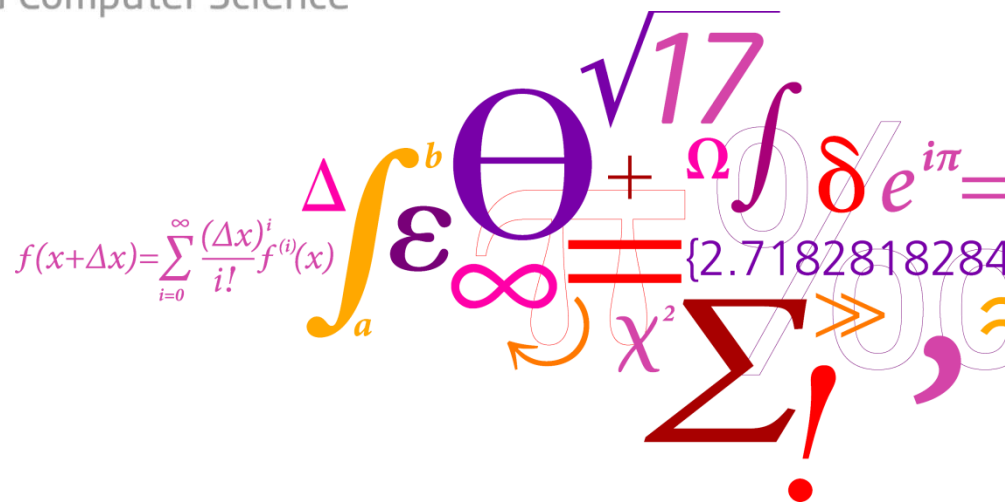


Model-based Software Engineering (02341, spring 2016)

Ekkart Kindler

DTU Compute

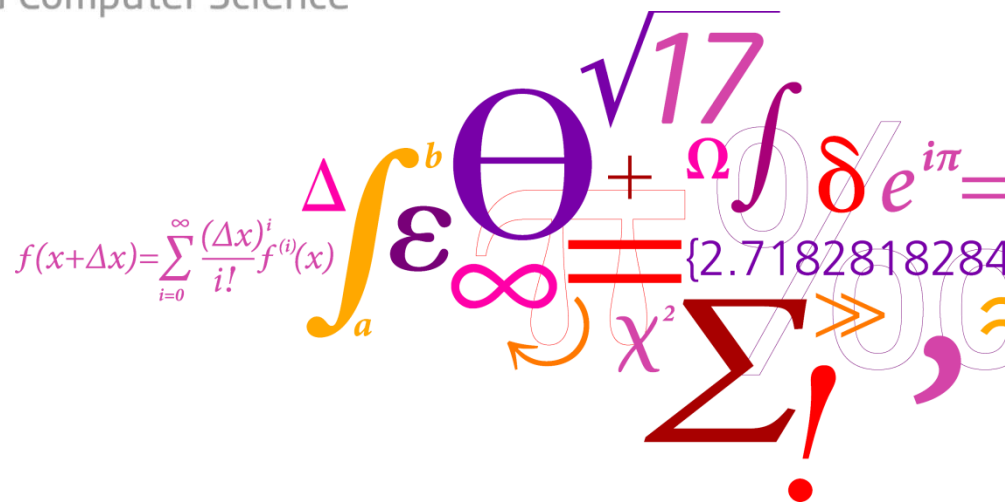
Department of Applied Mathematics and Computer Science



Why, What, and How: Documents in the Software Development Process

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For simplicity, also source code and informal communication are considered documents here.

- During the software development process many documents are produced!
- When should we do which documents?
- Which diagrams to use for which purpose?

→ This lecture provides some orientation (classification)

How



- **Why** should the software be built?
→ Softwares purpose
- **What** should the software do?
→ Software from the end-users point of view
- **How** should the software be realized?
→ Software from the developers point of view

