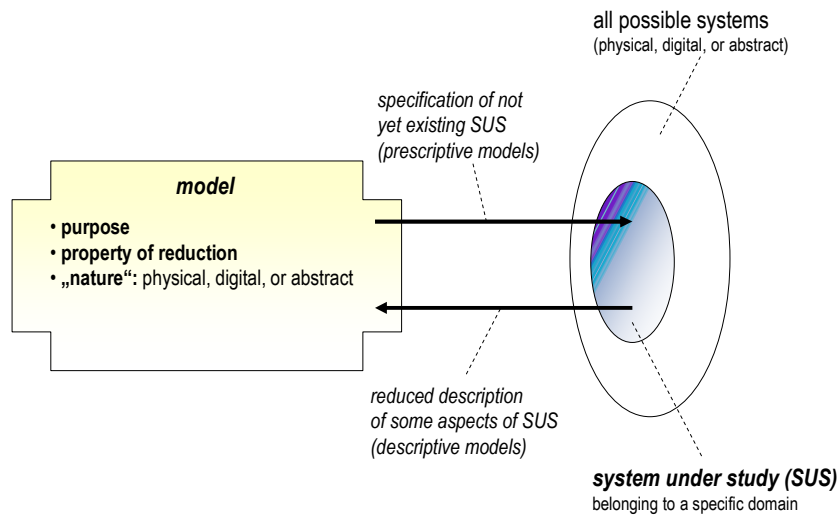


TUTORIAL OVERVIEW

INTRODUCTION

1. DEFINITION OF SYSTEM UNDER STUDY



2. TYPE OF APPLICATION SCENARIO

- ▶ **Representation Characteristic**
"Models as a representation of natural or artificial originals, that again can be models." [translated]
- ▶ **Abstraction Characteristic**
"Models in general do not capture all attributes of the represented original, but only those that seem relevant to the modeller or model user." [translated]
- ▶ **Pragmatic Characteristic**
Models meet their substitution function for specific subjects, within a pre-determined time interval and with limitations on defined intellectual and/or real operations. [translated]

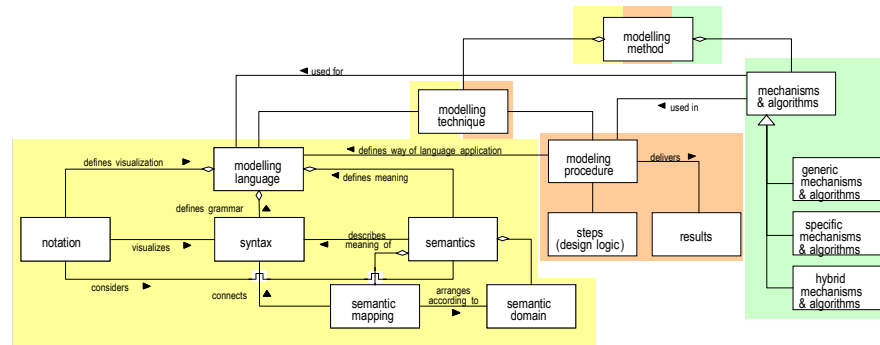
3. INTRODUCTION OF TERMS



- ▶ **Modelling Language:**
Modelling constructs (object types) and their relations (relation types) to each other to declare a model.
- ▶ **Metamodel:**
The model of the syntax of the modelling language
- ▶ **Meta² Model:**
Model of abstract syntax of a language to describe meta models.
- ▶ **Modelling Technique:**
A modelling language and proceeding instructions for creation of a model in this modelling language.
- ▶ **Mechanisms und Algorithms:**
Provision of functionalities to process models such as manipulation, visualisation, query, transformation or simulation depending on the modelling language and modelling procedure.

“Requirement Analysis needs a framework and a procedure to identify requirements for modelling methods in a systematic and transparent way.”

