



**HAL**  
open science

## Eclipse Labs for improving DSL development

Hugo Bruneliere

► **To cite this version:**

Hugo Bruneliere. Eclipse Labs for improving DSL development. Eclipse DemoCamp Juno 2012 - Nantes, Jun 2012, Nantes, France. hal-00713733

**HAL Id: hal-00713733**

**<https://inria.hal.science/hal-00713733v1>**

Submitted on 11 Apr 2023

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# Eclipse Labs for Improving DSL Development

AtlanMod Team  
(Hugo Bruneliere)

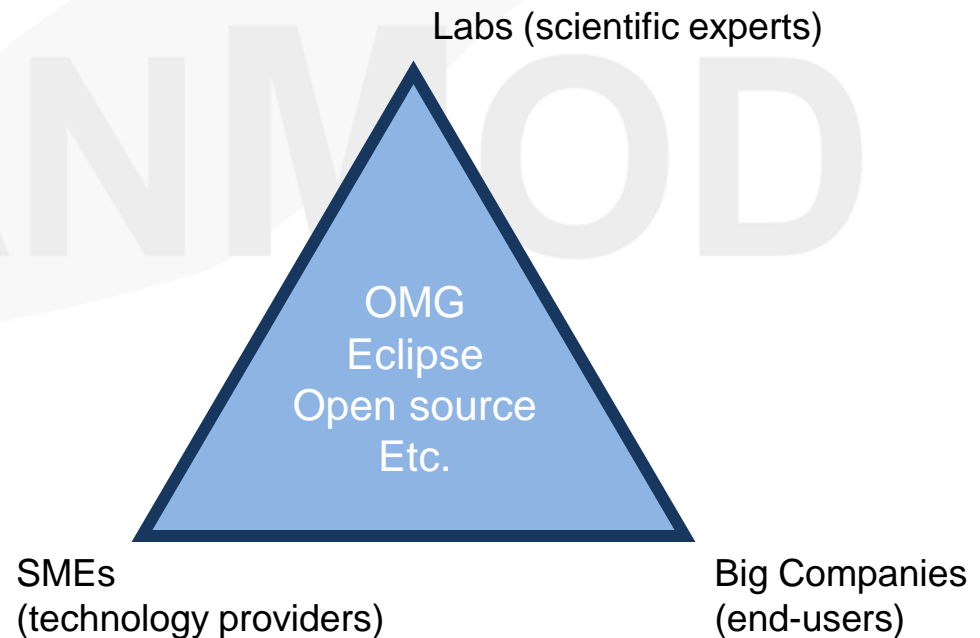


Eclipse DemoCamp Juno  
Nantes (France) – Thursday 28<sup>th</sup> of June 2012

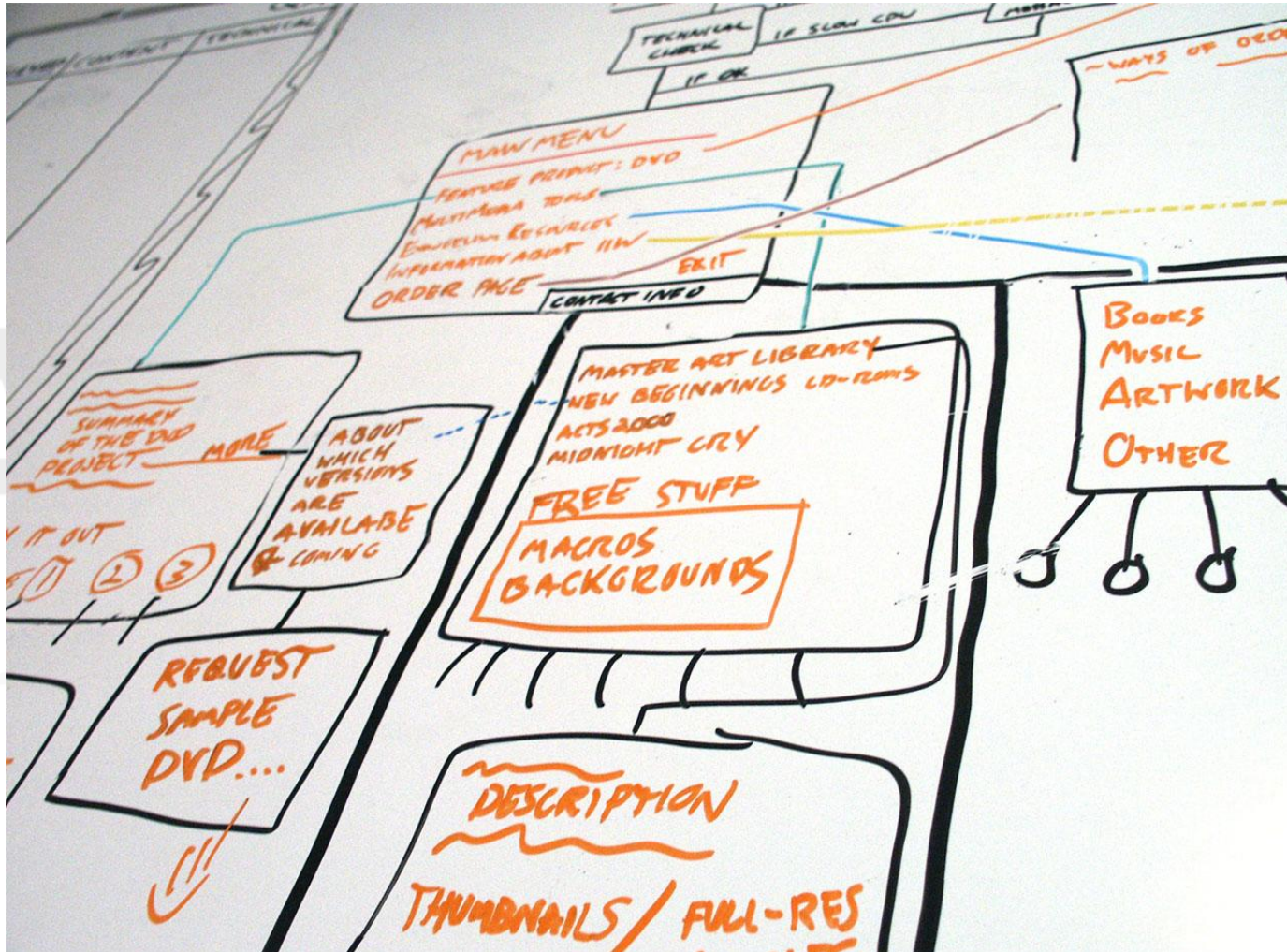
# AtlanMod: an Expert Research Team in MDE/Modeling

