3rd International OMI Workshop: Modeling Methods in Motion

The OMLAB®

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Open Models Initiative: The Start

www.openmodels.org

- Initiative to collaboratively develop reference models for everyone to use, modify, copy and distribute in an open and public process
- Aims to build an open modeling community and to initiate an open modeling process with reference to the principles of open source
- Aims to develop software tools for collaborative modeling including facilities for model review, model documentation and more
- Prime Initiators:
  - Prof. Dr. Ulrich Frank, Universität Duisburg - Essen
  - Prof. Dr. Stefan Strecker, FernUniversität Hagen
  - and other professors

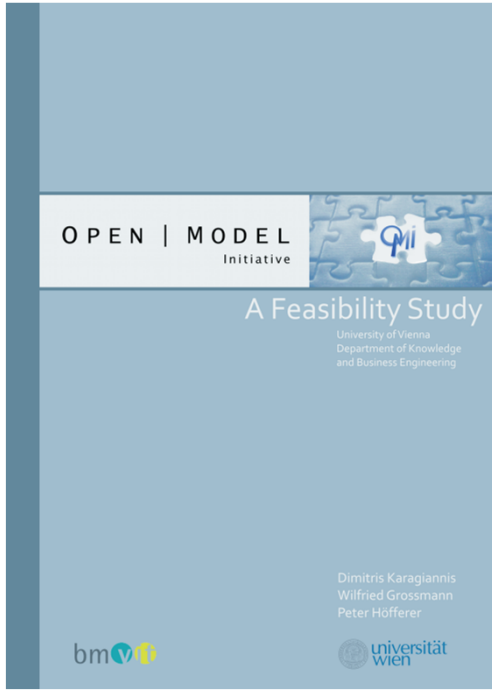
OMI: The Austrian Chapter

Open Model Initiative

www.openmodels.at

2008 — 2009 — 2012

OMI Feasibility Study



179 Modeling Editors were analyzed

Recommended consideration to:

- ✓ Establish an Open Models Platform
- ✓ Provide a suited IT-based modeling environment for distributed and cooperative modeling
- ✓ Realize an operational structure of the chapter, namely OMLAB®

OMiLAB: Provision

OMiLAB®

2008 2009 2012

OMI Platform

Community

Groups of individuals sharing common values and following common goals.

Organized in communities of practice for different domains providing value through i.e. competence, joint activities, shared practices and resources, sustained interaction, experiences, and tools.

Projects

Modeling Environment Projects: creating model content for various domains and/or purposes.

Method Engineering Projects: conceptualization of new or further development of existing methods, development and deployment of IT-based modeling tools.

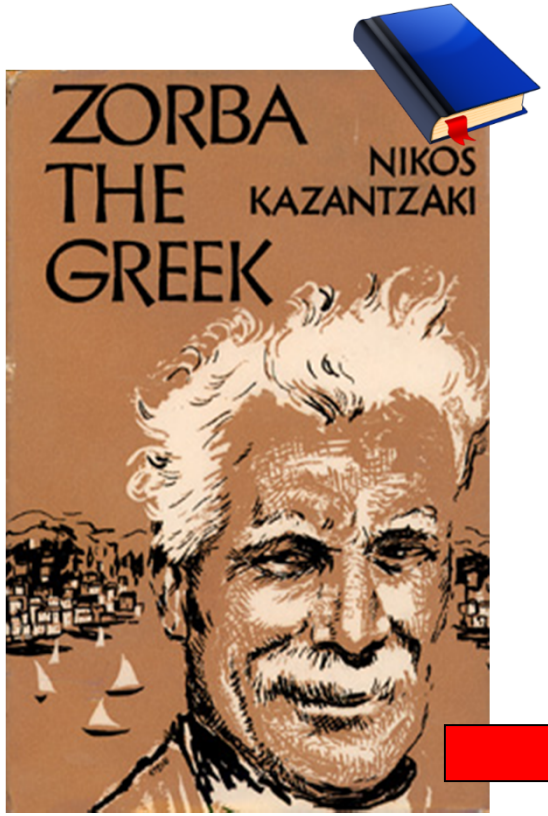
Foundations

Modeling languages and their algorithms for the processing of models as well as IT-based modeling environments.

