

MoSeS 4 eGov

Model-based Security System for eGovernment



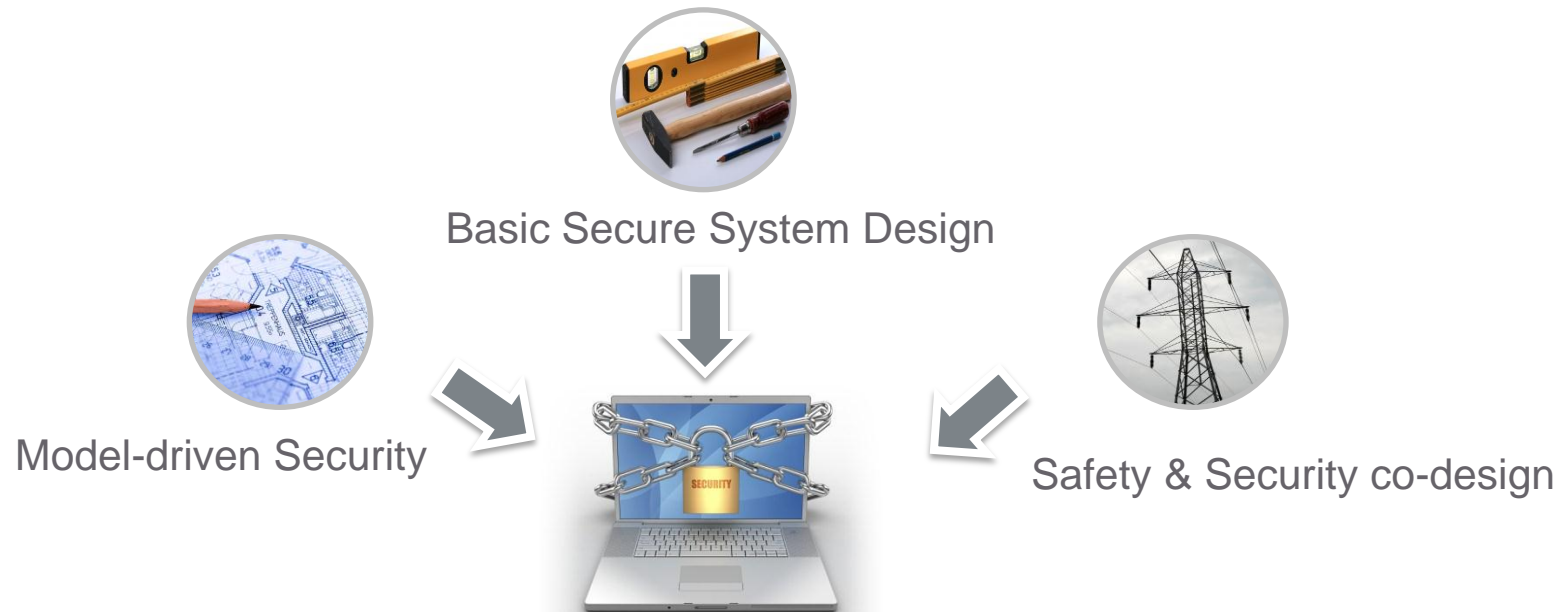
Thomas Bleier, Zhendong Ma, Christian Wagner | AIT Austrian Institute of Technology

3rd International Workshop Modeling Methods in Motion, Vienna, September 13th, 2012

Outline

- ICT Security Research @ AIT
- Introduction
- Austrian eGovernment System (PVP)
- Security Modeling of PVP Application
- Model-driven Security Development Lifecycle
- Summary

