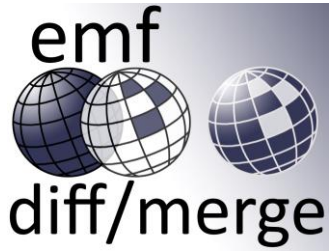


THALES



A MERGE ENGINE AND APPLICATIONS FOR MODEL-BASED ENGINEERING



“Merge” as a primitive operation

■ “Merge” as a primitive operation

■ To realize features for model-based engineering

■ “Merge” as a primitive operation

■ To realize features for model-based engineering

■ Based on  emf
© ECLIPSE MODELING FRAMEWORK

“Merge” as a primitive operation

To realize features for model-based engineering

Based on  emf
© ECLIPSE MODELING FRAMEWORK

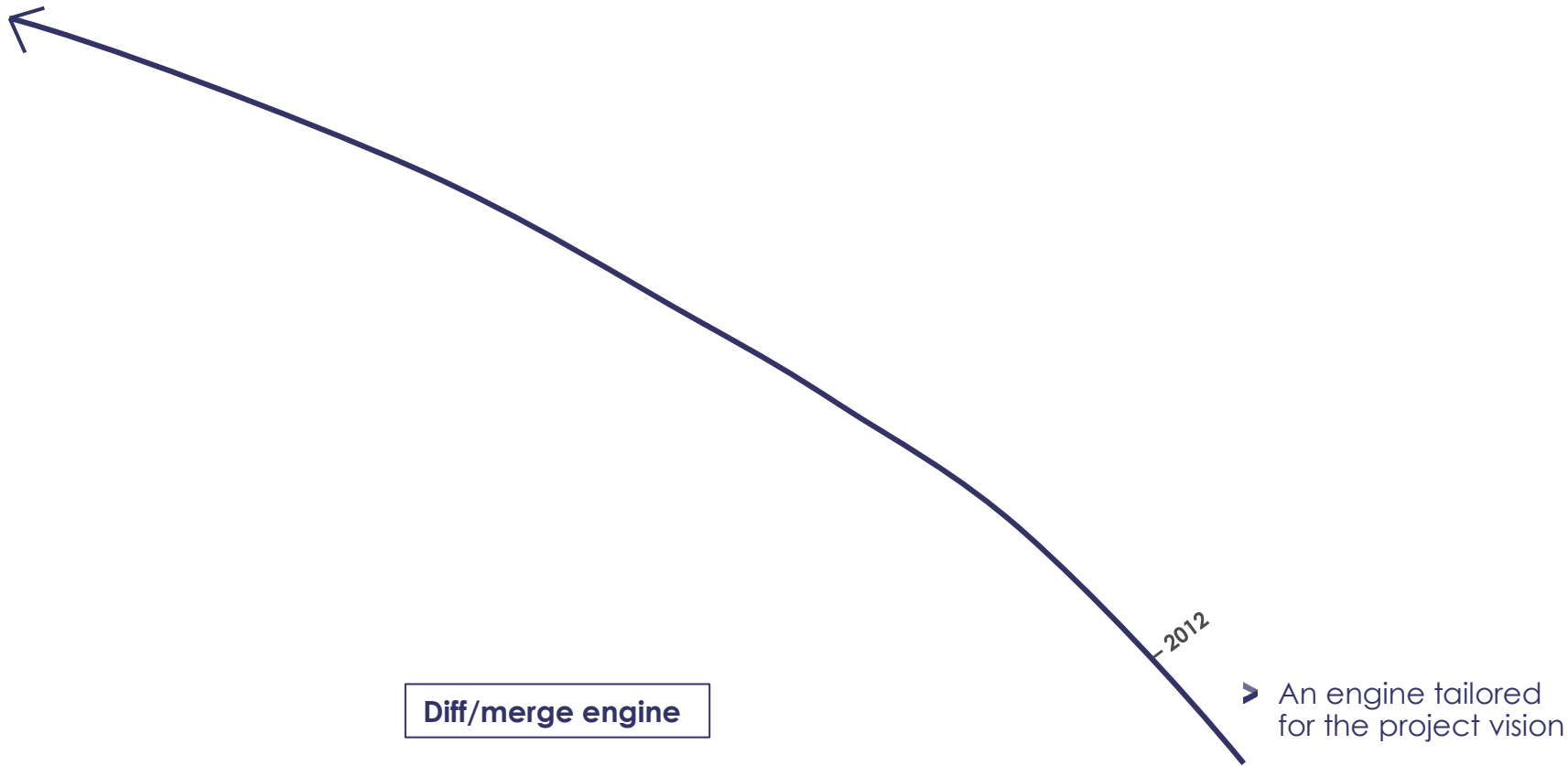
Especially related to

- Collaboration
- Reuse

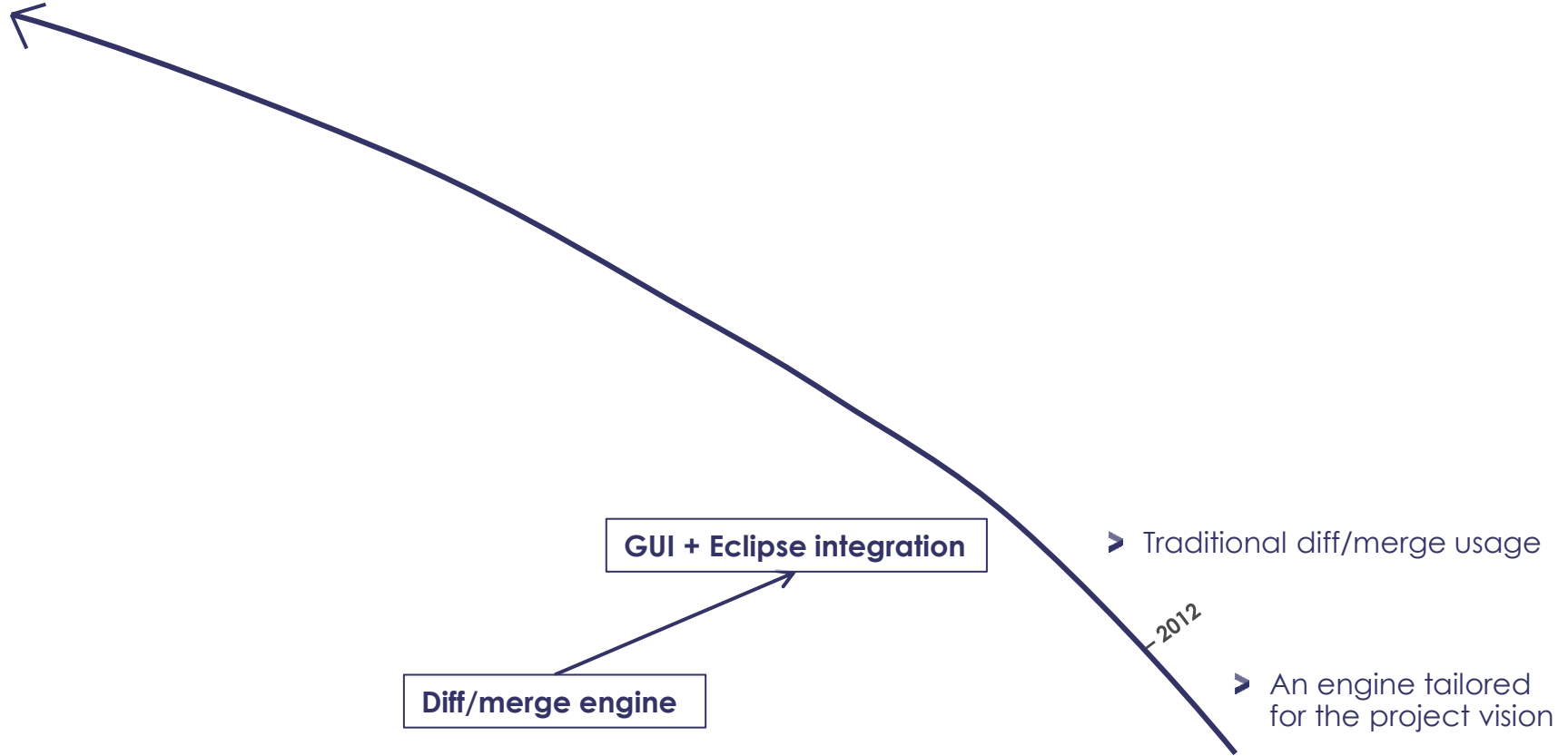
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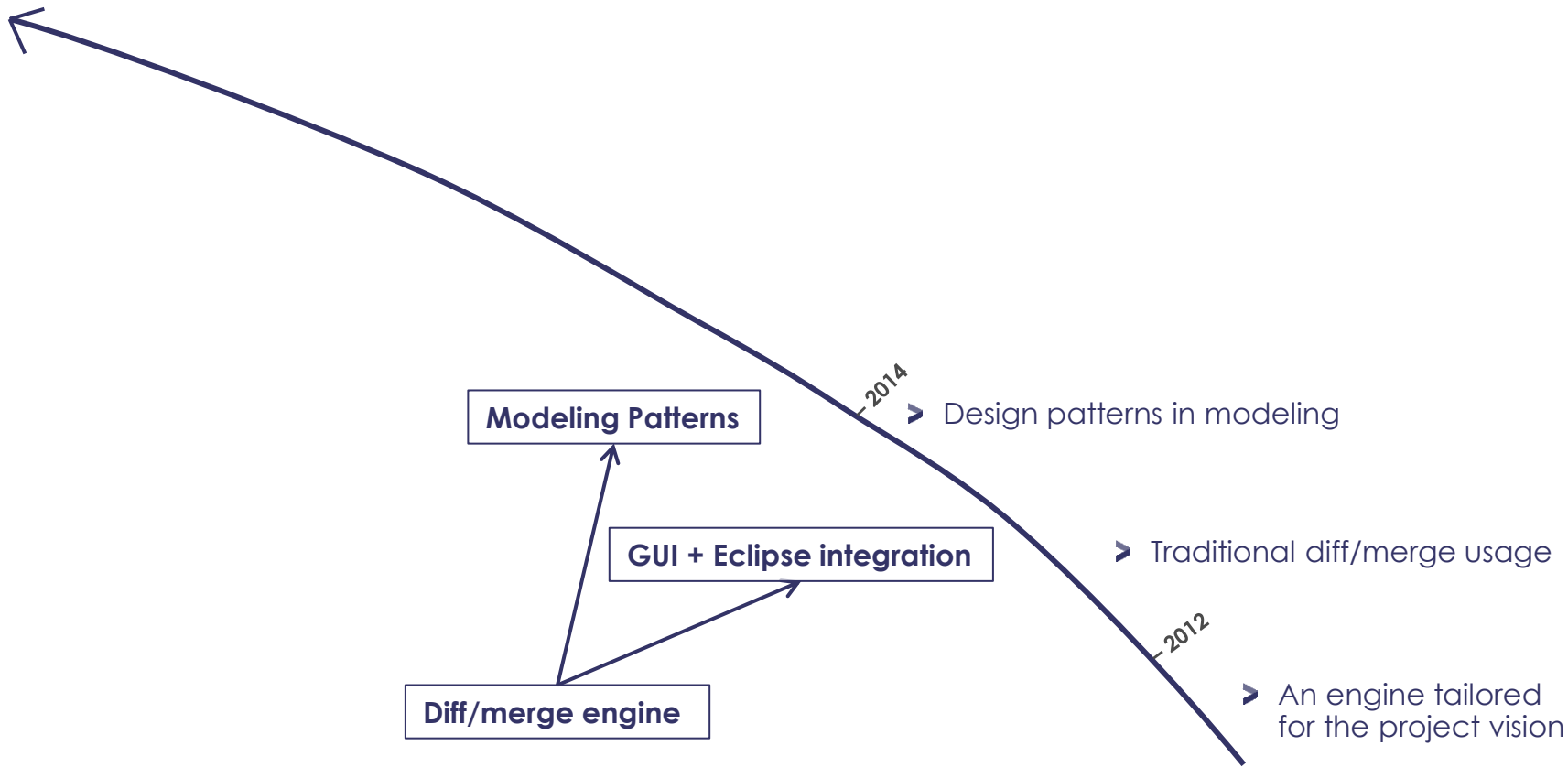


