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ITML: A Domain-Specific Modeling Language for Supporting Business Driven IT Management

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on Domain-Specific Modeling**



Institute for Computer
Science and Business
Information Systems (ICB)



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Problem & Motivation

- IT Management: Planning, realizing and maintaining of IT resources – a task of remarkable complexity
- Requires knowledge
 - about IT artifacts, heterogeneous IT infrastructures, ever changing technologies, manifold interdependencies
 - ... and about the business!
- Hence, requires involving people with different professional backgrounds
- IT Management as an integrated enterprise function requires methods & corresponding tools to support
 - planning of IT investments in line with business goals
 - business-oriented performance measurement

The Approach in a Nutshell

- Reduction of complexity through **conceptual models** of IT infrastructures
- Safe & convenient design and use of models through **domain specific modeling language**
- Support for IT-business alignment through integration with **enterprise models**
- Promises for higher productivity in development of IT Management **software** through code generation and reuse

Illustration of The Solution

Type Level

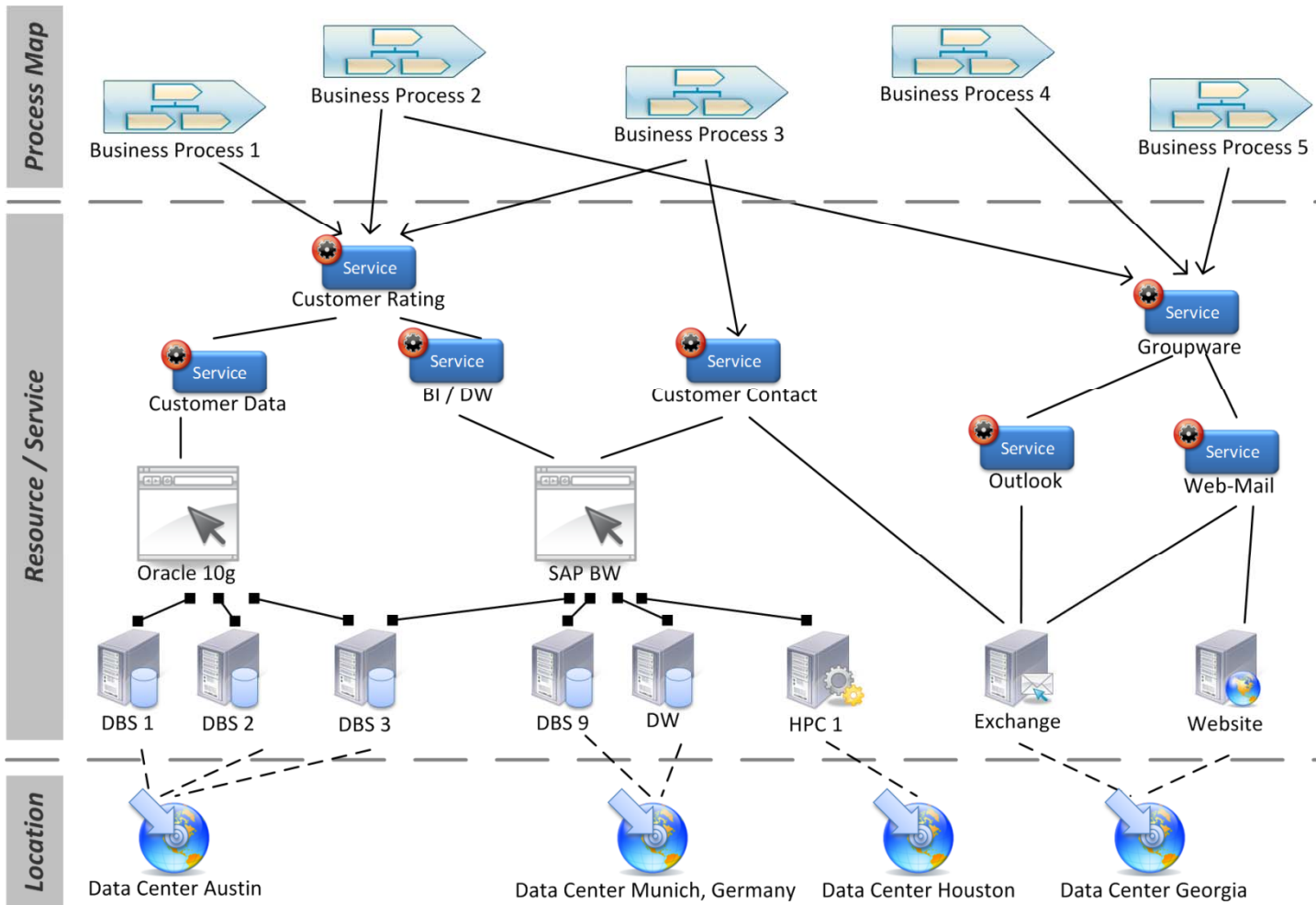
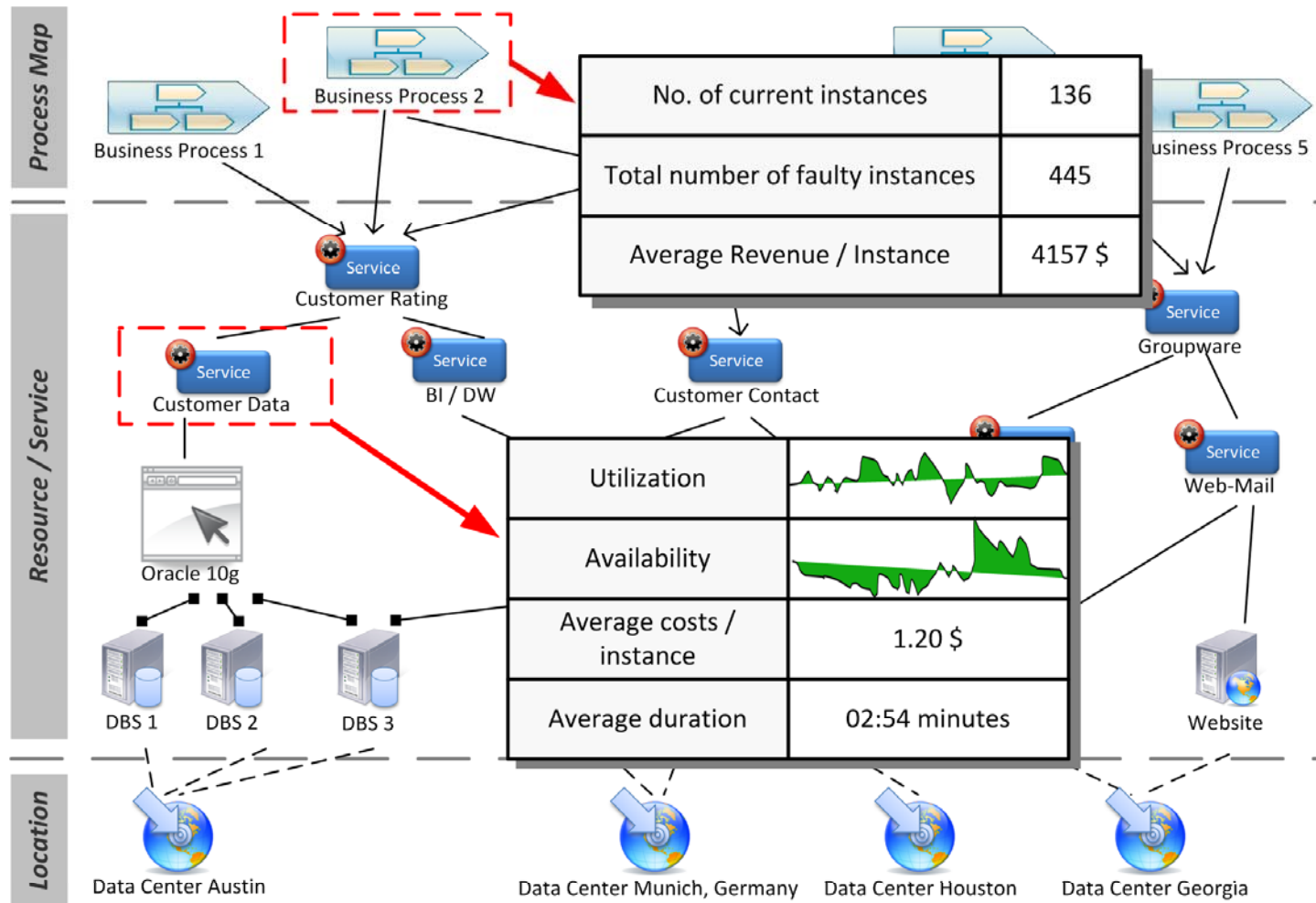
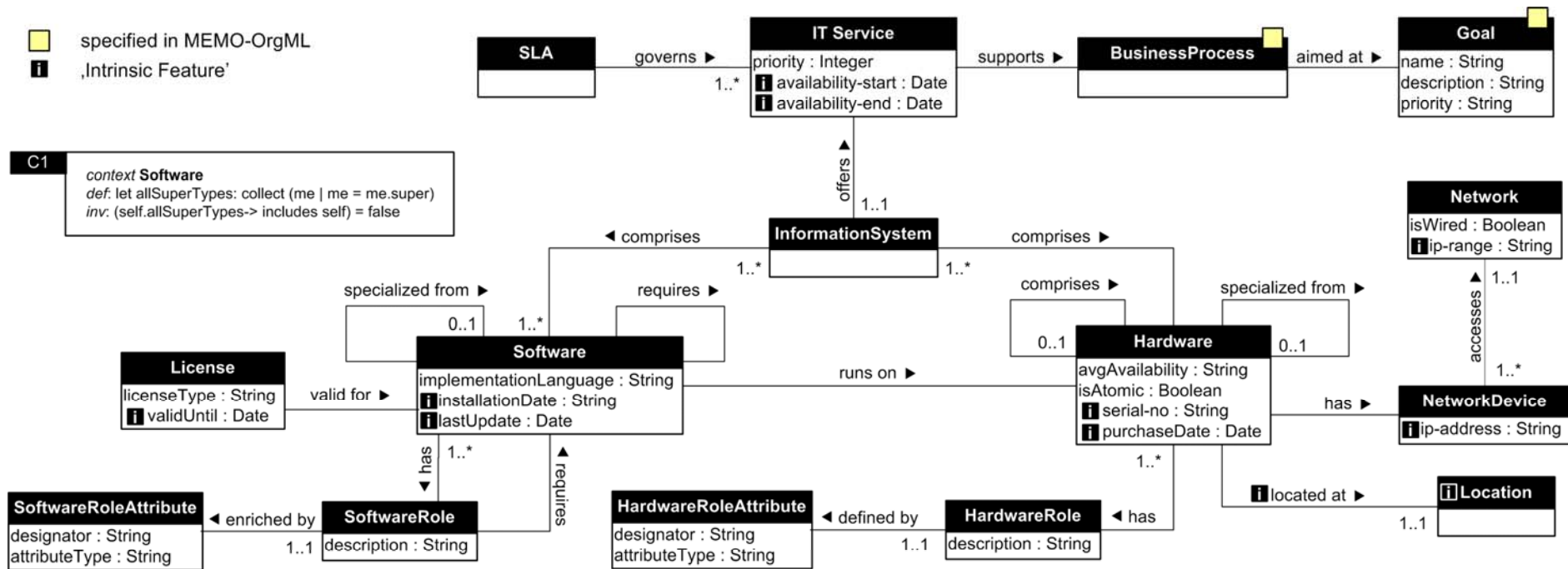