ICT Security Research @ AIT

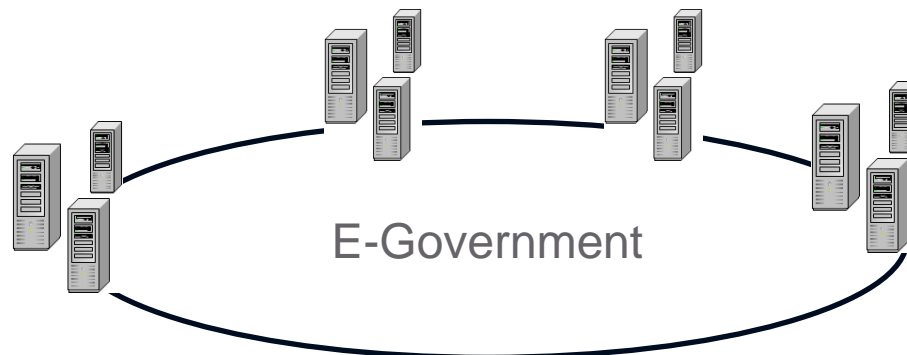


Methodologies and Tools for Secure System Design

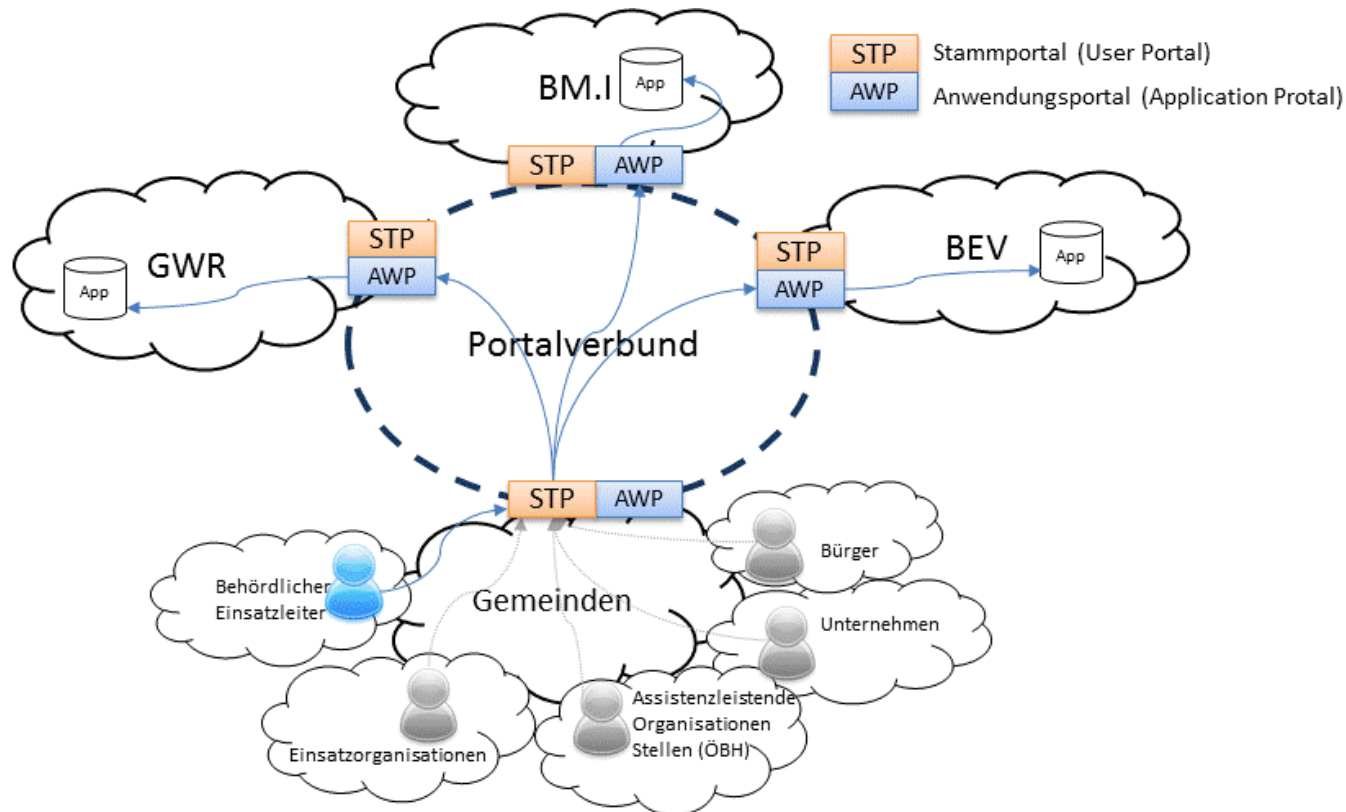


Within framework of 4 national, 4 EU FP7, 1 ESA contracted security research projects

Motivation



Austrian eGovernment System (PVP)

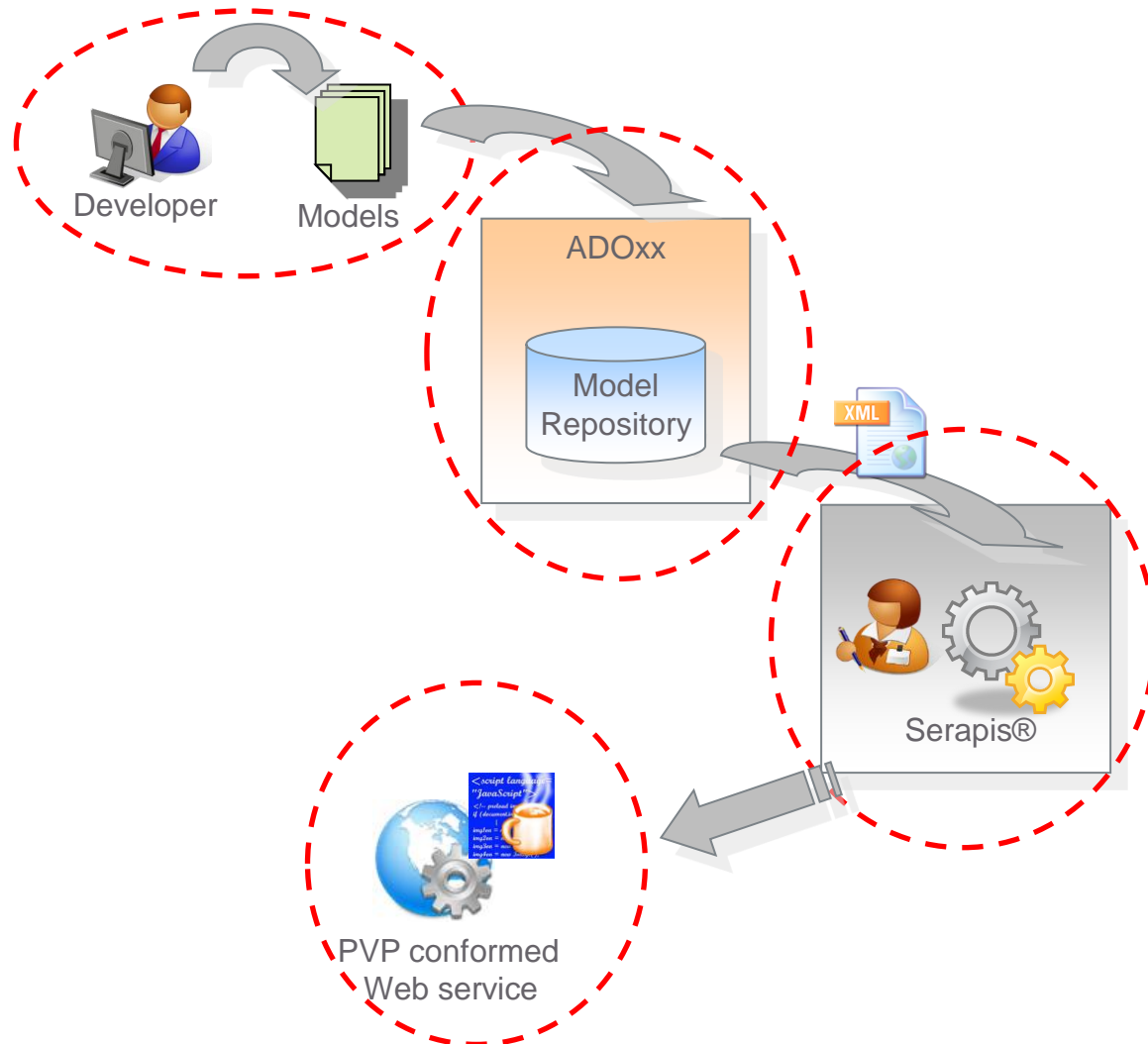
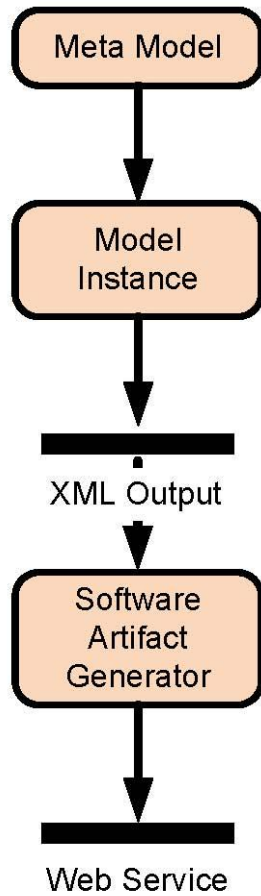


