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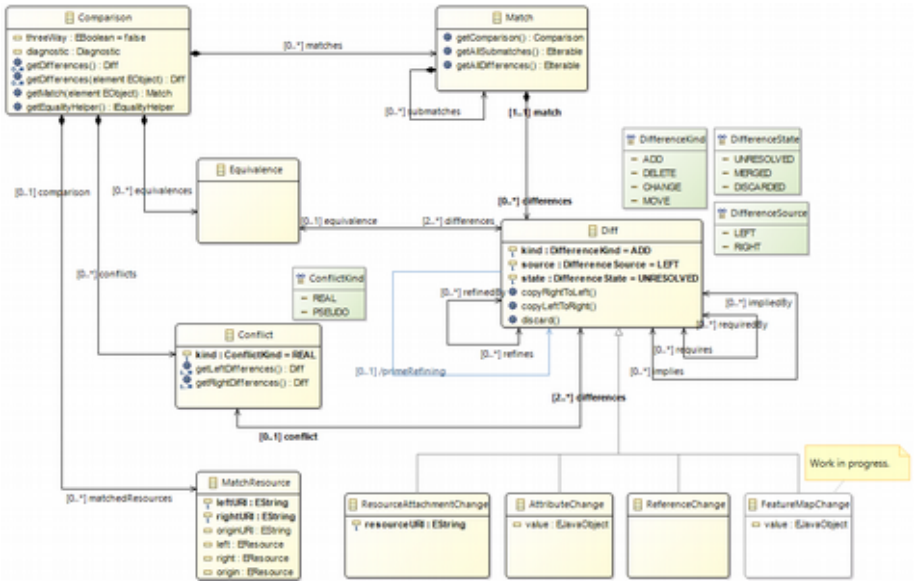
A Guided Tour of Eclipse Modeling, Monday, October 23, 2017

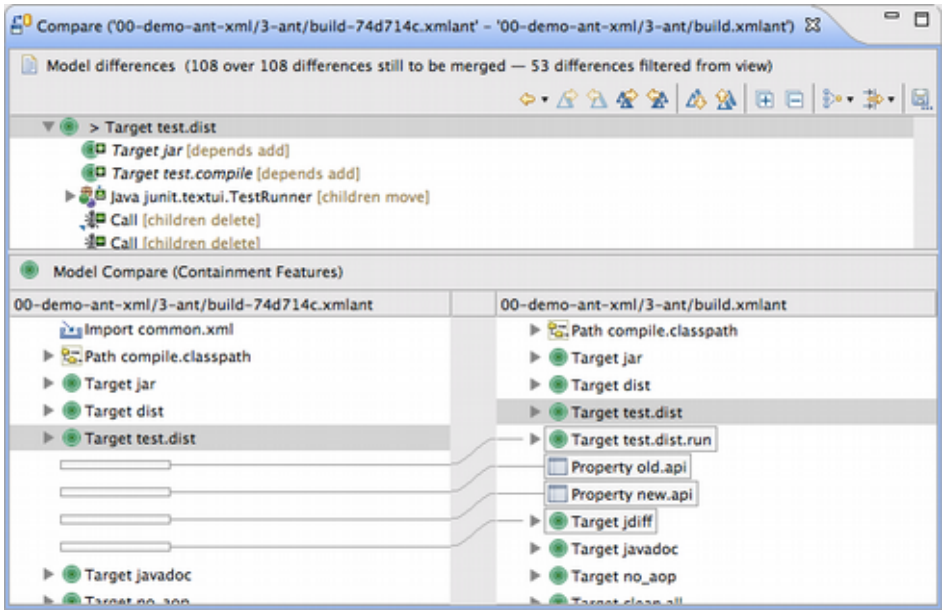
eclipsecon Europe 2017

What is EMF Compare?

- A highly-customizable model-based framework to compare EMF models



- An integrated tool to visualize and merge differences between EMF models



Diff and merge at the model level !

