



## Eclipse Labs for improving DSL development

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# Eclipse Labs for Improving DSL Development

AtlanMod Team  
(Hugo Bruneliere)

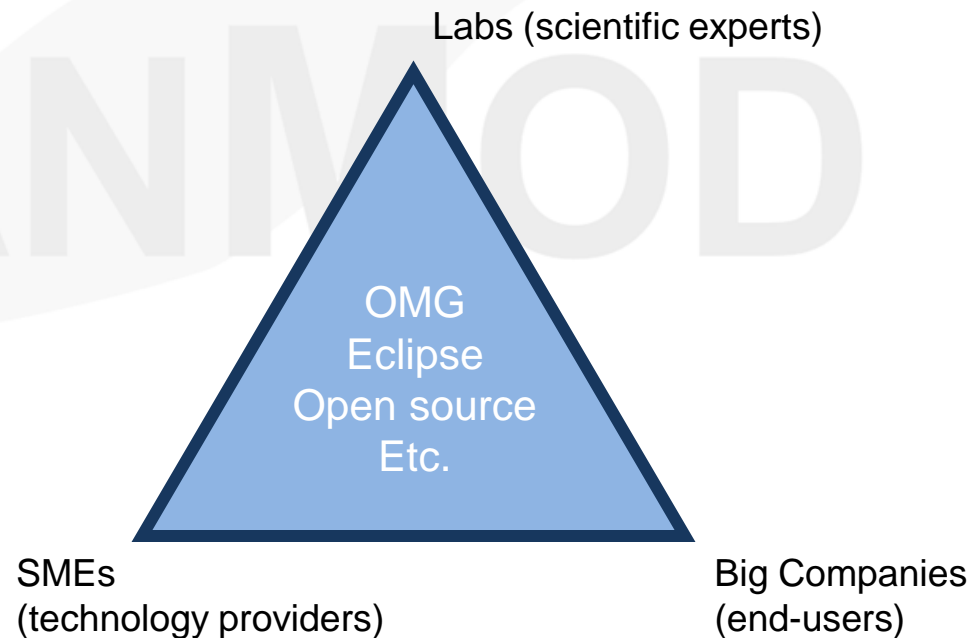


Eclipse DemoCamp Juno  
Nantes (France) – Thursday 28<sup>th</sup> of June 2012

