

# Models, Representations, Animations

## The Eclipse Sirius Project and Gemoc

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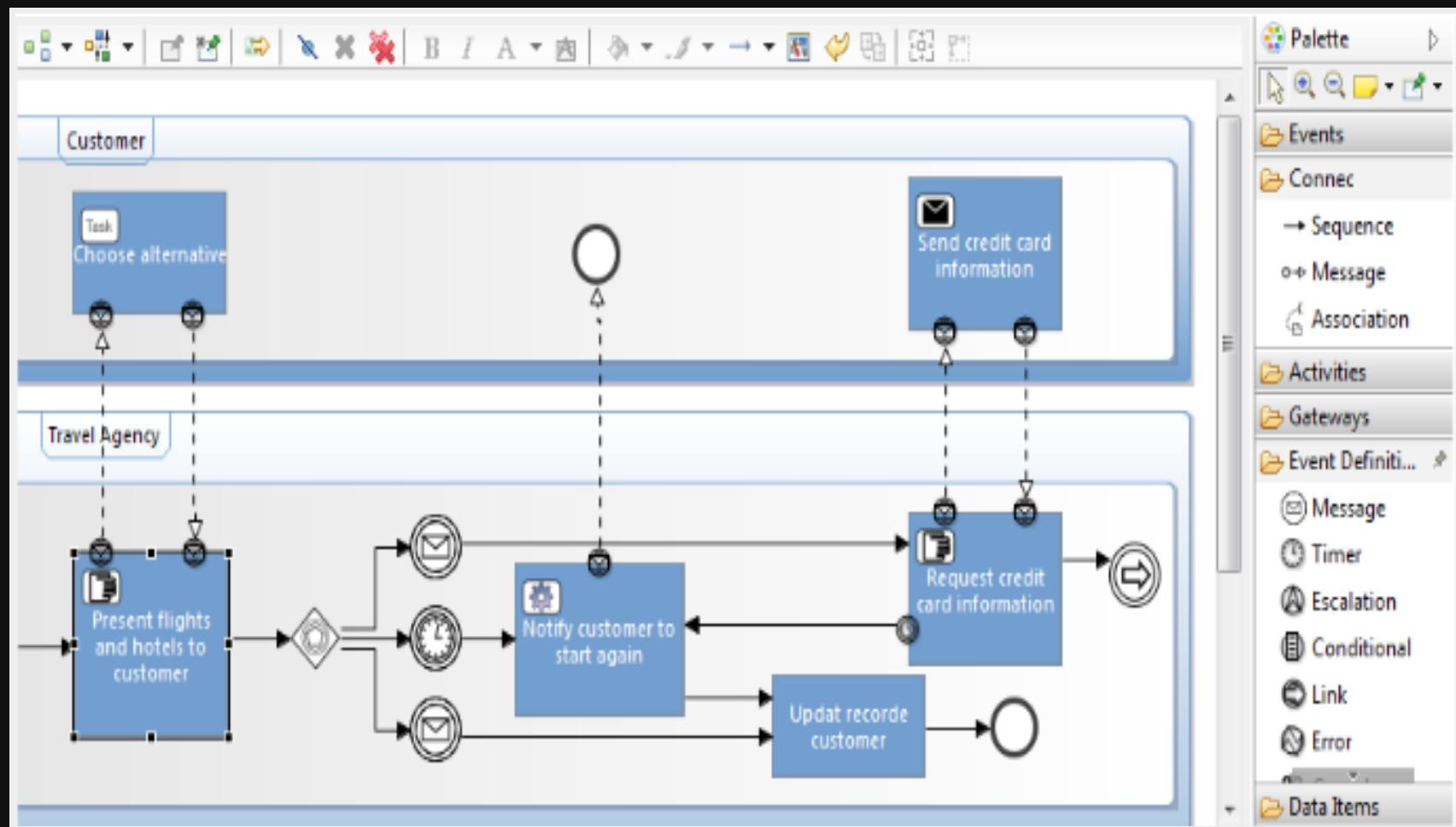