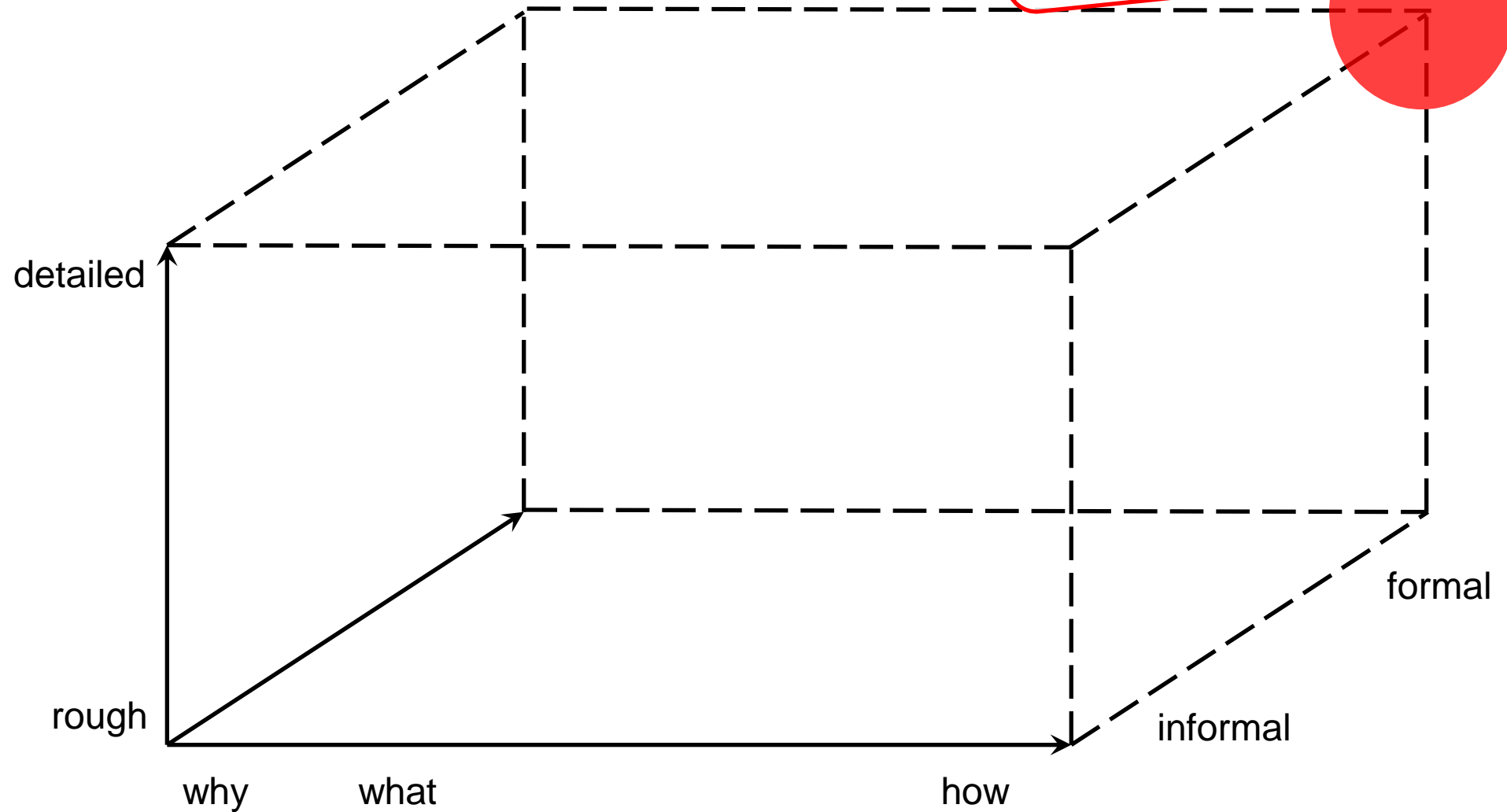
I call this the "what/how dimension"

- Level of detail: low \leftrightarrow high
- Formality/technicity: informal \leftrightarrow formal (technical)
- Aspects / scope: (next slide)
- ...

- Concepts / data
- Behaviour
- Structure
- Presentation (to end user / GUI)
- Security
- Performance
- ...

How to get there?