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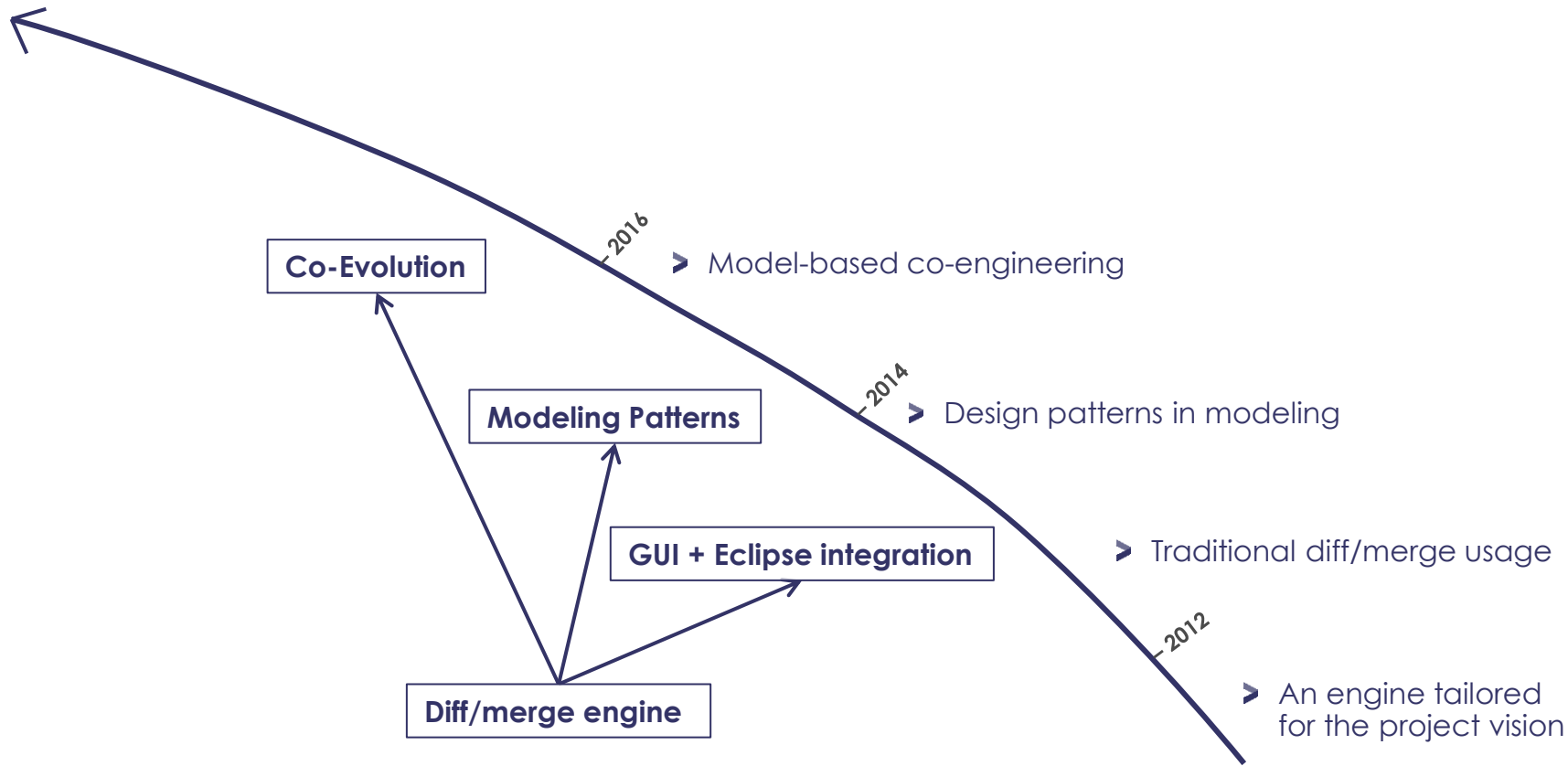