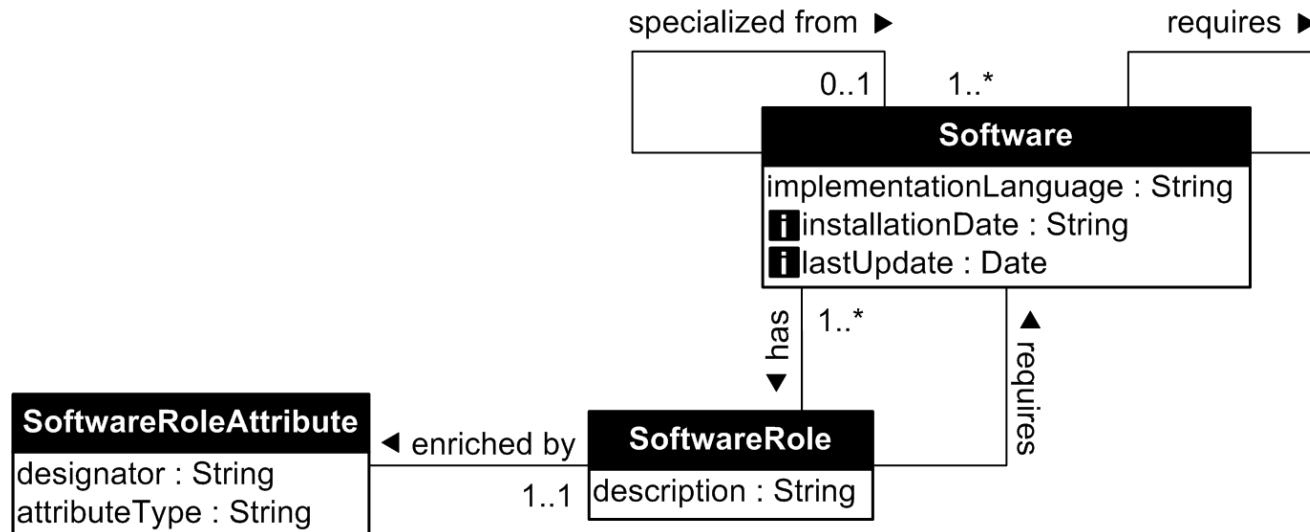
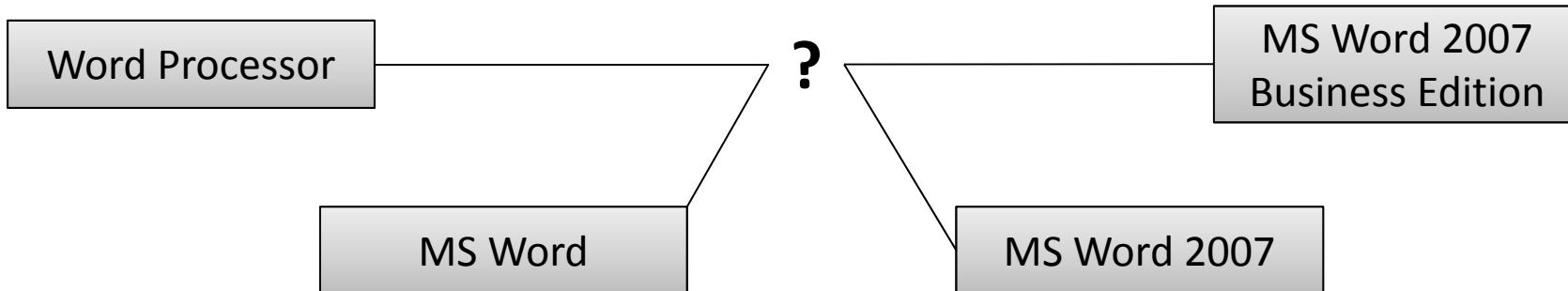
Illustration of The Solution Supplemented by Instance Information