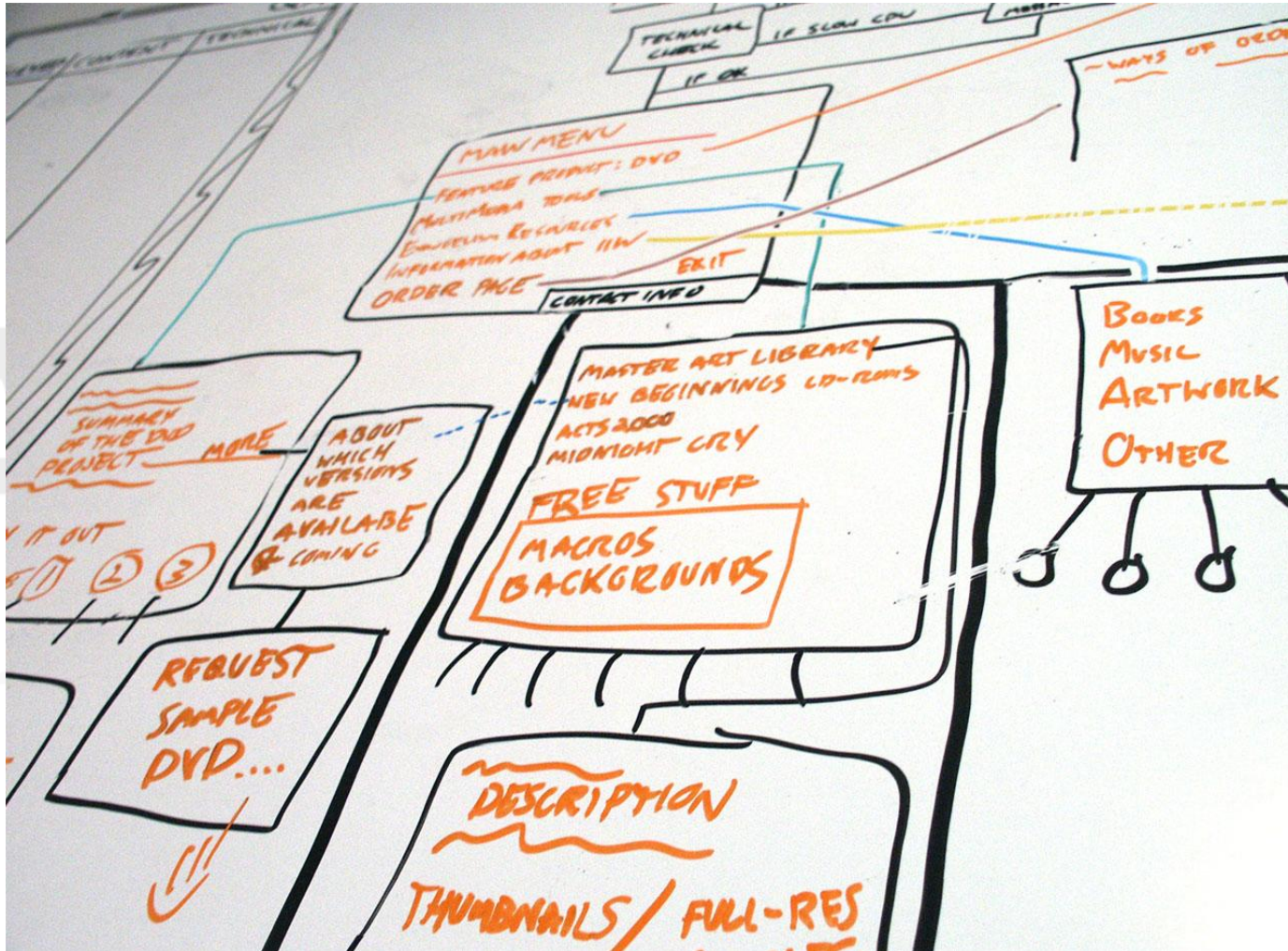
# AtlandMod: an Expert Research Team in MDE/Modeling

- 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

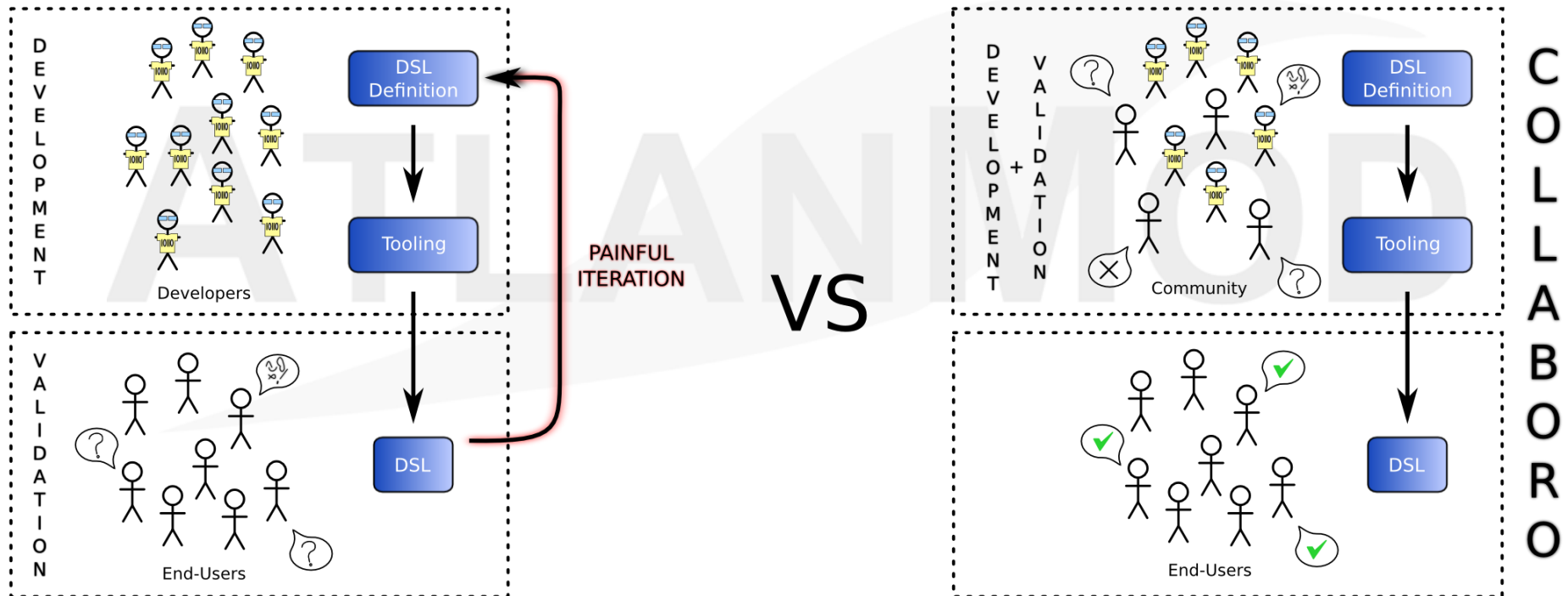
We define Collaboro, a DSL to represent proposals, solutions and comments during the development process