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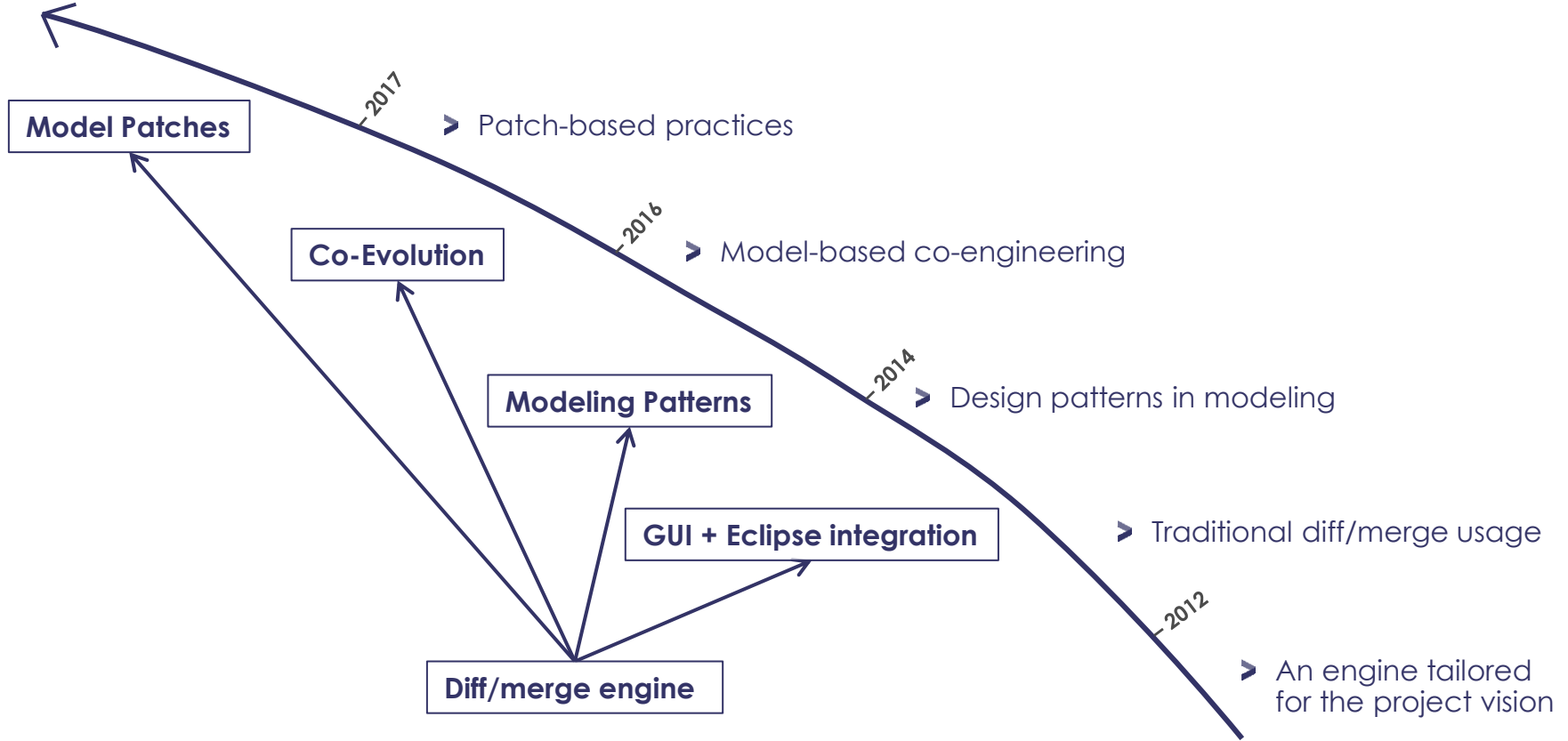


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Project Contents

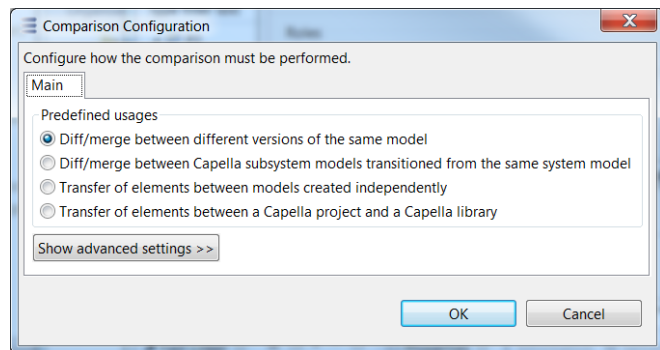


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1) GUI + Eclipse Integration

Predefined use cases

- Version control
- Opportunistic reuse

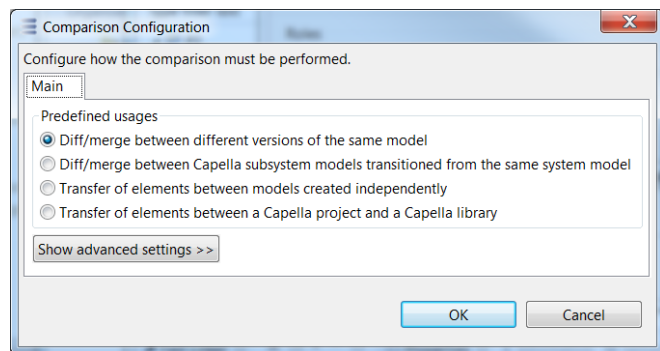


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1) GUI + Eclipse Integration

Predefined use cases

- Version control
- Opportunistic reuse



Other use cases

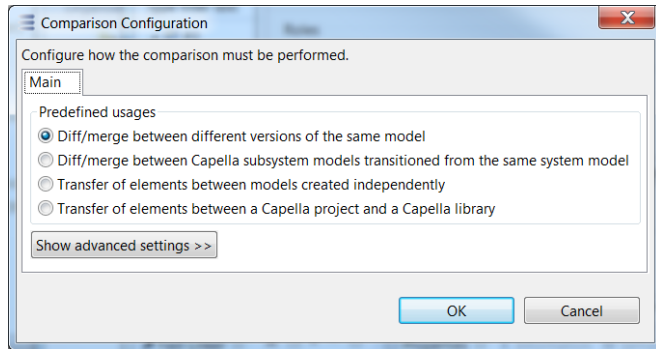
- Advanced configuration
- Extendible per modeling tool

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1) GUI + Eclipse Integration

Predefined use cases

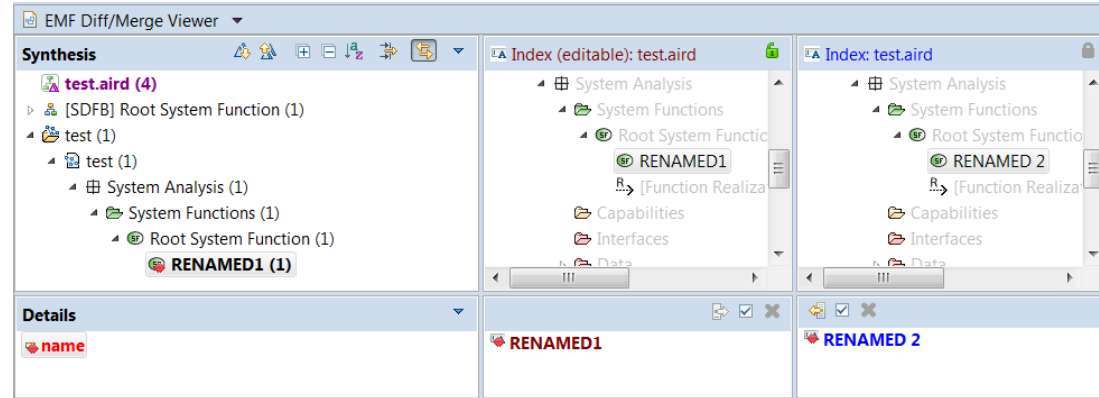
- Version control
- Opportunistic reuse



Other use cases

- Advanced configuration
- Extendible per modeling tool

Dedicated GUI

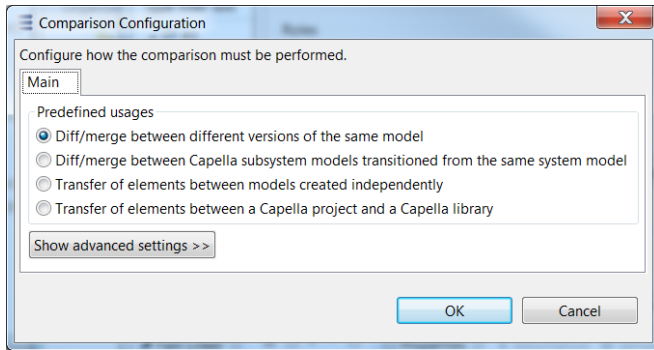


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1) GUI + Eclipse Integration