Enabler that supports designers to choose the right algorithms for the processing of methods and models.

OMiLAB: Focus

The Metaphor…



Filmdaten / Film Data	
Deutscher Titel:	**Alexis Sorbas**
Originaltitel:	**Zorba the Greek**
Produktionsland:	Vereinigte Staaten, Vereinigtes Königreich, Griechenland
Erscheinungsjahr:	1964
Länge:	142 Minuten
Originalsprache:	Englisch
Altersfreigabe:	FSK 12

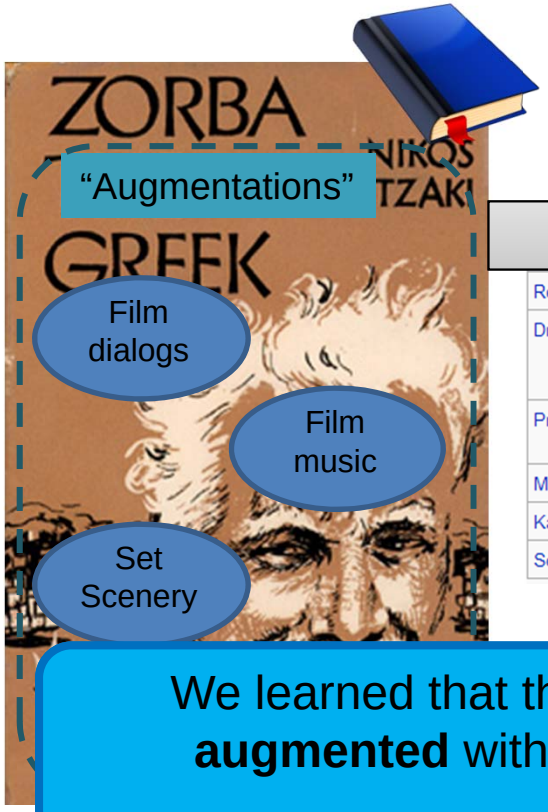
Stab / Staff	
Regie:	Michael Cacoyannis
Drehbuch:	Michael Cacoyannis (nach dem Roman von Nikos Kazantzakis)
Produktion:	Michael Cacoyannis, Anthony Quinn
Musik:	Mikis Theodorakis
Kamera:	Walter Lassally
Schnitt:	Michael Cacoyannis

Besetzung / Cast

- Anthony Quinn: Alexis Sorbas
- Alan Bates: Basil
- Irene Papas: Witwe
- Lila Kedrova: Madame Hortense
- Sotiris Moustakas: Mimithos
- Yorgo Voyagis: Pavlis