- Connecting
 - 5 ministries
 - 7 federal states
 - 8 organisations
 - 3 cities

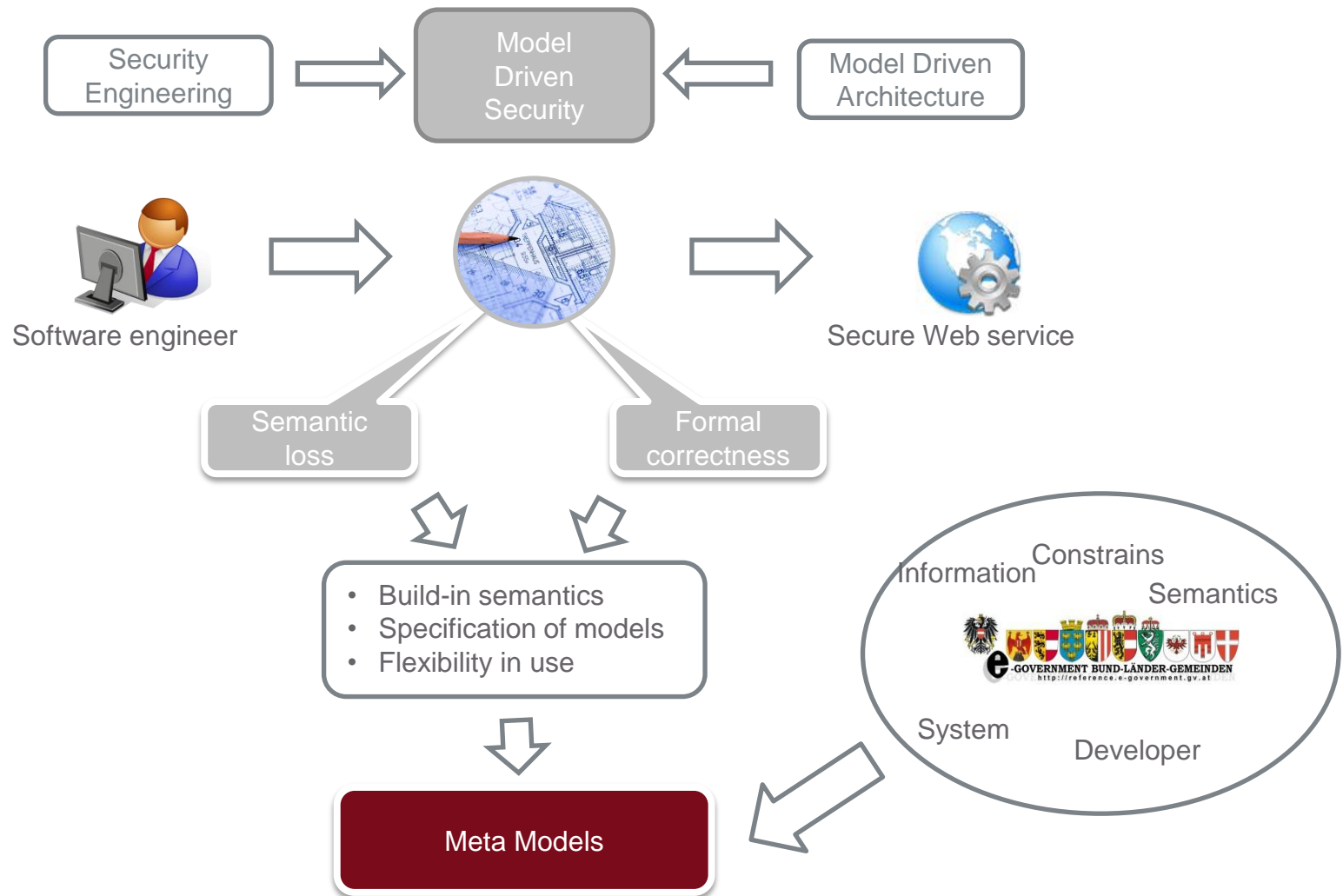
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How to *efficiently* develop *secure*
eGovenment applications?