4. Source Code



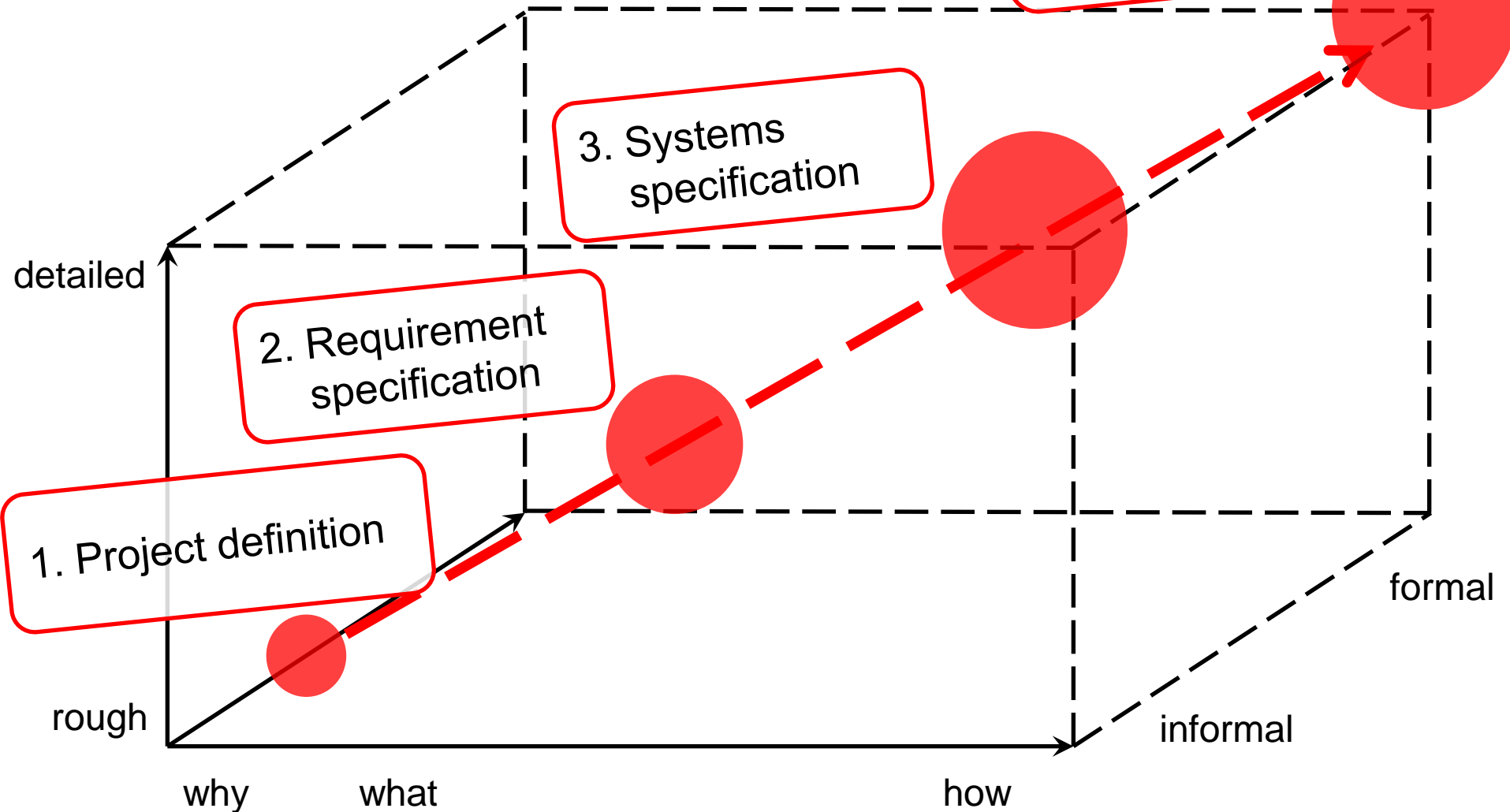
How to get there?