- A common team between INRIA, Ecole des Mines de Nantes (EMN) & LINA
- Expertise on Model Driven Engineering (MDE)
- Focus on “Modeling Technologies for Software Production, Evolution, and Operation”

## Application Driven Research Virtuous triangle



# Developing DSLs...



# Developing DSLs...

- Domain-Specific Language
  - **Abstract syntax: metamodel**
  - Concrete syntax(es): textual or graphical
  - Semantics: e.g. via model transformations
- Development of the DSL core (possible scenario)
  1. Collaborative work to define the main concepts
  2. Automated verification to validate some properties
  3. View definition/building to validate the language

# Eclipse Labs prototypes...



# Collaboro: Enabling the collaborative definition of DSLs

- Goal

Make the DSL development process more collaborative, meaning that anyone can help

- How to do it

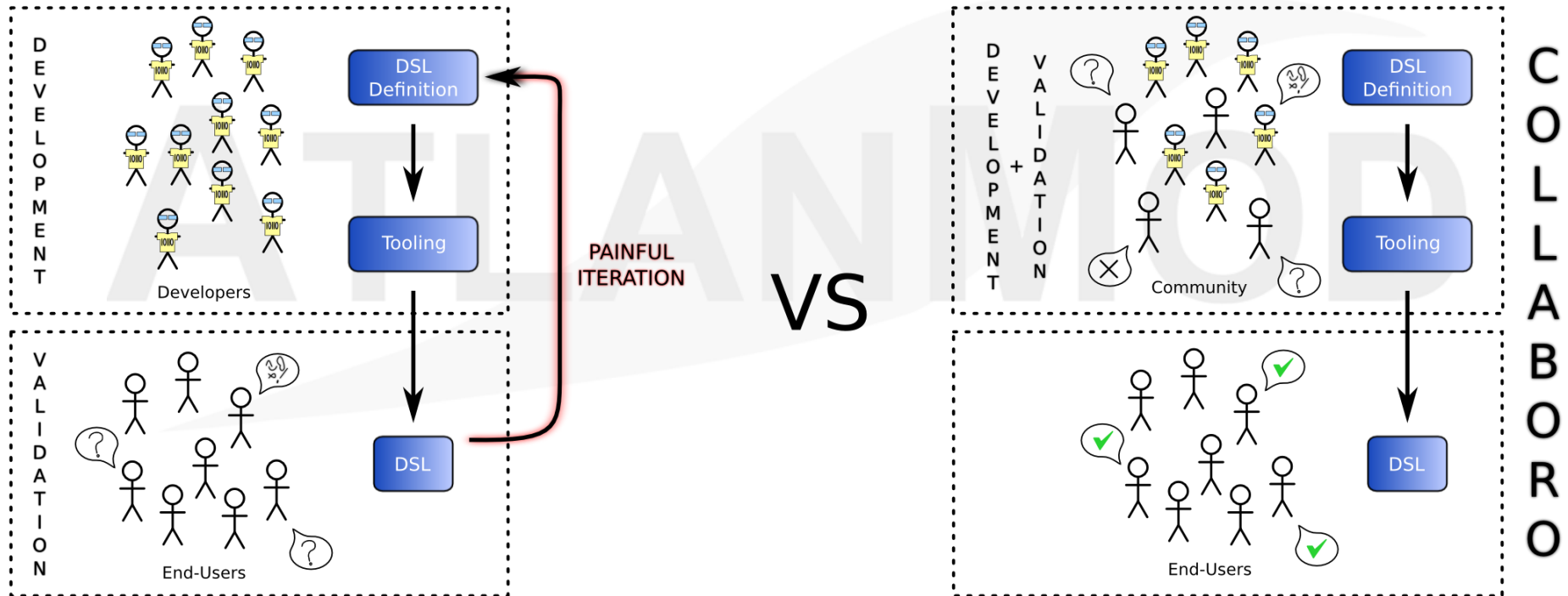
We define Collaboro, a DSL to represent proposals, solutions and comments during the development process