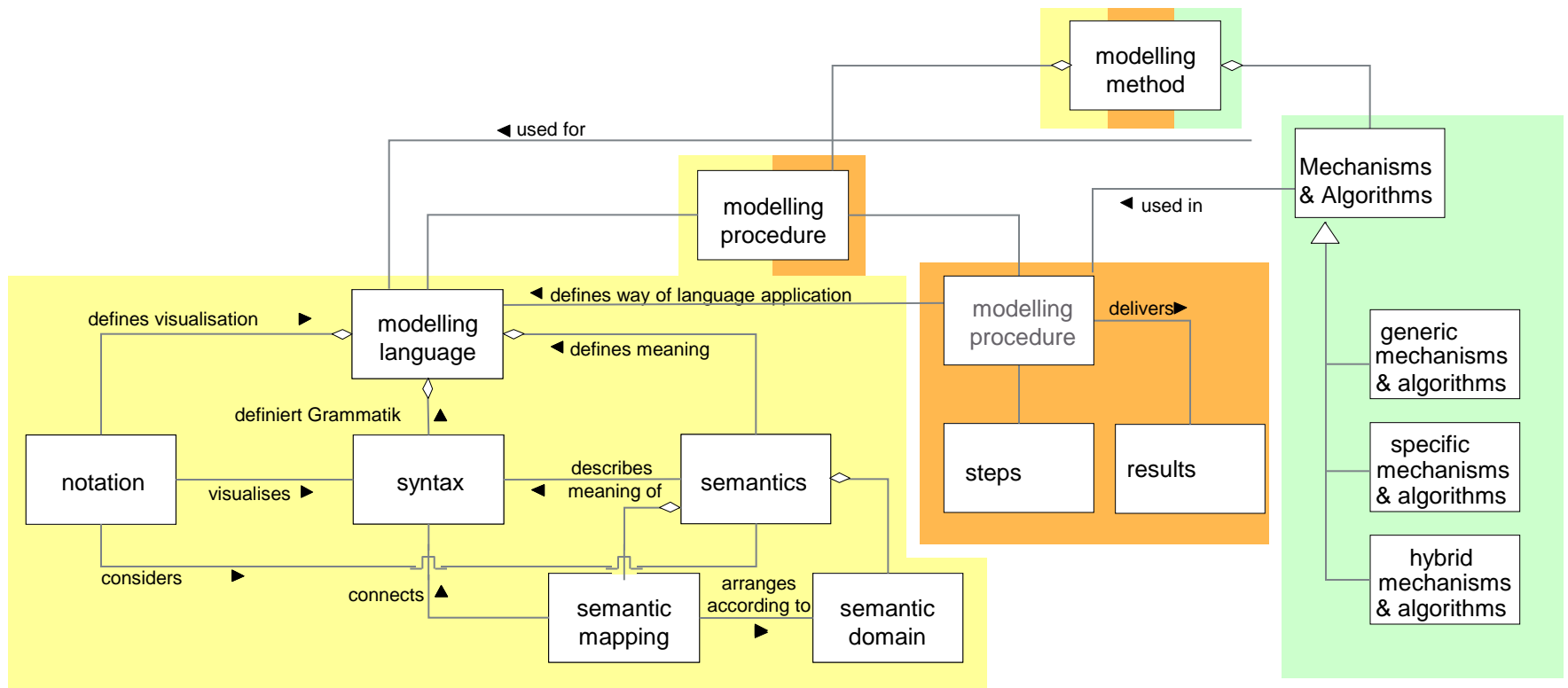
Model-driven approach



Modeling Method

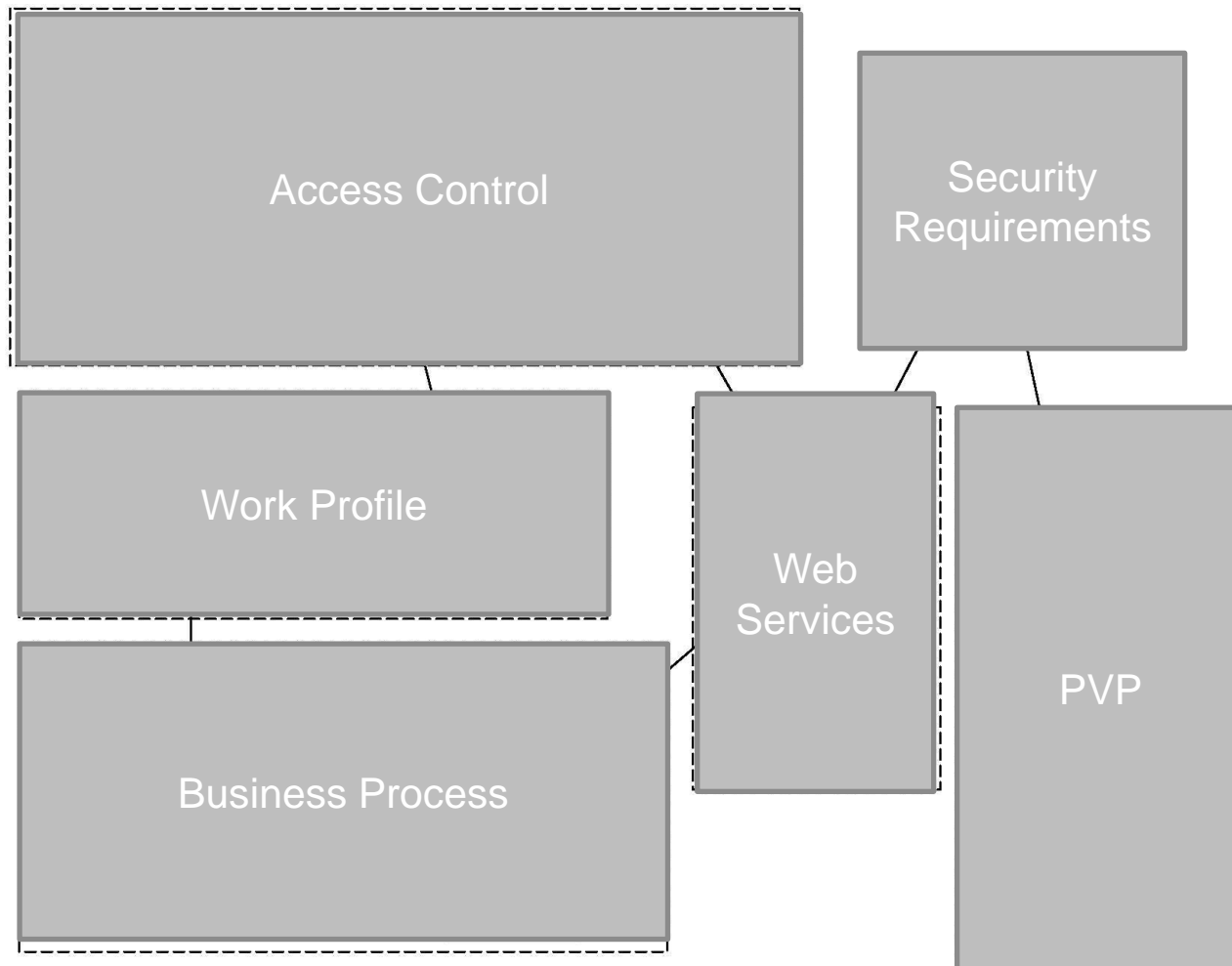


Modeling Language Specification Framework

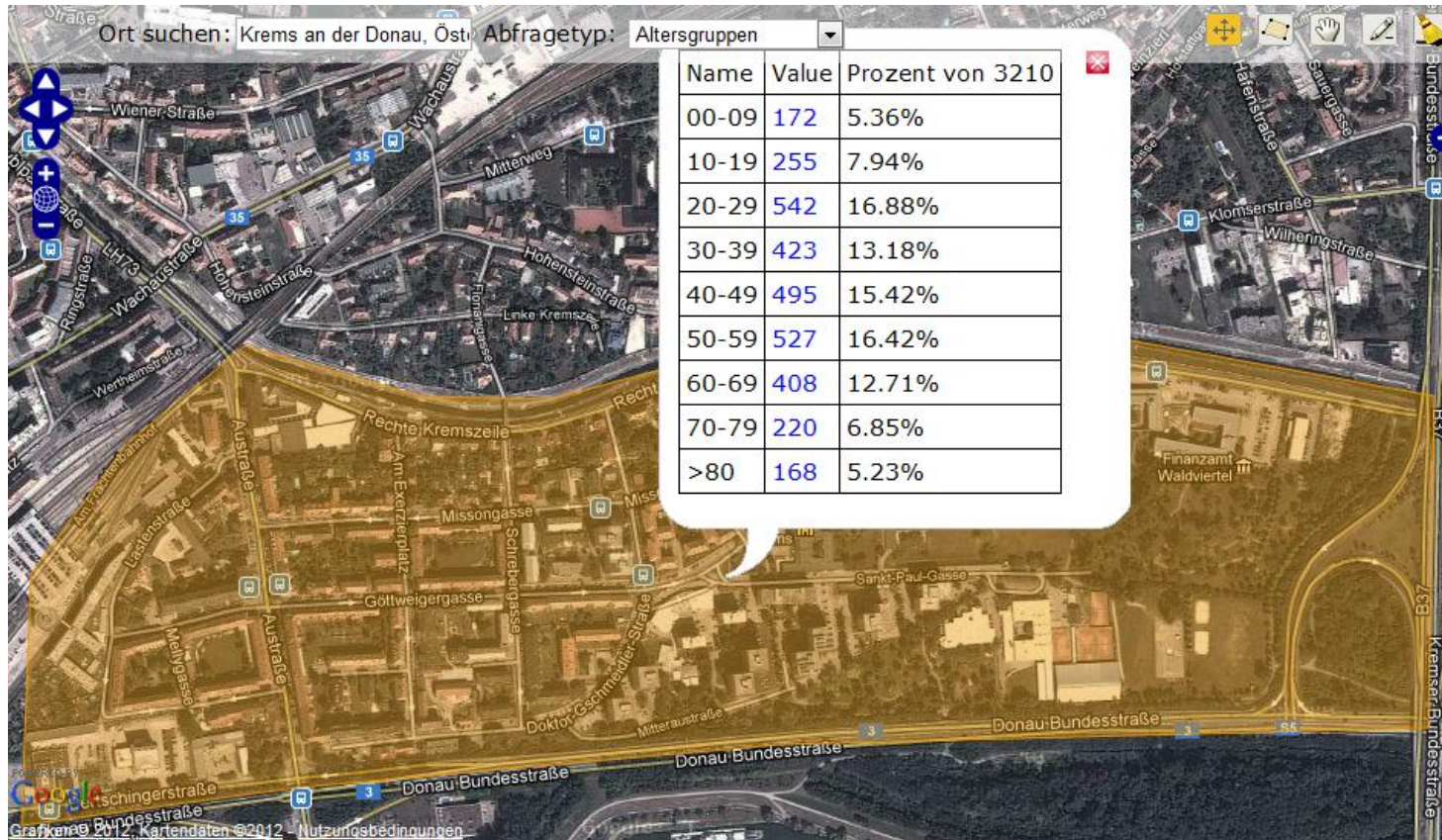


Karagiannis, D., Kühn, H.: „Metamodelling Platforms“. In Bauknecht, K., Min Tjoa, A., Quirchmayer, G. (Eds.): Proceedings of the Third International Conference EC-Web 2002 – DEXA 2002, Aix-en-Provence, France, September 2002, LNCS 2455, Springer, Berlin/Heidelberg, p. 182 ff.