OMI: Focus

Method Conceptualization©



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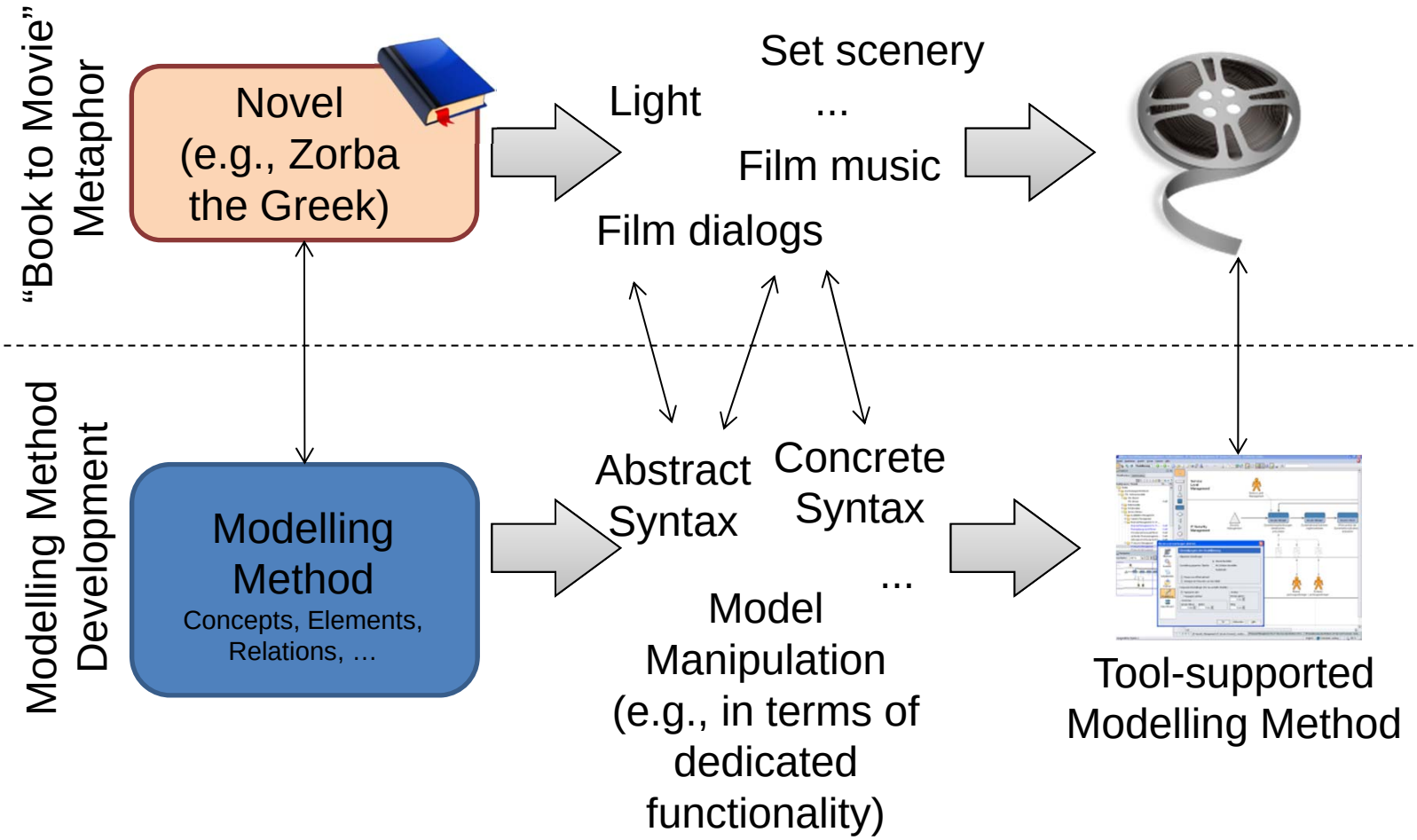
We learned that the method descriptions need typically to