# Your domain, your language, your representation

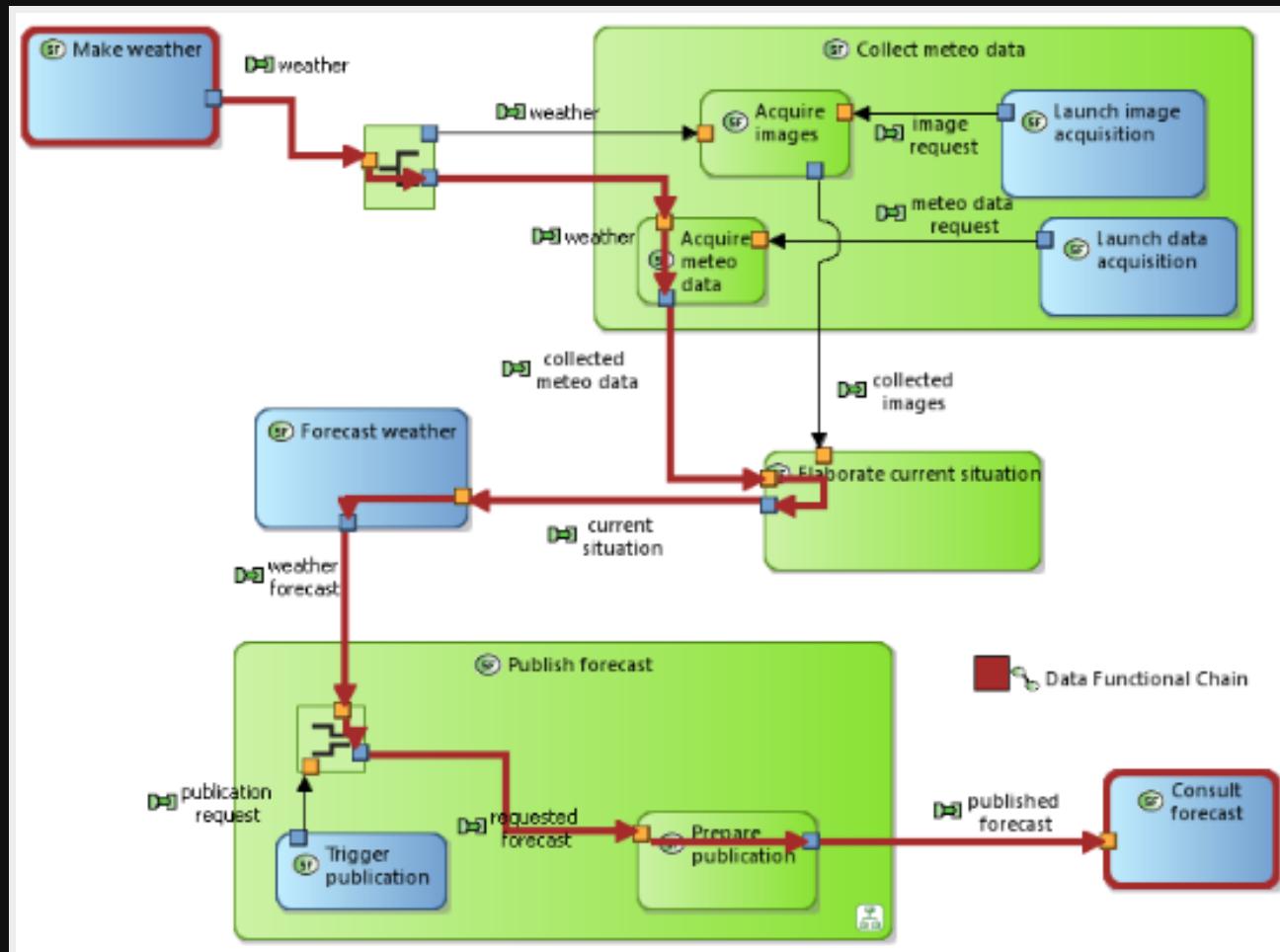
Each domain as its own specific vocabulary :

