

# WP2 - D2.4: OpenETCS methods

## Getting start with SysML ?

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7th of October 2013, DLR, Braunschweig

# Outline

- 1 D2.4 Methodological guidelines
- 2 Getting start with SysML
  - Overview
  - SysML selected diagrams
  - SysML On going work
- 3 Conclusion

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# Aim

Provide hints to start the modelling activities

- Introduction on formal approaches
- General guidelines
- SysML guidelines
- Others selected approaches

⇒ **On going work** : Participation from all the partners is welcomed

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# Introduction on formal methods

- Definitions
- Use for modelling activities
- Use for VnV activities
- Use for safety activities

# General guideline

- List of selected approaches
- List of artifacts
- Language restrictions (key-words, case-sensitive,...)
- Definition of items: data model
- Naming of items (data, requirement, functions,...)

⇒ **On going work**

# General guideline

- List of selected approaches
- List of artifacts
- Language restrictions (key-words, case-sensitive,...)
- Definition of items: data model
- Naming of items (data, requirement, functions,...)

⇒ **On going work**



# SysML guideline

On going work, more details on the sequel

# Others selected approaches

Depend of D7.1 Decision

⇒ **Description postponed**

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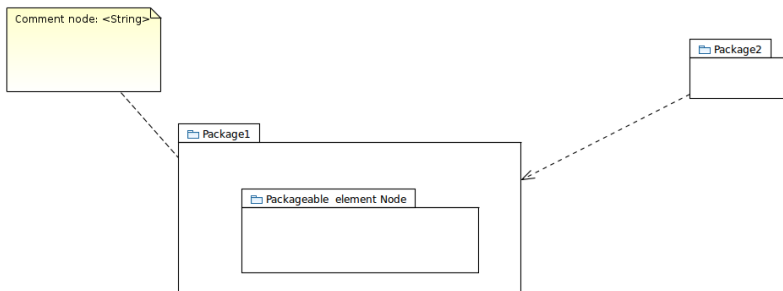
## 3 Conclusion

# Aim

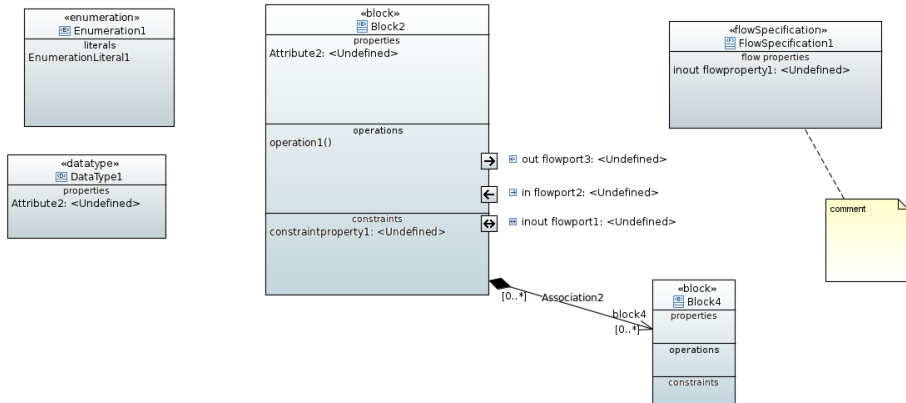
Clarify how to build the semi-formal with SysML on Papyrus, in order to:

- facilitate modelling and VnV activities
- facilitate the exchanges between the (sub-)models
- facilitate the readability of the models
- facilitate the exchange between partners
- ....