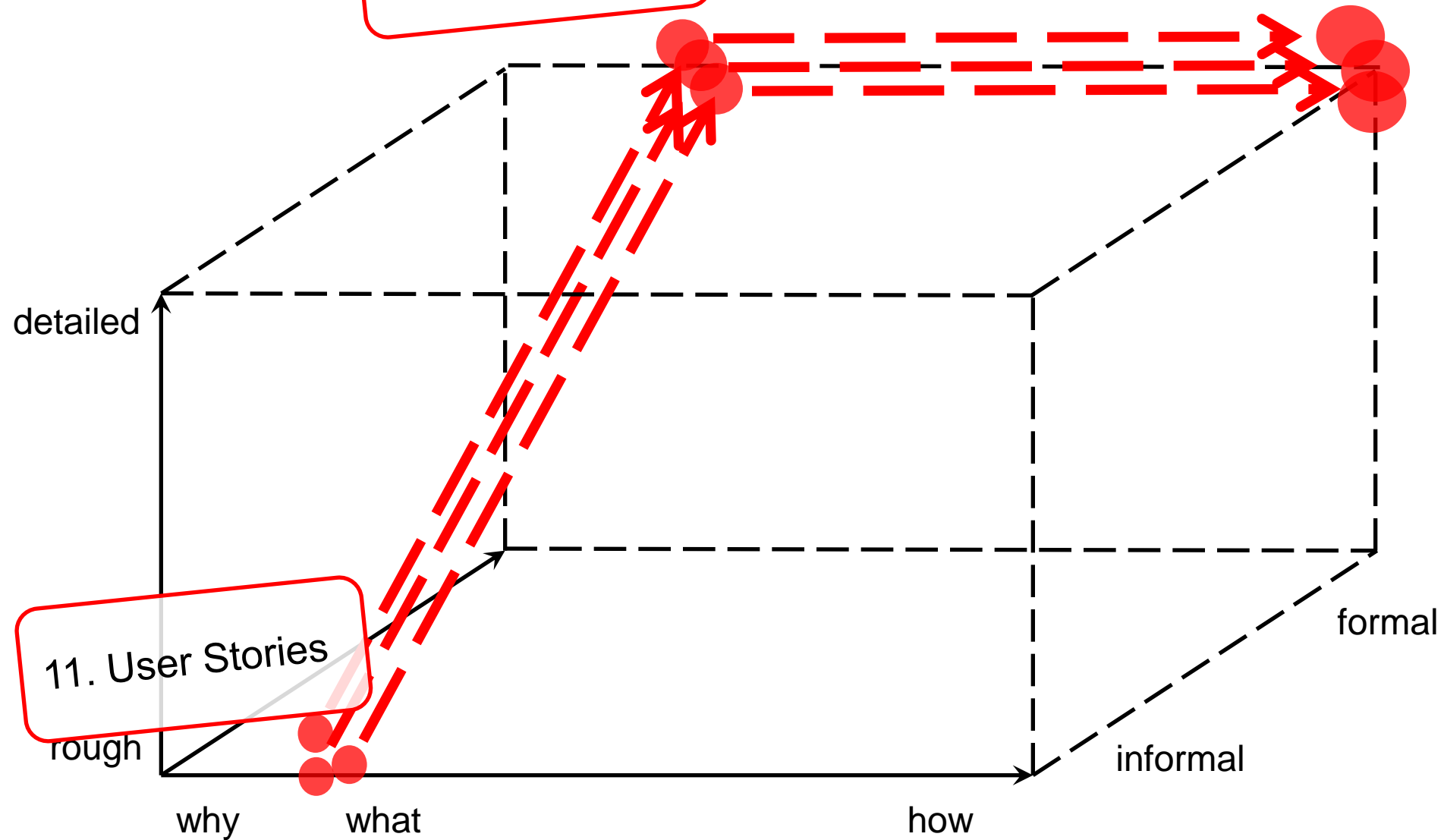
4. Source Code

3. Systems
specification

2. Requirement
specification

1. Project definition





1. Project definition
2. Requirements specification
3. System specification
4. Source code
5. Domain model
 - 6a. (Domain-) Taxonomy
 - 6b. (Domain-) Glossary

Remember: Conceptually constraints are a part of the domain model.

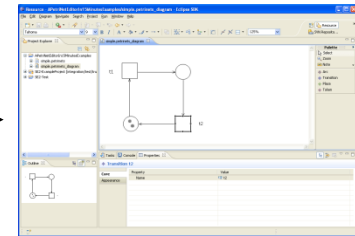
Blackboard discussion

- 7. Architecture (model)
- 8. Automata for objects' life-cycles
- 9. ECNO (see Lecture 9)
- 10. YAWL (and other modelling languages for business processes)
- 11. User story (in agile development)

- X. Your report
- Y. Classdiagrams (?)