... and forget XMI files textual differencing

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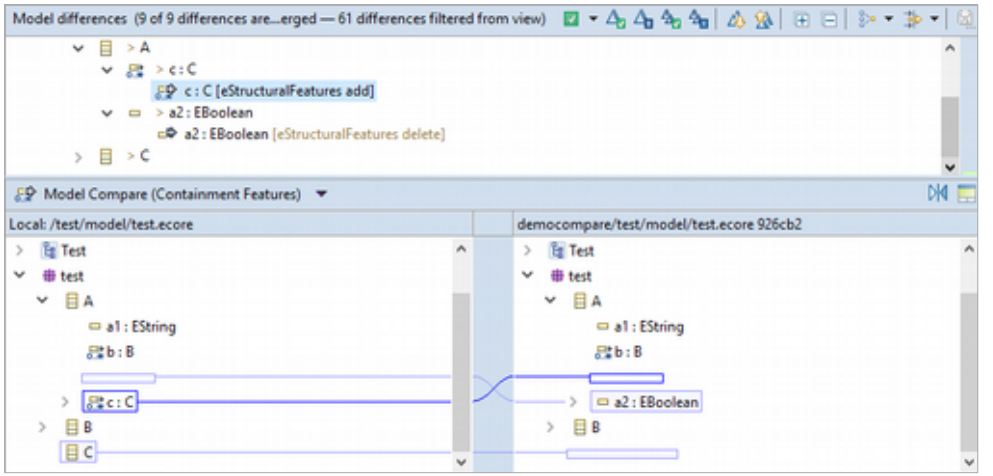
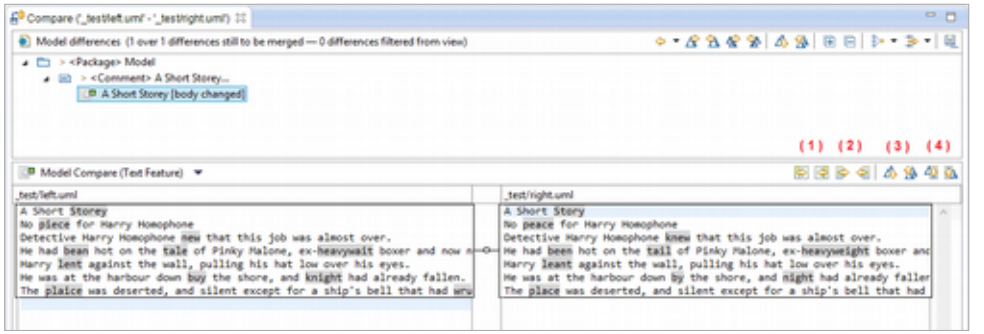
Main features

- **Comparison with Local or Remote models**
  - Integration with Egit

- **Differences management**
  - Preview
  - Grouping (kind, side, resource)
  - Filtering
  - Conflicts



- **Text attribute comparison**
  - Specific actions for String-typed differences