- 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

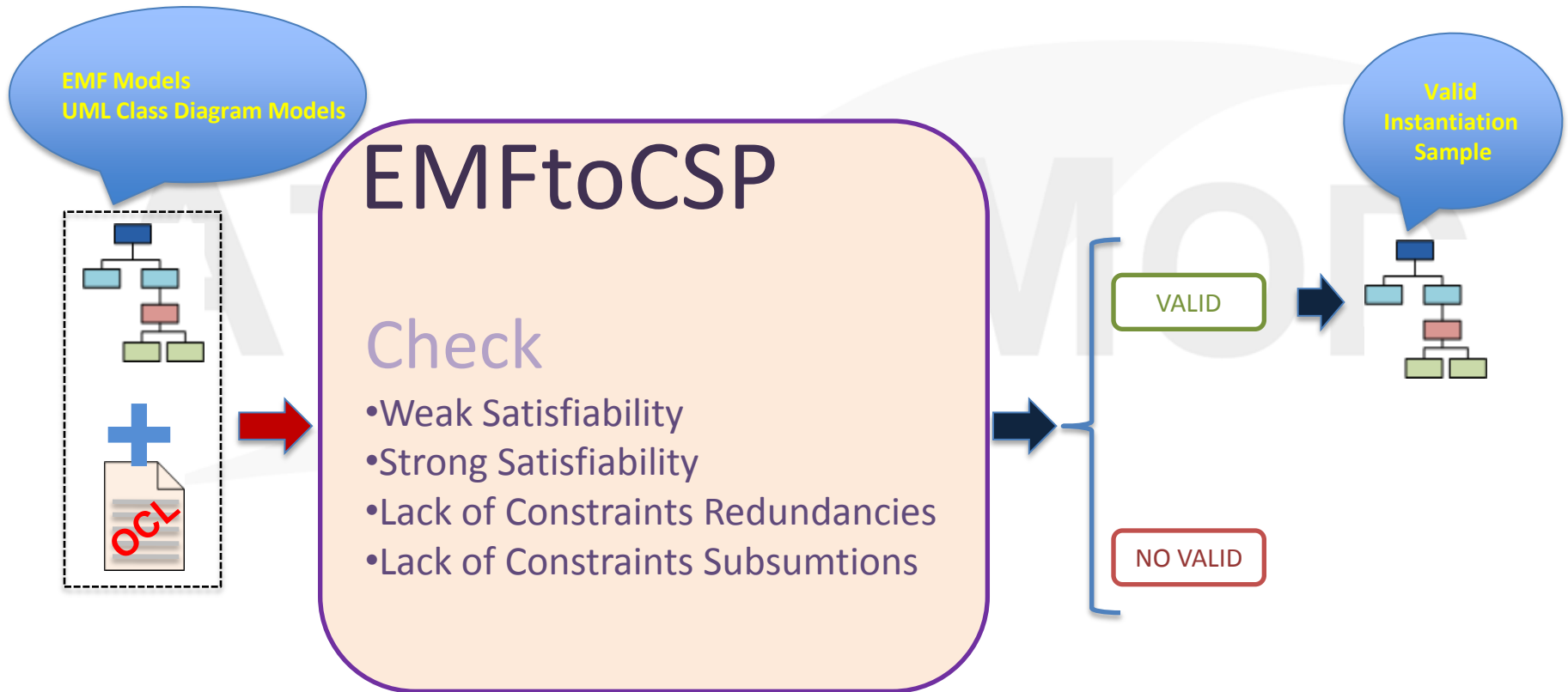
Checking whether the input model satisfies a given set of desirable correctness properties