- Textual
- Graphical

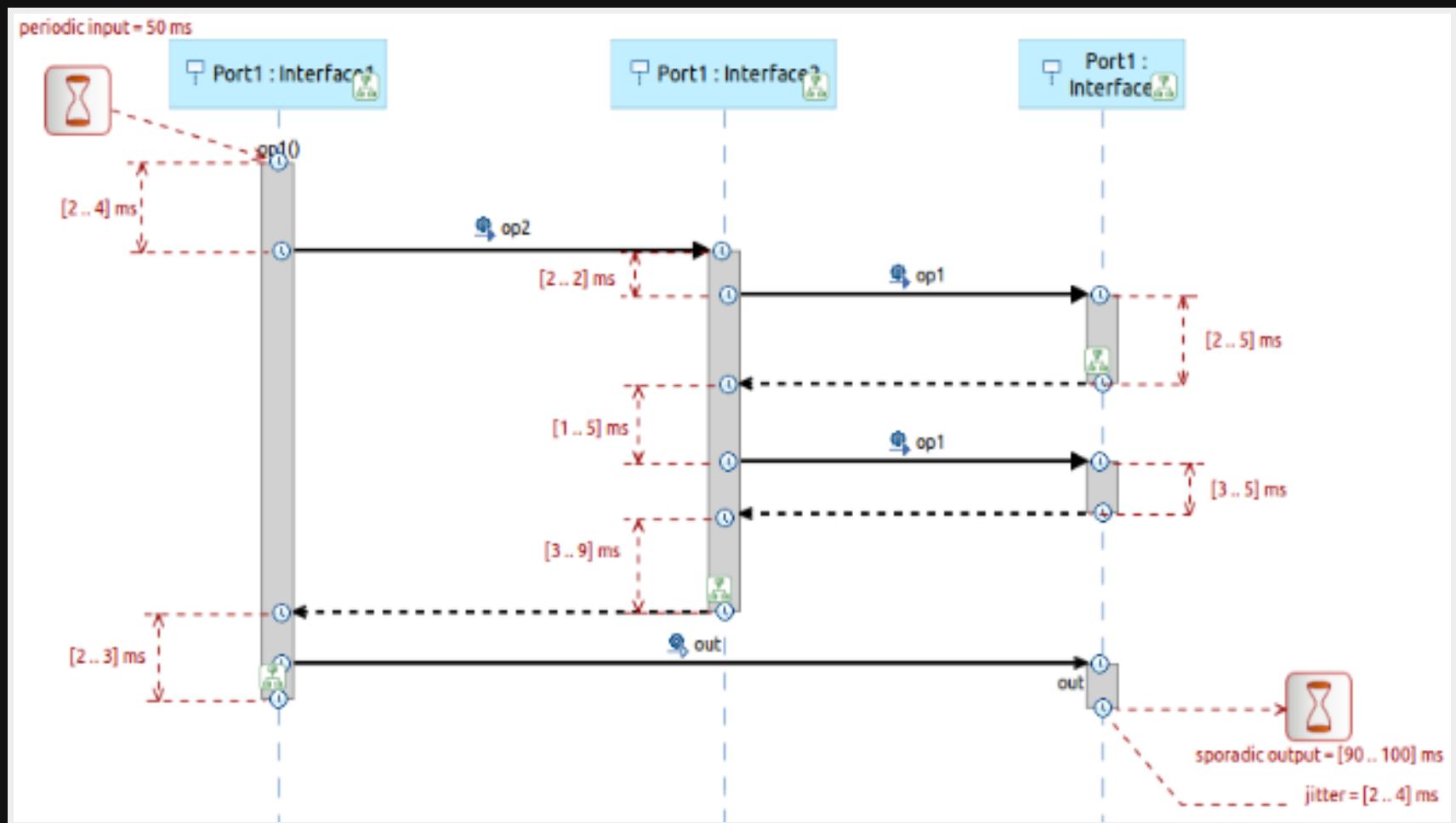
# Business Process



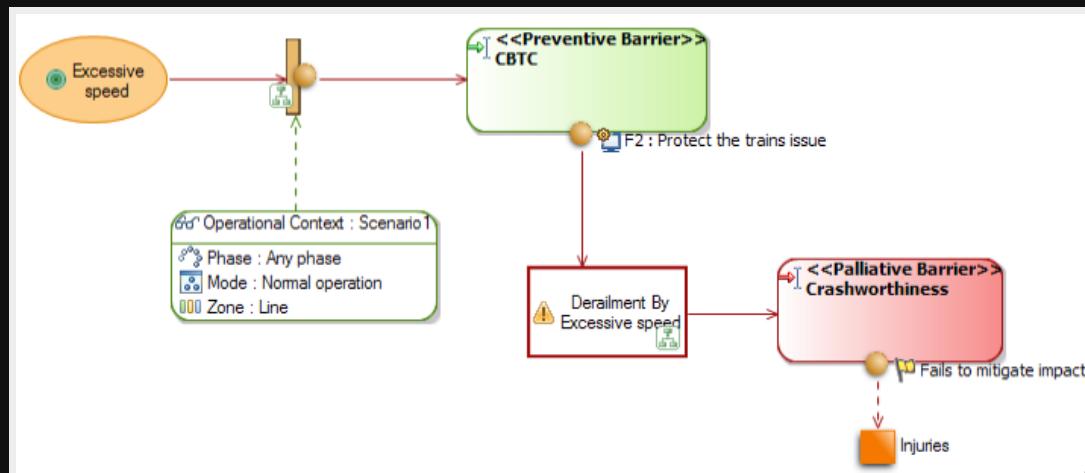
# System engineering



# Software



# Safety



	Consequence Severity	Phase	Mode	Zone	Hazard	System
Demo		Demo	Demo	Demo	Demo	Demo
Scenario1		Scenario1	Scenario1	Scenario1	Scenario1	Scenario1
Scenario2		Scenario2	Scenario2	Scenario2	Scenario2	Scenario2
Fire						
Collision						
preventiveBarrier						ATC
preventiveBarrier						ATC
Deraillement						
Hurtling of passenger						
Collision						
preventiveBarrier						Braking system
preventiveBarrier						ATC
Scenario3		Operation	Manual	Depot	Fire on board	
Scenario3		Scenario3	Scenario3	Scenario3	Scenario3	Scenario3
Fire	marginal	Operation	Manual	Depot	Fire on board	
Collision		PassengerExchange	Auto	Station	Unexpected train movement	
Collision		PassengerExchange	Auto	Station	Unexpected train movement	
Scenario4		Scenario4	Scenario4	Scenario4	Scenario4	Scenario4