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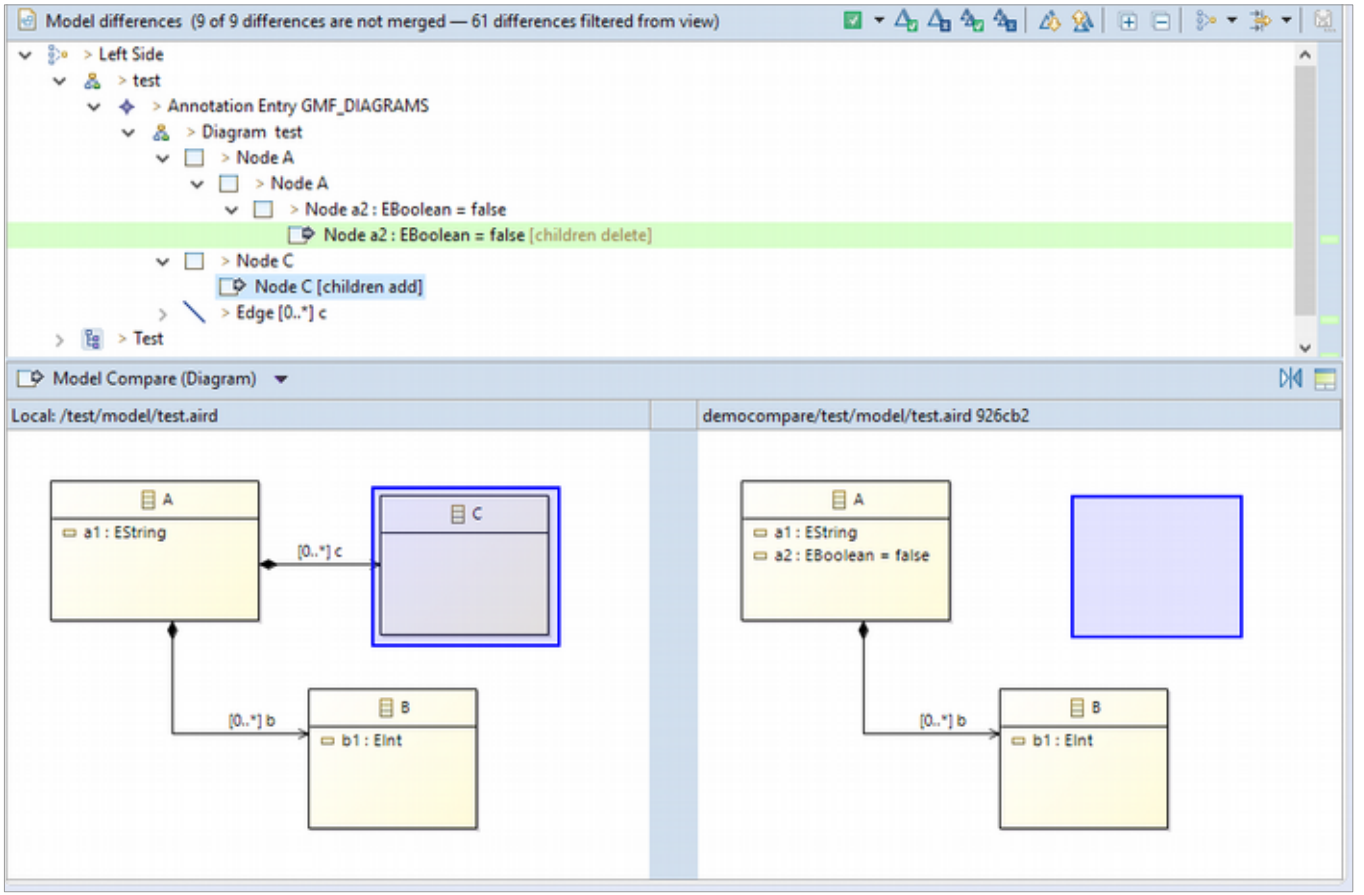
Visual Differencing

- Implementations for Papyrus and Sirius (experimental)



