UML-DSimulator

Final presentation

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Acknowledgement

Thanks you!

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Introduction

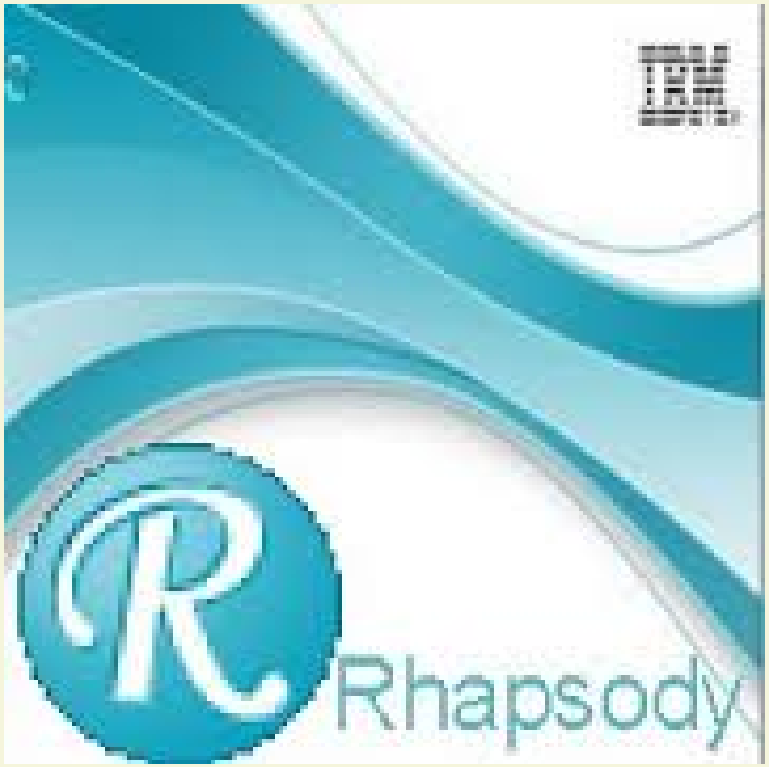

Figure: Rhapsody

Figure: Papyrus

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Teodorov Simulator

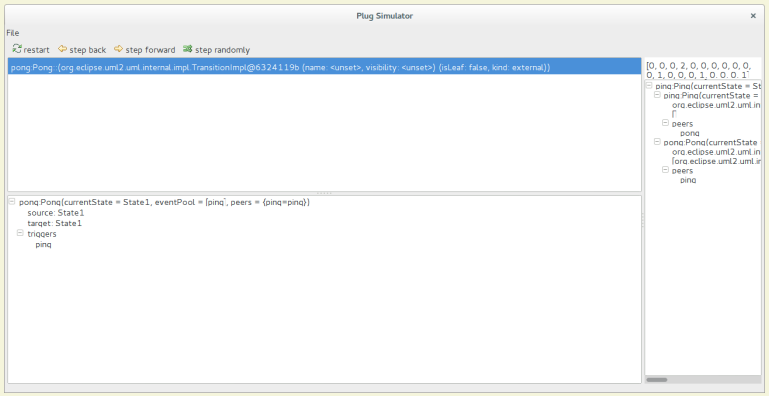

Figure: Teodorov Simulator Interface

The Teodorov simulator is a simulator of uml diagram.
This simulator needs some object:

- A Class diagram
- A State Machine diagram for all class

Explanation about the simulation

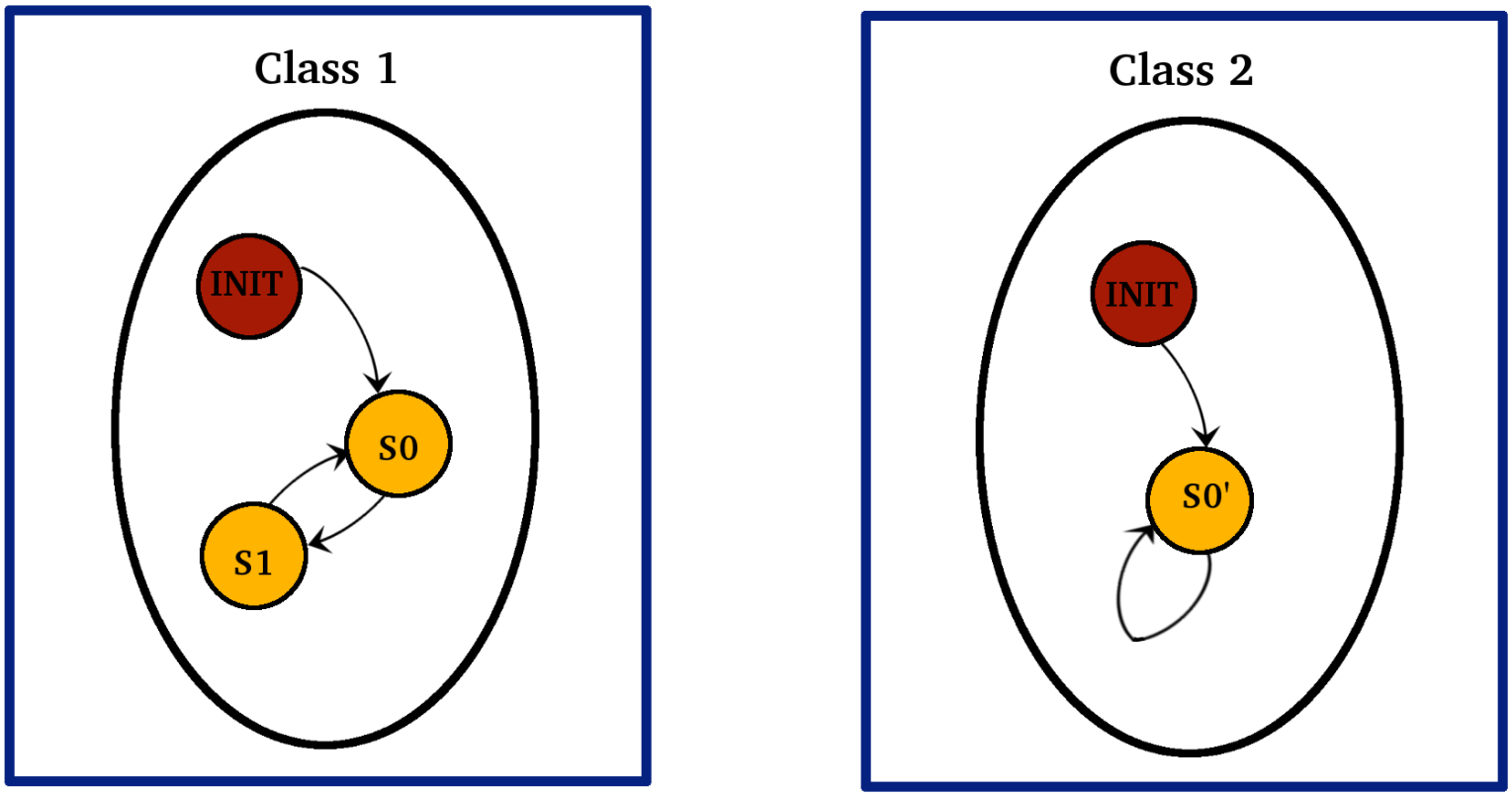

Figure: Representation of the most important elements of the simulator

UML Designer

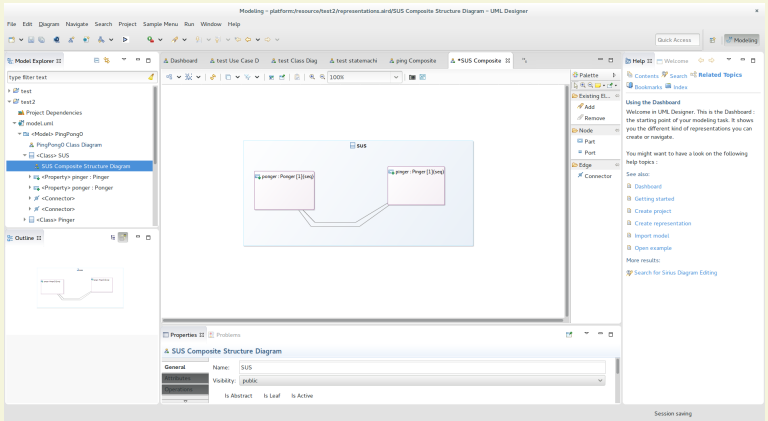

Figure: UML Designer Interface

UML Designer is an open-source tool to edit and visualize UML2 models created by the French company: *Obeo*. The project is licensed under the EPL

UML Designer kernel

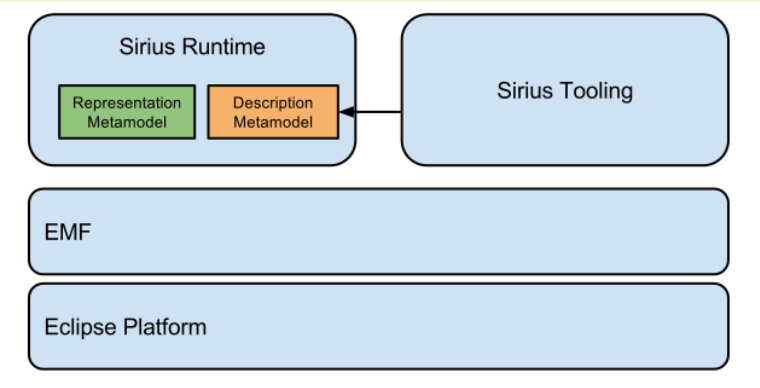

Figure: Sirius kernel [6]

