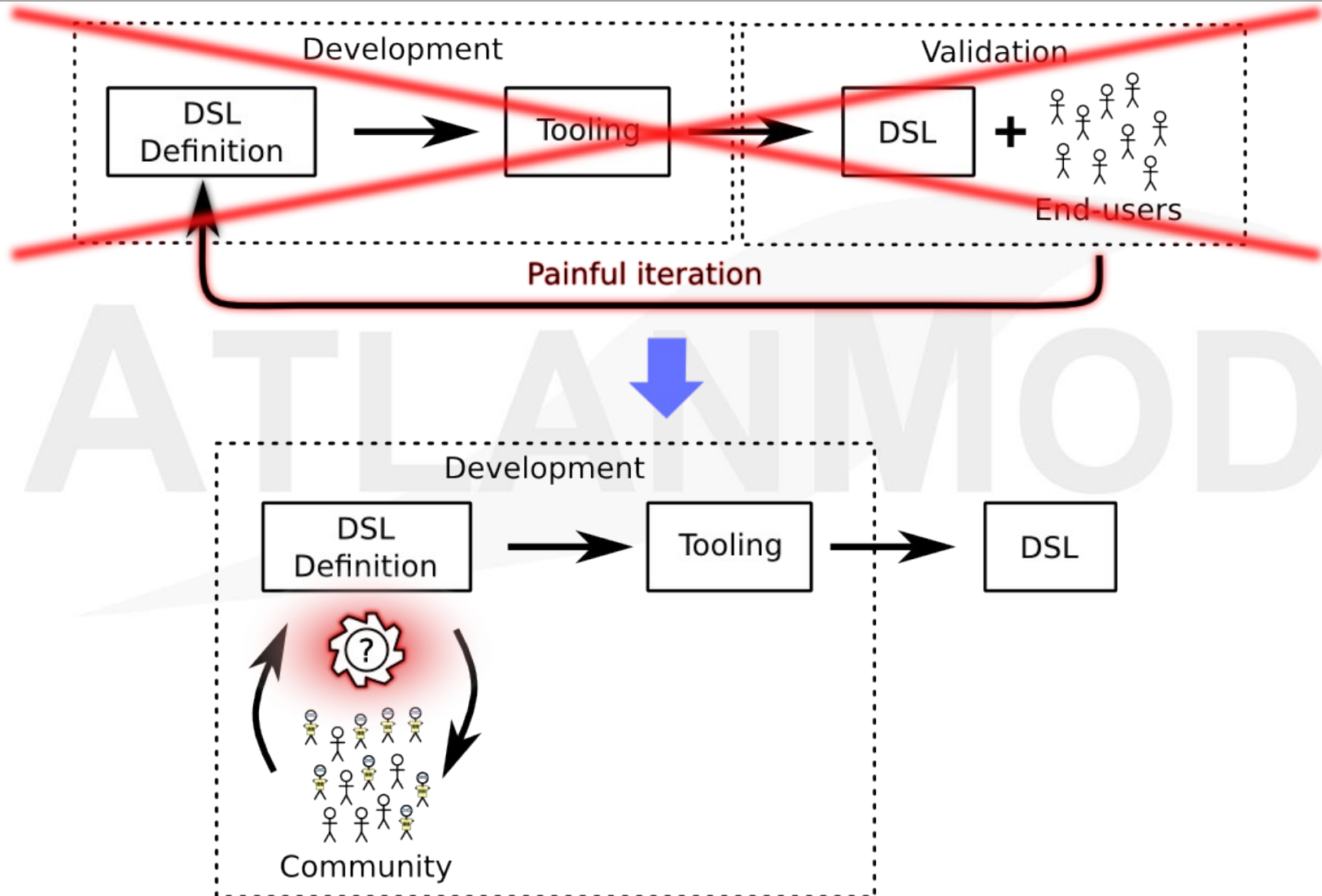


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Collaboro: Enabling the collaborative definition of DSLs



Collaboro: Enabling the collaborative definition of DSLs



Collaboro in a few words

- Collaboro - an approach & supporting infrastructure
- Objective: *make DSL/DSML definition process more participative, meaning that both developers and users of the language can collaborate together to create and evolve it*
- Tool under development – currently available as an EclipseLab

Collaboro tooling: Workbench

The screenshot displays the Collaboro Workbench interface, which is divided into several panes:

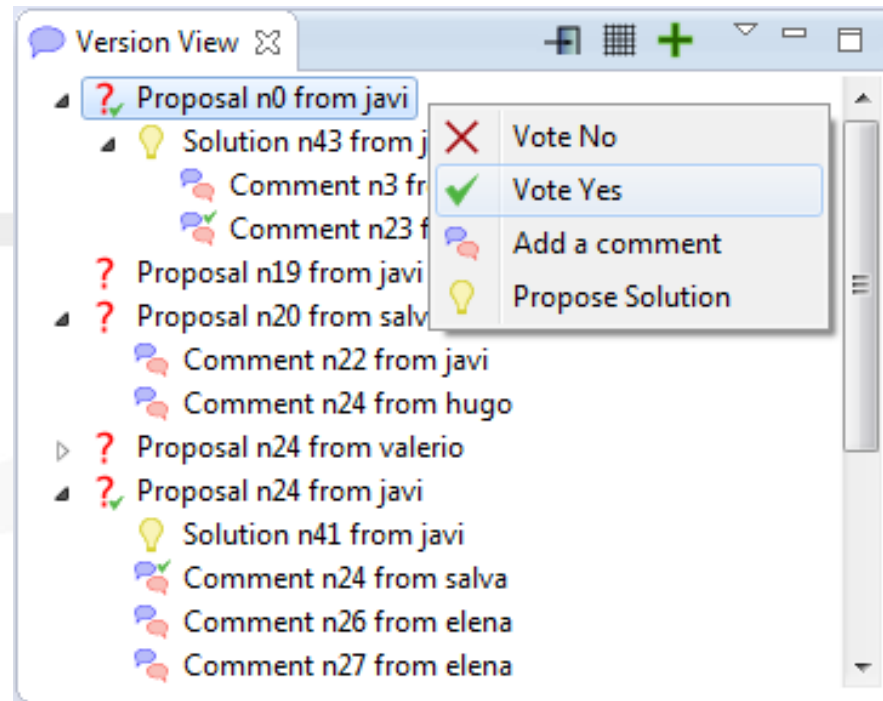
- Package Explorer:** Shows a project structure for 'platform:/resource/fr.inria.atlanmod.coll' containing a 'modiscoworkflow' package with various elements like 'Element', 'Workflow -> Element', 'Work -> Element', 'WorkParameter', 'Direction', 'WorkParameterValue', 'WorkParameterStringValue -> Wc', 'WorkParameterStringListValue ->', 'WorkParameterBooleanValue -> \', 'WorkParameterIntegerValue -> W', 'WorkParameterMapValue -> Wor', 'WorkParameterEntryValue [java.u', and another 'modiscoworkflow' package.
- Version View:** Displays a 'Solution n43 from javi' with associated comments: 'Comment n3 from hugo' and 'Comment n23 from salva', and a proposal: 'Proposal n19 from iavi'.
- Collaboration View:** Shows details for a collaboration, including:
 - Proposed by: hugo
 - Rationale: OK for a first proposition.
 - Votes Agree: elena
 - Votes Disagree: (empty)
- Notation View:** Displays a notation snippet:

```
work <value of 'name' attribute> :  
previous : <value of 'previous' reference>
```