# Domain Specific Language

Improve the communication



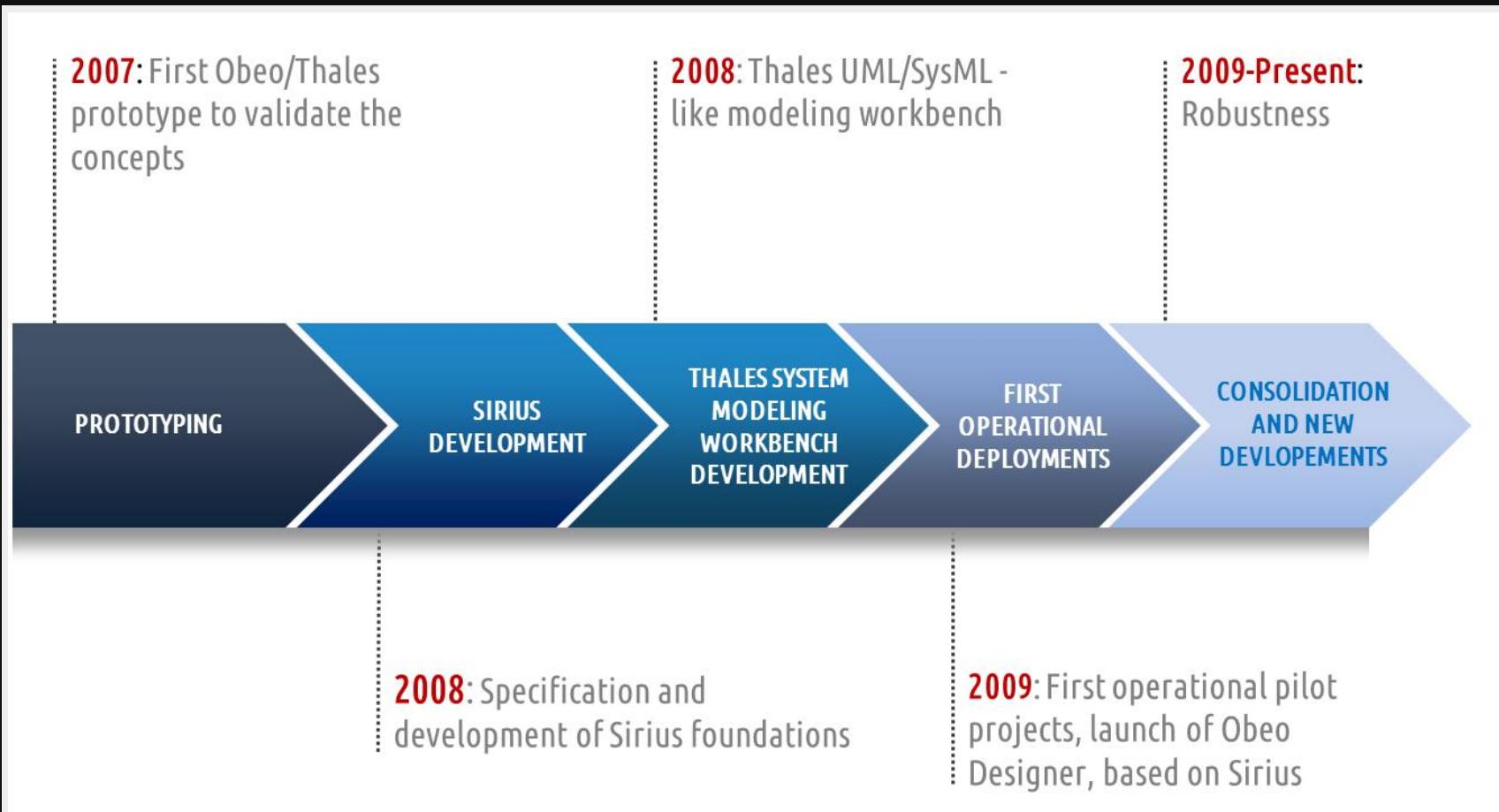
# DSL based tools

- Are easy to take in hand
- Guide the user to the right way

A black and white photograph of a person's hand holding a circular button. The button has a dark center with the word "easy" written in a large, bold, sans-serif font. The hand is positioned as if presenting or demonstrating the button.

easy

# A bit of history



# Thales previous experiences with UML profiling

- Poor adoption
- Metamodels constrained by UML concepts
- Representations constrained by existing UML diagrams



‘진정한 개발자’는 코드를 작성한다

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# Needs for DSLs

- More freedom in representations
- Heavier and more technical developments
- Originally 2 or 3 foreseen modeling tools

# Workbench/Business concerns separation

- Generic infrastructure for model management and representations
- Focus on business added-value
- Capitalization

# What is Sirius ?

A tool to quickly define DSL based **custom multi-view workbenches**  
with dedicated representations

# Sirius goes open source

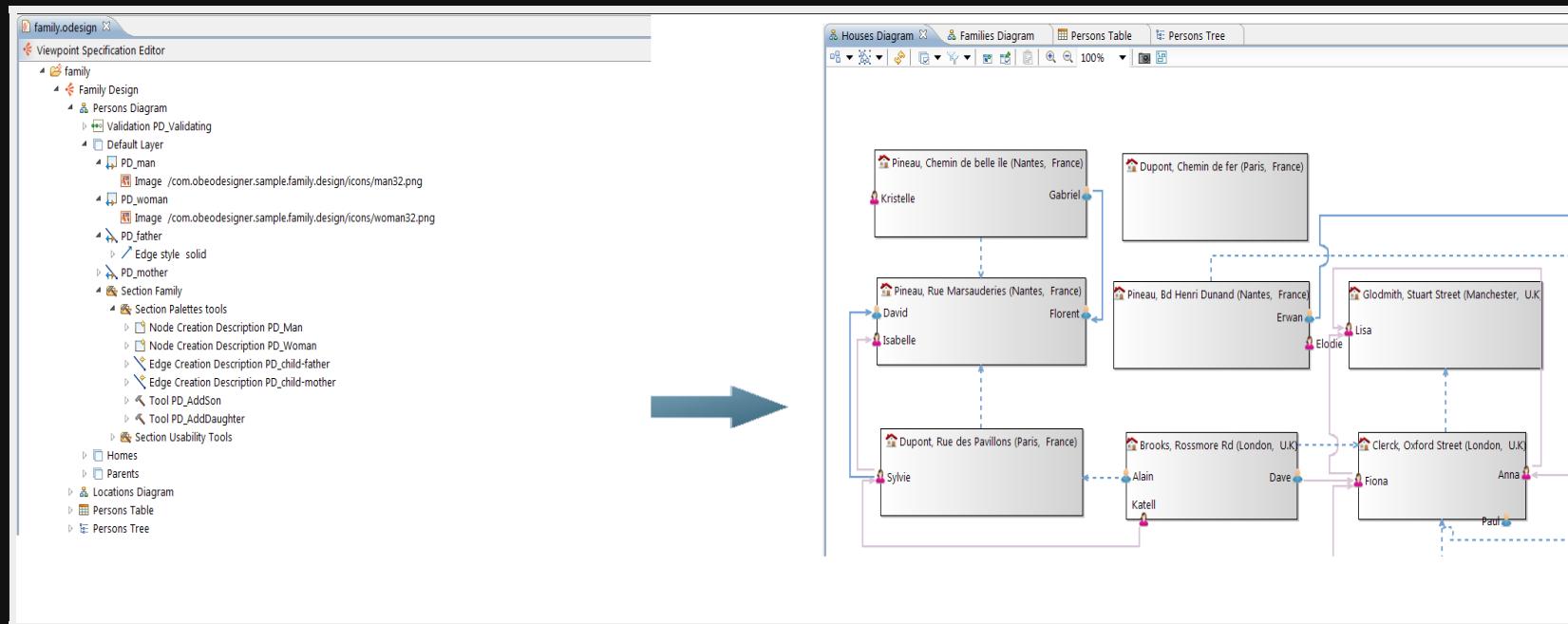
Within the **Crystal** european project : Artemis and DGCIS

