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## Introducing Collaboro: Collaborative DSL/DSML Definition

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► **To cite this version:**

Hugo Bruneliere. Introducing Collaboro: Collaborative DSL/DSML Definition. EclipseCon France 2013, Jun 2013, Toulouse, France. hal-00869270

**HAL Id: hal-00869270**

**<https://inria.hal.science/hal-00869270v1>**

Submitted on 11 Apr 2023

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# Introducing Collaboro: Collaborative DSL/DSML Definition

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EclipseCon France 2013 – Ignite Talks  
Wednesday 5<sup>th</sup> of June 2013

# Defining DSLs/DSMLs...

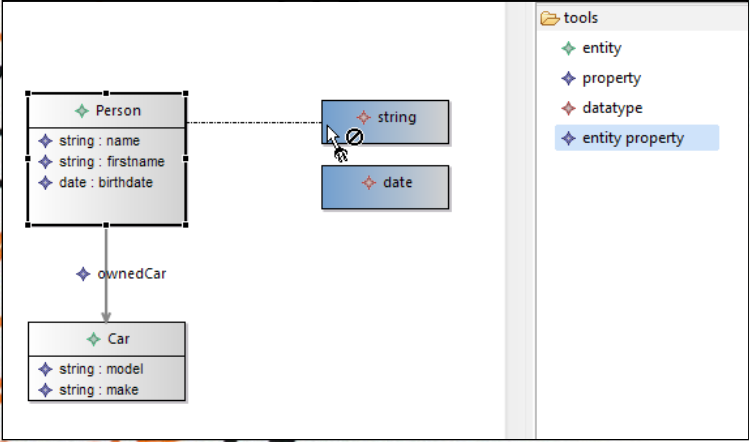
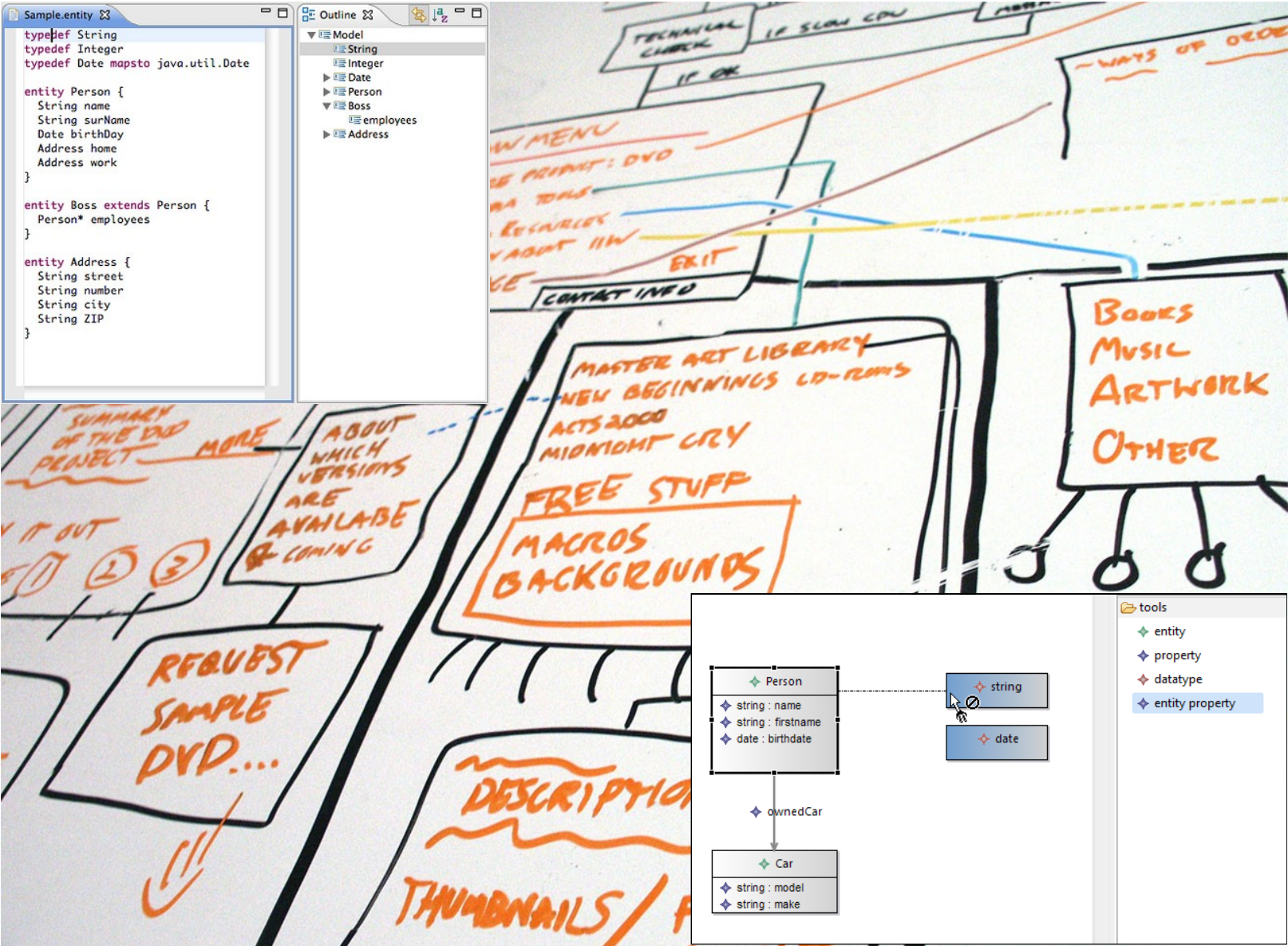
```
Sample.entity  Outline  ↗ ↘ ↙ ↚ ↛ ↜ ↝ ↞ ↠ ↡ ↢ ↣ ↤ ↥ ↦ ↧ ↨ ↩ ↪ ↫ ↬ ↭ ↮ ↯ ↰ ↱ ↲ ↳ ↴ ↵ ↶ ↷ ↸ ↹ ↺ ↻ ↼ ↽ ↾ ↿ ↺ ↻ ↼ ↽ ↾ ↿ ↺ ↻ ↼ ↽ ↾ ↿
```