Predefined use cases

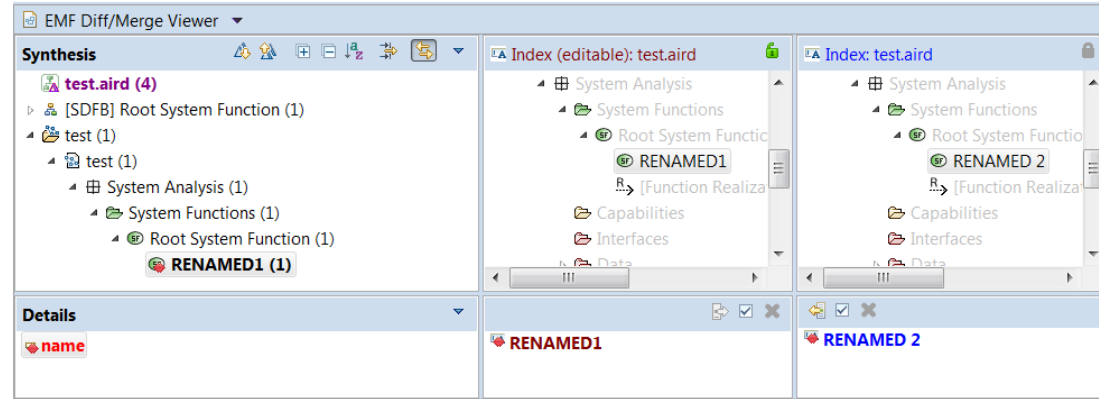
- Version control
- Opportunistic reuse



Other use cases

- Advanced configuration
- Extendible per modeling tool

Dedicated GUI



+ Integration with Local history, SVN, Git

Diagrams: extensions for GMF, Sirius

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2) Modeling Patterns

Engineering Patterns

A general solution to a class of
recurring problems

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Engineering Patterns

A general solution to a class of
recurring problems

- Enforce design principles
- Share and disseminate know-how
- ➔ Productivity and design quality

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Engineering Patterns

A general solution to a class of
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Model-based
Engineering

Modeling Patterns

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2) Modeling Patterns

Engineering Patterns

A general solution to a class of
recurring problems

- Enforce design principles
- Share and disseminate know-how
- ➔ Productivity and design quality

Model-based
Engineering

Modeling Patterns

- Formally
- With tool support
- Through Pattern catalogs

2) Modeling Patterns

Pattern creation

The screenshot displays a software interface for creating a pattern. On the left, a signal flow diagram shows the following components and connections:

- Convert Audio** block outputs a **Decoded Audio Stream**.
- The **Decoded Audio Stream** connects to a **Synchronize Audio Video** block.
- The **Synchronize Audio Video** block outputs **Sync Metadata**.
- The **Decoded Audio Stream** and **Sync Metadata** connect to a **Decode Audio Packets** block.
- The **Decode Audio Packets** block outputs an **Audio Packet**.
- The **Audio Packet** connects to a **Receive and Bufferize Audio Packets** block.
- The **Receive and Bufferize Audio Packets** block outputs a **Packetized Audio Stream**.
- The **Packetized Audio Stream** connects to a **Play Audio on Seat TV** block.
- A **Split Audio Video Streams** block is also present, receiving input from the **Play Audio on Seat TV** block.

On the right, the **New Pattern** dialog box is open, showing the following details:

- Create new pattern** section: Specify the properties and contents of the new pattern, and how this pattern can be applied in models.
- Properties** tab: Includes fields for **Catalog** (In-Flight Entertainment System), **Name** (Audio Conversion), **Version** (1.0), **Environments** (Capella 1.2.x), and **Authors** (T0131040).
- Image** section: A preview of the signal flow diagram is shown, with the **Image** checkbox checked.
- Include layout and style** checkbox is checked.
- Use template...** button is available.
- Finish** and **Cancel** buttons are at the bottom.

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2) Modeling Patterns

Pattern creation

Create new pattern
Specify the properties and contents of the new pattern, and how this pattern can be applied in models.

Properties: Content | Advanced

Catalog: In-Flight Entertainment System | Open... | Close | New...

Name: Audio Conversion

Version: 1.0

Environments: Capella 1.2.x

Authors: T0131040

Description:

Image:

Include layout and style

Use template...

Finish

Pattern Instance Management

Select a pattern instance and actions to perform on it. Element initially selected: 'Synchronize Audio Video'.

Instance of	Role played
Audio Conversion (v1.0)	PhysicalFunctions

Life-cycle

Fold Show unfolded elements

Rename Keep user names

Delete

Synchronization

Features to Exclude

Name Description Summary

Check Conformity: Show details

Update instance Show additions Destructive

Representation

Status:

Nodes Ports Edges

Reuse style

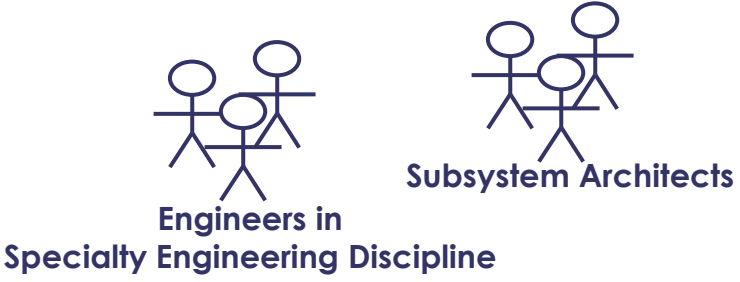
**Pattern application & reuse,
Instance management,
Conformance checking**

3) Model-Based Co-Engineering

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System model(s)



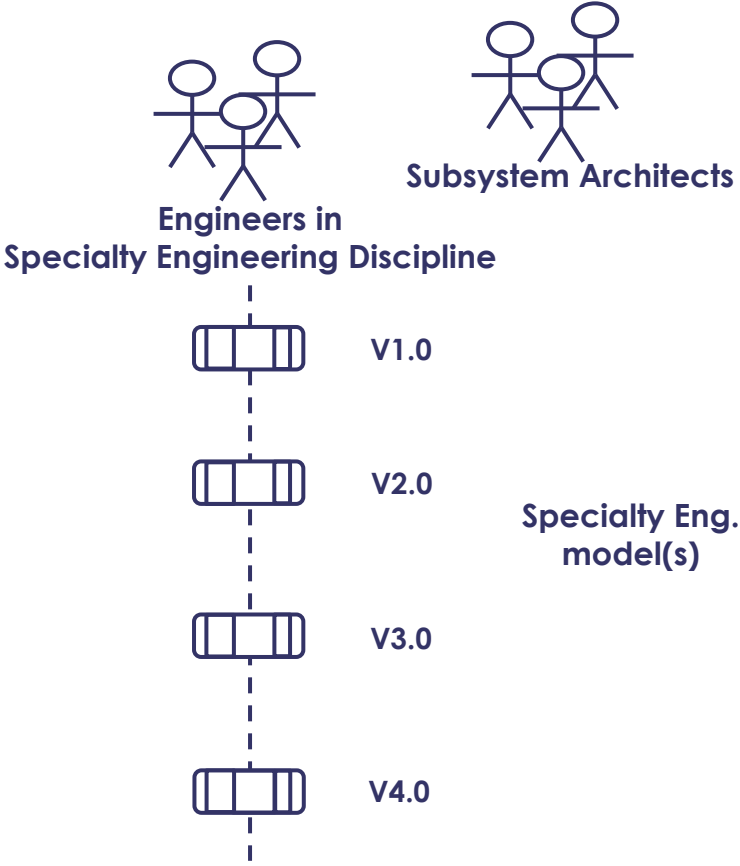
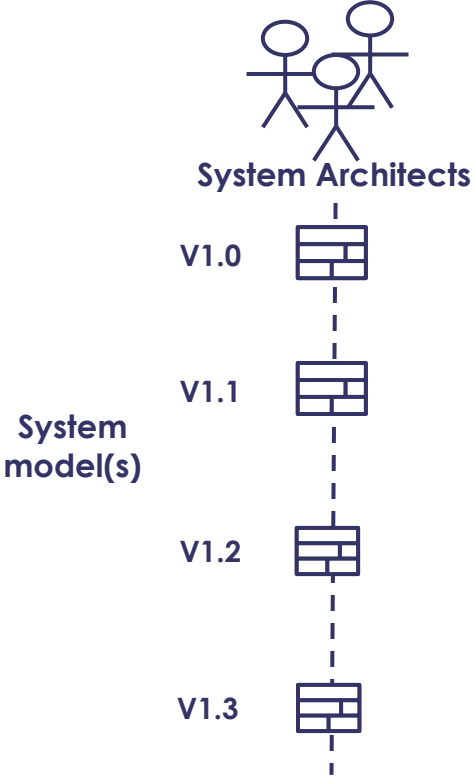
Specialty Eng. model(s)



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3) Model-Based Co-Engineering