Financed by the french "Caisse des dépôts et consignations"

Released in 2013 as an **official Eclipse project**

# Why using Sirius ?

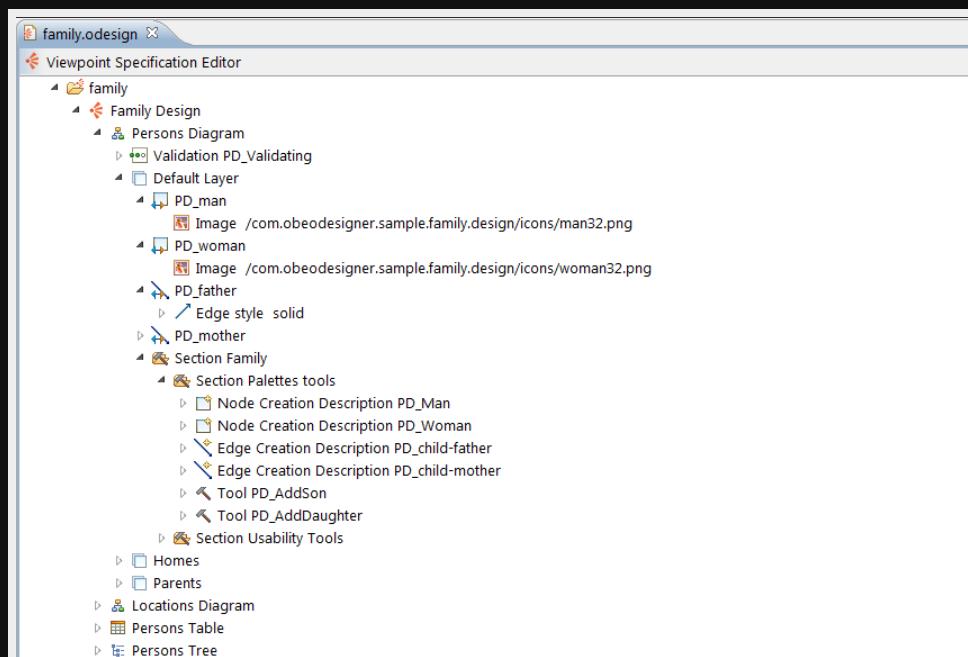
- For *developers* : reduce cost & complexity
  - No need to be an Eclipse modeling expert
  - Dynamic & iterative (live) development



- For *end-users* :
  - Tooling adapted to needs and workflows
  - Improved experience

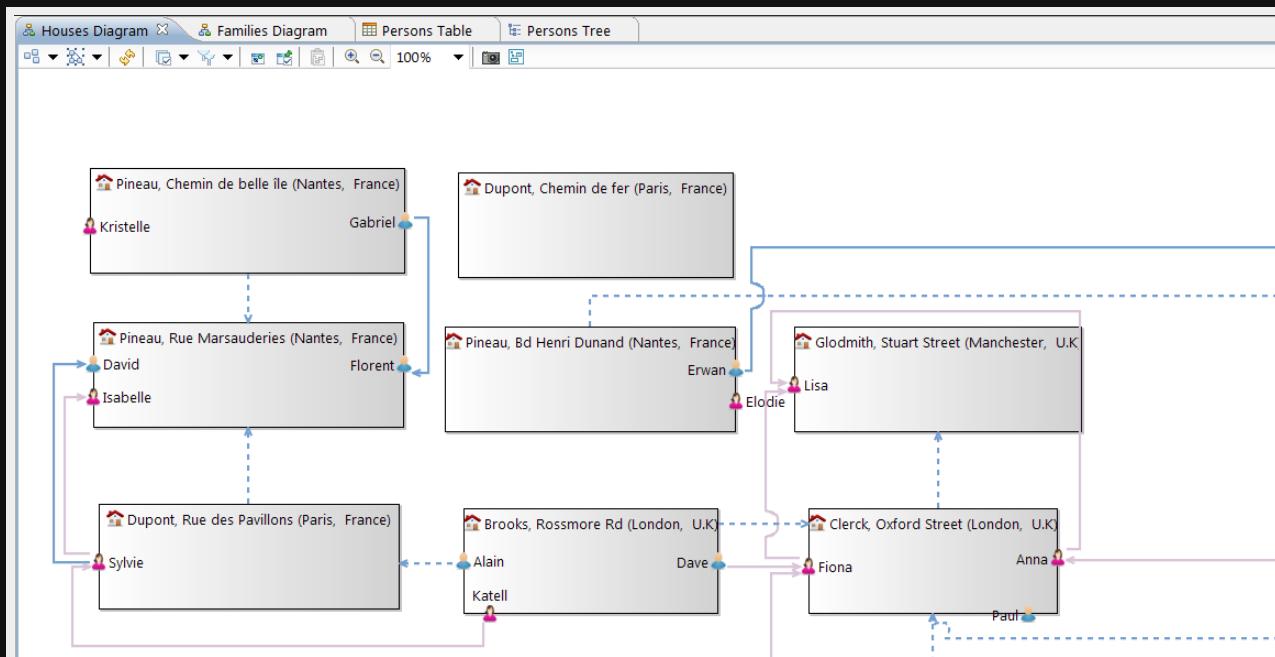
# Creating a modeling workbench with Sirius