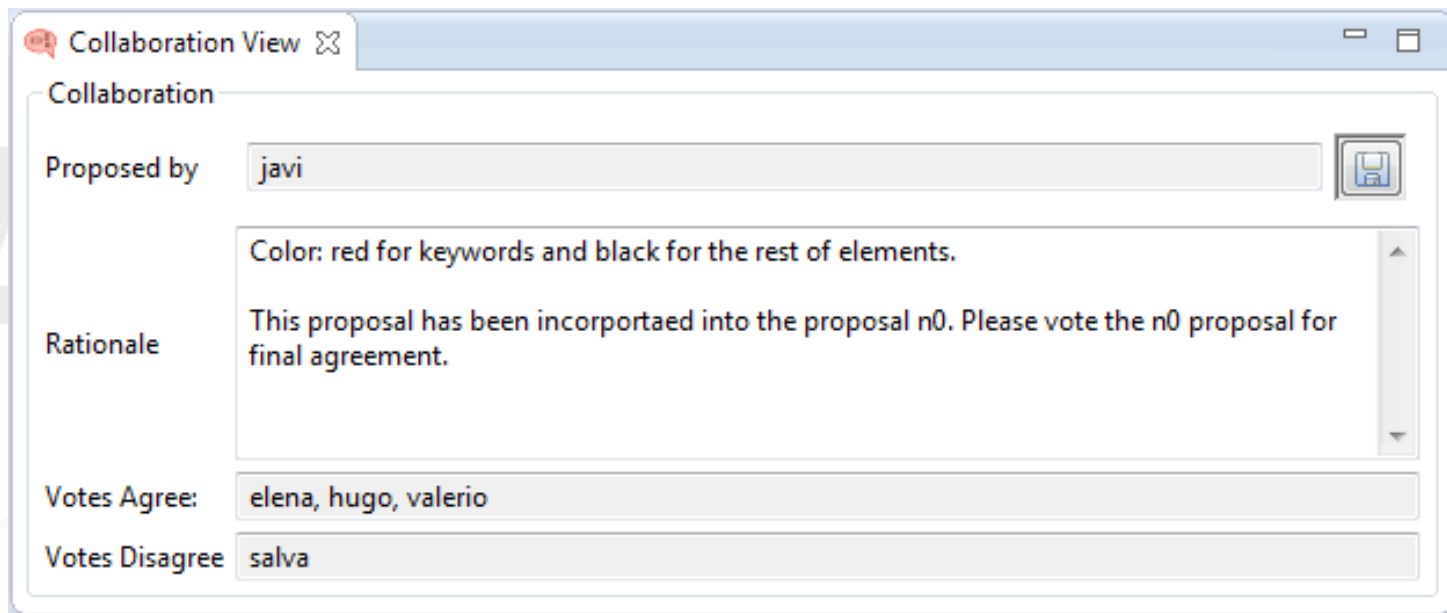
A context menu is open over the 'Collaboro' tab, listing the following actions:

- Save History Model
- Reset Collaboro Engine
- Execute Decision Engine
- Apply accepted proposals

Collaboro tooling: Version view



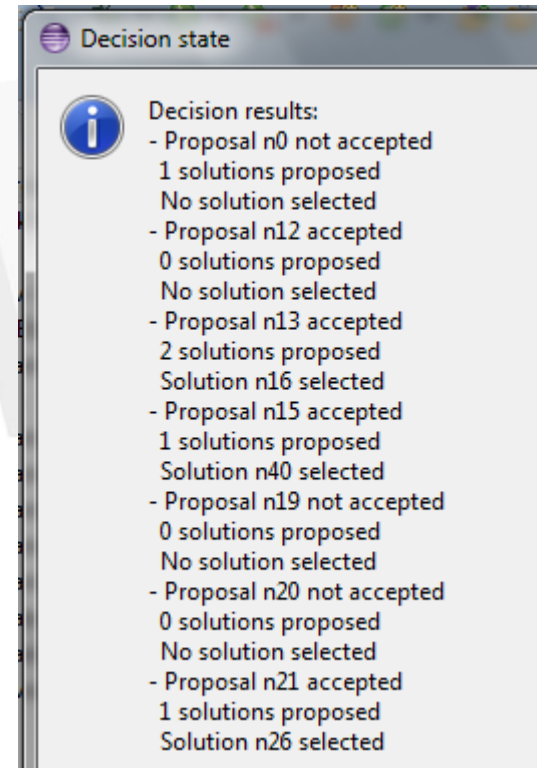
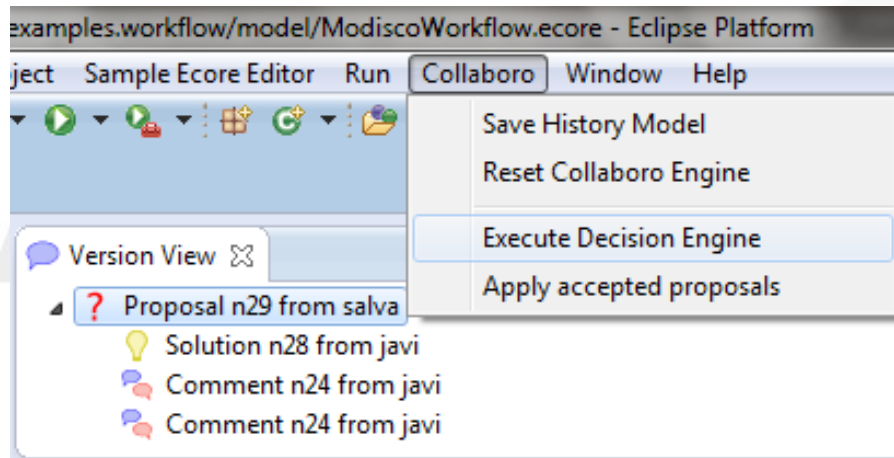
Collaboro tooling: Collaboration view (1/2)