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

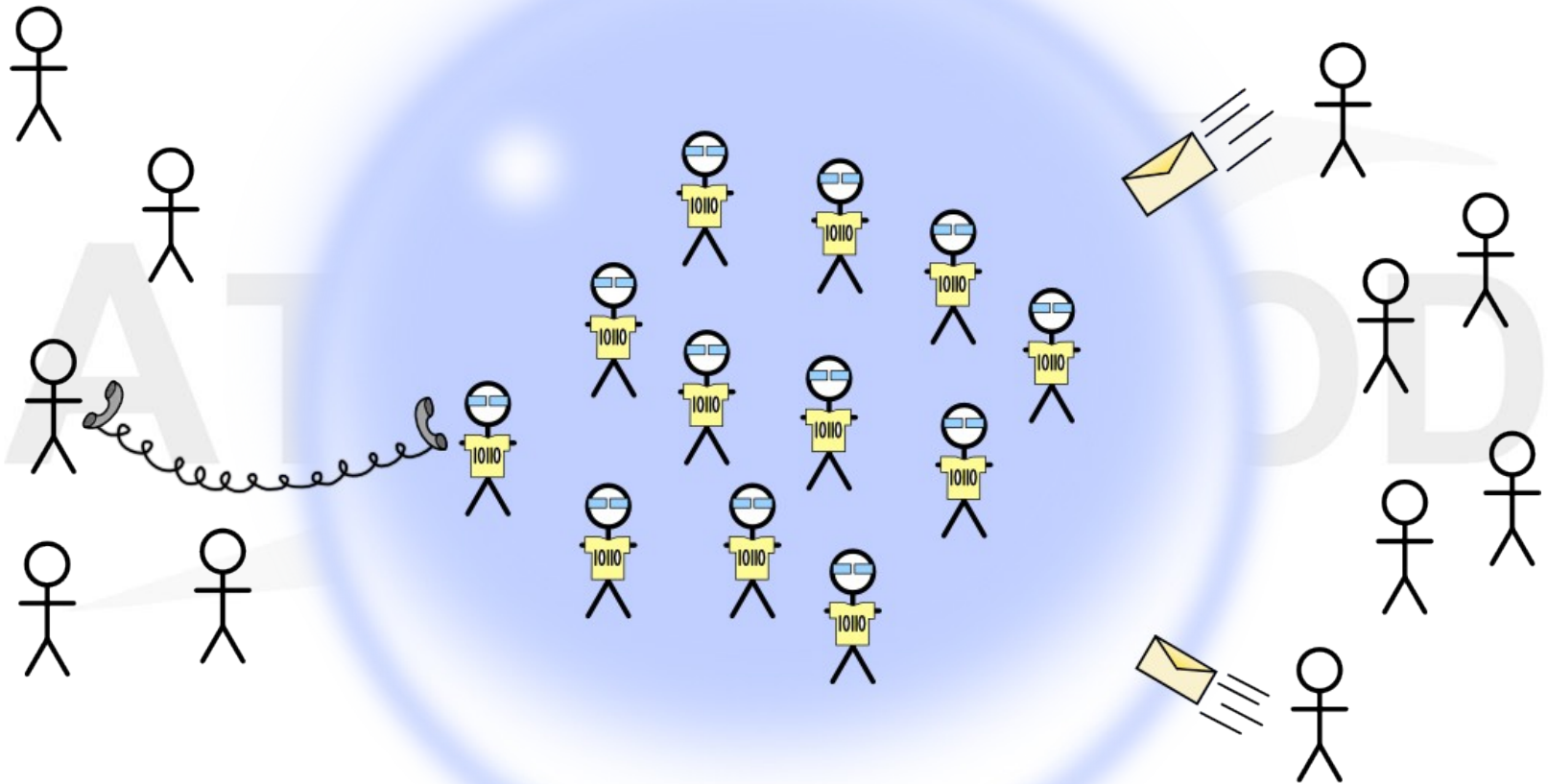
entity Person {
  String name
  String surName
  Date birthday
  Address home
  Address work
}