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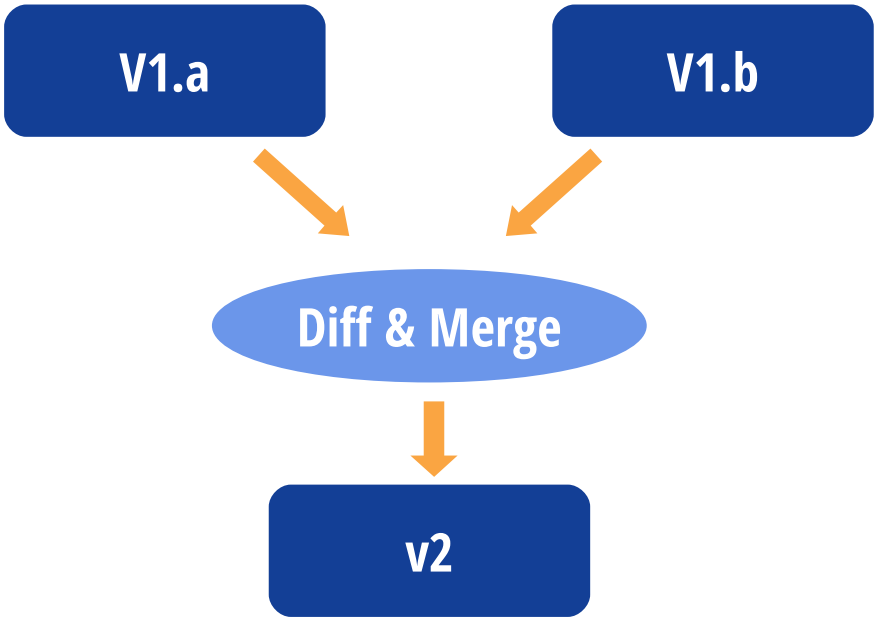
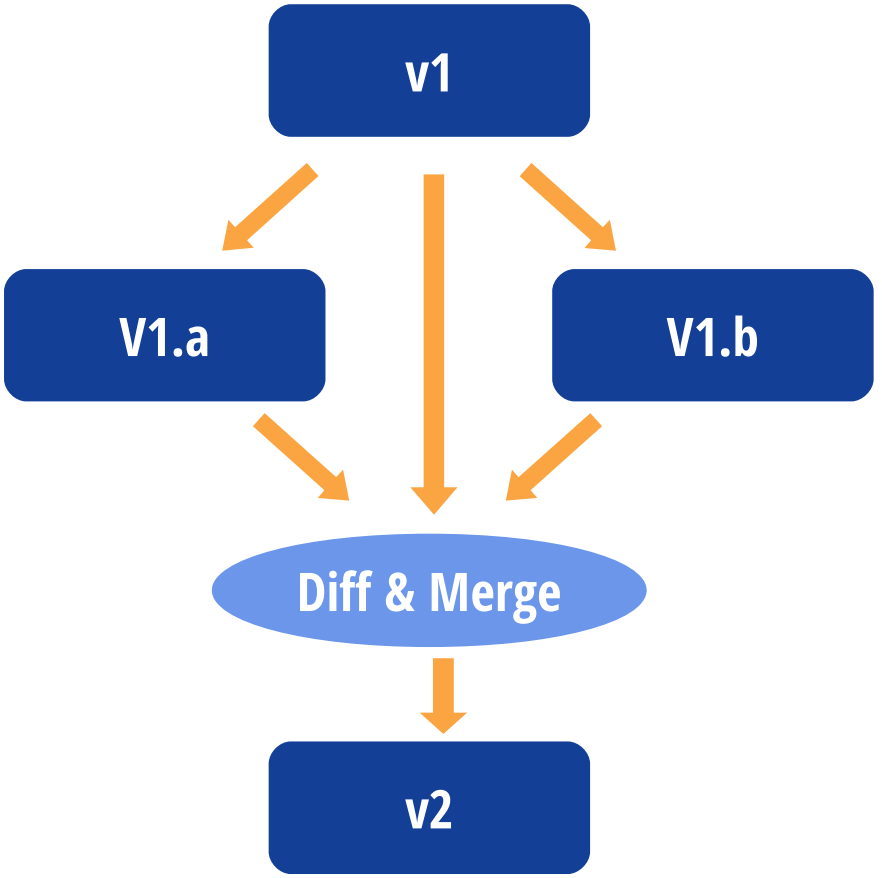
2 Supported merging strategies