UML Designer is based on:

- UML Designer plugin
- Sirius
- EMF
- Eclipse kernel

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Goals

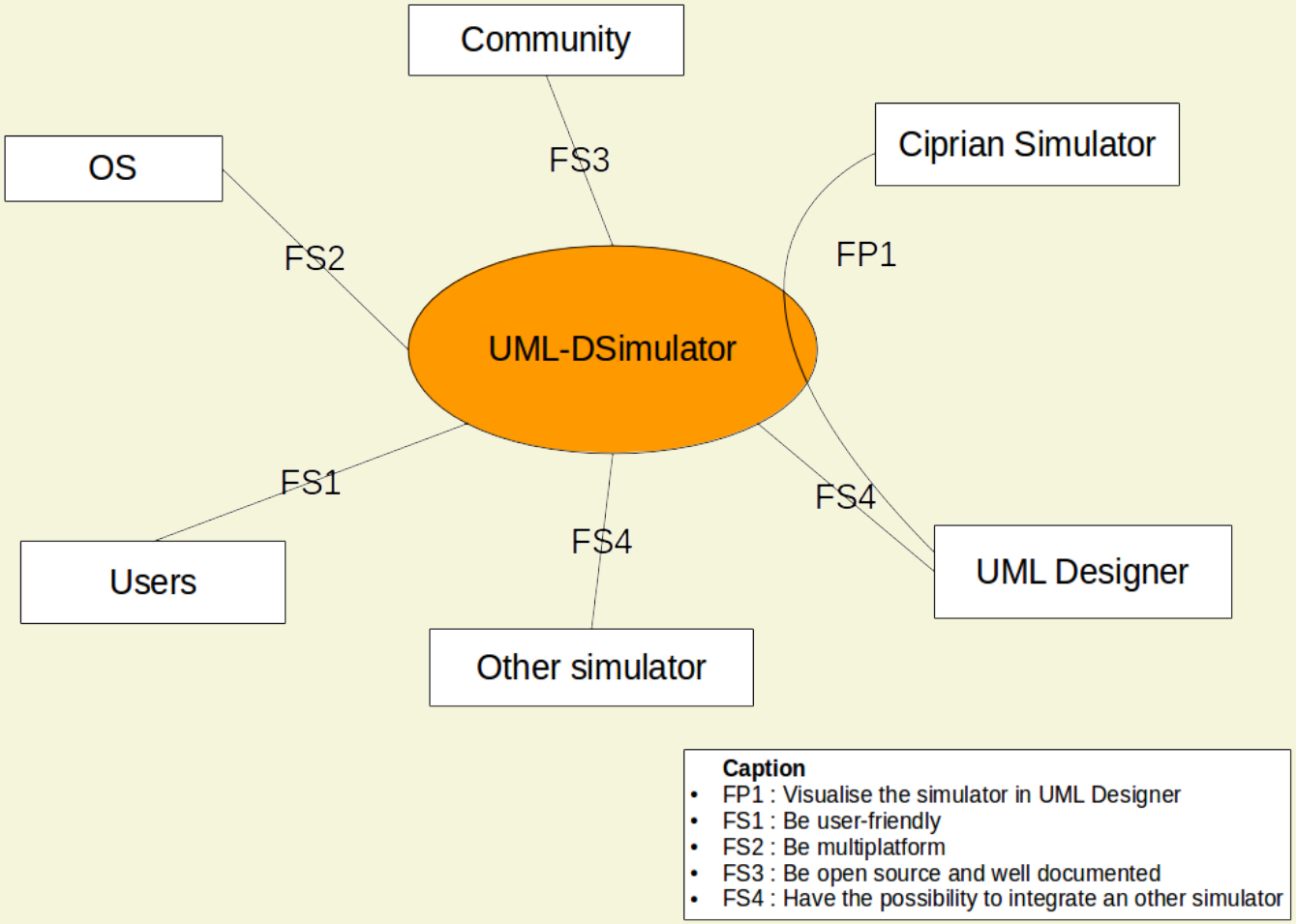

Figure: Octopus Diagram

Organization

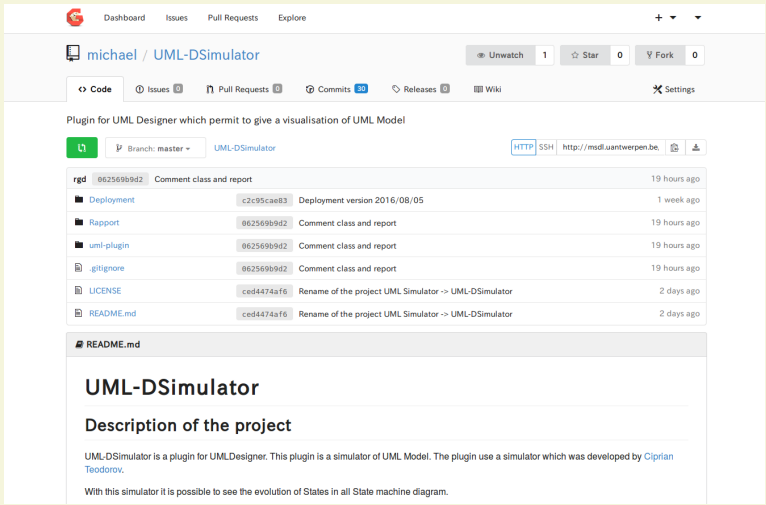

Figure: Git repository

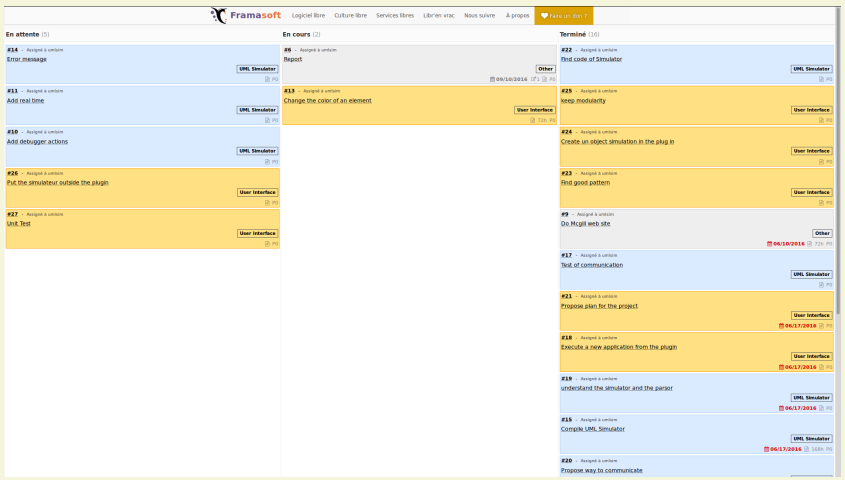

Figure: Kanban diagram

Planning

Tasks/weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14
State of the art	-	-								X				
Create a plugin			-							X				
Visualize the simulation				-	-	-	-	-		X				
Unit tests								-		X				
Integration tests									-	X				
Try an other simulator										X	-	-		
Redaction		-	-	-	-	-	-	-	-	X	-	-	-	
Oral						-				X				-