entity Boss extends Person {
  Person* employees
}

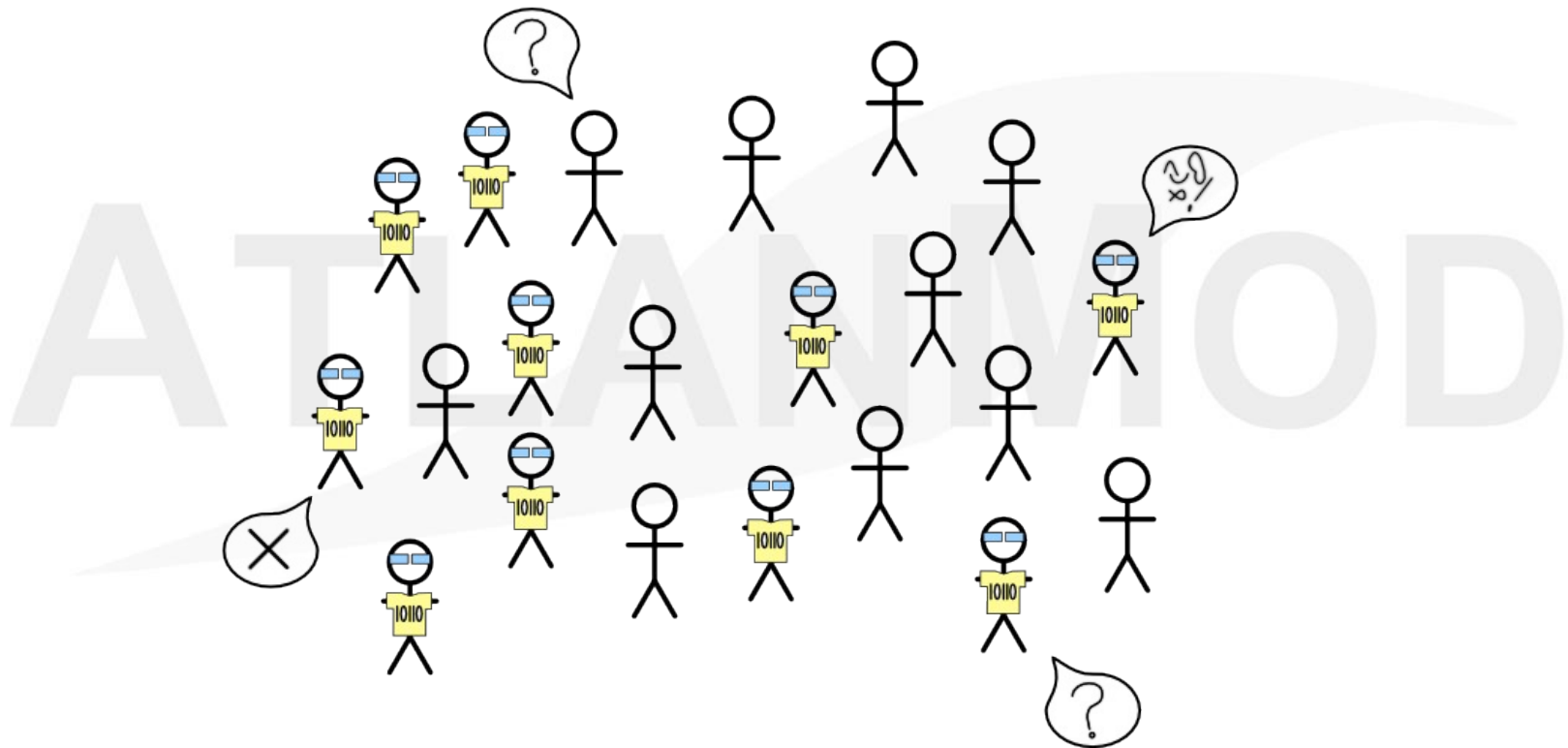
entity Address {
  String street
  String number
  String city
  String ZIP
}
```



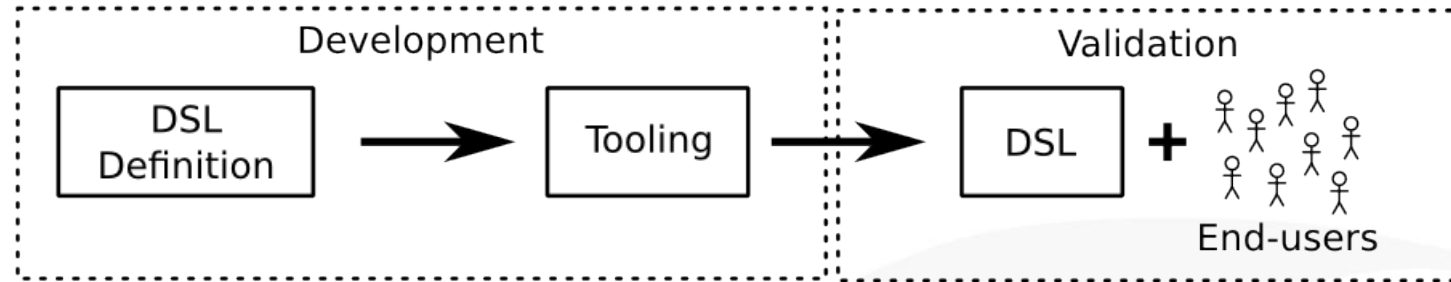
# Defining DSLs/DSMLs “separately”



# Defining DSLs/DSMLs collaboratively

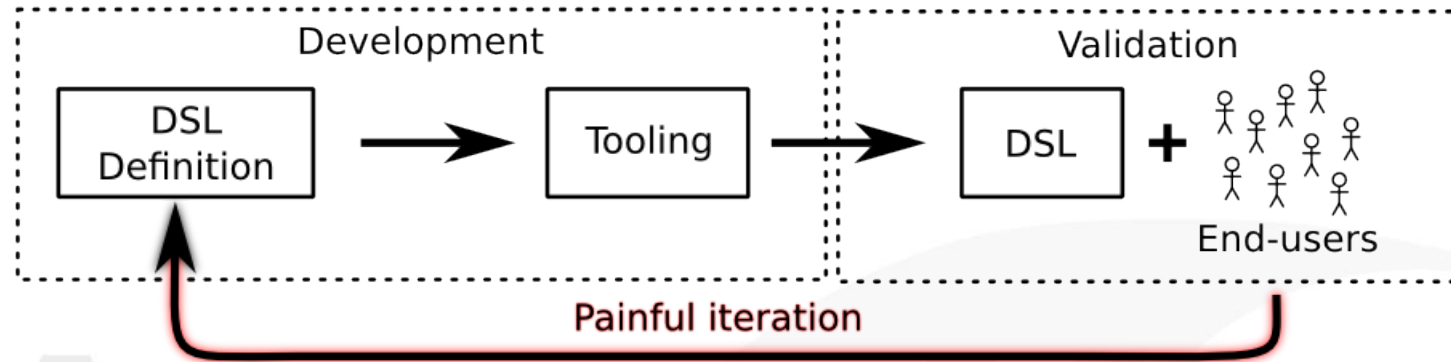


# Collaboro: Enabling the collaborative definition of DSLs