Meta Model Design



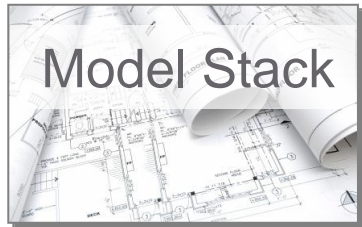
Use Case: Flood Rescue Mission







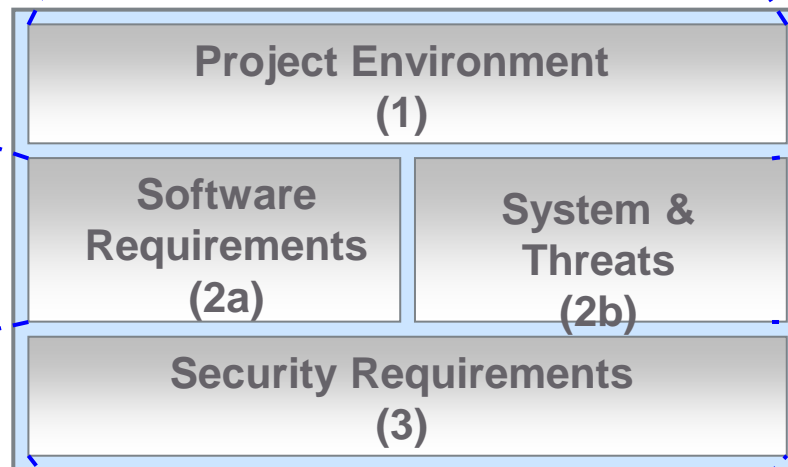
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
Can we generalise our approach and model security at a higher level of abstraction?


What do we need?