- 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

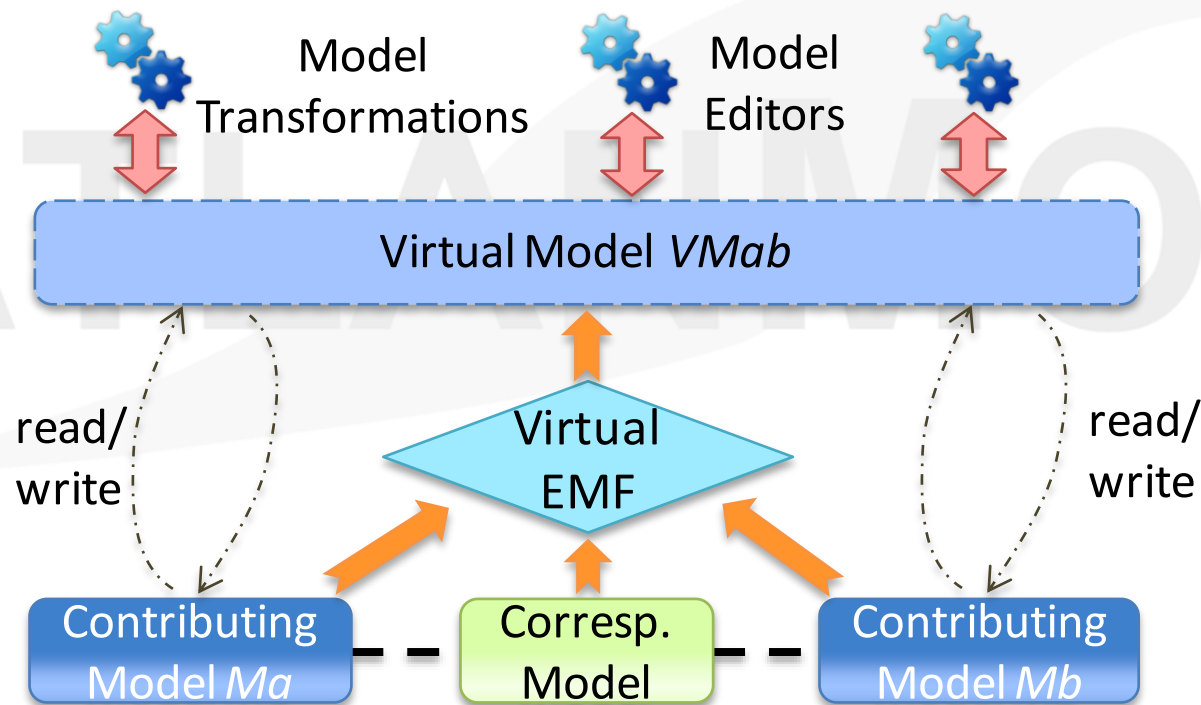
Representing views as a virtual model that *reuses* and *propagates* changes to base model elements

- 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

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