- Implementation

Eclipse plugin providing the infrastructure needed to enable the collaboration

# Collaboro: Enabling the collaborative definition of DSLs

- Collaboration in DSL development...





# Collaboro: Enabling the collaborative definition of DSLs

- [Click here for accessing the demo...](#)



# EMFtoCSP: automatically verifying EMF/UML/OCL models

- Goal

Verification of EMF static models and UML Class Diagrams to increase model reliability and soundness of MDE development processes.

- How to do it

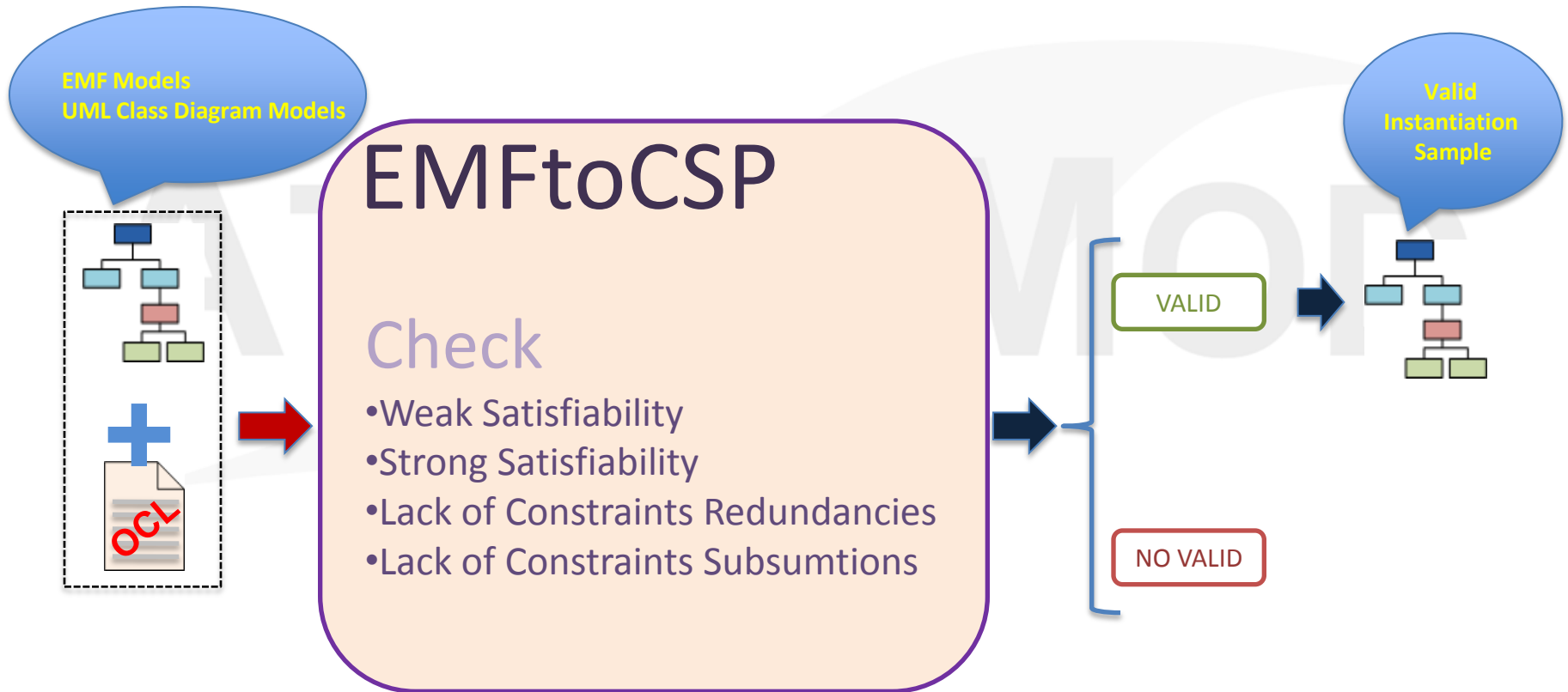
Checking whether the input model satisfies a given set of desirable correctness properties

- Implementation

Prototype integrated in Eclipse

# EMFtoCSP: automatically verifying EMF/UML/OCL models

- Automated verification of metamodel...