be **augmented** with **concepts** that satisfy the expectations of method engineers.

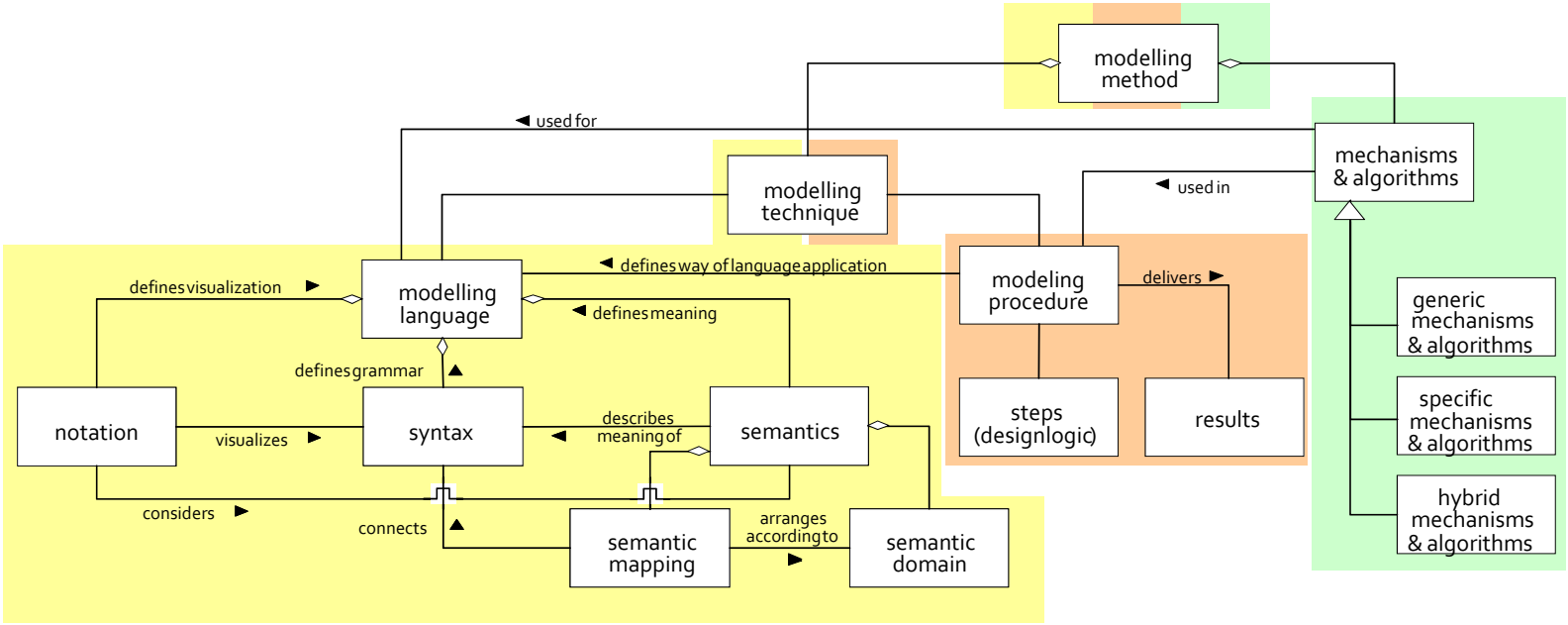
We named this process: **The Method Conceptualization process**