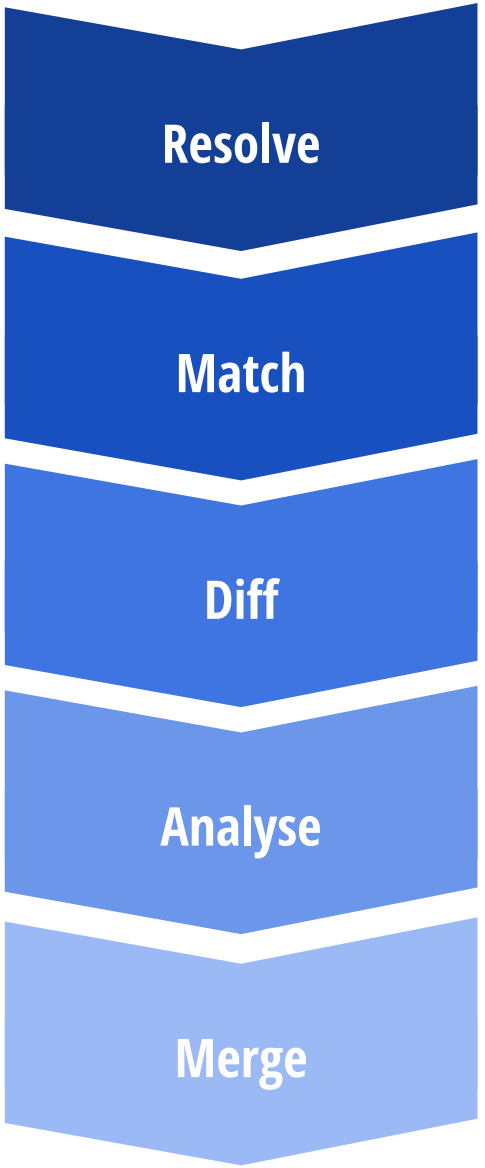
Two-way diff & merge



Three-way diff & merge



How it works ?



Build **logical models** from physical resources that form a complete and consistent in-memory model

Map together **corresponding model elements** from the input models (2 or 3), using ID (**Fast**) or even without using heuristics and graph matching (**Slow**)

Identify **differences between matching elements** (value of properties, number of relationships)

Interpret the kind of changes:

- **Equivalences**: changes result to the same state
- **Requirements**: merging requires other model elements
- **Conflicts**: changes can't be resolved

Obtain **one** single model

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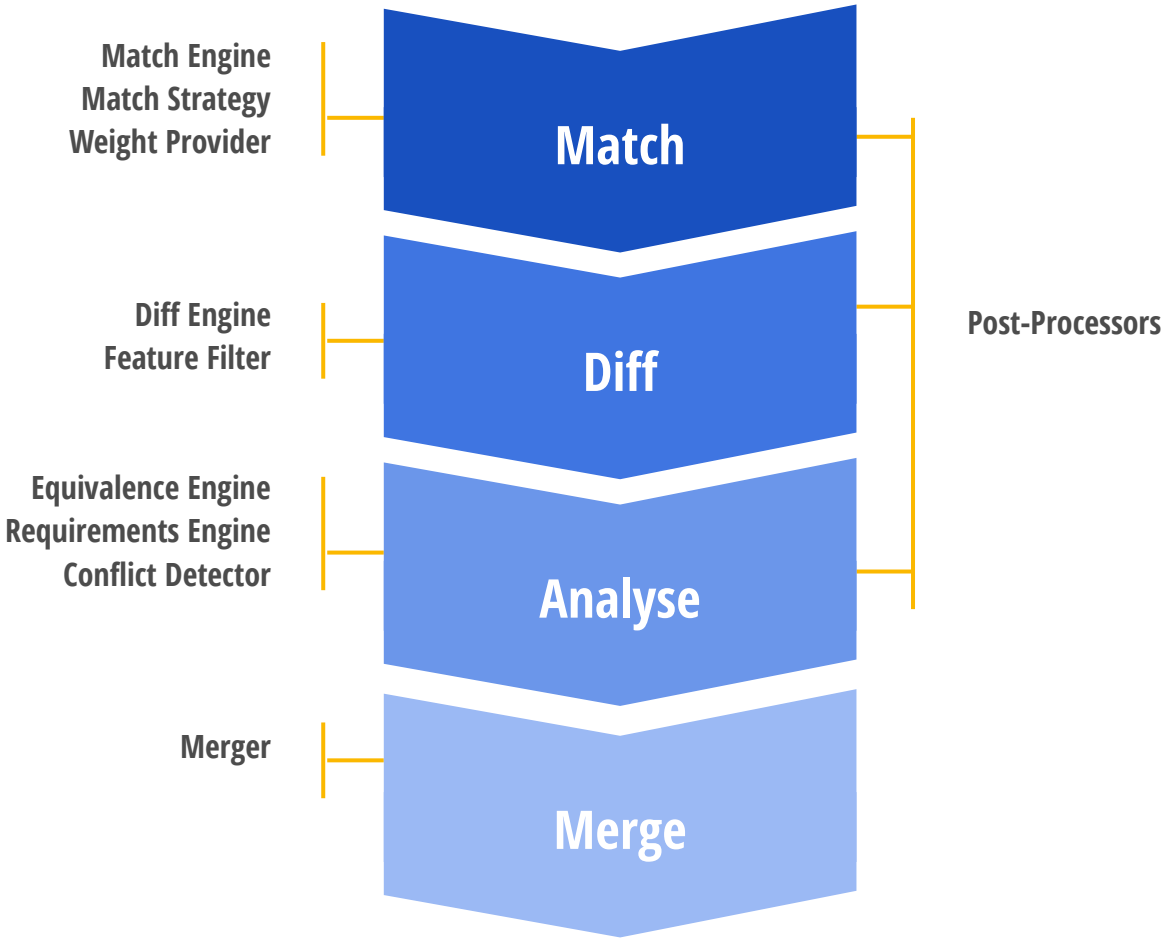
Highly Customizable