# EMFtoCSP: automatically verifying EMF/UML/OCL models

- [Click here for accessing the demo...](#)



# Virtual EMF: transparently composing, weaving or linking models

- Goal

*Scalable and transparent* generation of model views to enable unified visualization and editing of multiple (complex) models

- How to do it

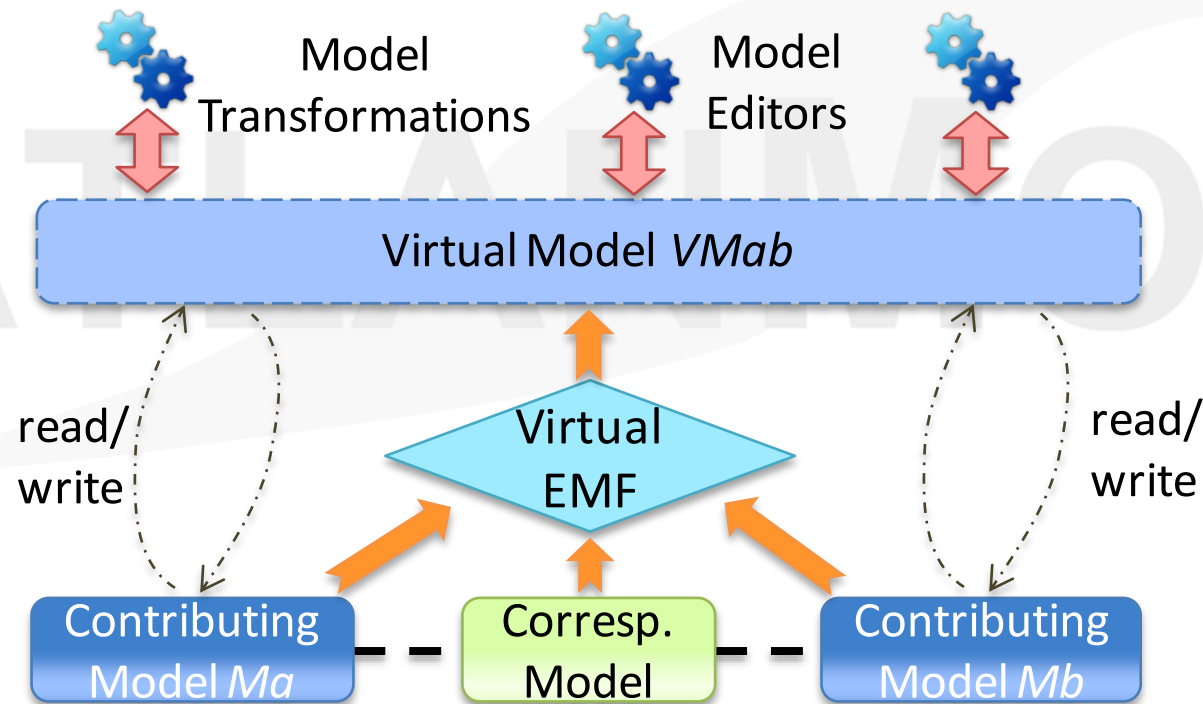
Representing views as a virtual model that *reuses* and *propagates* changes to base model elements

- Implementation

Background Eclipse plugin to enable virtual model usage within standard EMF tools

# Virtual EMF: transparently composing, weaving or linking models

- Transparent linking between different models...



# Virtual EMF: transparently composing, weaving or linking models

- [Click here for accessing the demo...](#)



# Thanks for your attention!

## ■ Useful links

### – Collaboro

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

### – EMFtoCSP

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

### – Virtual EMF

- <http://code.google.com/a/eclipselabs.org/p/virtual-emf/>



## ■ AtlanMod contacts

– Javier Canovas - [javier.canovas@inria.fr](mailto:javier.canovas@inria.fr) (Collaboro)

– Carlos Gonzalez - [carlos.gonzalez@inria.fr](mailto:carlos.gonzalez@inria.fr) (EMFtoCSP)

– Hugo Bruneliere - [hugo.bruneliere@inria.fr](mailto:hugo.bruneliere@inria.fr) (Virtual EMF)