The great Eclipse Papyrus migration,
from GMF and XWT to Sirius and EEF
AGENDA

- A Brief History
- The Migration
- The Result
- The Roadmap
A brief Papyrus History / Once upon a time

- 2000 ~ CEA becomes a member of the OMG (http://www.omg.org/)
- 2006: Creation of Papyrus (https://list.cea.fr/en/) - initially in order to get a Profile diagram
  - afterwards extended to all other diagrams
- 2008: Papyrus becomes open-source as an Eclipse Project under EPL1
- 2008 onward: SysML (2009), MARTE (2010), many other profiles and relatives (42 projects)
A Brief Papyrus Presentation

Several customizable views and tools

- Diagram editors (1) - GMF
- Property view (2) - XWT
- Model explorer (3)
- Table editors
- Xtext editors
- Context menu
The Migration
Why are we migrating?

Papyrus thrived for nearly 15 years but ended up with some aging technologies.

- GMF Tooling is not maintained anymore (Papyrus is using a fork since 2021)
- XWT is not maintained anymore (CEA handles its builds and releases since 2019)

Goals of the update:

- Ease the maintenance and use up-to-date technologies
- Ease the creation of new diagrams and the creation of Property Views.
- Homogenize Look And Feel between views
- Overhaul the specifications of Papyrus itself
- Prepare the migration to a future Papyrus-Web, by using shared technologies (EEF + Sirius Web + UML common java code for edition)
What has been realized and how (1/2)

● Improve diagram codebase → Assume a GMF Tooling fork
  - GMFFGen extension + xtend template overrides
  - Improve GMFFGen generation
  - 860 thousands lines
  - Efficiency
  - Maintainability

● New versions for 3 diagrams (Class, StateMachine, Sequence) with Sirius
  - Challenges:
    - Sirius as nested editor (open/close/save)
    - Sirius Session
    - Sirius Toolbar
    - Connect GMF ElementType used to edit UML elements (CRUD services: create, read, update, delete)
What has been realized and how (2/2)

- The second round of work focused on:
  - Developing the other UML Diagrams with Sirius
  - Developing a new Property View with EEF
  - Exploring the connexion of CRUD Services with Sirius Diagrams and Properties

Papyrus on the Web?
Analyzing old and new functionalities

- Textual specifications,
- Matrix of capabilities for each diagrams used to complete specifications
- JUnit Tests
- User and developer documentations

Can we create column element inside row element representation?

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Create Dependency between the row (source) and the column (target)?
Papyrus architecture migration result

- Model Edition - CRUD -> GMF ElementType + EditionService
- GMF Diagram Editor
- XWT for the Properties Views

- UML-DomainService - a new project (git repository) dedicated to the CRUD
- Sirius Diagram
- EEF Properties Views
Behavior and diagram changes

- New Diagrams are integrated as nested editor into Papyrus
- Appearance of elements is preserved
- Capabilities are preserved
- Harmonize of UML keywords usage (« interaction », « import », …)
- Harmonize of UML icons usage in the diagrams
- Harmonize of some behaviors between diagrams (typing Property by DnD)
- Easier to maintain for the Papyrus Team

<table>
<thead>
<tr>
<th>GMF</th>
<th>Sirius</th>
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<tr>
<td>oep.uml.diagram.common : ~94 thousand lines</td>
<td>oep.sirius.uml.diagram.common : 10 699 lines</td>
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<tr>
<td>oep.uml.diagram.clazz : 74 881 lines</td>
<td>oep.sirius.uml.diagram.clazz : 4 284 lines</td>
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New Diagrams, customizing in the new architecture

- Old specialization
  - Create a UML profile for the usecase
  - New ElementTypes inherinting from UML ones
  - New Diagrams inherinting from UML ones (figure, behavior, palette)
  - New Properties Views

- New specialization:
  - Create a UML Profile
  - Create a dedicated domain service
  - Create new diagrams
  - Create new EEF Properties views
How to create a new diagram?

Easier, Better, Faster, Stronger...
How to create a new property view?

Easier, Better, Faster, Stronger...

(One more time!)
Papyrus roadmap

- **2023-12: Sirius based Papyrus (Alpha version)**
  - New Property view (update site)
  - New diagram based on Sirius (update site)

- **2024-06: Sirius based Papyrus (Beta version)**

- **Q3 2024: Diagram migration**

Starting 2025, the plan is to not do any new developments on the Papyrus heavy client.
Thank you!

Join the conversation:

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