- Define custom multi-view workbenches (Diagrams, Trees, Tables)
- With little technical knowledge
- Get a working modeler fast (instant feedback)
- Highly customizable (native tooling, Java or extension points)



# Using a modeling workbench based on Sirius

- Work with data models: not just a drawing tool
- Environment adapted to user needs (Viewpoint-based)
- Simplified workflow (Modeling Project)



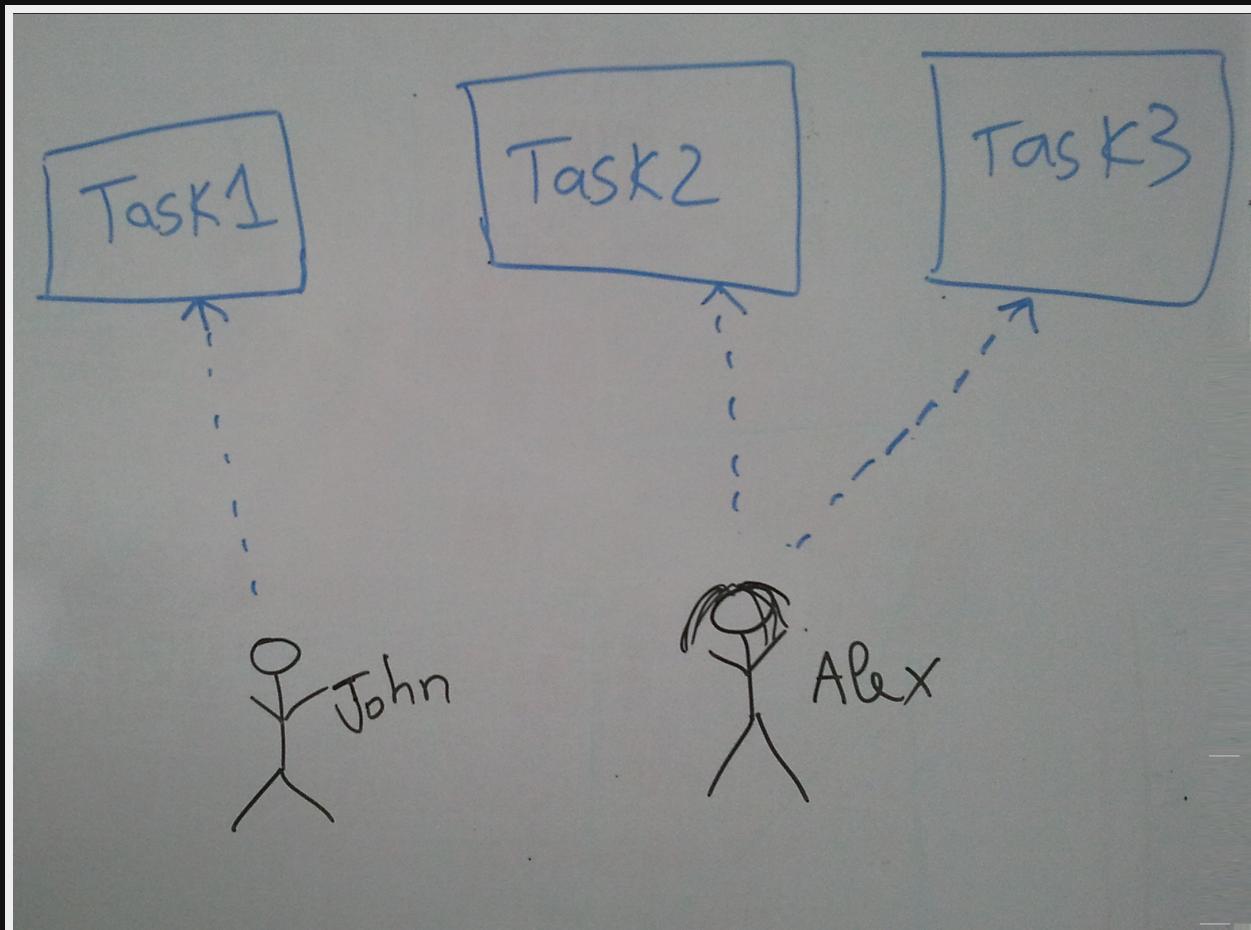
# Sirius in action

Using Obeo Designer

Available at <http://www.obeodesigner.com/>