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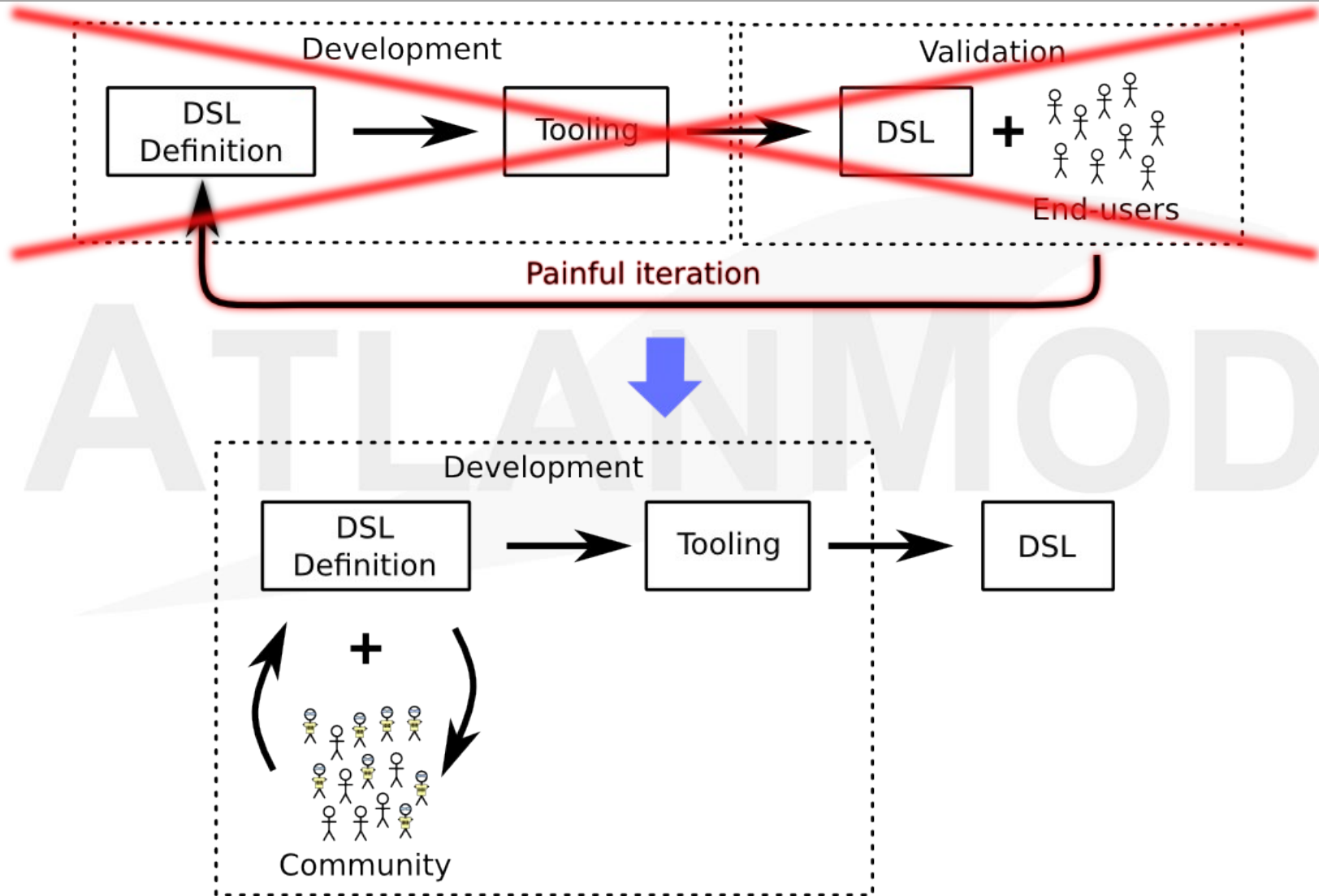
# Collaboro: Enabling the collaborative definition of DSLs



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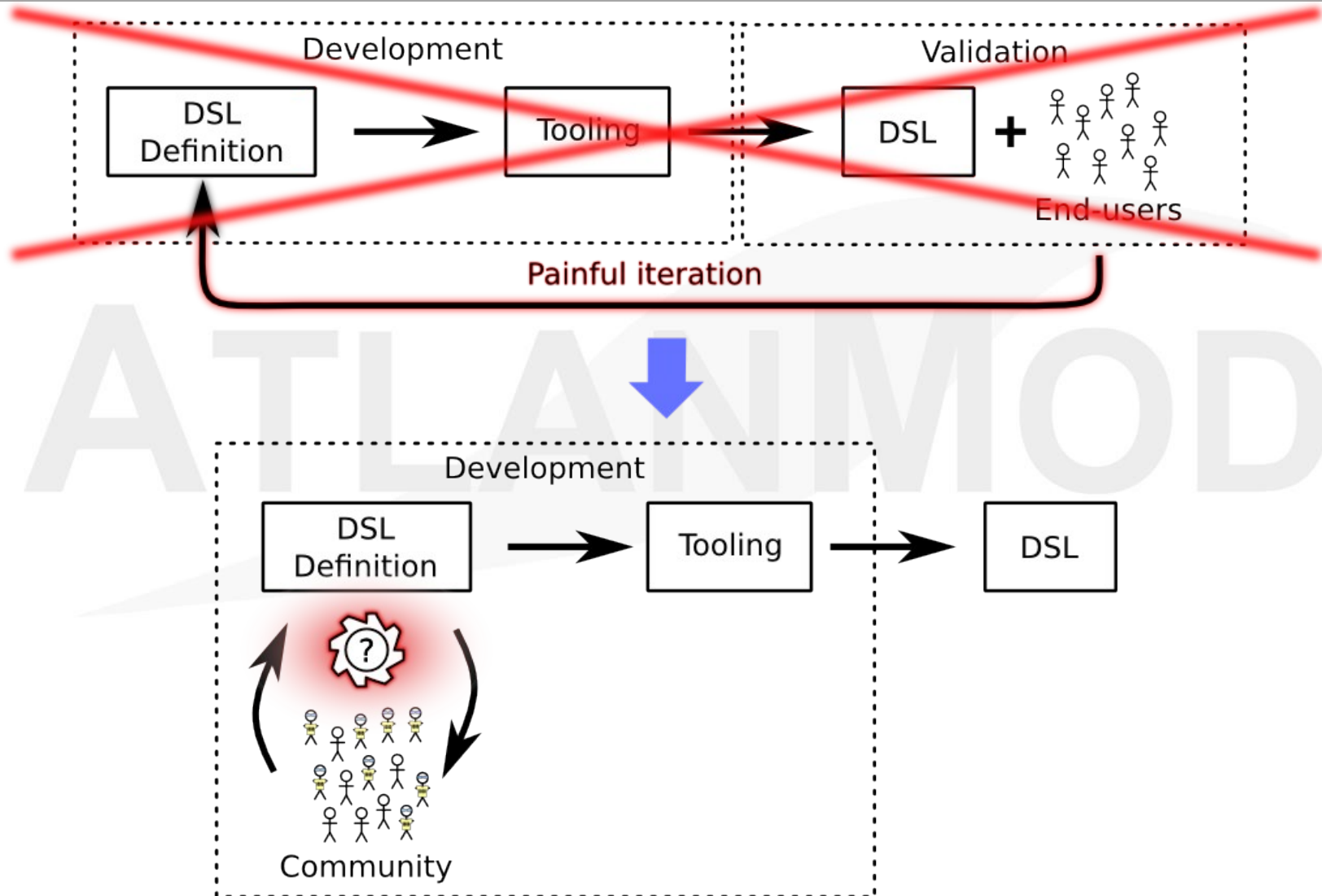


# Collaboro: Enabling the collaborative definition of DSLs





# 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 with the following components:

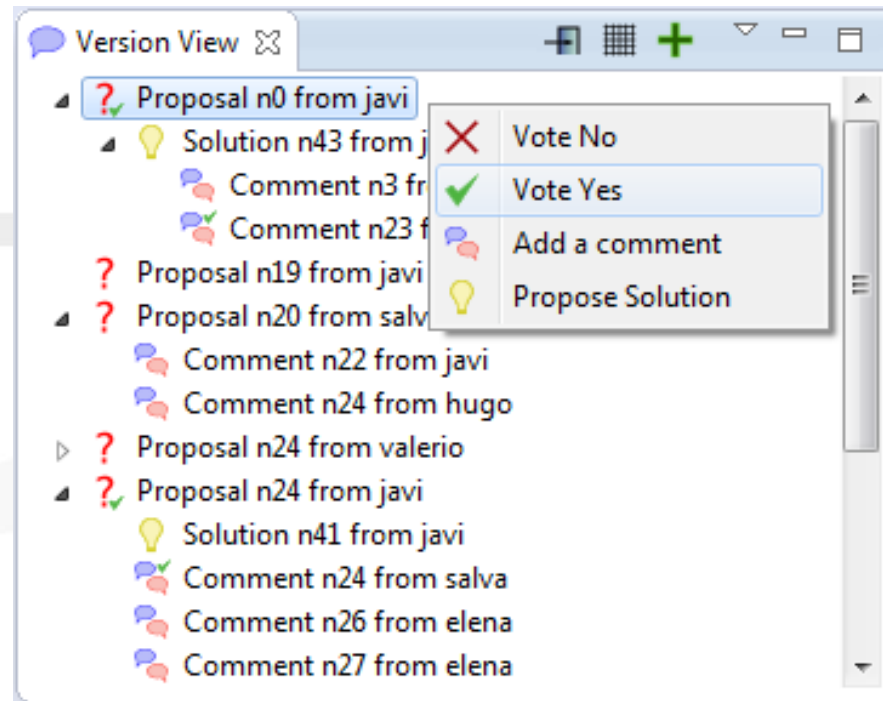