OMI: Focus

...continuing the metaphor

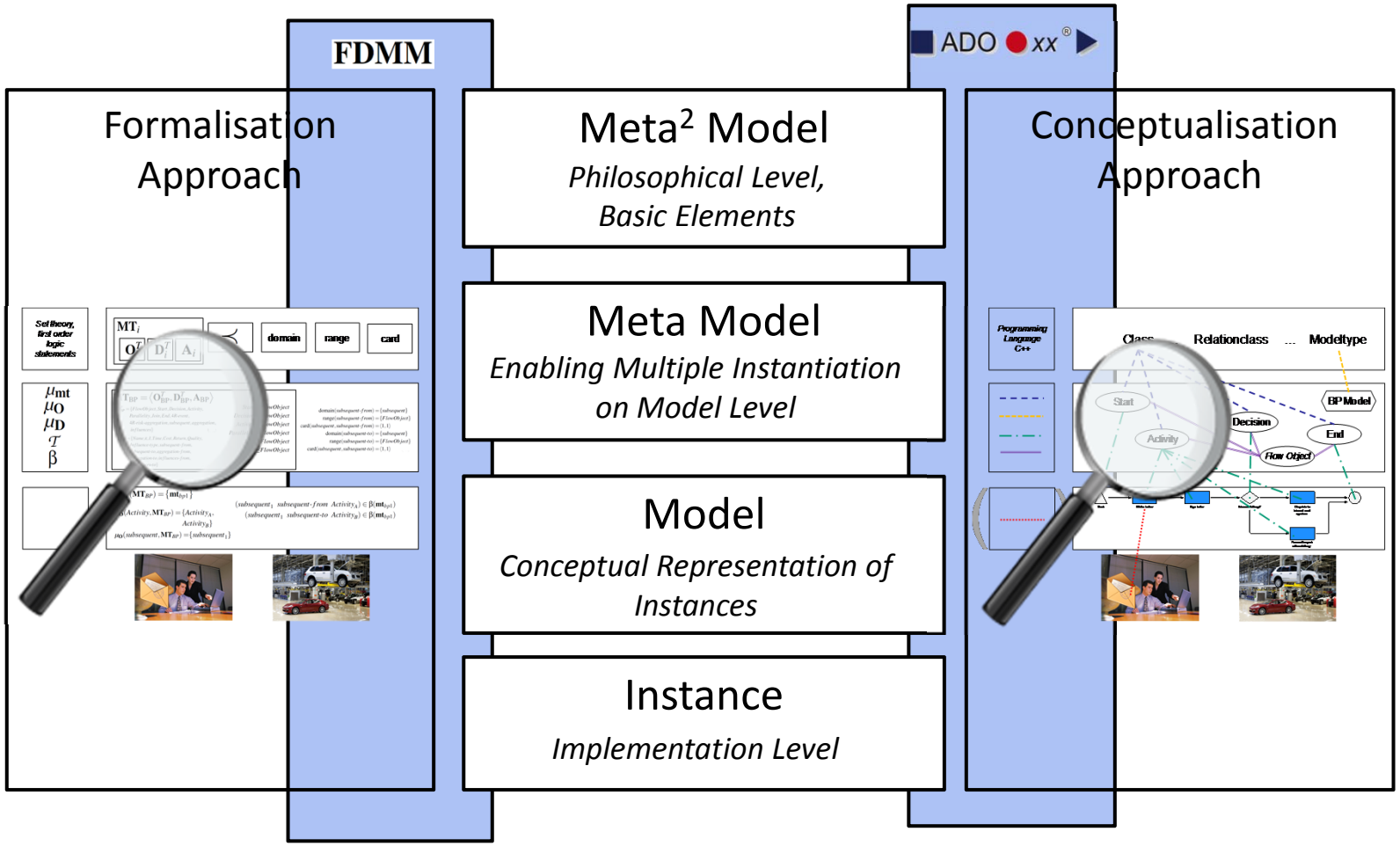


OMiLAB: Generic Modelling Method Specification Framework



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.

OMiLAB: Formalisation



Hans-Georg Fill, Timothy Redmond, Dimitris Karagiannis (2012): FDMM: A Formalism for Describing ADOxx Meta Models and Models, to appear in ICEIS'2012

FDMM Formalism View on Meta² Models

Meta Models, Models – Simple Example

Set theory, first order logic statements

$\mathbf{MT}_i$ $\mathbf{O}_i^T$ $\mathbf{D}_i^T$ $\mathbf{A}_i$ $\prec$ domain range card

Meta² Model

$\mu_{\mathbf{mt}}$
$\mu_{\mathbf{O}}$
$\mu_{\mathbf{D}}$
$\mathcal{T}$
β

$$\mathbf{MT}_{\mathrm{PO}} = \langle \mathbf{O}_{\mathrm{PO}}^T, \mathbf{D}_{\mathrm{PO}}^T, \mathbf{A}_{\mathrm{PO}} \rangle$$

$$\mathbf{O}_{PO}^T = \{\textit{Business-transaction}, \textit{relates-business-transaction}\}$$

$$\mathbf{D}_{PO}^T = \{\textit{String}, \textit{Float}, \mathbf{Enum}_{view}\}$$

$$\mathbf{A}_{PO} = \{ID, W, RE, RI, WE, \rho, \textit{relates-from}, \textit{relates-to}, \textit{Process}, \textit{View}\}$$

$$\mathrm{domain}(W) = \{\textit{Business-transaction}\}$$

$$\mathrm{range}(W) = \{\textit{Float}\}$$

$$\mathrm{card}(\textit{Business-transaction}, W) = \langle 0, 1 \rangle$$

Meta Model

$$\mu_{\mathbf{MT}}(\mathbf{MT}_{PO}) = \{\mathbf{mt}_{po1}\}$$

$$\mu_{\mathbf{O}}(\textit{Business-transaction}, \mathbf{MT}_{PO}) = \{BT_P, BT_Q\}$$