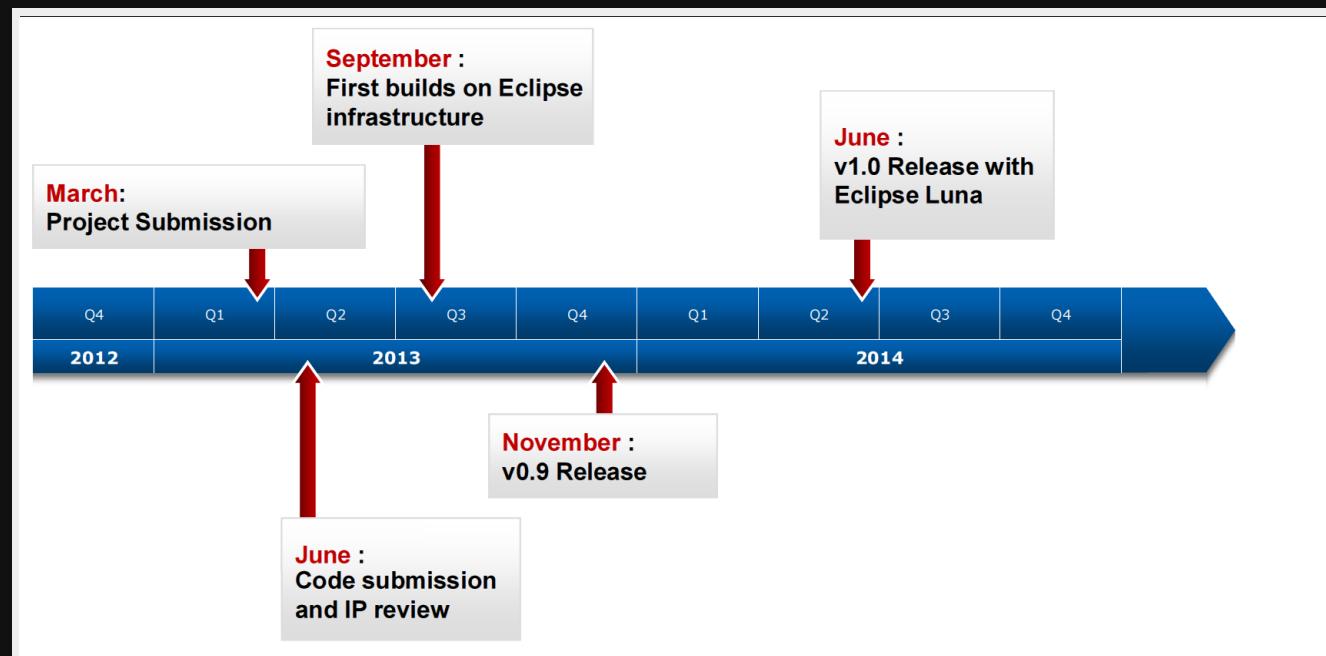


# What the customer asks for



# Who already uses Sirius ?

- Thales
- Embedded in Obeo Designer and Obeo SmartEA
- Open source modelers on the Eclipse marketplace : UML, SysML, TOGAF...
- You
  - already available in **Obeo Designer**
  - soon to be an official Eclipse project (Eclipse Luna)



# What's next ?

The **Gemoc Initiative**:

*On the Globalization of Modeling Languages*



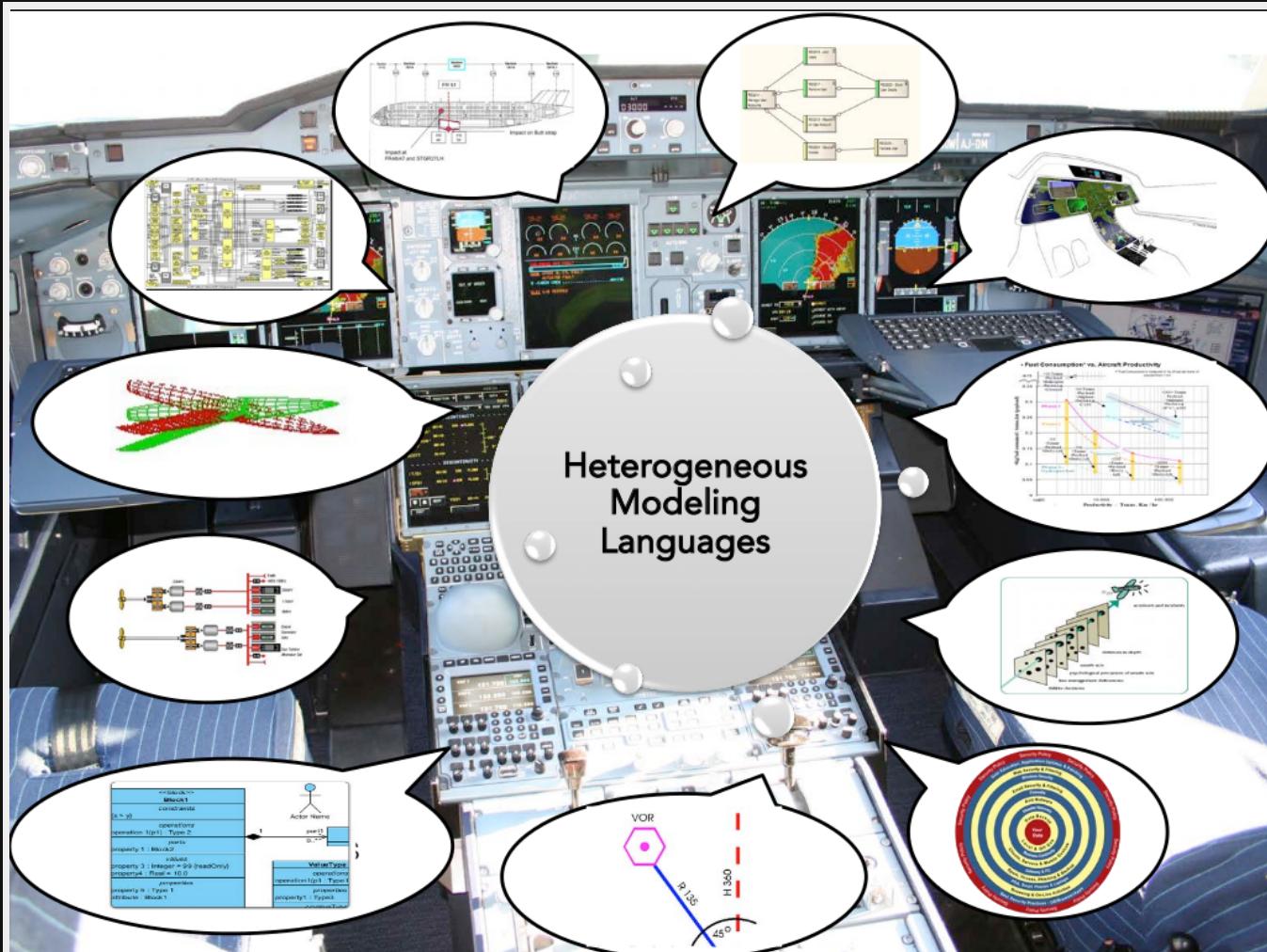
The **Gemoc** ANR project (2012-2016)