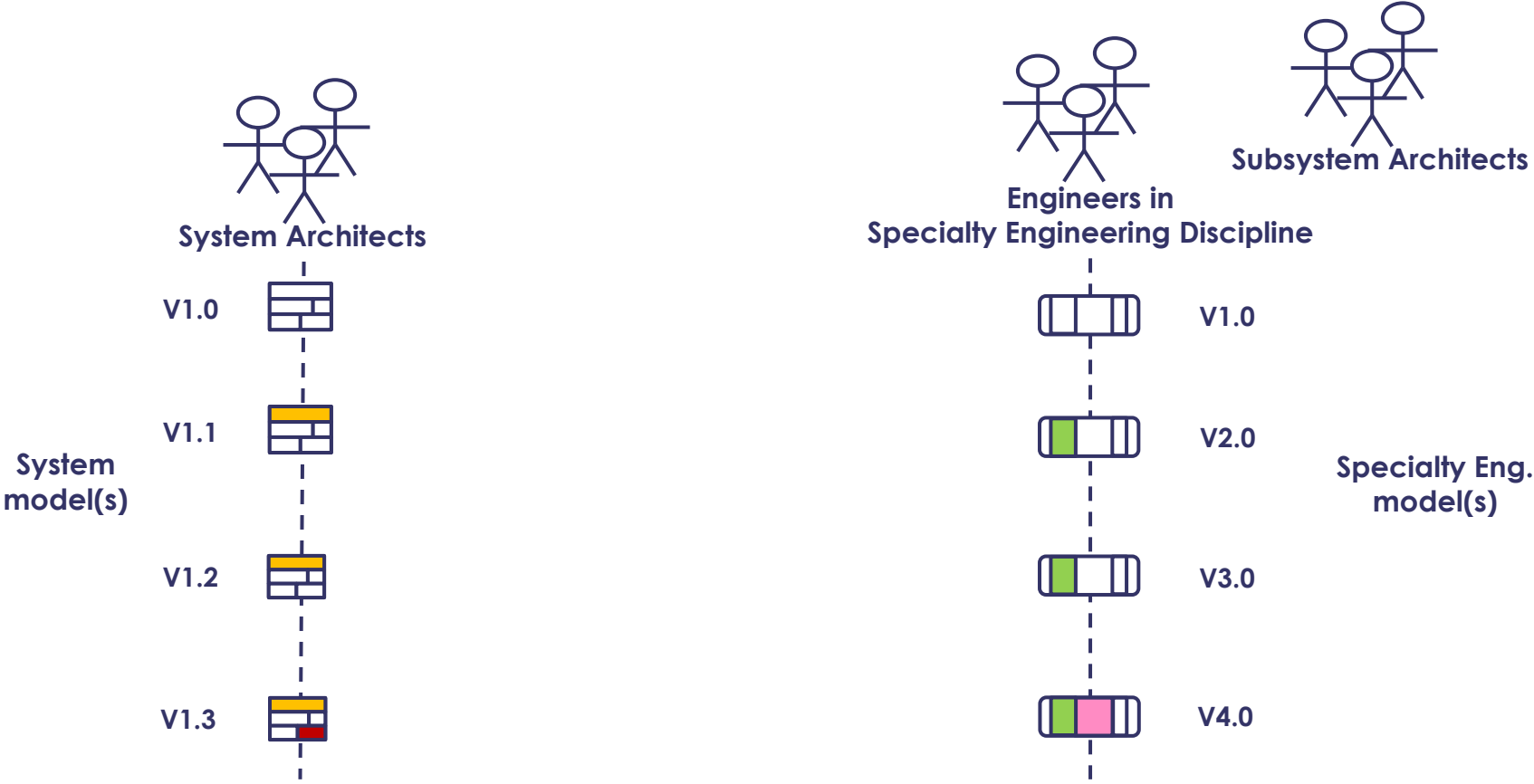
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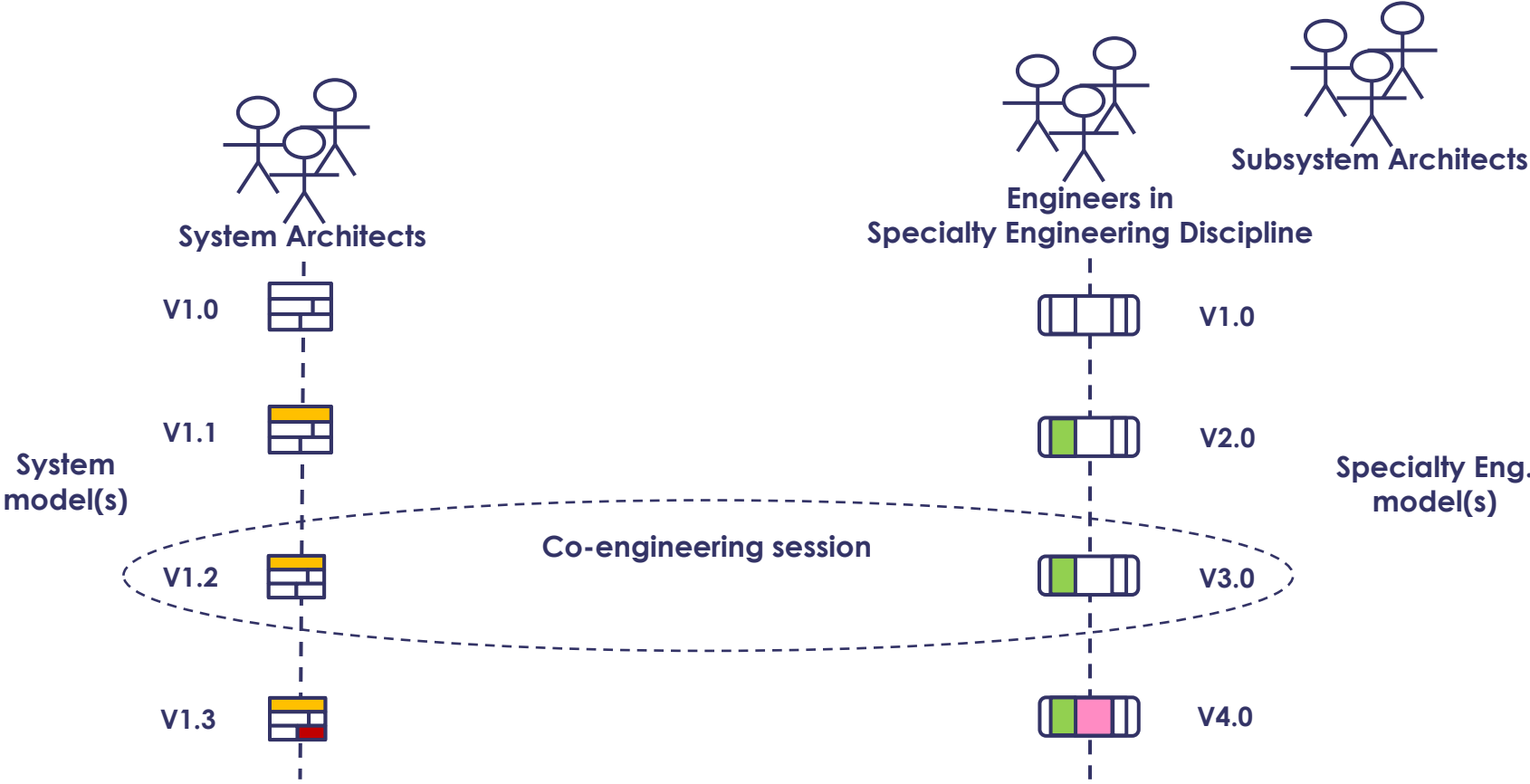
3) Model-Based Co-Engineering