Persons and Roles 
 Responsibilities 
 Tools Pool 
 Document Pool 

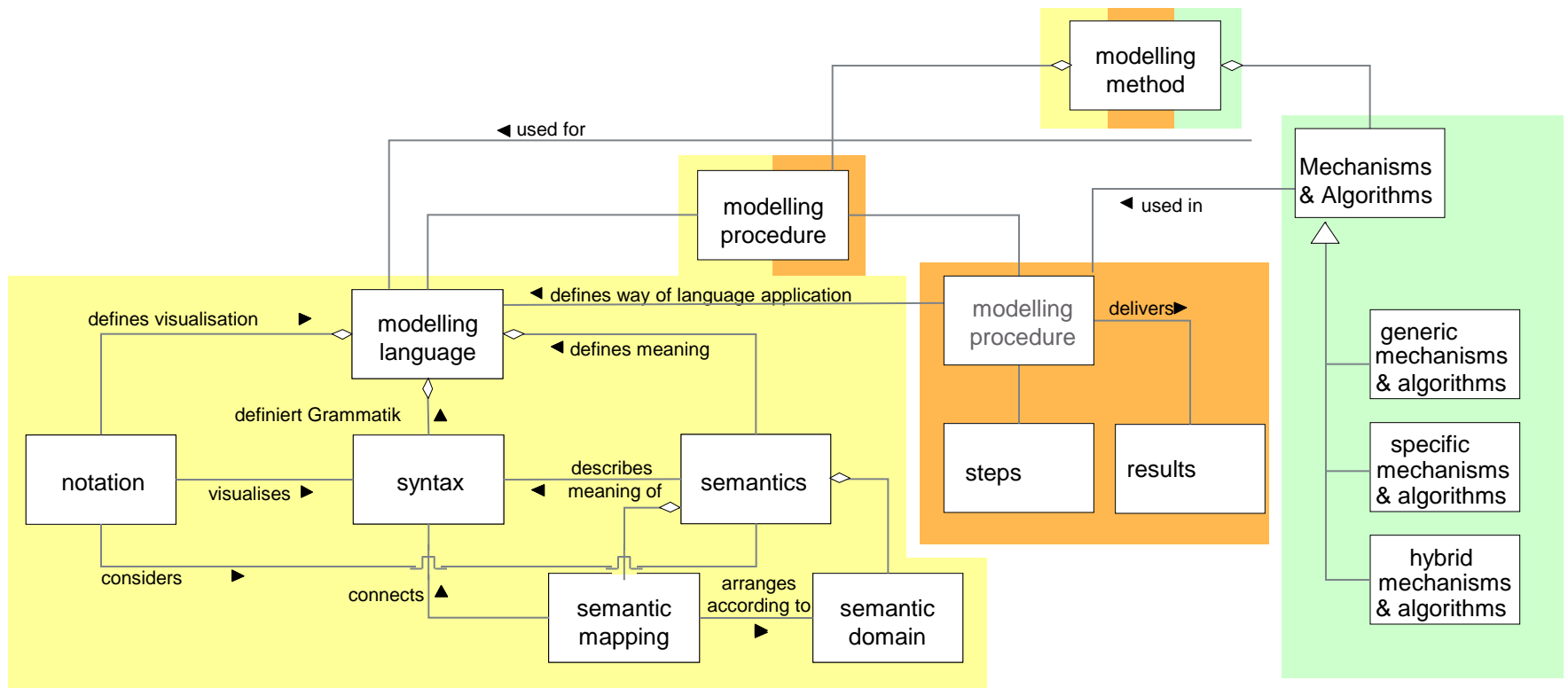


Access Control 
 Software Requirements 

Data Flow Diagram 

Security 
 Requirements

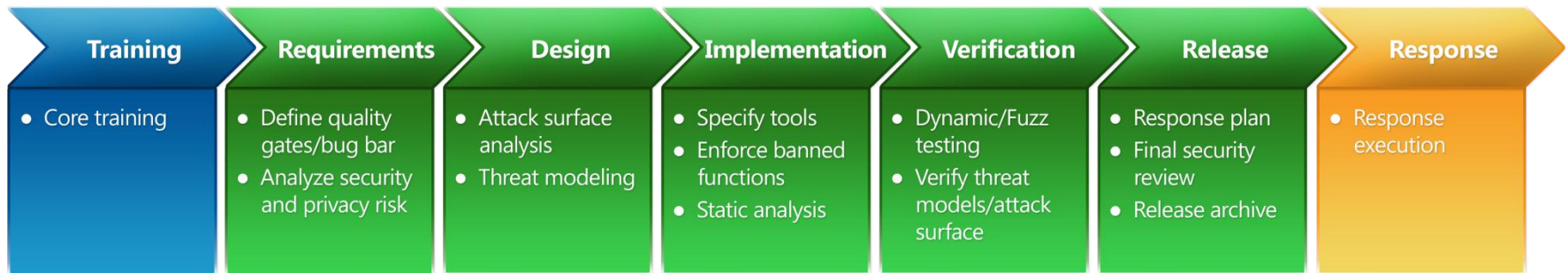
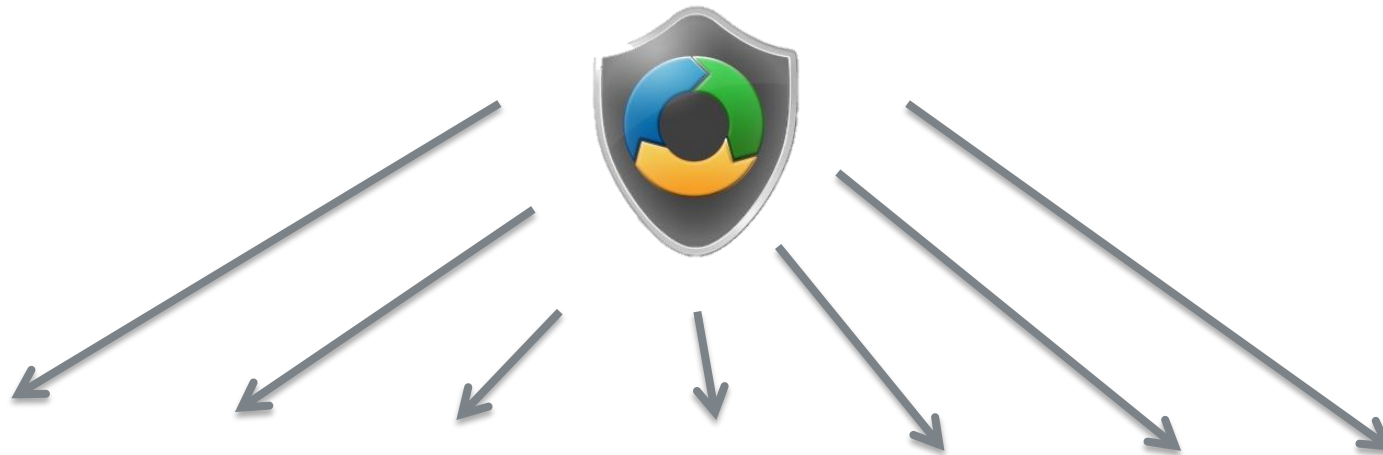
Revisit Modeling Language Specification Framework



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.

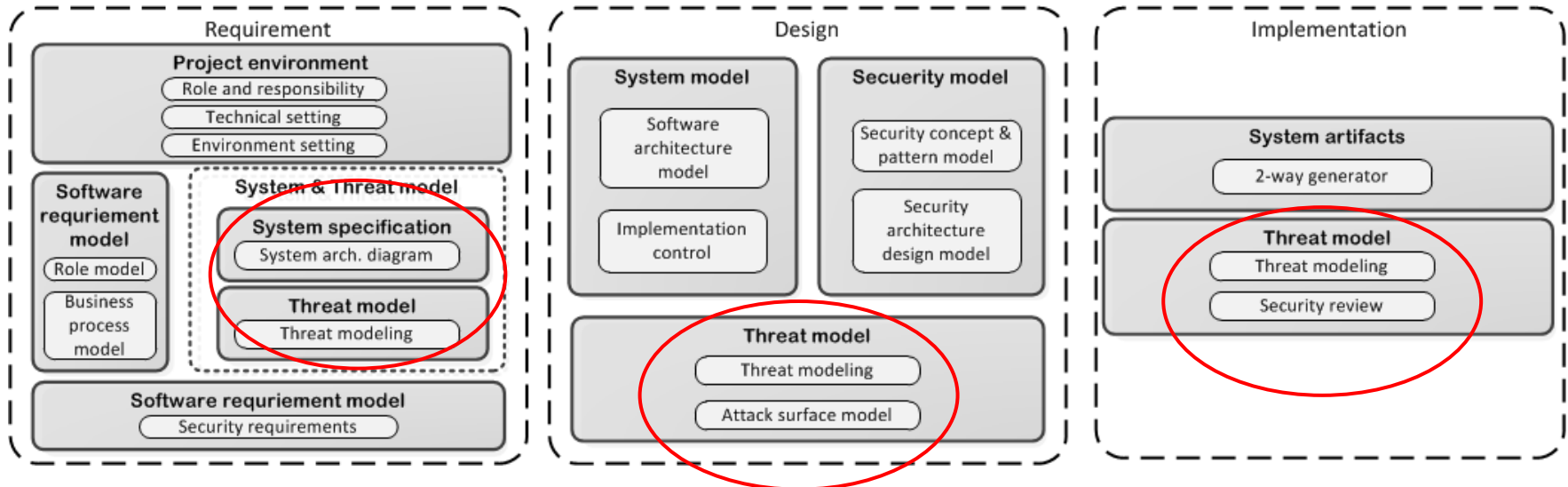
Security Development Lifecycle

Security & Privacy Practice



Microsoft Security Development Lifecycle (<http://www.microsoft.com/security/sdl/default.aspx>)

