



# Papyrus Tool

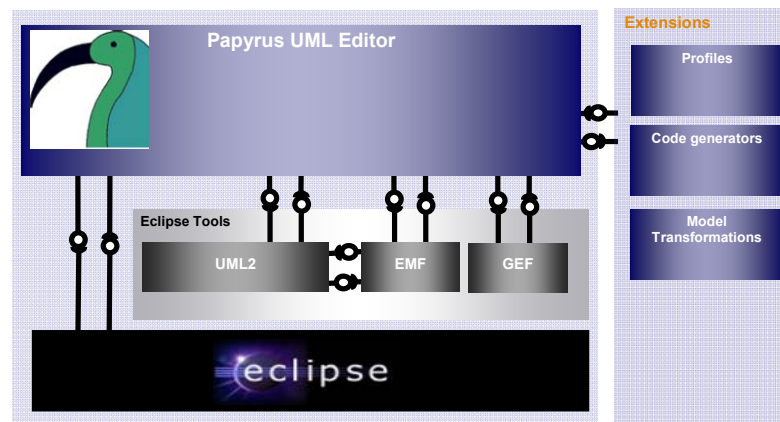
---

January, the 27th, 2009

Journées du GDP GPL – Outils pour l'IDM

# Key features for Papyrus

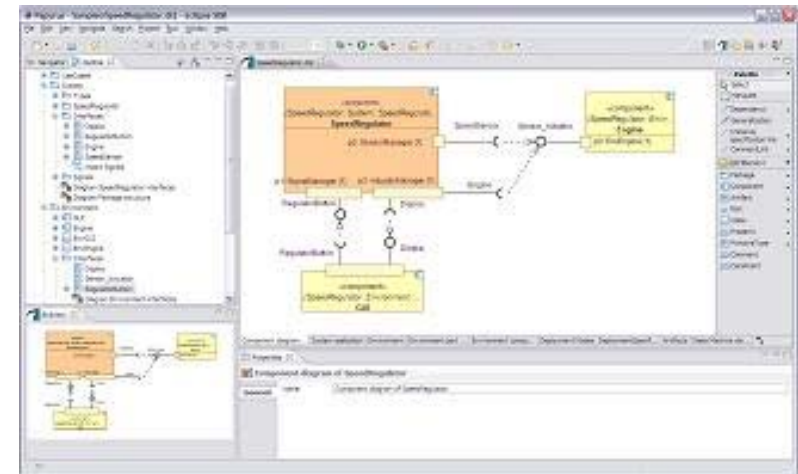
- open source modelling tool for UML2
- developed by the **CEA LIST** since February 2007
- around 180,000 download (September 2008)
- Papyrus website: <http://www.papyrusuml.org>
- Actual release: **V1.11**. Two versions :
  - a standalone product on various targets (OSX, Windows, Linux)
  - an Eclipse extension.
- Papyrus is an Eclipse project (October 2008)
- Papyrus provides an efficient graphical editor for the Unified Modelling Language (UML 2)
- Papyrus architecture:



- Papyrus obviously addresses the two key features expected from a UML2 graphical editor: **modeling** and **profiling**.

# Modeling with Papyrus

- Papyrus currently supports eight of the diagrams described in UML specification:
  - **class** diagram,
  - **component** diagram,
  - **activity** diagram,
  - **composite structure** diagram,
  - **state machine** diagram,
  - **use case** diagram,
  - **sequence** diagram,
  - **deployment** diagram.
  - **(requirement diagram)**
- User-defined modeling OCL rules in the models
  - specific text completion features implemented in Papyrus
  - OCL constraints checking via an OCL verification engine
- UML modeling with Papyrus: **Accord|<sub>UML</sub> methodology**





# Profiling with Papyrus

---

- Profiling:
  - a key feature of UML
  - **adapts** the UML language to **specific modelling aspect** or **business domain**.
- Papyrus offers a graphical editor to:
  - **create new profiles**,
  - define new modelling concept (stereotypes).
- Stereotypes may be associated
  - with specific modelling rules in OCL,
  - and/or specific graphical representation.



# Tool extensibility

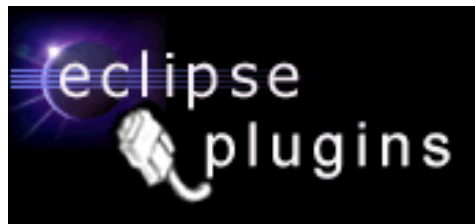
---

- An Eclipse basis for Papyrus:
  - various kind of Eclipse extensions available.
- Papyrus has defined a set of commonly used extension to allow:
  - **profile** implementation and
  - **code generation** plug-ins for Papyrus.
- Currently **available profiles** are the following implementations of OMG specification:
  - UML profile for Modeling and Analysis of Real Time and Embedded systems (**MARTE**)
  - UML profile for Systems Engineering (**SysML**)
  - UML profile for CORBA and CORBA Component Model (**CCM** and **Lightweight CCM**)
- Papyrus **code generation** plug-ins for the following languages:
  - **C++**,
  - **C** and
  - **Java** (integrates code generation with **round-trip feature**).

# Papyrus – The future

---

- Papyrus Eclipse project
  - Papyrus V2



- New architecture of Papyrus based on GMF



# Papyrus tool - Overview

---

- What are the objectives of Papyrus tool?
  - Papyrus addresses two key features expected from a UML2 graphical editor: **modeling** and **profiling**
  - Eclipse EMF standard
- With Papyrus, how can we:
  - **Test the model**: code generation (C++, C and Java)
  - **Guaranty coherence between diagrams**: OCL editor, connexion to model transformation tools (ATL, and so on...)
  - **Define CIM → PIM → PSM → code transformations**:
    - define model transformation (ATL for instance).
    - Accord<sub>UML</sub> methodology is implemented within Papyrus
  - **Trust the different transformations?**: To be considered by other tools connected to Eclipse.
- How can we **integrate Papyrus**?
  - Papyrus is Eclipse integrated
- With Papyrus, how can we?:
  - **Model a domain-specific application**: profile definition.
  - **Gain in productivity, quality, security?** To be done.
- Can you cite "**success stories**"?
  - Papyrus is used in different projects associated with industrials
  - Papyrus is still under development



# Papyrus - Demo

---

- Accord|<sub>UML</sub> methodology
- example...