Create domain-specific comparators!

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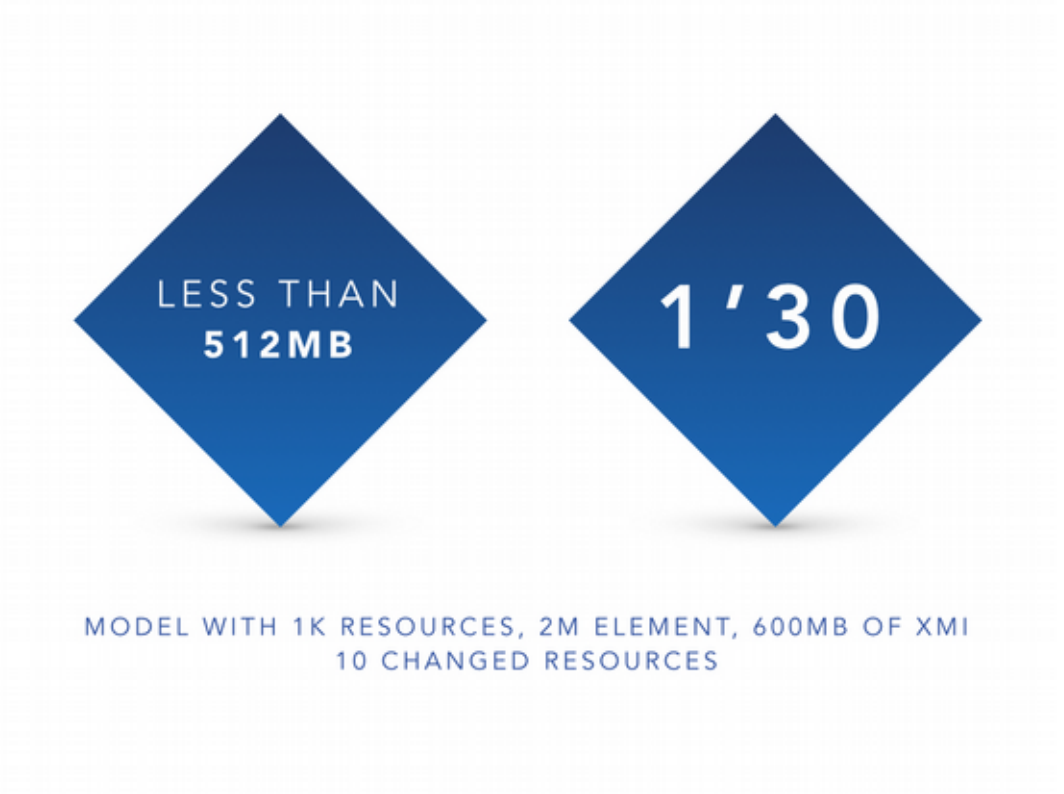
Scaling to millions

- **Support comparisons of large fragmented models.**
  - Only loads the fragments susceptible to have changed
  - Parallel loading and processing
  - Fast differences computing along with an optimal memory footprint
  - Comparison execution is proportional to the number of differences