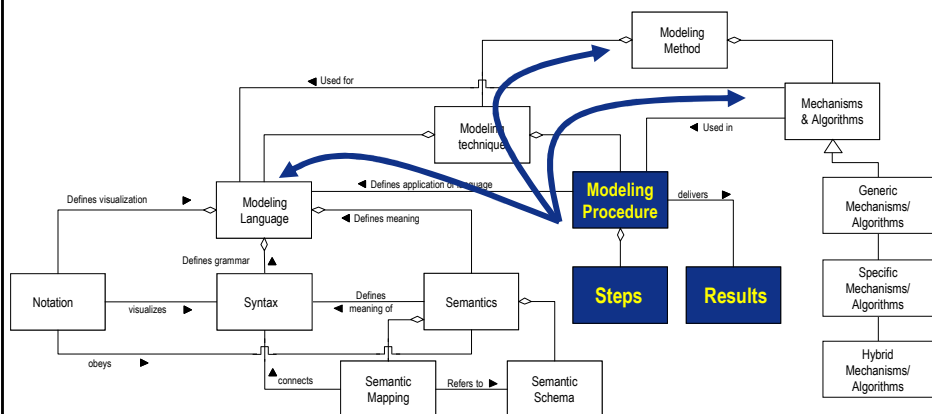
GENERIC MODELLING METHOD FRAMEWORK



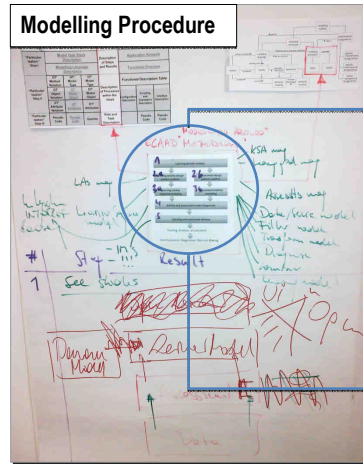
Reference: Karagiannis, D., Kühn, H.: „Metamodelling Platforms“. In Bauknecht, K., Min Tjoa, A., Quirchmayer, G. (Eds.): Proceedings of the Third International Conference EC-Web 2002 – Dexa 2002, Aix-en-Provence, France, September 2002, LNCS 2455, Springer, Berlin/Heidelberg, p. 182 ff.

MODELLING PROCEDURE AS STARTING POINT

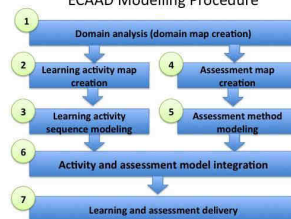
How to support modelling procedure in an optimal way?



Modelling Procedure



ECAAD Modelling Procedure



- Assessments, Tracking, Visualisation
- Transformation, Integration of Data
- Diagnose, Communication, Negotiation
- Export into student learning system

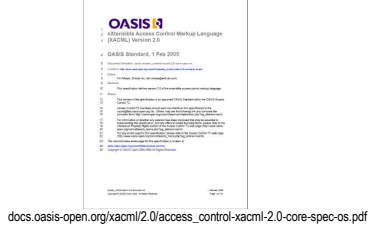
The diagram illustrates the relationships between various modeling components. Key elements include:

- Modeling Language** (blue box): Defines visualization, visualizes, obeys, Defines grammar, Defines meaning, Defines application of language.
- Syntax** (blue box): visualizes, obeys, Defines grammar, Defines meaning, connects.
- Semantics** (blue box): Defines meaning, connects, Refers to.
- Semantic Mapping** (blue box): connects.
- Semantic Schema** (blue box): Refers to.
- Modeling Method** (white box): Used for, Modeling Technique.
- Modeling Technique** (white box): Used for, Modeling Method, Modeling Procedure.
- Modeling Procedure** (white box): Defines application of language, delivers, Steps, Results.
- Mechanisms & Algorithms** (white box): Used in, Generic Mechanisms/Algorithms, Specific Mechanisms/Algorithms, Hybrid Mechanisms/Algorithms.
- Generic Mechanisms/Algorithms** (white box): Specific Mechanisms/Algorithms, Hybrid Mechanisms/Algorithms.
- Specific Mechanisms/Algorithms** (white box): Hybrid Mechanisms/Algorithms.
- Hybrid Mechanisms/Algorithms** (white box): Final output.

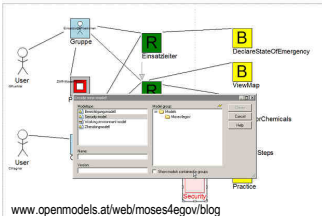
MODELLING PROCEDURE AS STARTING POINT

Example: MoSeS4eGov (Model-based Security System for eGovernment) from eGovernment domain