Model-Driven Security Development Lifecycle (MDSDL)



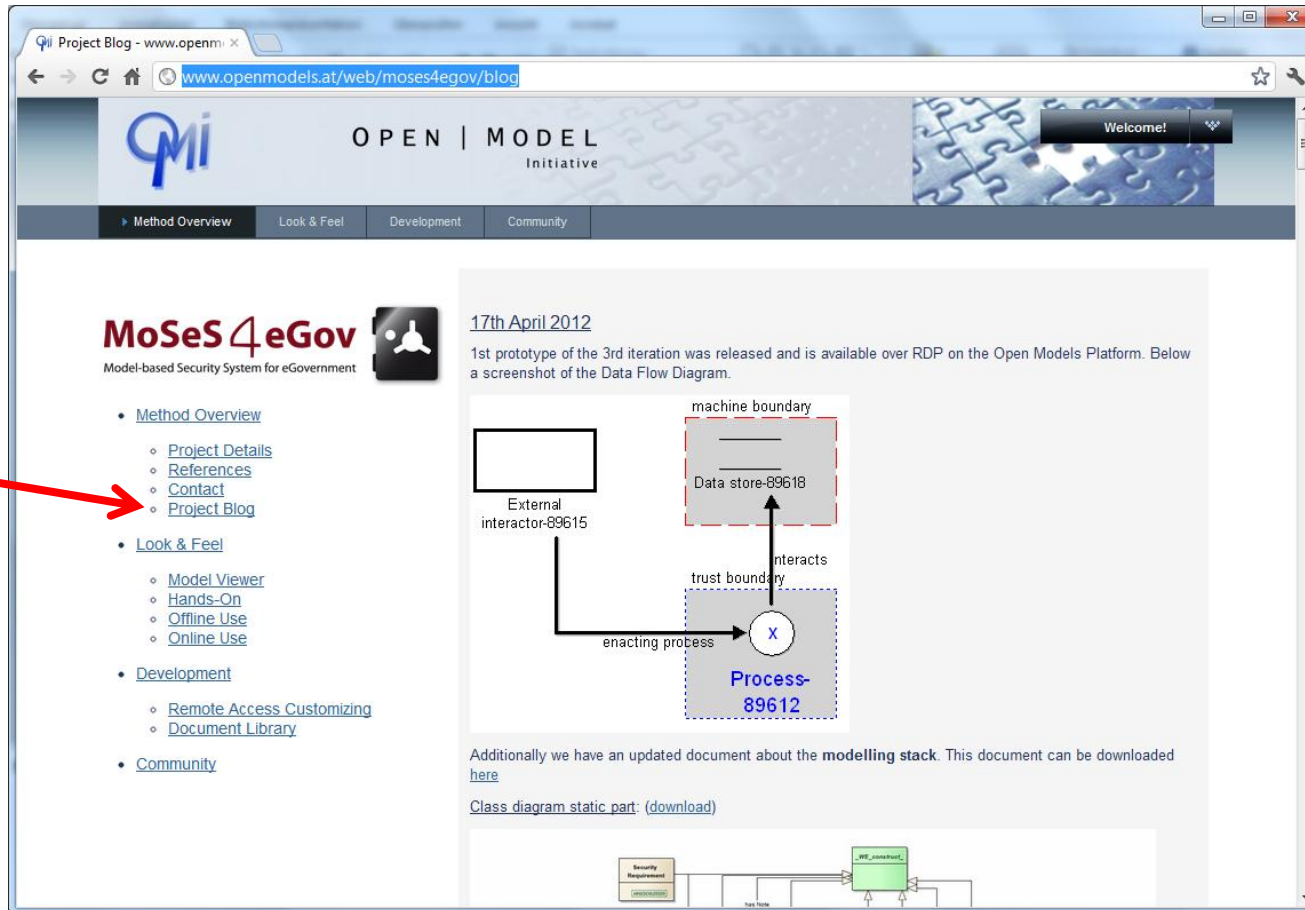
Meta Models

Functionality

Help files



Open Model Initiative



Project Blog - www.openm...
www.openmodels.at/web/moses4egov/blog

QMI OPEN | MODEL Initiative

Welcome!

Method Overview | Look & Feel | Development | Community

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 Model-based Security System for eGovernment

17th April 2012

1st prototype of the 3rd iteration was released and is available over RDP on the Open Models Platform. Below a screenshot of the Data Flow Diagram.

External interactor-89615

machine boundary

Data store-89618

trust boundary

Process-89612

enacting process

interacts

Additionally we have an updated document about the **modelling stack**. This document can be downloaded [here](#)

Class diagram static part: [\(download\)](#)

[Project Details](#)
[References](#)
[Contact](#)
[Project Blog](#)

<http://www.openmodels.at/web/moses4ego>

Summary

- MDS increases efficiency and simplicity in developing eGovernment Web services
 - For access control / role definition
 - In PVP specific environment
- Security features predefined in the development
- System-specific, cost-benefit consideration
- Gaps in model processing, and model transformation
- Further development of MDSDL

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your ingenious partner

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