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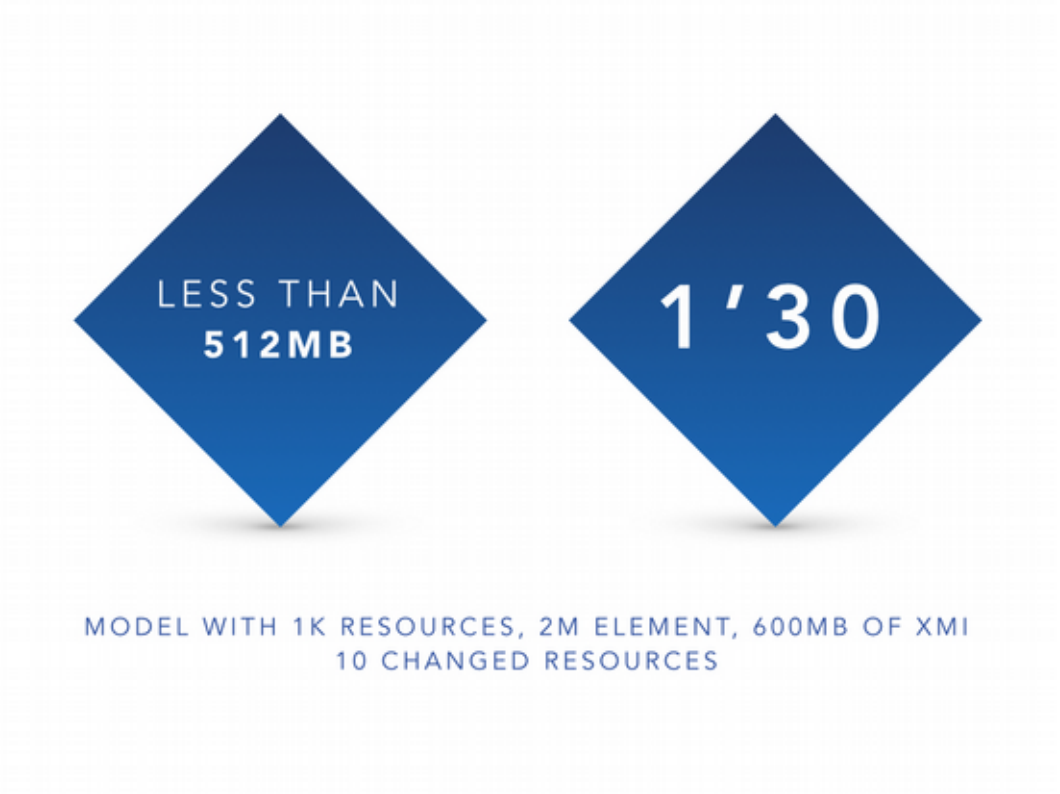

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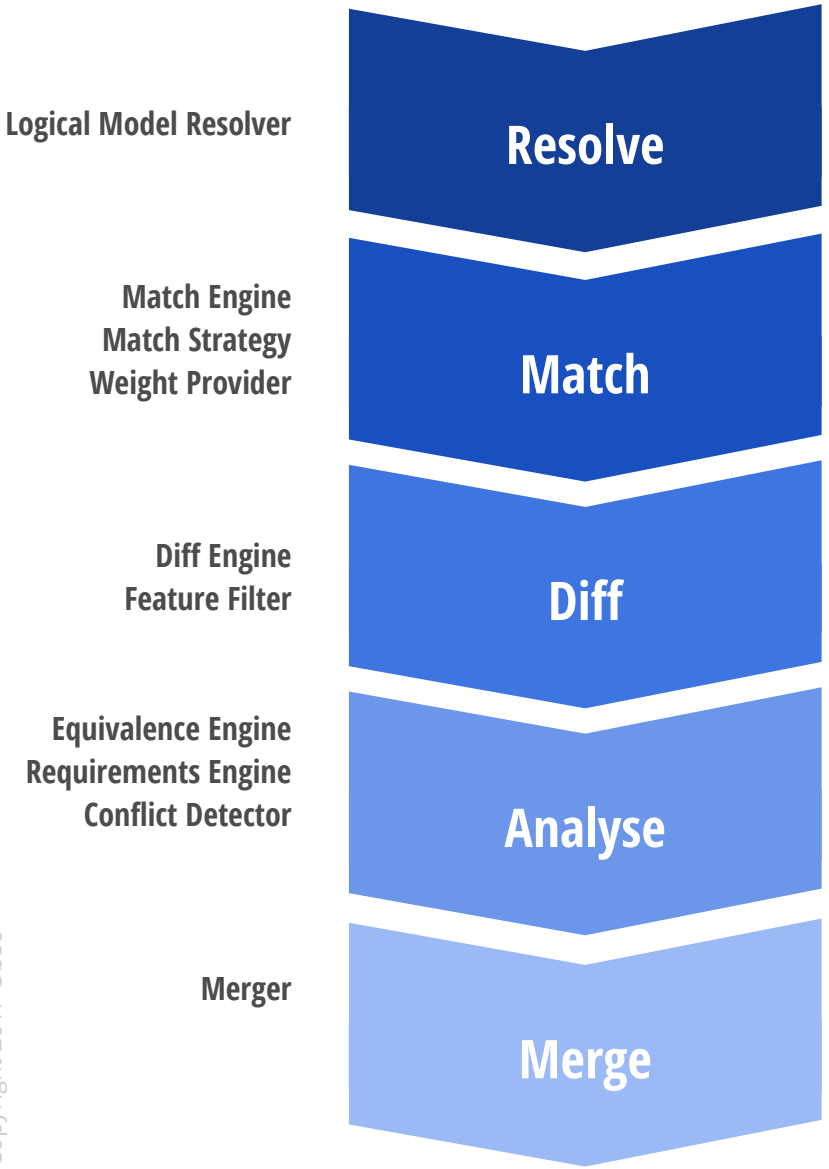
UML and Papyrus Customization