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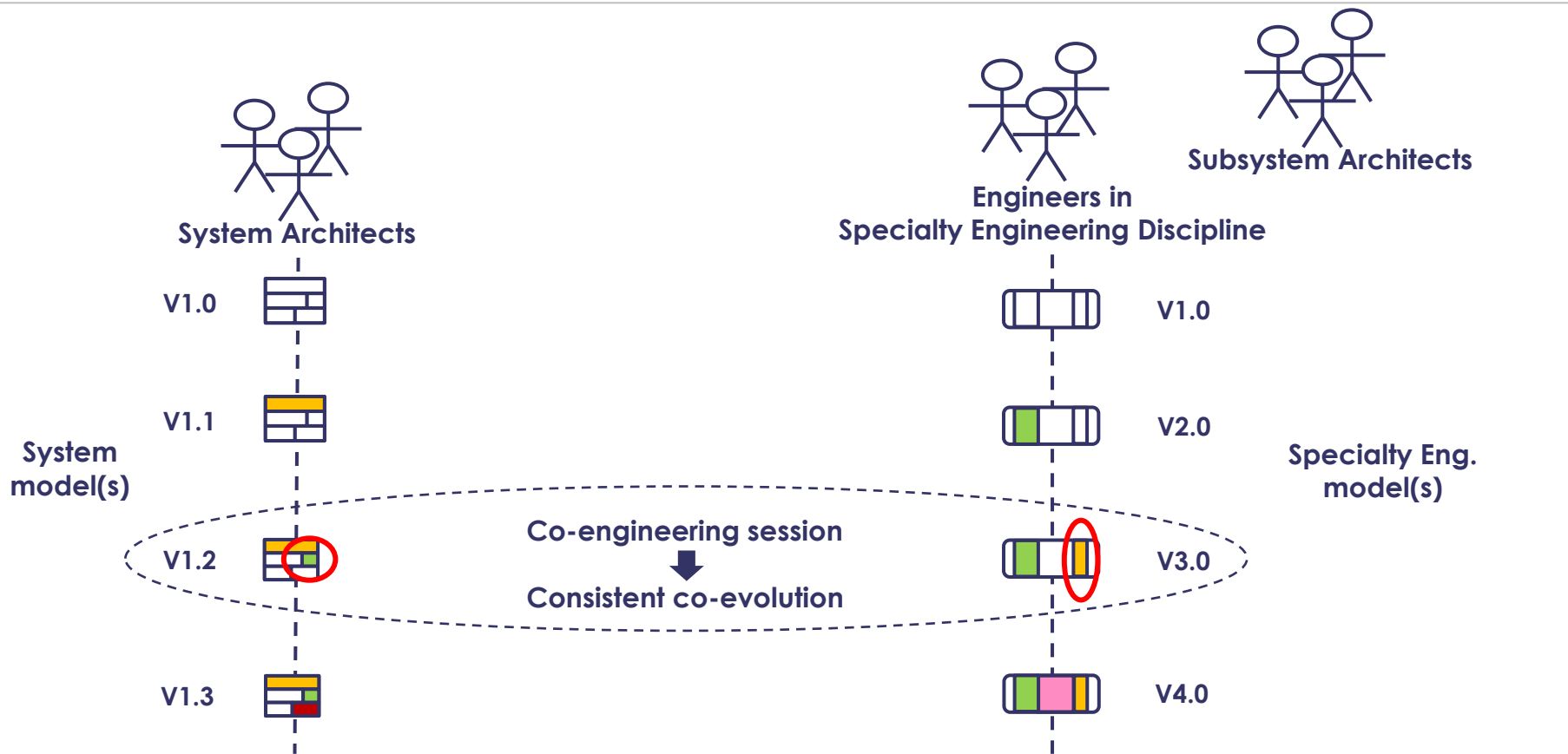
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3) Model-Based Co-Engineering



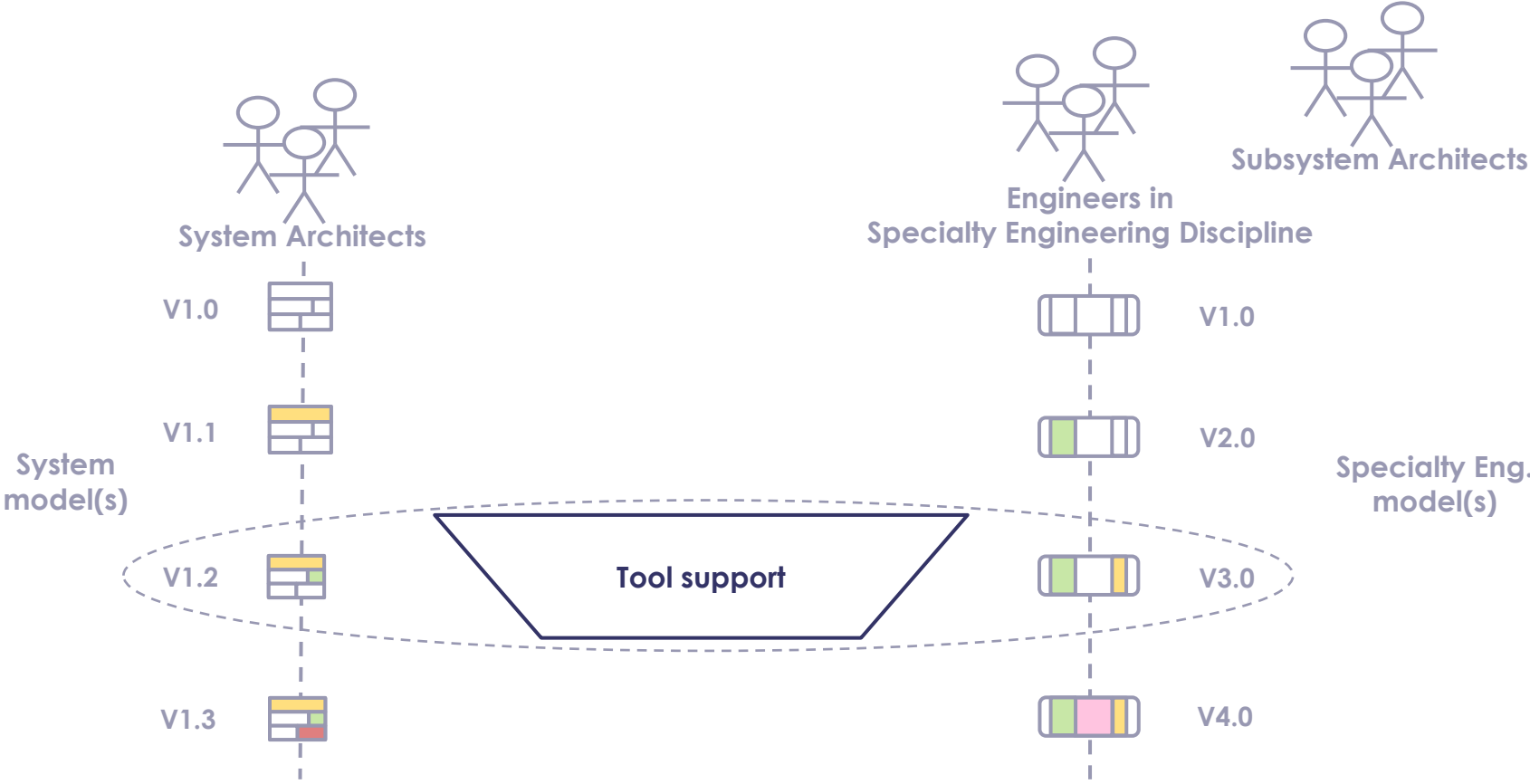
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3) Model-Based Co-Engineering



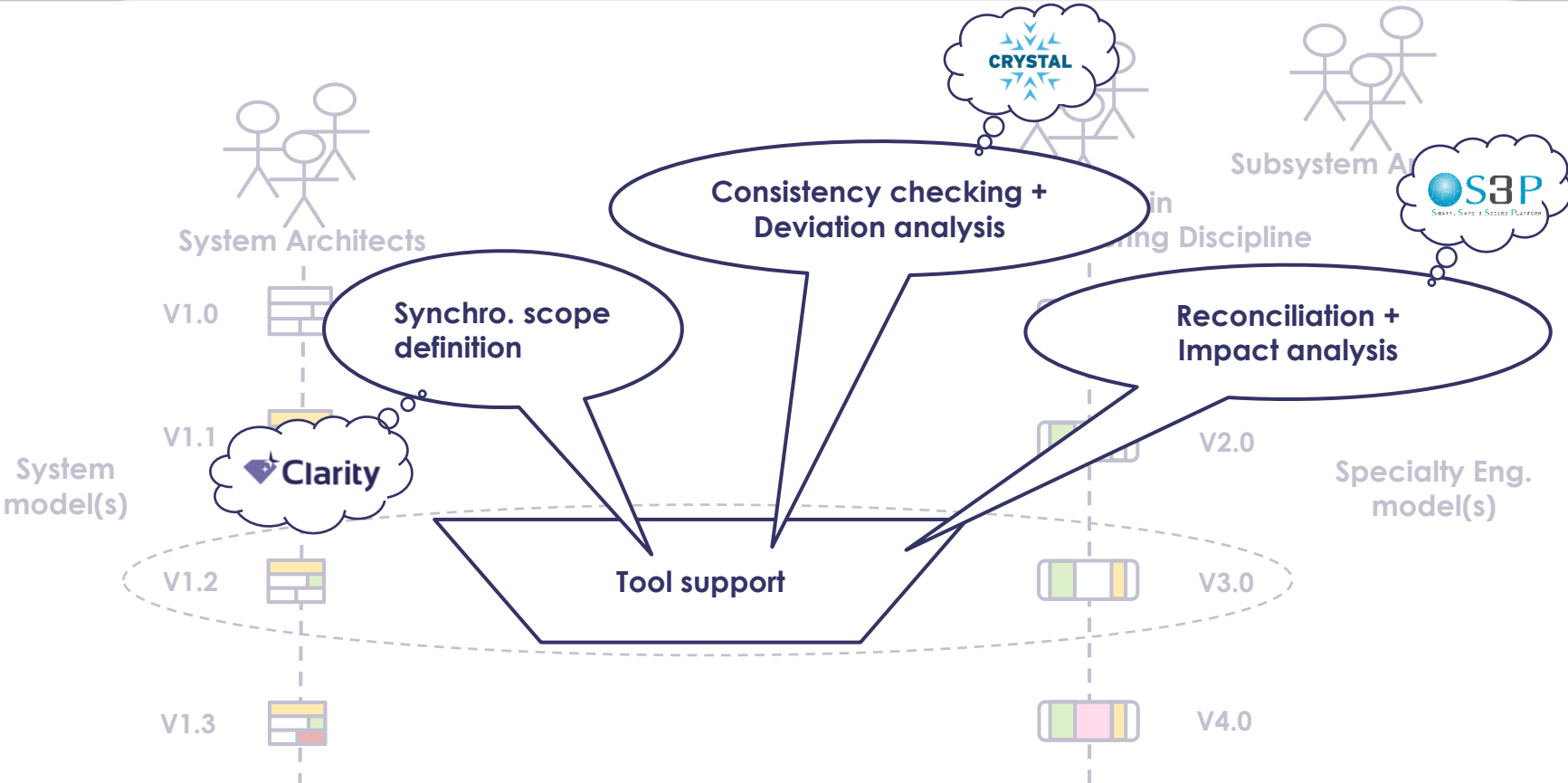
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3) Model-Based Co-Engineering