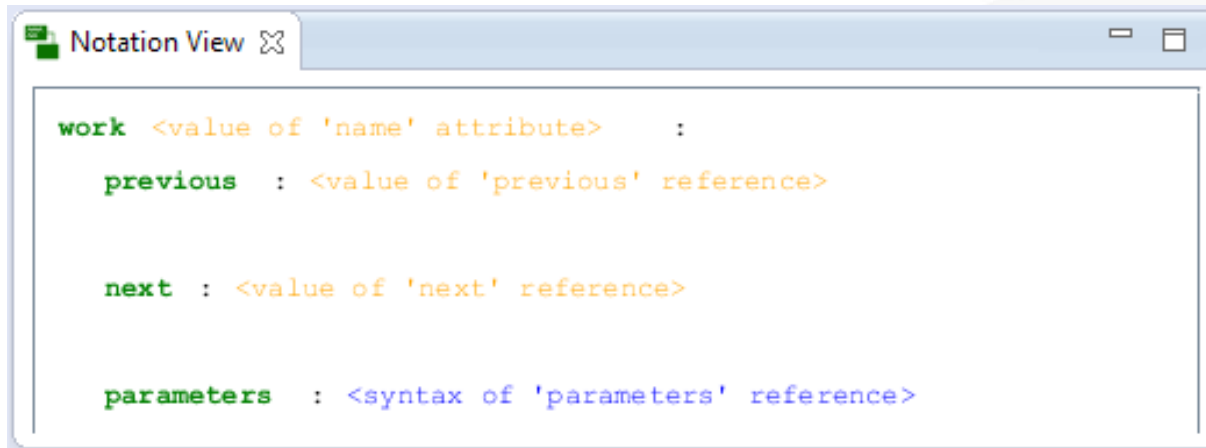
Collaboro tooling: Collaboration view (2/2)

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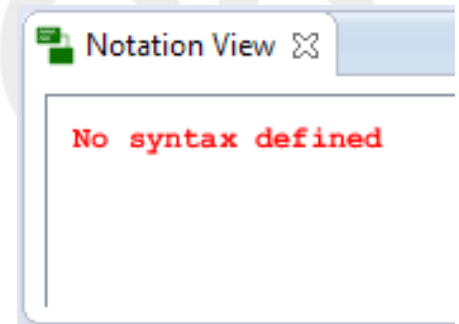
Collaboro tooling: Decision engine



Collaboro tooling: Notation view - textual DSL/DSML



```
work <value of 'name' attribute> :  
  previous : <value of 'previous' reference>  
  
  next : <value of 'next' reference>  
  
  parameters : <syntax of 'parameters' reference>
```



```
No syntax defined
```


Collaboro tooling: Notation view - graphical DSL/DSML (in progress)



Collaboro tooling: DSL/DSML initialization by example (in progress)

The screenshot displays the Eclipse IDE interface with three main views:

- Package Explorer:** Shows a project structure under 'collaboro.examples'. The 'transport' package is expanded, highlighting 'example1.transport.xml'. Other files include 'transport-evolved.textual.ecore', 'transport.graphical.ecore', 'transport.graphical.history', 'transport.graphical.notation', 'transport.textual.ecore', 'transport.textual.history', and 'transport.textual.notation'.
- example1.transport.xml:** Shows a tree view of the 'Transport System' package. It contains four elements: 'Tram T1', 'Route R1', 'Stop stop1', 'Stop stop2', and 'Stop stop3'.
- Notation View:** Displays the DSL/DSML notation for the transport system. The notation is as follows:

```
tram T1 :  
  route R1  
route R1 :  
  stops stop1, stop2, stop3  
stop1  
stop2  
stop3
```

Collaboro: Ongoing works & potential future improvements

- Ongoing...
 - Support for remote definition & synchronization via CDO
- Future?
 - Better support for non-technical users (e.g. via a simplified Web-based interface)
 - Generating examples from existing proposals
 - Improving the decision policies (user right managements)
 - Initialization of DSL/DSML first implementation (e.g. Xtext/GMF)

Collaboro tested in the context of other Eclipse initiatives



- ATL model transformation language & toolkit

- <http://www.eclipse.org/atl/>

- Maintained by



- MoDisco model driven reverse engineering framework

- <http://www.eclipse.org/MoDisco/>

- Maintained by  Mia-Software
model-driven agility



Thanks for your attention!

- **Collaboro** from EclipseLabs

<http://code.google.com/a/eclipselabs.org/p/collaboro/>



- **AtlanMod contacts**

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