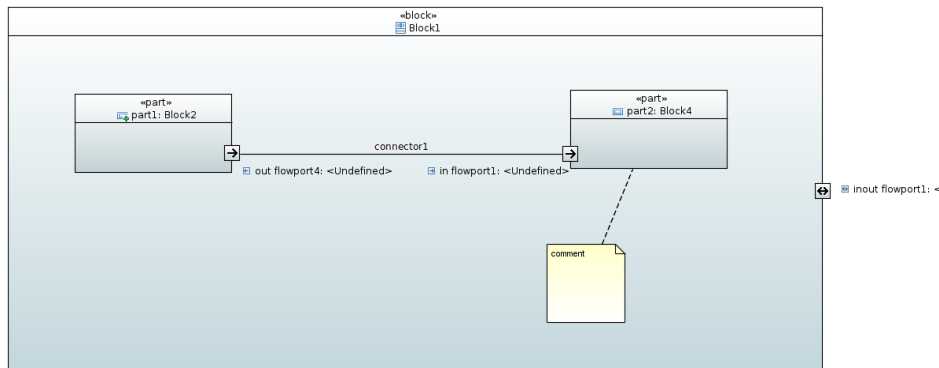
# Package diagram



# BDD diagram

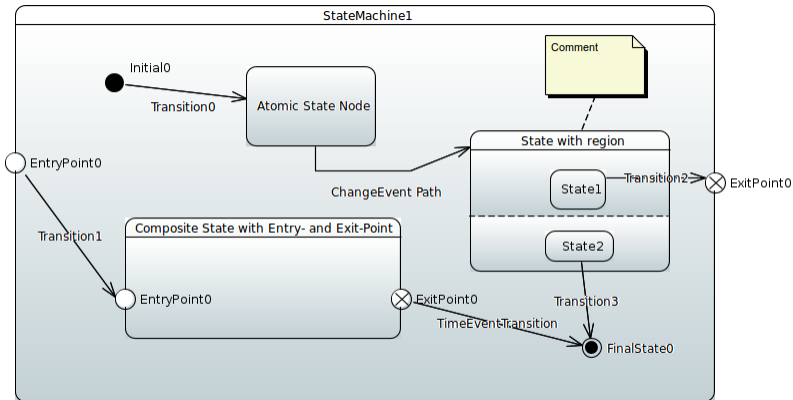


# IBD diagram

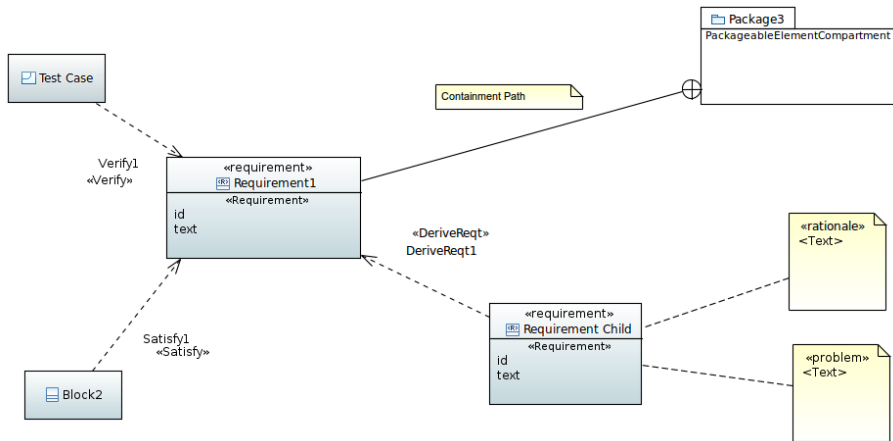




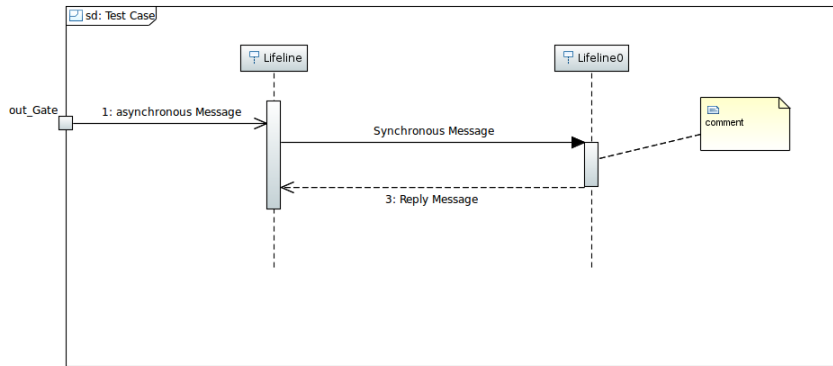
# State Machine diagram



# Requirement Diagram



# Sequence diagram



# On going discussions

Weekly telco on Monday 10:15

Active discussions on issue tracker:

<https://github.com/openETCS/requirement>

# How to start with SysML ?

- 1 Restriction to a set of diagrams
- 2 Definition of metamodel to clarify the items
- 3 Model patterns
- 4 Practical approach to build the SysML model

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# How to use Papyrus ?

- 1 References on user guide on Papyrus
- 2 Training on SysML with Papyrus

⇒ To do

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⇒ **To do**



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# Conclusion

- **Agenda is slipping**
- Decision on primary toolchain are needed for end of guideline
- **Feedbacks and active participation to SysML experts and modellers required**
- Guideline for low-level modelling to do