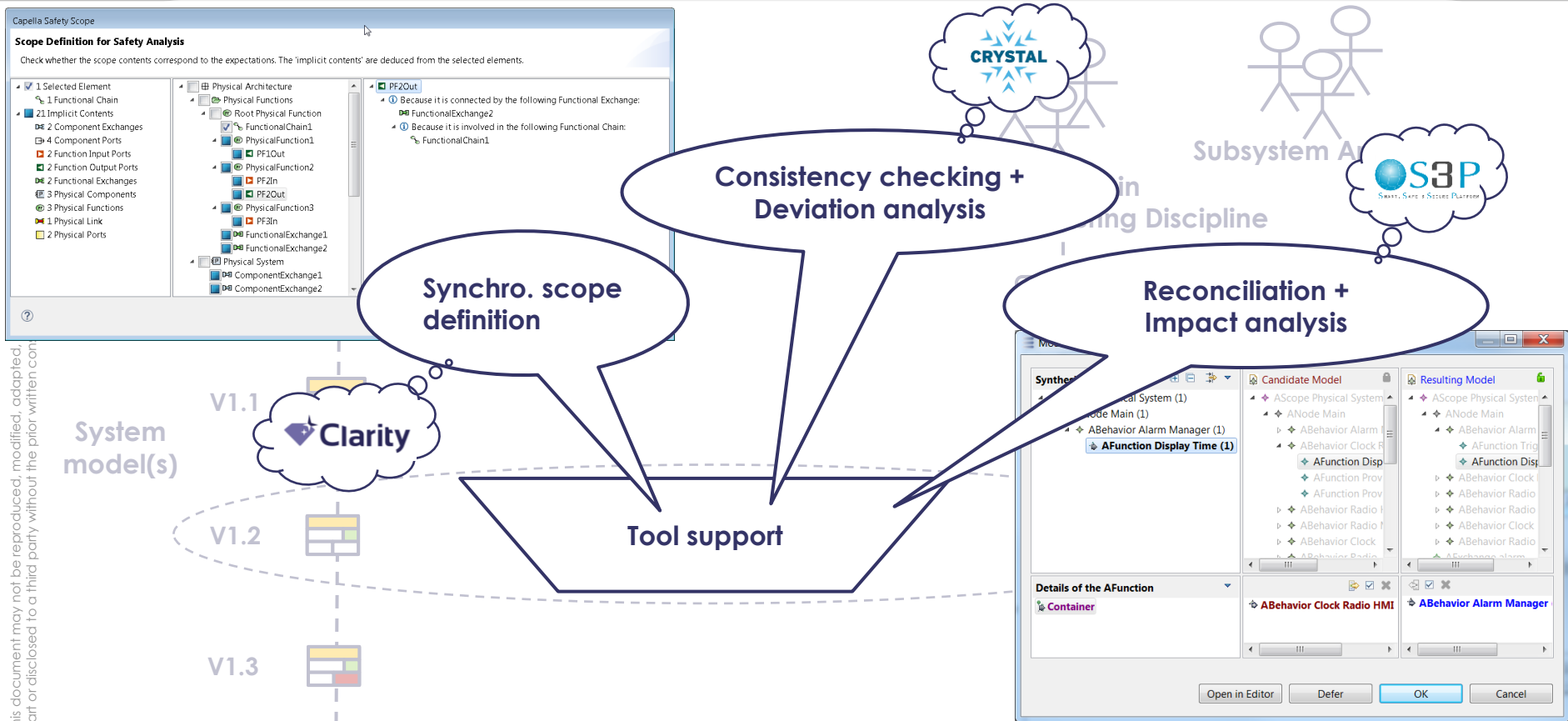
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3) Model-Based Co-Engineering



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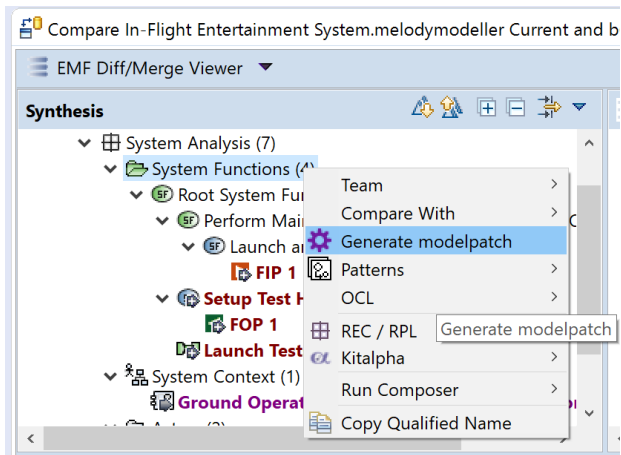
3) Model-Based Co-Engineering