$$\mu_{\mathbf{D}}(\textit{Float}) = \{25.00, 55.00, 60.00\}$$

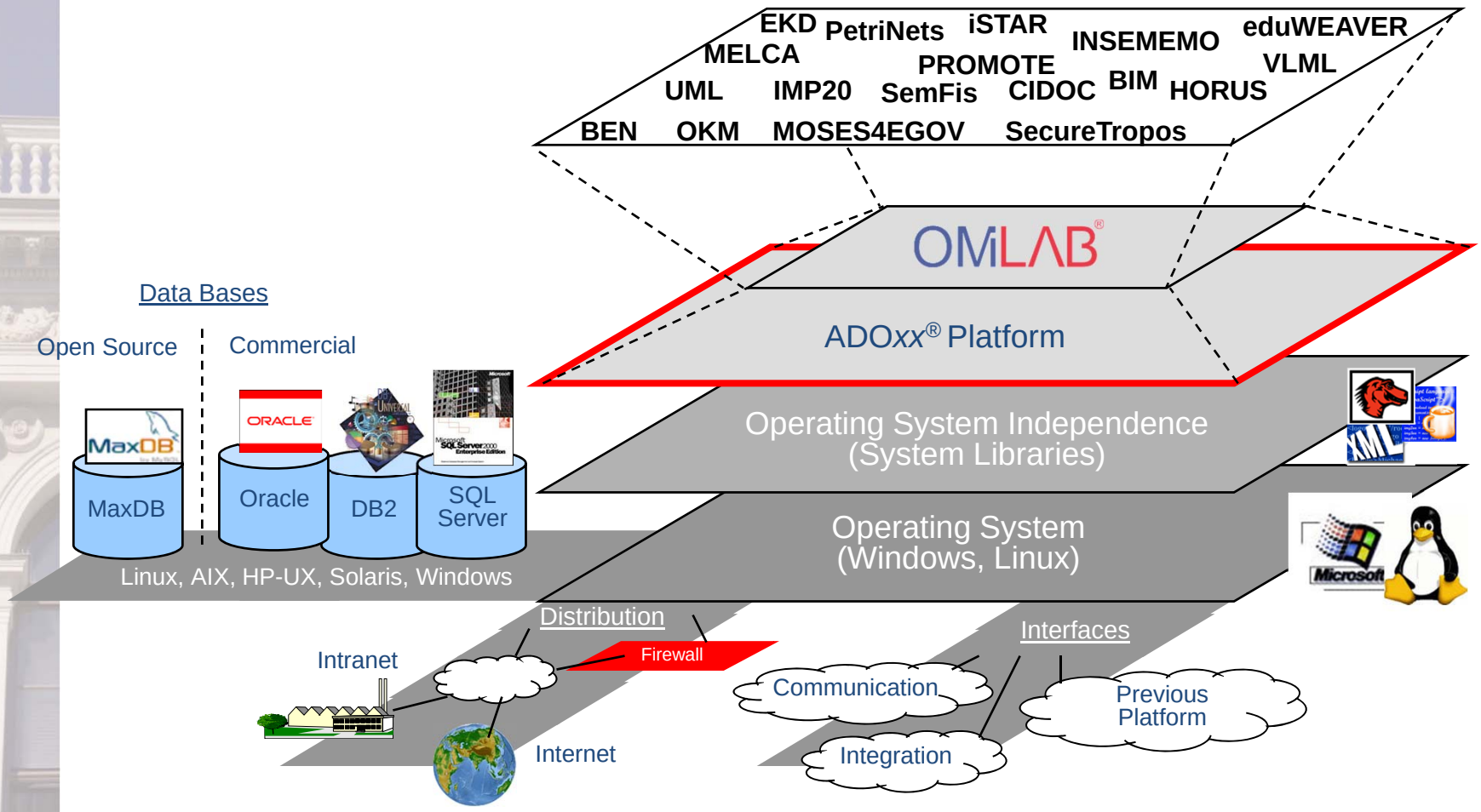
$$(BT_P \ \ W \ \ 25.00) \in \beta(\mathbf{mt}_{po1})$$

Model

Hans-Georg Fill, Timothy Redmond, Dimitris Karagiannis (2012): FDMM: A Formalism for Describing ADOxx Meta Models and Models, ICEIS'2012

World

OMiLAB: Logical Architecture



ADO*xx*®: General Definitions

Classes

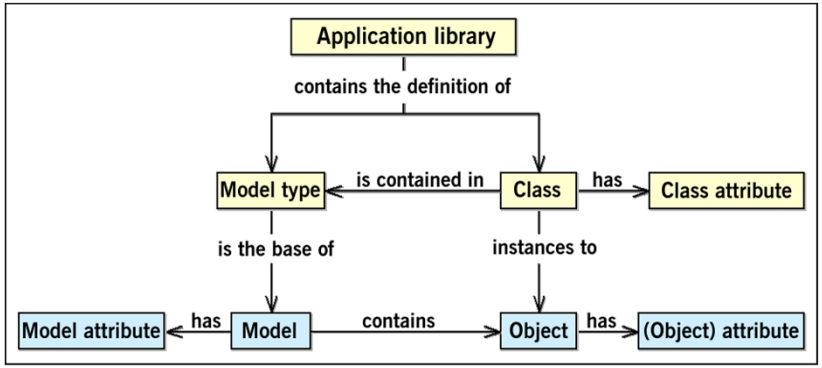
- A class is a construct that is used as a template to create objects of that class. The objects of a class are alternatively called “instances”. Abstract classes cannot be instantiated!