Figure: Planning

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Technical choice

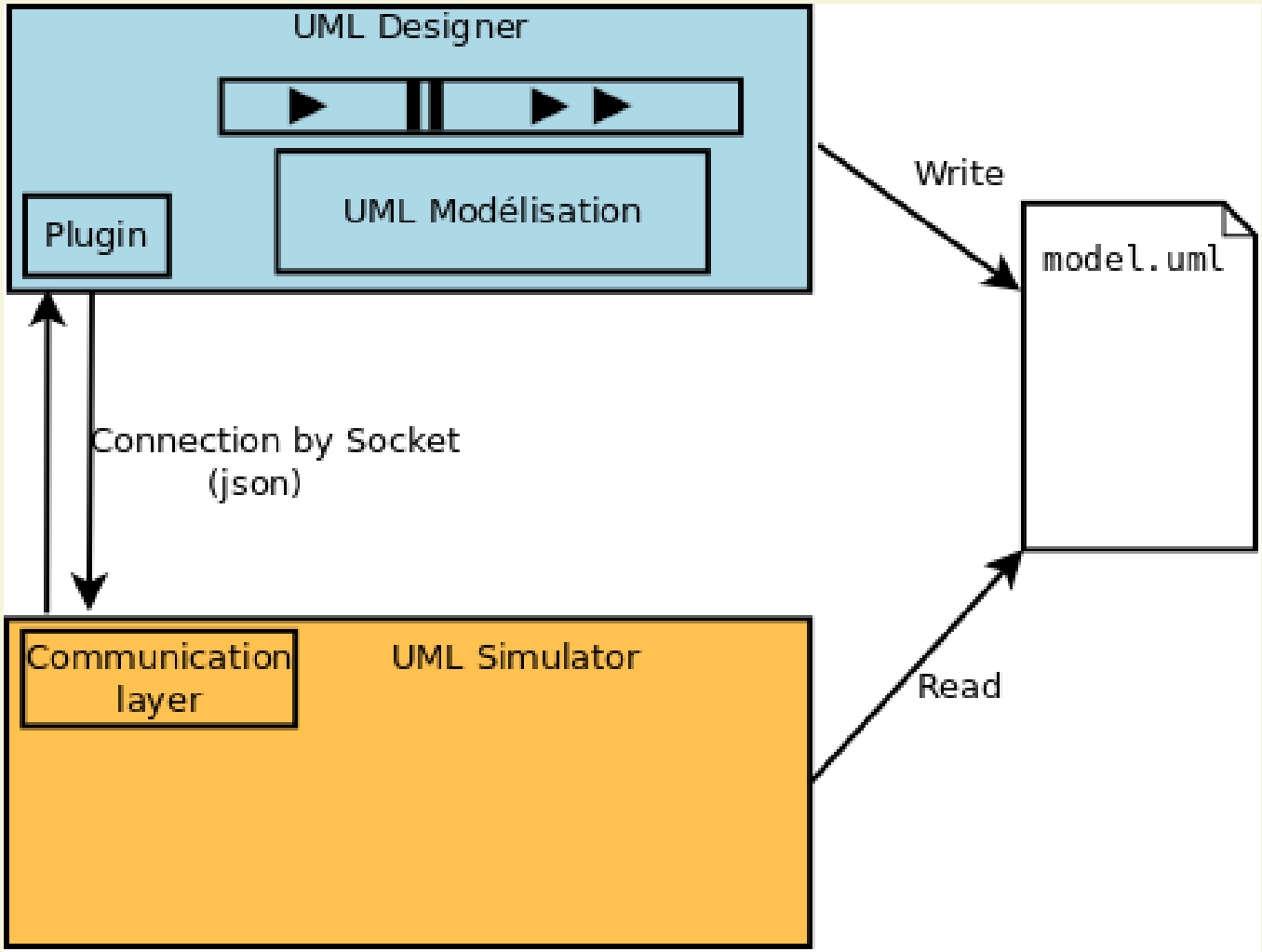

Figure: Overview of the project

Plugin

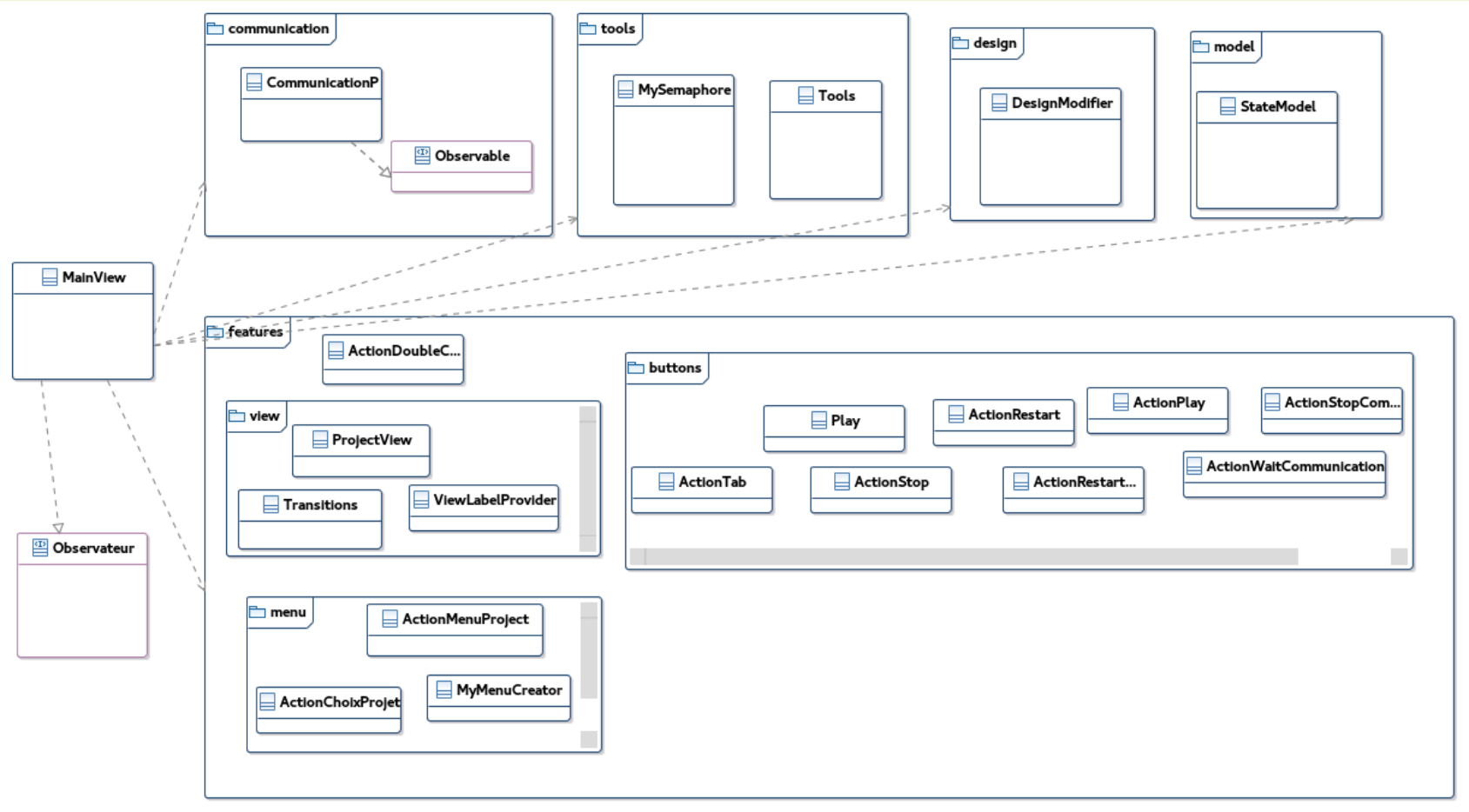

Figure: UML class diagram

Functionality implemented

Work done

