(Sirius + Papyrus) x Web

a new Era for Collaborative Engineering tools
Challenges for engineering...

- **User Experience**
  - Onboarding, usage scenario, supporting modeling goals, etc.

- **Digital Thread**
  - Tool interoperability, Agile engineering, etc.

- **Next Gen Editing of knowledge**
  - VR, multi-devices, multi-modality of UI, metavers, etc.

- **Sovereignty & security**
  - Lock-in, data privacy, etc.

- **Collaboration at Scale**
  - Several organizations, Security, IP, etc.

- **Augmented Engineering**
  - Chatbots, Lgen AI, LLMs, etc.

... calls for a long term and open vision for tools
Involved in many Modeling Technologies

1500 days of OSS effort in 2022
A joint initiative

Initial Steps

1. Sirius Web
   - Move to the Web and adapt the platform

2. Papyrus + Sirius Desktop
   - Migrate Papyrus to Sirius
   - Isolate editing logic

3. Papyrus + Sirius Web
   - Reach "Minimum Viable Product" level for UML modeling on the Web

4. SysMLv2
   - Implements the standard in a reusable and customizable project

**“The great Eclipse Papyrus migration...”**
Thursday 12:20 in Silchersaal
Papyrus Web Editors

On the Eclipse Foundation Gitlab

1st milestone:
- 100% metamodel and basic editing
- Files import/export
- Composite / Package / Class / State Machine diagrams
- Profiles Application (under development)
- Rich Properties (under development)
- Layout and UX (under development)

https://gitlab.eclipse.org/eclipse/papyrus/org.eclipse.papyrus-web
Demo: a Quick Tour of Papyrus Web Editors
Sirius Web
Modular platform to define visual modeling tools

React + GraphQL
Huge ecosystem of widgets

Spring Boot
Java back-end, Industry Standard

View Model
Define the graphical editors, forms, tables

UML Services
Shared component between Desktop and Web Editors

Eclipse MDT UML
UML Implementation in Java

Through Web editor or Java builder API
Eclipse UML reused “as is”

Same Implementation for:
- Metamodel Implementation
- Model Manipulation API
- Create/Read/Update/Delete
- XMI Serialization
Enabler for more innovation

Reduce Barriers
Model Agnostic
Leverage Web based Techs
Fast Iteration
Online Data and new Integrations

As simple as going to an URL
Domain Specific Languages and Standards integrated in the same environment
Rich forms, charts, 3D rendering, cloud stacks...
Adapt the tool, metamodel instantly deploy and get feedback
Link with other engineering tools and global data stores.
Demo: Papyrus Web Editor + Jupyter Notebook
Support for the specification, analysis, design, and V&V of complex systems (incl. HW, SW, information, processes, project, etc.).

SysML v2 Objectives

- Increase adoption and effectiveness of MBSE by enhancing...
- Precision and expressiveness of the language
- Consistency and integration among language concepts
- Interoperability with other engineering models and tools
- Usability by model developers and consumers
- Extensibility to support domain specific applications
- Migration path for SysML v1 users and implementors
The SysON Open Source project in Eclipse

a Web Modeling Tool for editing SysMLv2 models conforming to the OMG Standard

Integration With Capella
Enable co-design

Co-Lead CEA & Obeo
CEA: OMG and standard “Meta” and extensibility
Obeo: Product and User Experience

Structured Editing
Graphical Modeler
Forms
Tables

User Experience
Shortcuts, edit assists

Interoperability
Textual syntax
API

Re-used in Papyrus
Core of SysMLv2 Support

Roadmap
Project in proposal phase
Initial contribution by 2023
Basic System Modeling in 2024

https://projects.eclipse.org/proposals/eclipse-syson
Demo : SysON

- General View
- Direct edit, typing definition, subsetting, reconnect...
- SysMLv2 + Arcadia
SysON : Vehicle Sample Model
SysON : Interconnection View
SysON: Arcadia Method Overview
Next Steps

Papyrus + Sirius Desktop
- Full Migration and Professionnal Support

Sirius Web
- Consolidation, Search, Tables, React Flow ...

Papyrus Web Editors
- Complete UML diagrams in 2024

Augmented Engineering
- Modeling assistants, LLMS, bots, code gen ...

SysON
- First level of practicability by 2024
- First Integrations

GreenTech

Papyrus & SysMLv2
- Model simulation, code generation, robotics, ...

Capella & SysMLv2
- Integration for Subsystem design

SysMLv2
- Integration for Subsystem design
Transitioning the Eclipse Modeling Technologies
While revisiting choices and tradeoffs

Papyrus is making the leap to Sirius and Sirius Web

We hope to enable new Research and Innovation

SysON will bring OpenSource SysMLv2 tooling

More talks:
- Shape Me Up, Before you Go Go! A Journey transforming how we build products
  - Tuesday, 15:15 in Schubartsaal
- The great Eclipse Papyrus migration, from GMF and XWT to Sirius and EEF
  - Thursday 12:20 in Silchersaal

Get involved:
Interested Parties
R&D Projects
Industrial Use cases
Sponsored Developments

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