Relation Classes

- A relation class is a construct that is used as a template to create relations between objects. A relation class is defined between classes. A relation is always a directed connection between objects, i.e. each relation has a from-side and a to-side.

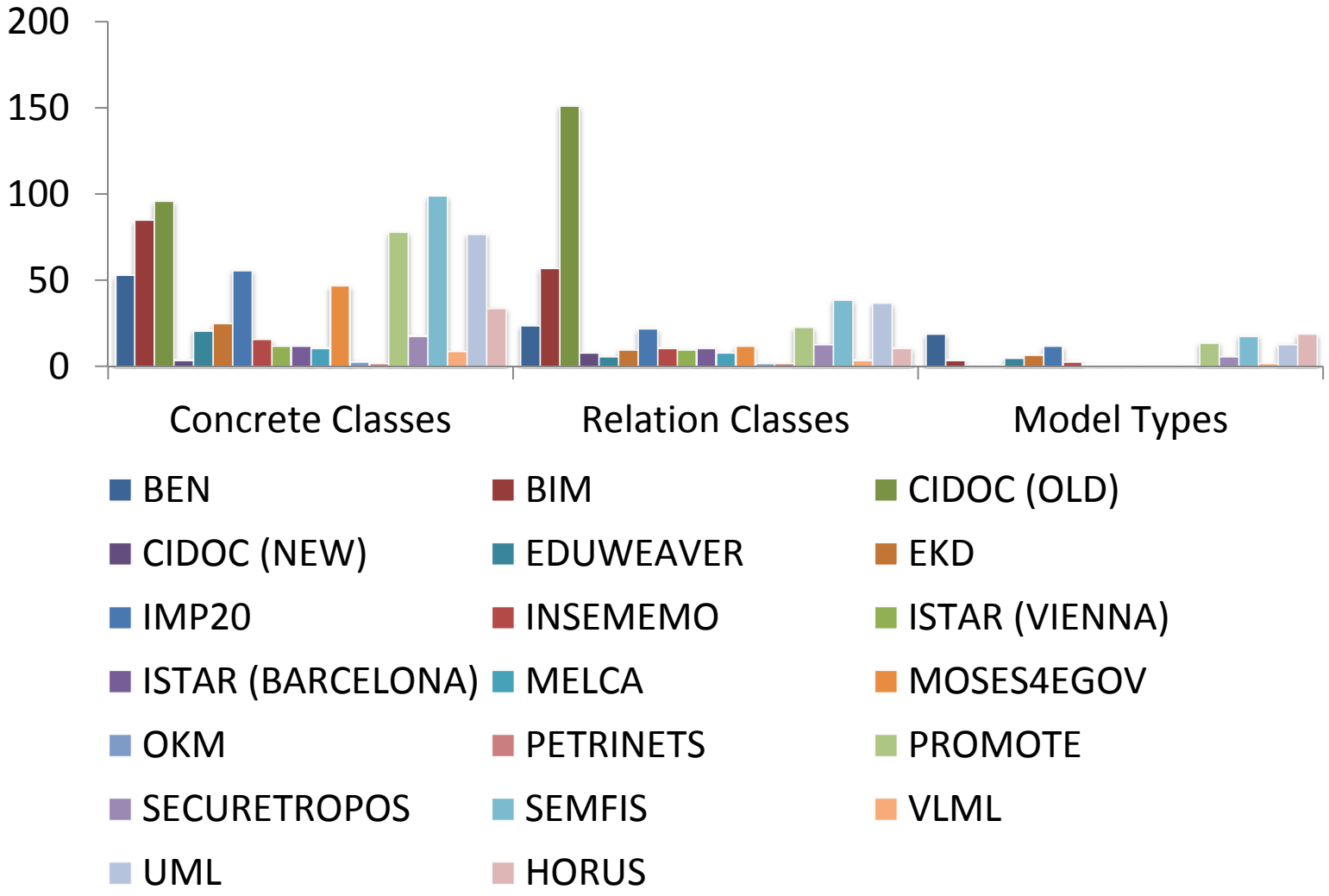
Model Types

- A model type is a well-defined sub-collection of classes and relation classes of a meta model.