Language Design: Meta Model

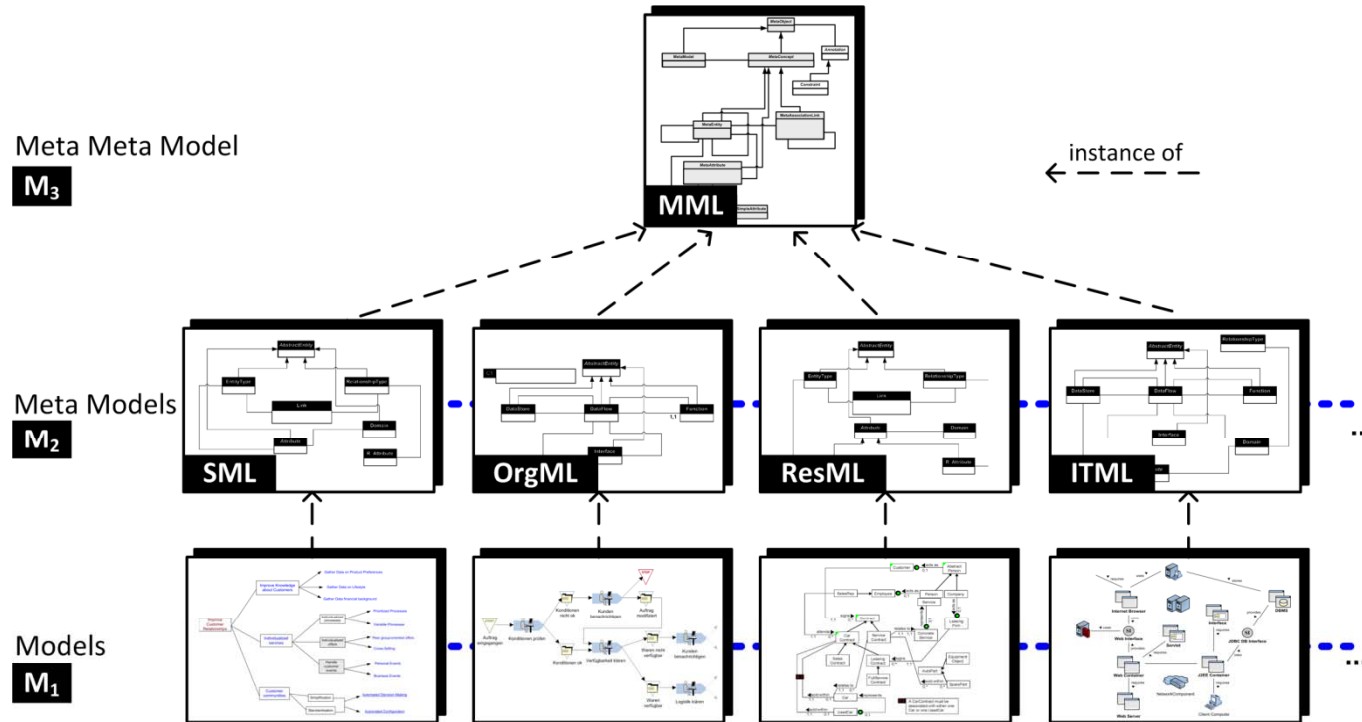


Design Decision: Software Role



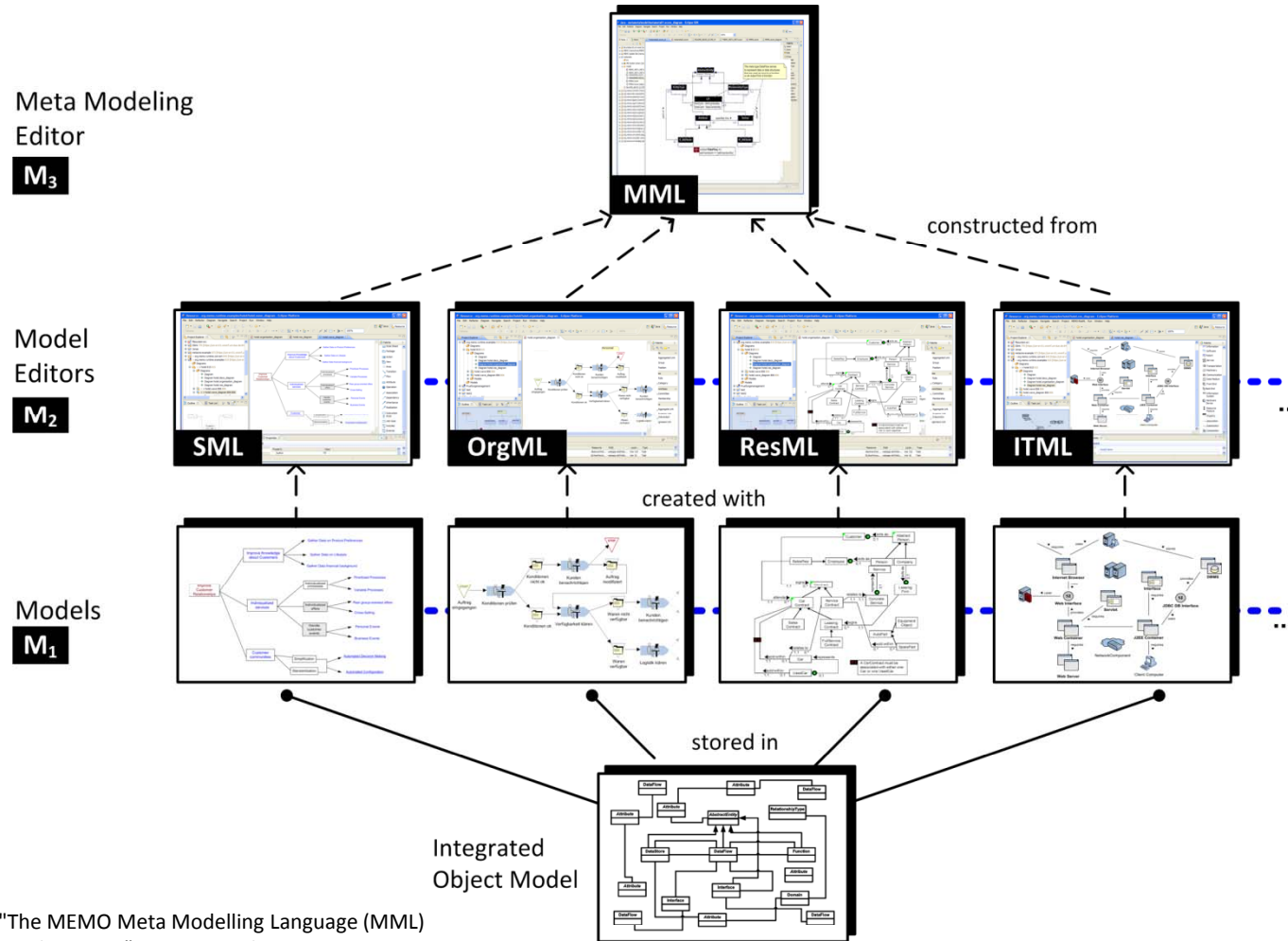
Language Architecture

Integration with Enterprise Modeling



Language Architecture

Tool Implementation



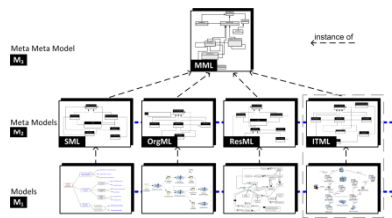
Ulrich Frank: "The MEMO Meta Modelling Language (MML) and Language Architecture", ICB Research Report, University of Duisburg-Essen

Modeling Tool: MemoCenterNG

- Enterprise modeling and meta modeling tool
 - Meta modeling editor + code generation
 - set of integrated modeling editors
 - fosters integrity of interrelated models through shared concepts
- Based on standardized platform:
 - Eclipse Modeling Framework (EMF)
 - Graphical Modeling Framework (GMF)
 - XMI
 - ...

Questions, Answers & Discussion

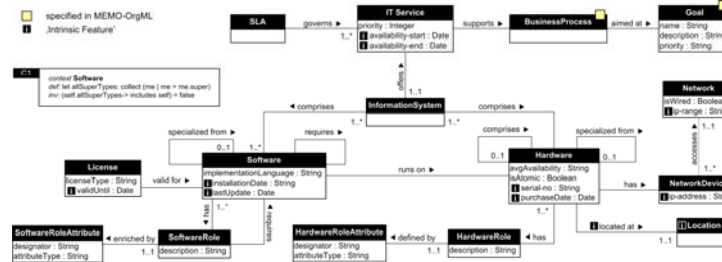
Language Architecture



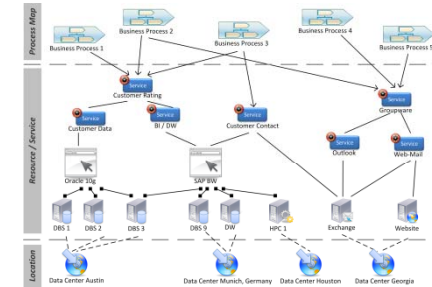
Modelling Tool



Meta Model

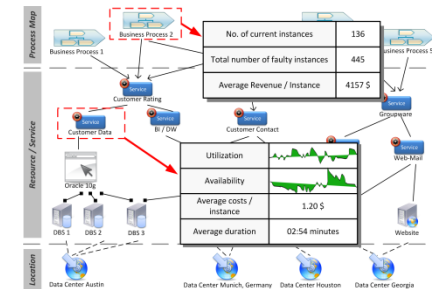


IT Landscapes



IT Landscapes

+ Instance Information



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References & More Information