- Integration of the Ciprian simulator in UML Designer
- Visualization of the simulation on State Machine Diagram and Class Diagrams
- Possibility to choose the next step
- Possibility to change the simulator
- A play mode
- Take care about instances creation
- Possibility to chose the instance visible

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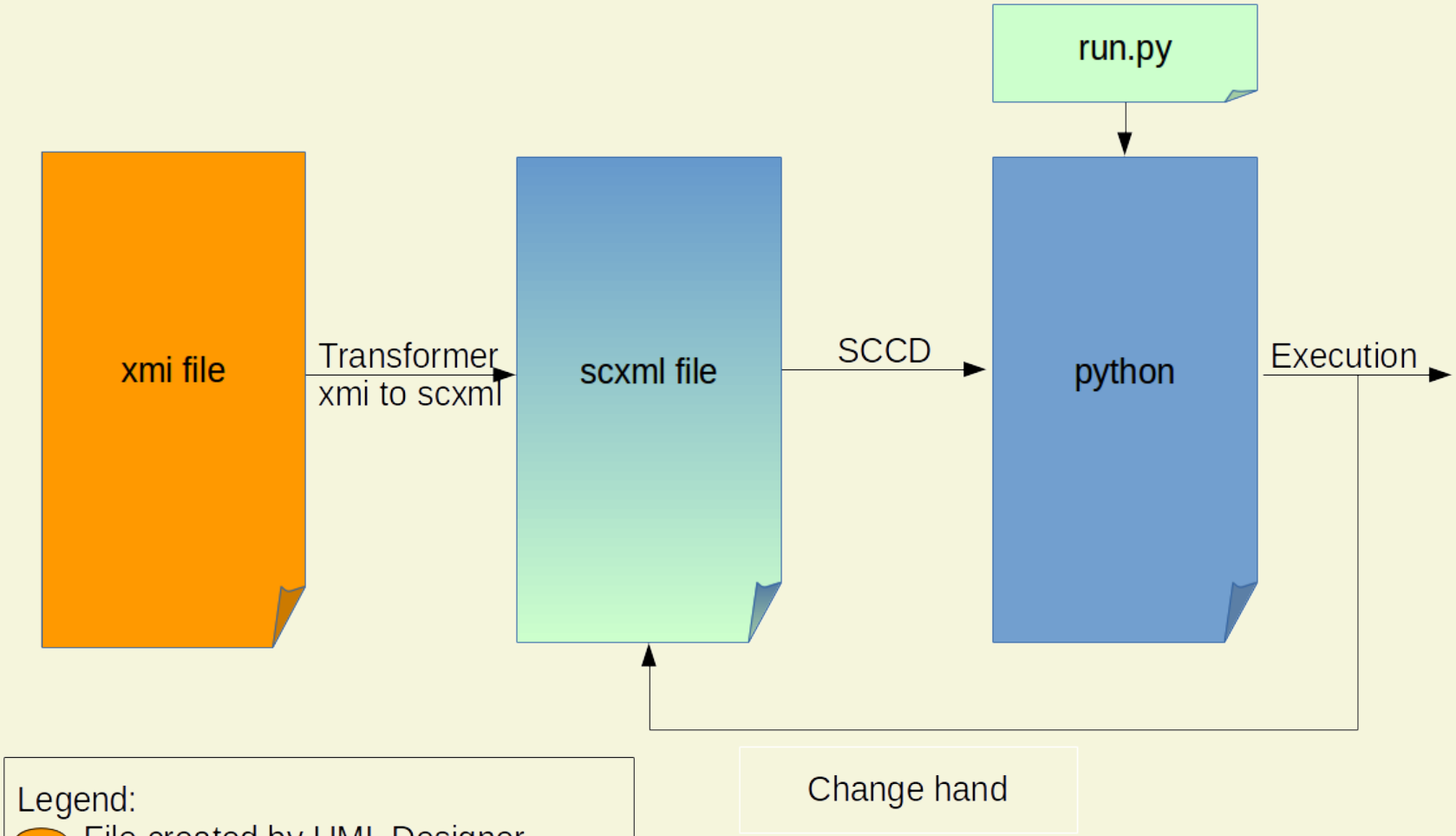
SCCD


run.py
xmi file
Transformer
xmi to scxml
scxml file
SCCD
python
Execution
Change hand
Legend:
File created by UML Designer
File created by hand
File created automatically