Methods in Implementation

Status per 1.09.2012



Methods in Implementation

Status per 1.09.2012

	BEN	BIM	CIDOC (OLD)	CIDOC (NEW)	EDUWEAVER	EKD	IMP20	INSEMEMO	ISTAR (V)	ISTAR (B)
Concrete Classes	53	85	96	4	21	25	56	16	12	12
Relation Classes	24	57	151	8	6	10	22	11	10	11
Model Types	19	4	1	1	5	7	12	3	1	1

	MELCA	MOSES4EGOV	OKM	PETRINETS	PROMOTE	SECURETROPOS	SEMFIS	VLML	UML	HORUS
Concrete Classes	11	47	3	2	78	18	99	9	77	34
Relation Classes	8	12	2	2	23	13	39	4	37	11
Model Types	1	1	1	1	14	6	18	2	13	19

OMiLAB: The environment

2008 2009 2012

OMiLAB@Faculty of Computer Science
Währinger Str. 29

OMI Laboratory

- ✓ Research and experimental space for modeling method development
- ✓ Technical environment – virtual and physical – for working on modeling related topics
- ✓ Cross-fertilization space for researchers and practitioners from various disciplines

OMiLAB: Add-Ons

Functionalities

- Publishing Tool
- Meta-Modeling Browser
- Apps

Trainings

- Tutorial on Conceptualization of Modeling Methods
- Tutorial on Deployment of Your Modeling Method in ADO*xx*®
- Tutorial on Customization and Scripting in ADO*xx* ® for Your Modeling Method

Events, Publications and Media

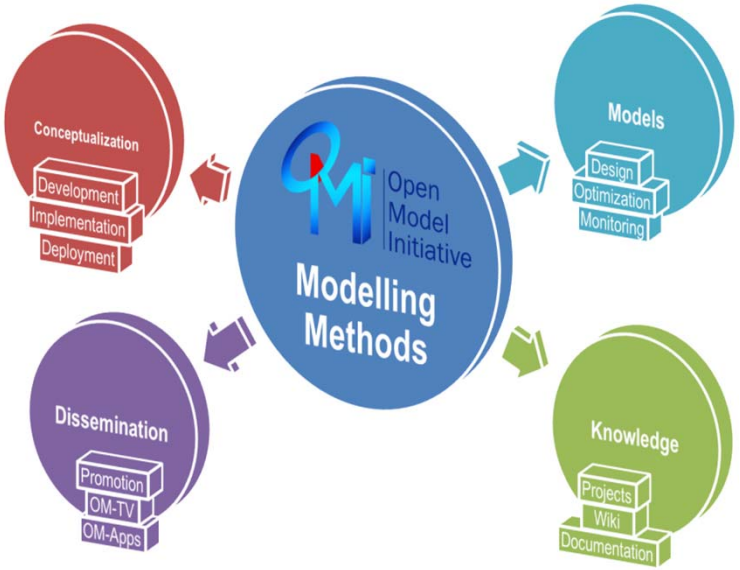
- Conferences, Workshops, Summer Schools
- OMI TV and OMI Mobile
- Newsletters
- ….

Individual collaboration with PhD Students

Register at:
www.openmodels.at

PhD Students are welcome to

- Perform research for their PhD Thesis at OMiLAB
- Further develop existing methods or functionalities
- Use existing methods for their research purposes
- Collaborate with other PhDs
- Use the implementation platform and knowledge resources



Join us @ OMLAB® !

Collaborate with other Projects @ OMI

The Open Model Initiative Workshop Series:

3rd Workshop focus on:

Modelling Methods in Motion

2012

13th September

2nd Workshop focus on:

Conceptualization of Modelling Methods

2011

1st Workshop focus on:

Methods as Plug-Ins for Meta - Modelling

2010

EU-Project Collaboration

Bivee & Comvantage

MATURE

plugIT

Details available at: **http://www.openmodels.at**

Thank You !

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