- Package Explorer:** Shows a project structure for `platform:/resource/fr.inria.atlanmod.coll` containing a `modiscoworkflow` package with sub-elements like `Element`, `Workflow -> Element`, `Work -> Element`, `WorkParameter`, `Direction`, `WorkParameterValue`, `WorkParameterStringValue -> Wc`, `WorkParameterStringListValue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

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

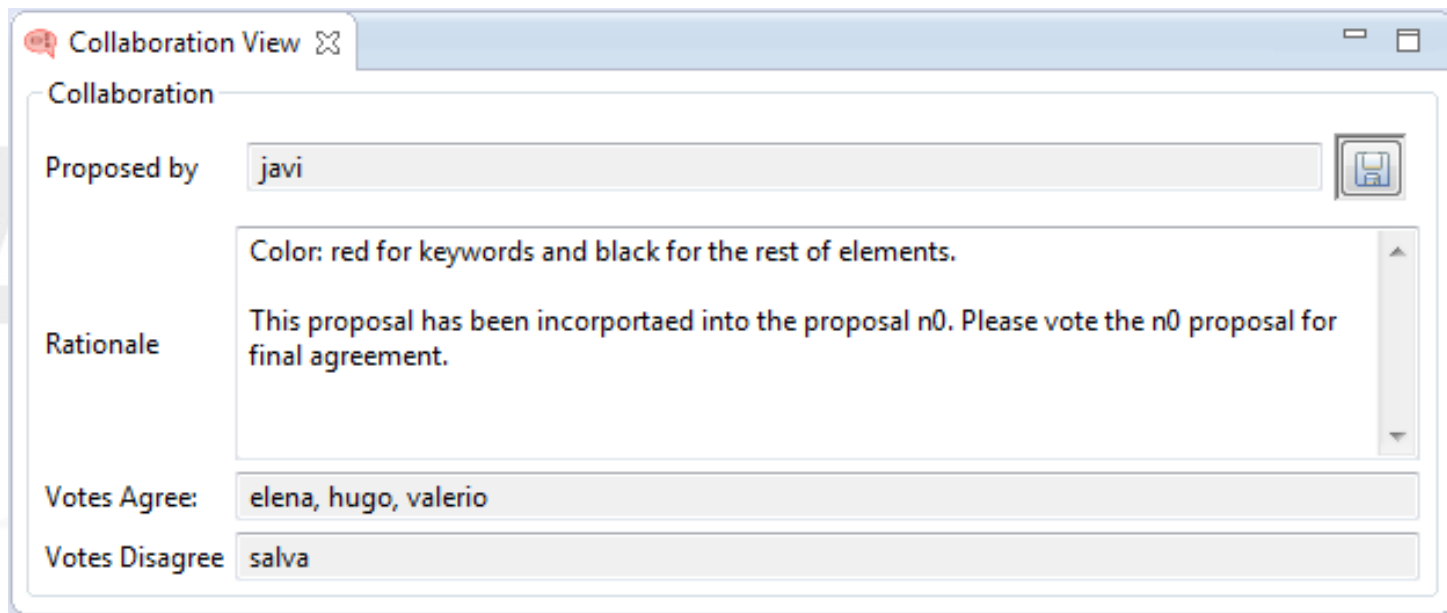
A context menu is open over the Version View, listing the following actions:

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

# Collaboro tooling: Version view



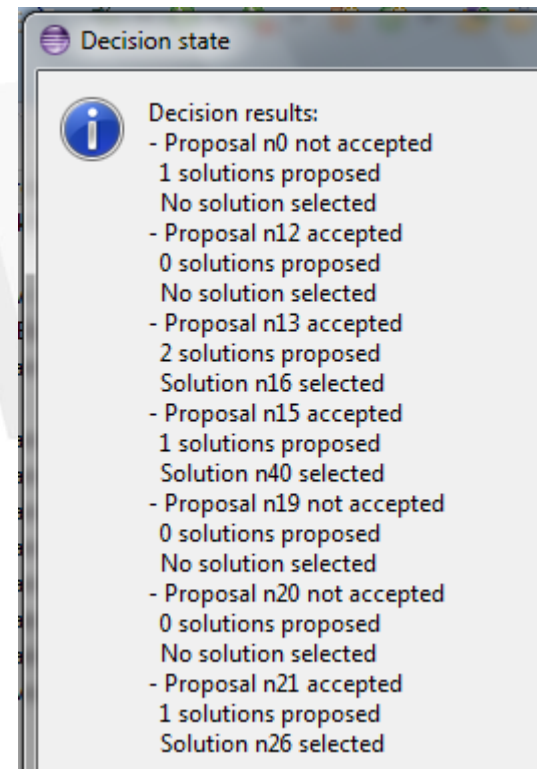
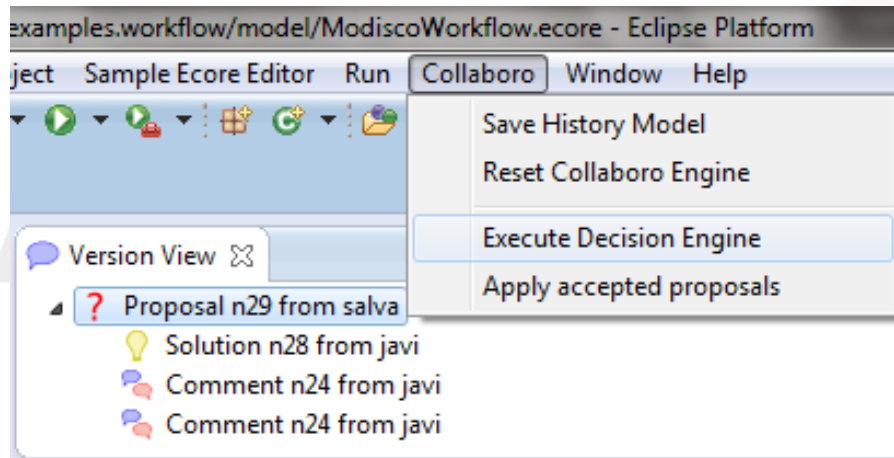