XACML as Conceptual Basis

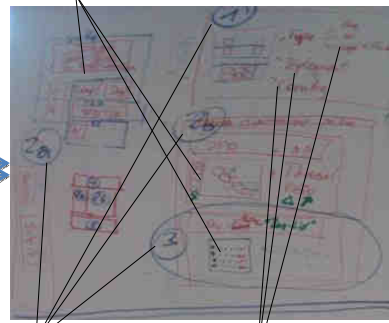


Implementation of „SECTINO“



Modelling Method Overview

Modelling Language

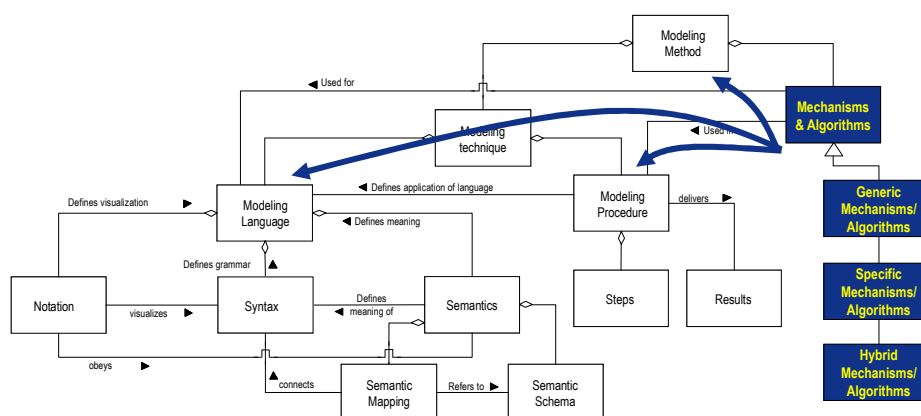


Modelling Procedure

Mechanisms & Algorithms

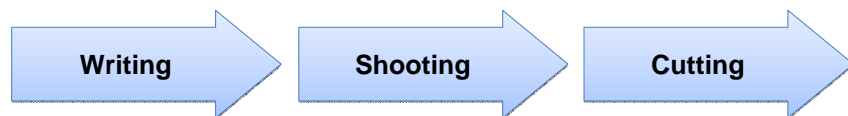
MECHANISMS & ALGORITHMS AS STARTING POINT

Which functionality is required and how are models expected to be used.