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4) Model Patches

Compare models → Generate patch

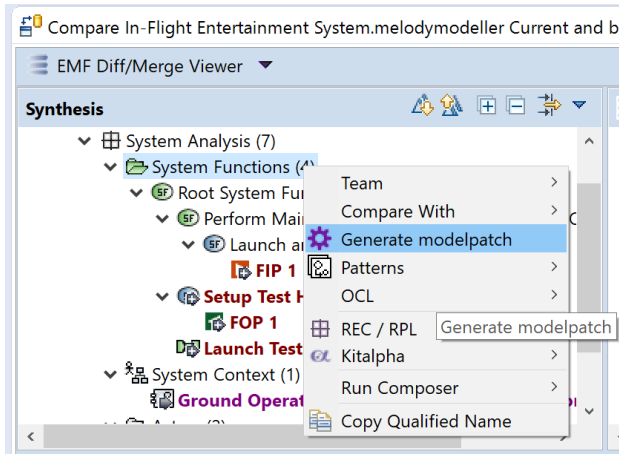


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4) Model Patches

Give patch to someone

Compare models → Generate patch

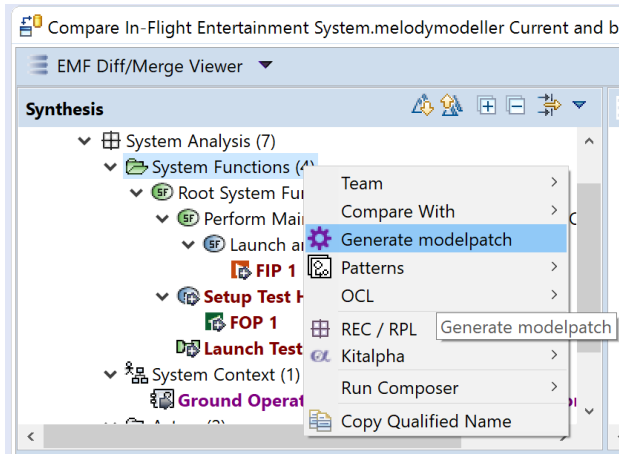


4) Model Patches

Give patch to someone

Apply patch on other model

Compare models → Generate patch



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4) Model Patches

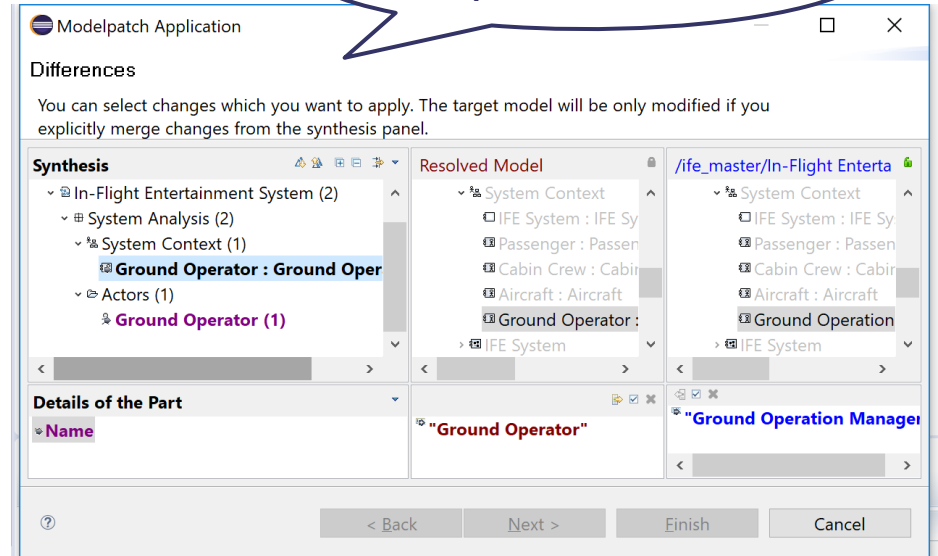
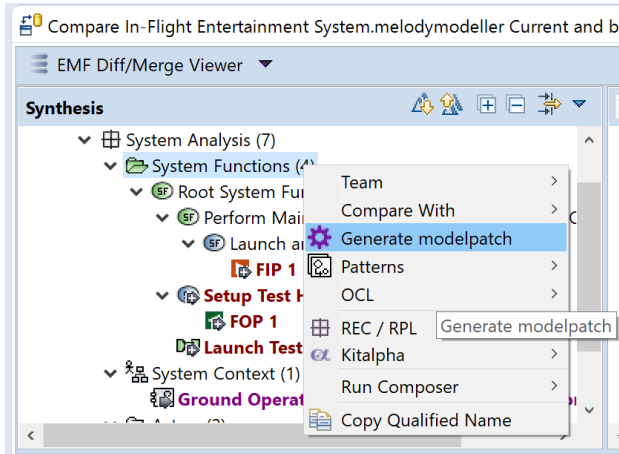
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Compare models → Generate patch

Give patch to someone

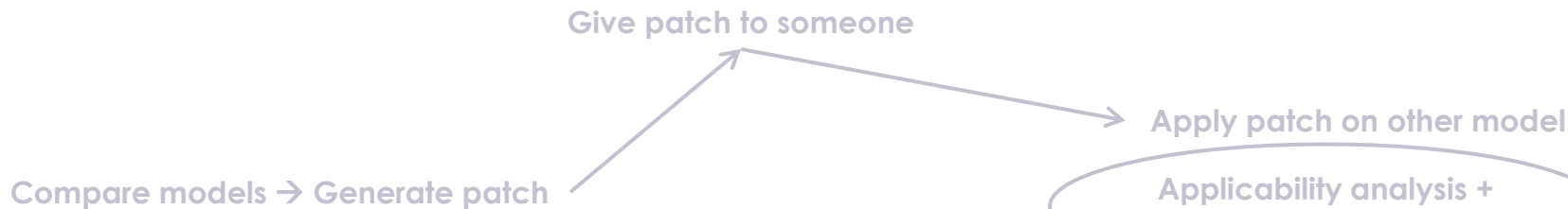
Apply patch on other model

Applicability analysis + Impact visualization



4) Model Patches

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May happen in very different situations and contexts

Resolved Model

Model	Part Name
In-Flight Entertainment System (2)	"Ground Operator"
/ife_master/In-Flight Enterta	"Ground Operation Manager"

Known Ecosystem

CoFluent™ Studio

 **Capella**

 Safety Architect

 MaTeLo

Products

Organizations


Software

THALES

ALL4TEC

Atos


IncQuery Labs Ltd

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THALES

Known Ecosystem

CoFluent™ Studio

 **Capella**

 Safety Architect

 MaTeLo

Products

Organizations


Software

+ Eclipse community:
“Most Innovative New Eclipse Project or Feature” award
@EclipseCon World 2013

L4TEC

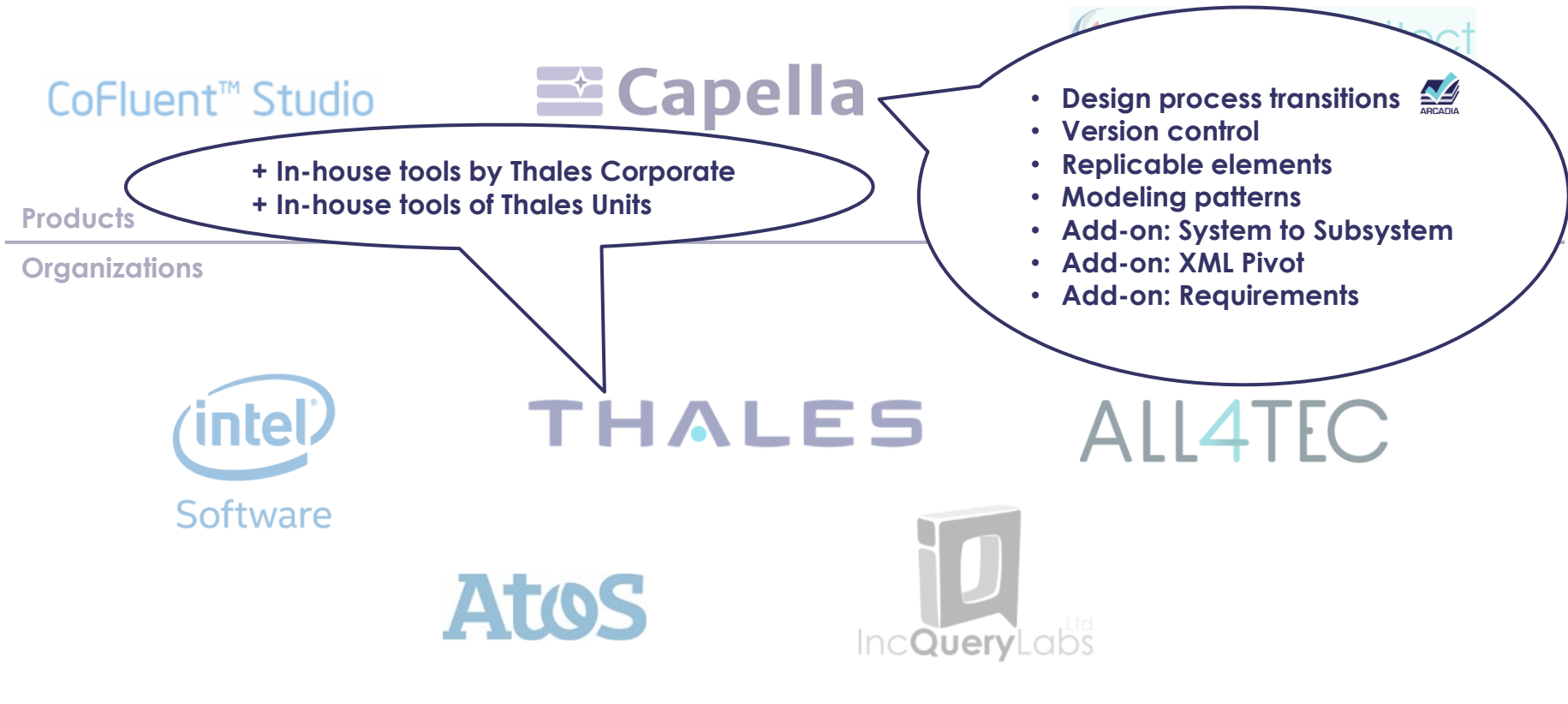
Atos


IncQuery Labs Ltd

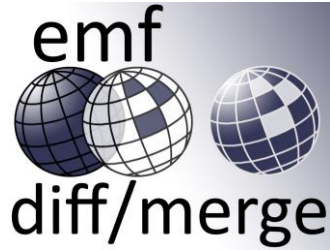
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Known Ecosystem – Thales Perspective



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▶ http://wiki.eclipse.org/EMF_DiffMerge

- ▶ Forum
- ▶ Bug tracking
- ▶ Download
- ▶ Misc. information

▶ **Main contact:** olivier . constant @ thalesgroup . com

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Thanks for your attention

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Log of changes and approval

Log of changes

Revisions	Description	Date
001	Initial version	2017 10 19
002	Slightly updated version	2017 10 24

Approval

Actors	Name and role	Signature	Date
Written by	Olivier CONSTANT, Thales Corporate Engineering		2017 10 19
Verified by			
Approved by			