*A Language Workbench for Heterogeneous  
Modeling and Analysis of Complex Software-  
Intensive Systems*

# Heterogeneous parts



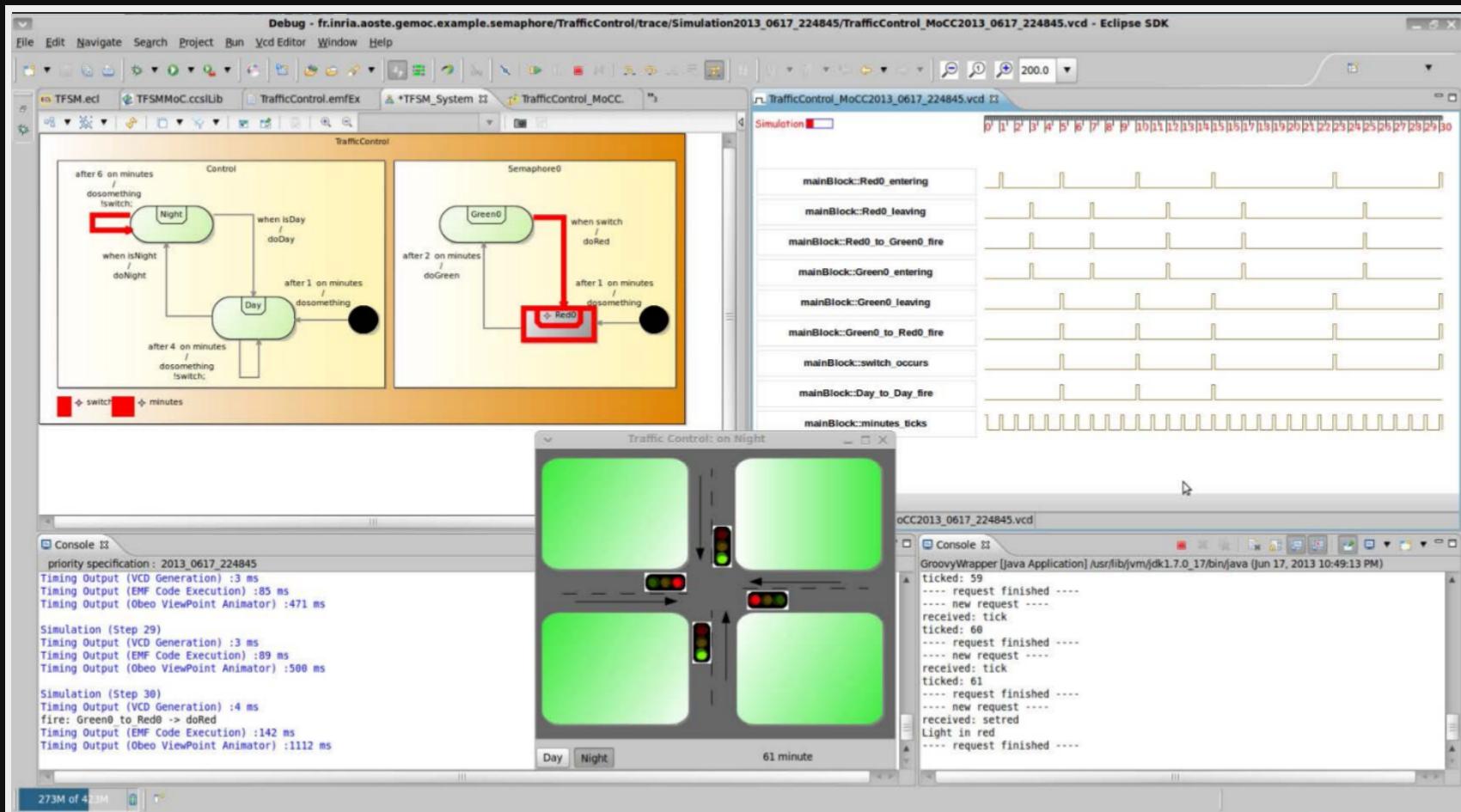
# Heterogeneous modeling languages



# Sirius in Gemoc

- *Today* : Able to create many DSLs with dedicated tools in the same workbench
- *Tomorrow* : **Unify** these separated semantics to get a sense of the heterogeneous systems
  - Drive system via debug (simulation or trace)
  - Animate the representations
  - Navigate through the whole system

# The Gemoc Studio



# 3 things to remember about Sirius

1. A full-featured environment to create custom modelers
2. Mature, many deployments
3. Open source

# Thank you!

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