Tests

org.ensta.uml.sim	36,0 %
src	25,4 %
json	18,9 %
org.ensta.uml.sim.views	0,0 %
org.ensta.uml.sim.views.features.buttons	0,0 %
org.ensta.uml.sim.views.features.menu	0,0 %
org.ensta.uml.sim.views.features.view	0,0 %
org.ensta.uml.sim.views.design	0,0 %
org.ensta.uml.sim.views.features	0,0 %
org.ensta.uml.sim.views.model	76,9 %
org.ensta.uml.sim.simulateur	90,9 %
org.ensta.uml.sim.views.communication	88,9 %
org.ensta.uml.sim.views.tools	88,9 %
test	90,9 %
mock	94,7 %

Figure: Coverage of my Unit Tests

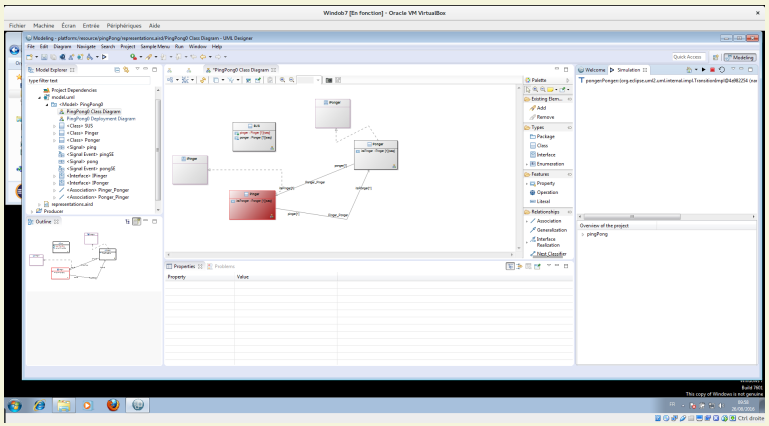


Figure: Screen-shot of the Windows virtual machine

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Contribution of this internship

Acquisition

- Discover how work a research laboratory
- Learn lot of things about SCCD and Statechart
- Improve my scholarship abilities

Encountered difficulties

- Understand how works UML Designer and the Ciprian Simulator
- Find the good API
- Block by the Simulator

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Conclusion

To conclude

- The project has some trouble due to the simulator
- Need some improvement in Debugging fields
- It can't be use by everybody

But, I am happy because...

- The plugin is stable, modular and documented
- I learn a lot of things, and I overwhelm myself
- Mr Champeau is satisfied of my works

Demonstration

Bibliography

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[9] stleary. Json-java. https://github.com/stleary/JSON-java.

[10] Wikipédia. Observer pattern. https://en.wikipedia.org/wiki/Observer_pattern.

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Questions?