Expand the comparison scope to include Papyrus specific models.

Match using **XMI-Ids.**

Abstract some differences by grouping it to make it easier to grasp for the end users

Add specific **requirements** and **equivalences** between diffs to enforce UML specific consistency rules.

Provide specific merges to adapt the **graphical notation model** when changes are merged

And also : UI related tweaks (dedicated filters...)

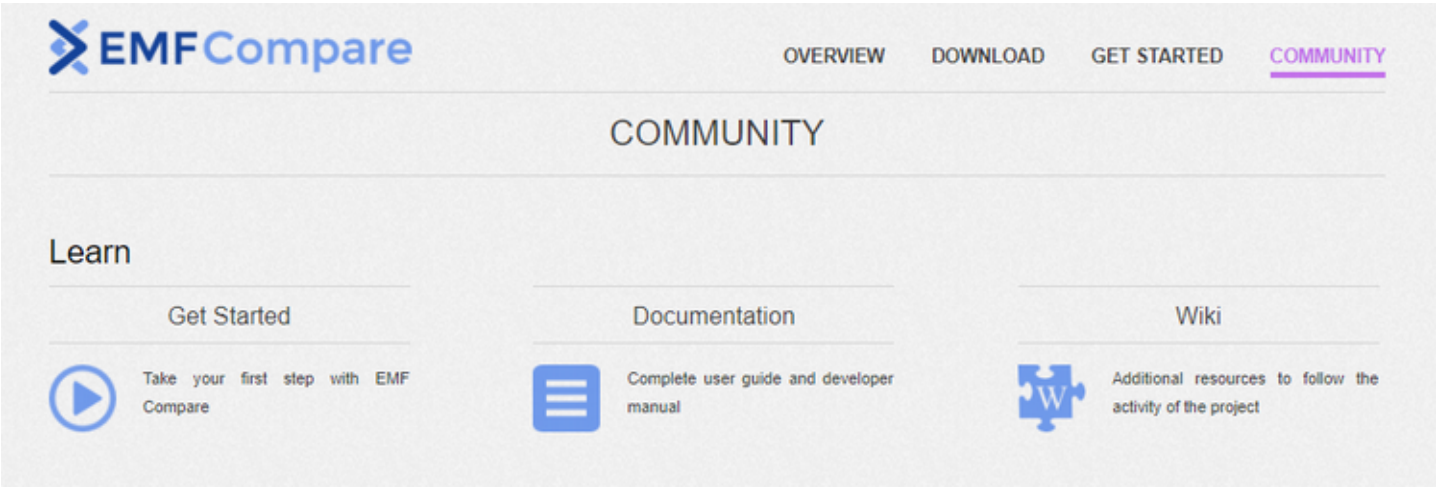
Compare and Merge Your EMF Models

Easy

Extensible

Scalable

www.eclipse.org/**emf/compare**



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