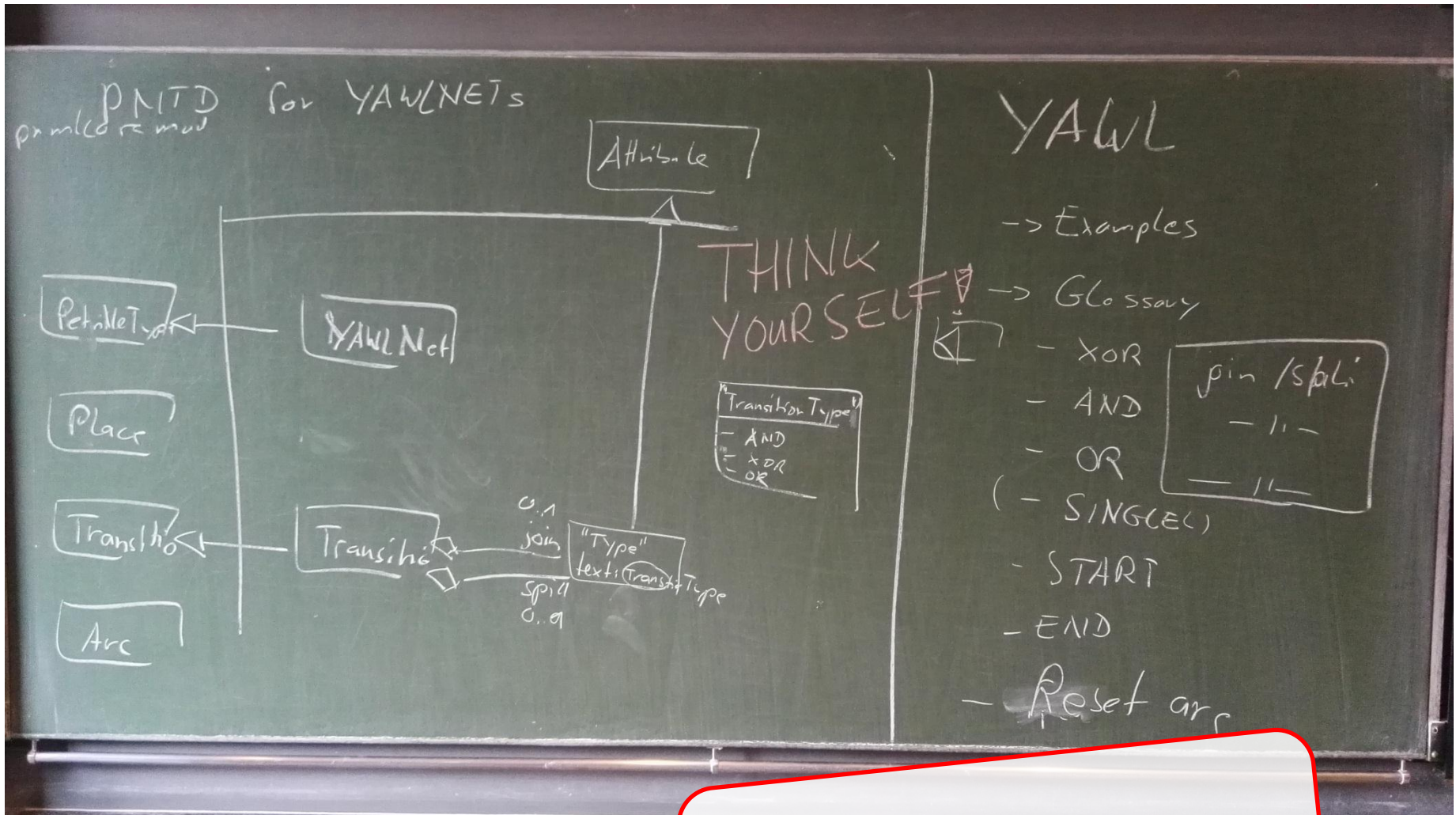
Blackboard
discussion

~~How~~



~~Cooling~~

- The vision of MBSE is to make models of the "WHAT" and to get the "HOW" automatically from that
- Domain models are about the "WHAT" only
- Some of our Ecore models, however, are slightly more about the "HOW" that we would wish them to be. **Example:** YAWL PNTD is made with the ePNK realization into account (see next slide and blackboard discussion of an "clean" domain model for YAWL)



Blackboard discussion from
lecture 5

- Your report might discuss a "clean" domain model and its realization with the ePNK
- Black board discussion: Where should your report be wrt. the "dimensions" discussed above