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- Ulrich Frank: "[The MEMO Meta Modelling Language \(MML\) and Language Architecture](#)", ICB-Research Report, Institut für Informatik und Wirtschaftsinformatik (ICB), Universität Duisburg-Essen, No. 24, 2008.
- Ulrich Frank; David Heise; Heiko Kattenstroth; Hanno Schauer: "[Designing and Utilising Business Indicator Systems within Enterprise Models – Outline of a Method](#)" in Peter Loos; Markus Nüttgens; Klaus Turowski; Dirk Werth (ed.): Modellierung betrieblicher Informationssysteme (MobIS 2008), GI, Bonn, Vol. 141, Lecture Notes in Informatics, 2008, pp. 89-105.
- Ulrich Frank; Stefan Strecker: "[Beyond ERP Systems: An Outline of Self-Referential Enterprise Systems](#)", ICB-Research Report, Institut für Informatik und Wirtschaftsinformatik (ICB), Universität Duisburg-Essen, No. 31, April 2009.
- Ulrich Frank; David Heise; Heiko Kattenstroth: "[Use of a Domain Specific Modeling Language for Realizing Versatile Dashboards](#)" in Matti Rossi; J. Gray; J. Sprinkle; Juha-Pekka Tolvanen (ed.): Proceedings of the 9th OOPSLA workshop on domain-specific modeling (DSM), Helsinki Business School, Helsinki, 2009 (accepted for publication).
- <http://www.wi-inf.uni-due.de/FGFrank/index.php>