MSDL organization

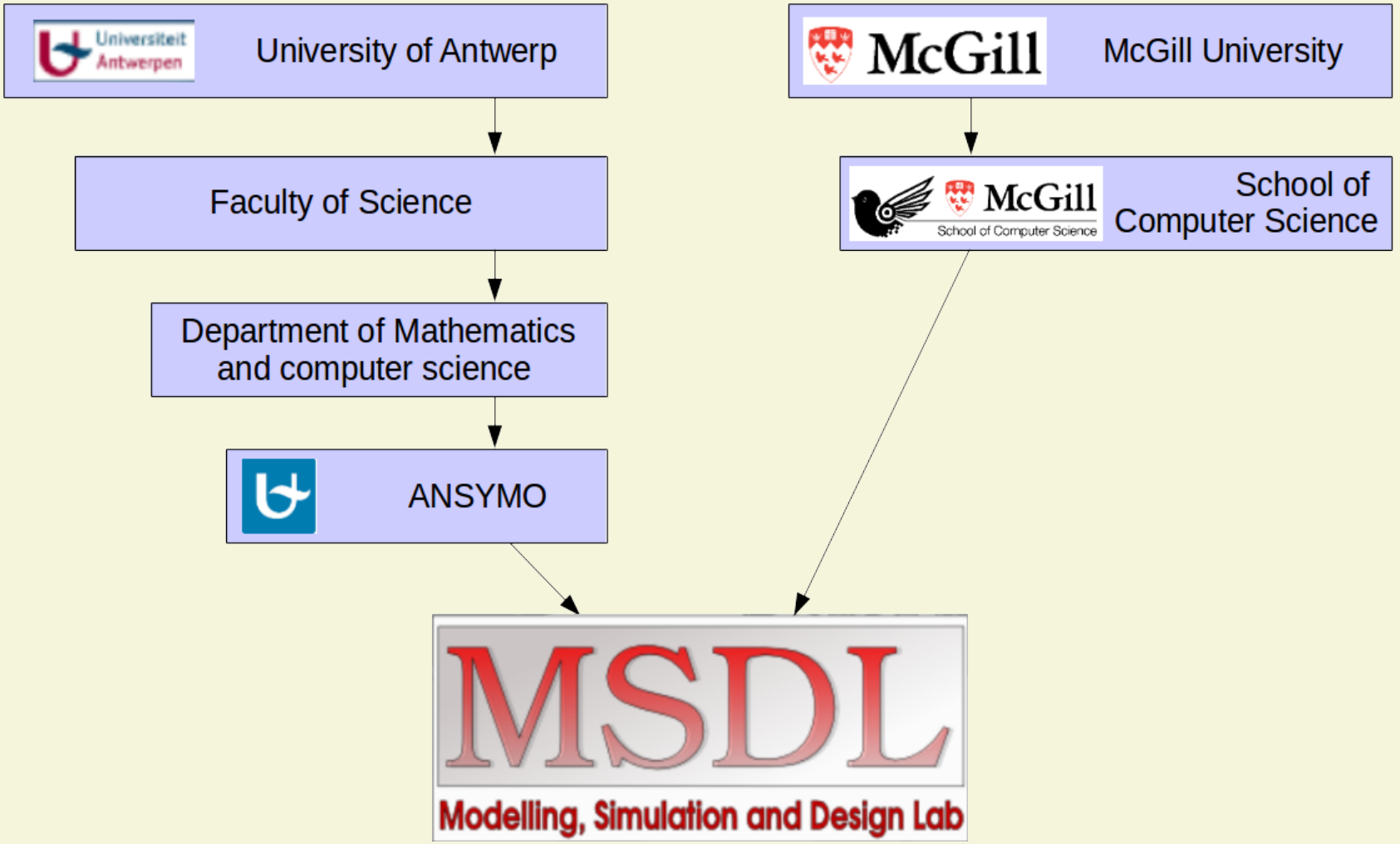

Figure: Position of MSDL

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How to write plugin

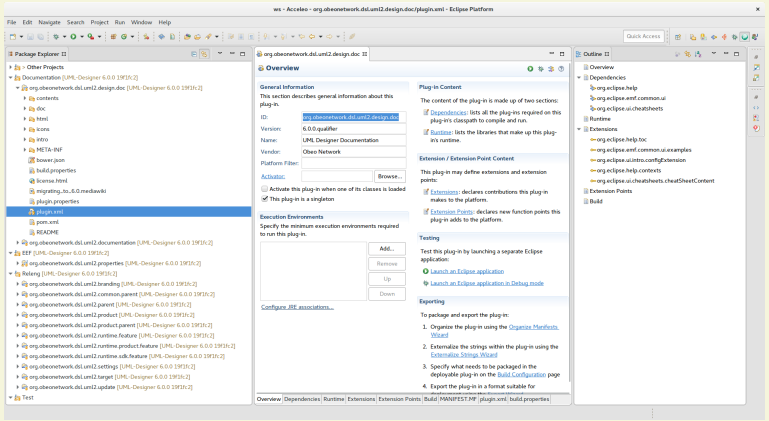

Figure: Eclipse environment

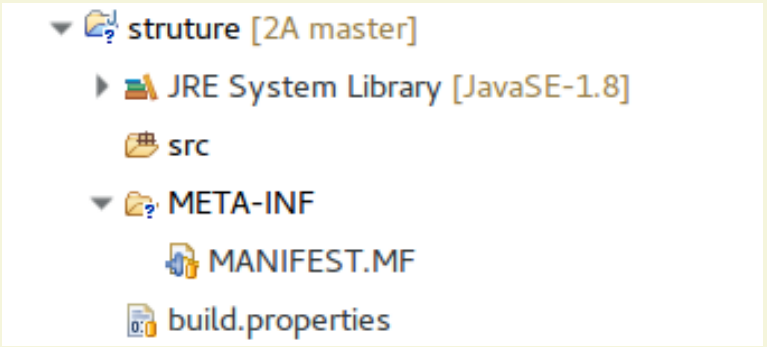

Figure: Structure of an eclipse plugin

Why Socket

Advantages	**Drawback**
Work with every language (python, java, ...)	Message need to be formatted
Allow communications enter process which don't use the same language	Not very fast
Work on all platform (Windows, Linux, OSX)	

TODO (13/07/2016)

Planned

- Give the choice of the simulator
- Show states in the State Machine diagrams
- Improve the User experience

If I have time...

- Create a Sequence Diagram automatically
- Create a Debug view
- Show real time

Functionality implemented