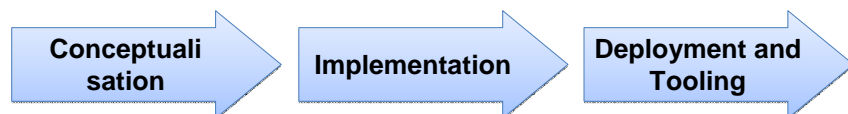




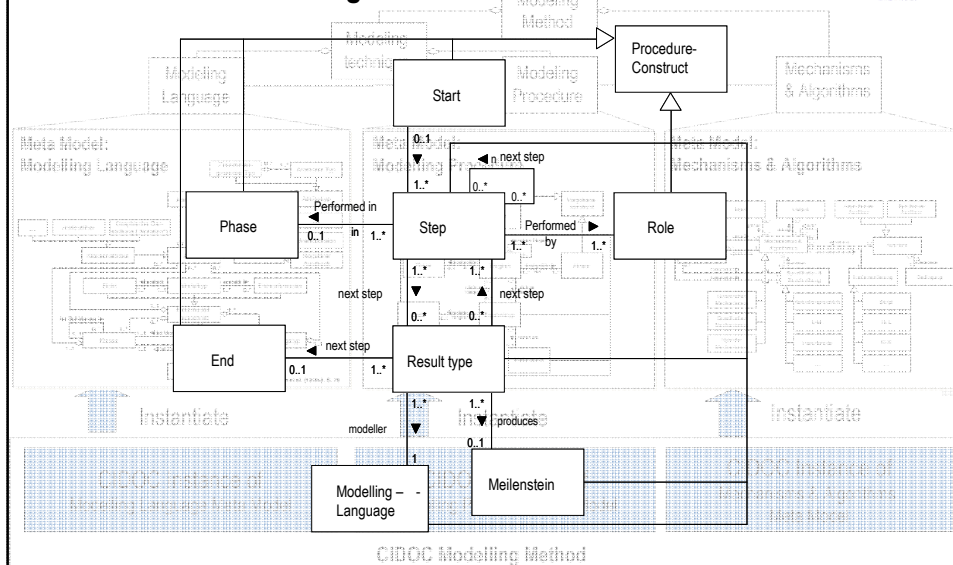
**CURRENTLY NO SAMPLE
AVAILABLE**



**WHAT IS THE ANALOGUE FOR
MODELLING METHODS ?**



Meta Model: Modelling Procedure



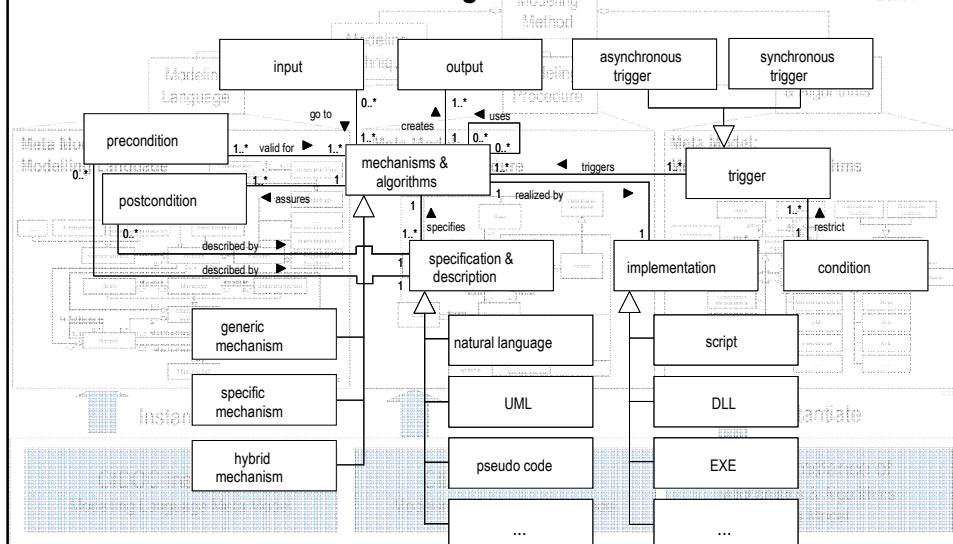
Reference: Kühn, H. (2004). Methodenintegration im Business Engineering. PhD Thesis, University of Vienna

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Meta Model: Mechanisms & Algorithms

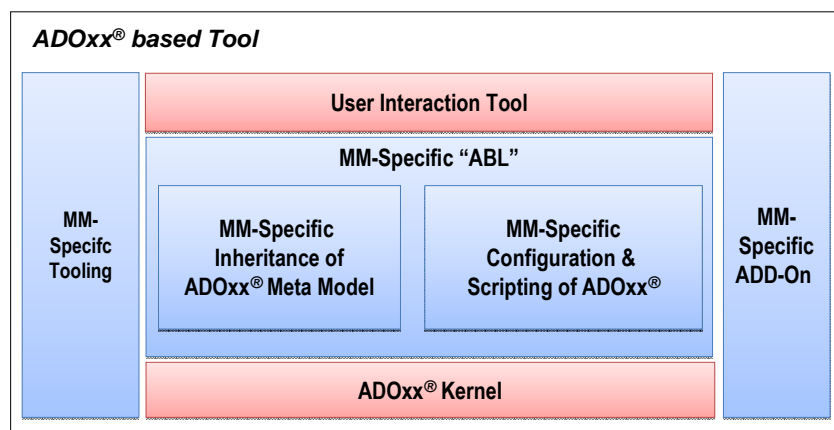
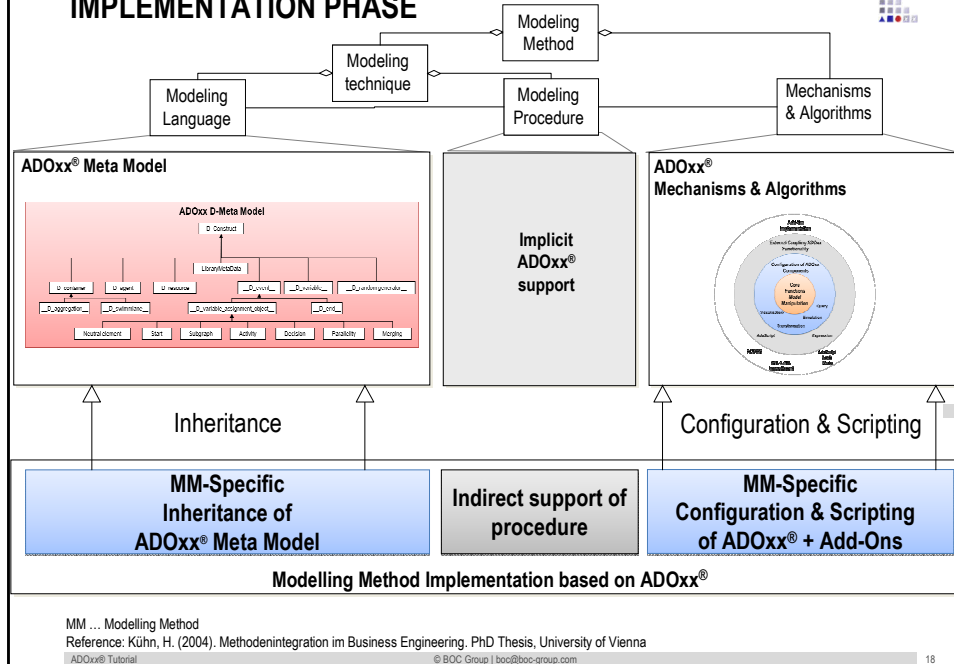


Reference: Kühn, H. (2004). Methodenintegration im Business Engineering. PhD Thesis, University of Vienna

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We thank you for your attention!

In case of any questions, please contact

tutorial@adoxx.org