# Collaboro tooling: Collaboration view (1/2)



# Collaboro tooling: Collaboration view (2/2)

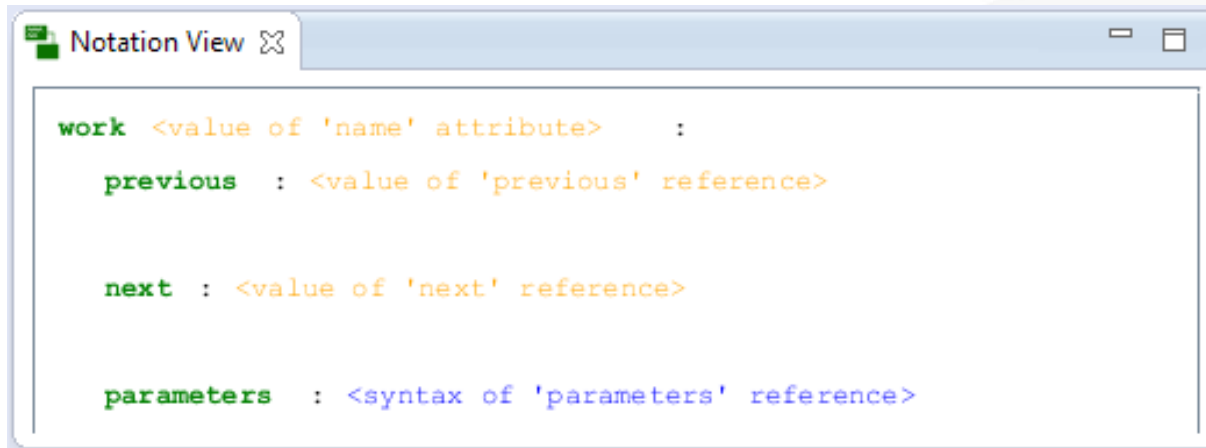
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# Collaboro tooling: Decision engine

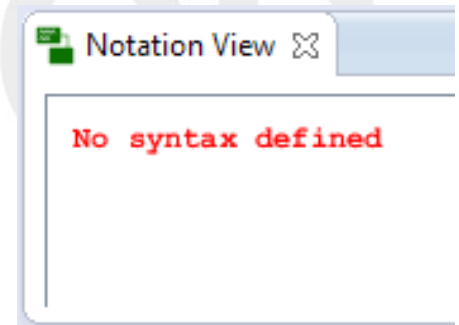




# Collaboro tooling: Notation view - textual DSL/DSML

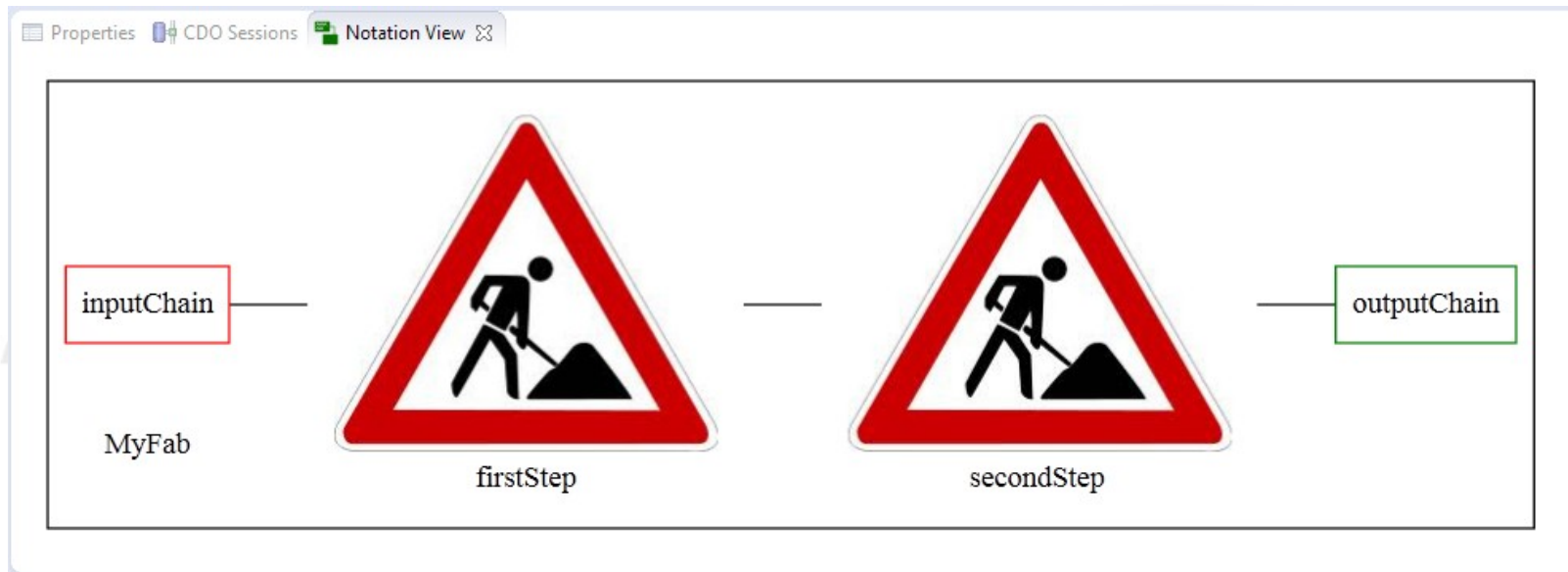


```
work <value of 'name' attribute> :  
  previous : <value of 'previous' reference>  
  
  next : <value of 'next' reference>  
  
  parameters : <syntax of 'parameters' reference>
```



```
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 elements. The text 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**

- Javier Canovas (lead dev.) - [javier.canovas@inria.fr](mailto:javier.canovas@inria.fr)
- Hugo Bruneliere - [hugo.bruneliere@inria.fr](mailto:hugo.bruneliere@inria.fr)