



The RASSA Initiative

Defining a Reference Architecture for Secure Smart Grids in Austria

Authors: Marcus Meisel, Angela Berger, Lucie Langer,
Markus Litzlbauer, Georg Kienesberger

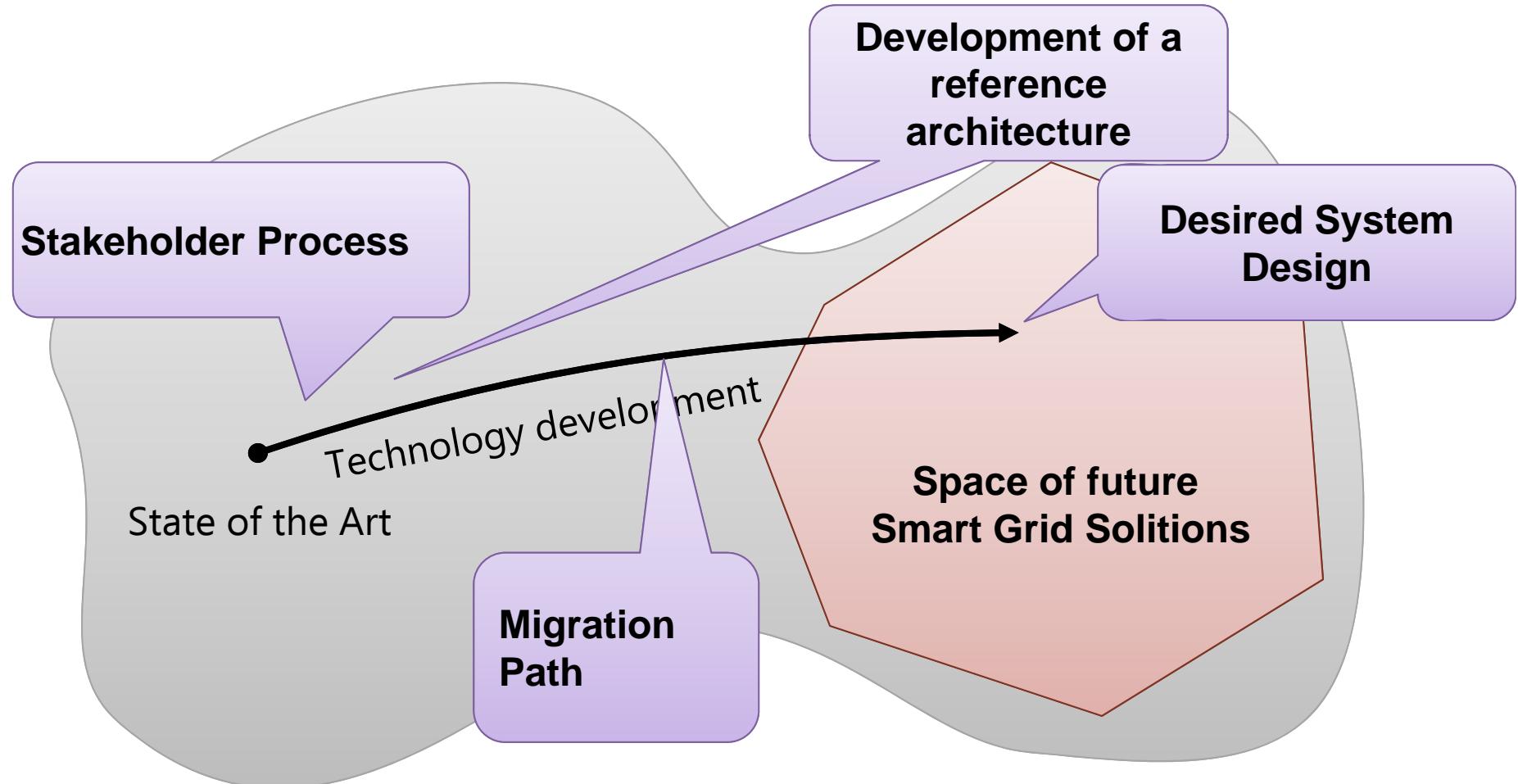
Presentor:

Friederich Kupzog
AIT Austrian Institute of Technology
Energy Department

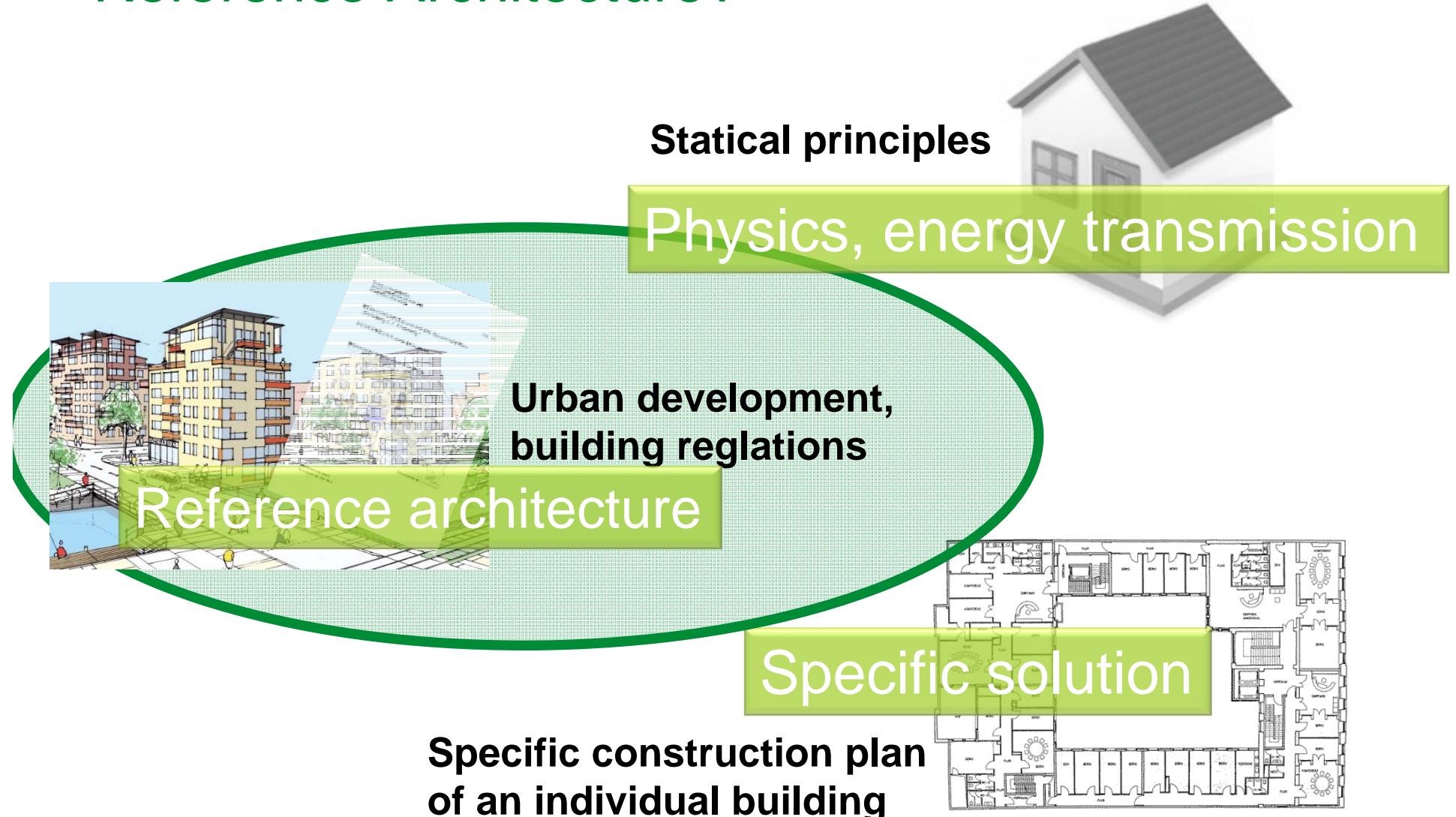


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The RASSA Initiative – a harmonized way into the future



Reference Architecture?



Why does Austria need a Smart Grid Reference Architecture?



- **Blue print** for the development of a Smart Grid gives a clear direction for development in industry
- **Standardised solutions** at all levels of scale
- **Best-practice guidelines** for DSOs, TSOs, and best solution
- **Avoid expensive island solutions**

*ensure Interoperability and Security
in Austrian Smart Grids*



RASSA Initiative Goals

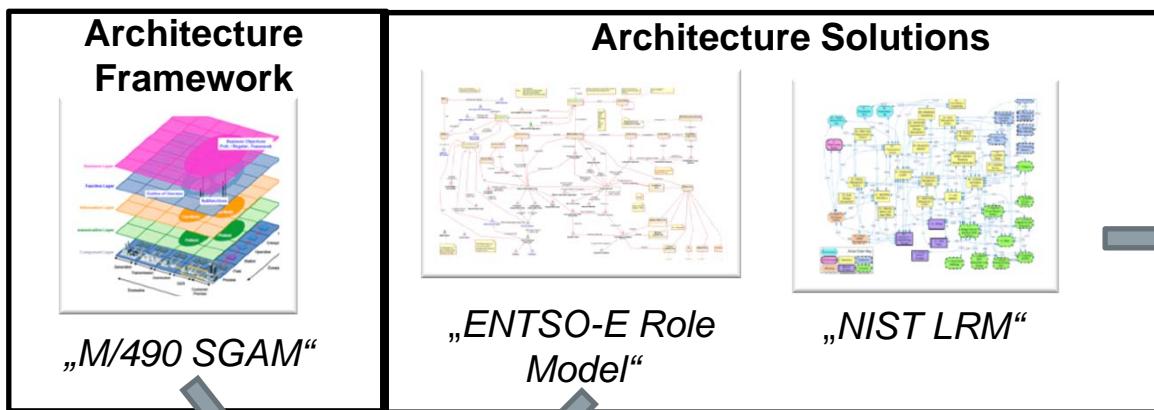


1. Define a consistent **reference architecture** for the Austrian smart grid, thoroughly considering aspects like **security, safety, resilience, privacy**,
2. Reach a **consensus** among all relevant **stakeholders** on contents and utilization of the reference architecture,
3. Foresee sufficient **degrees of freedom** to allow a competitive realization of the suggested reference architecture, and
4. Provide concrete guidance on the **migration path** from today's grid to a future smart grid infrastructure as expressed by the reference architecture.

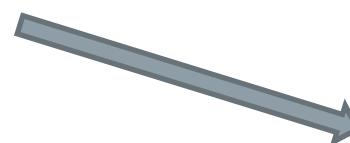
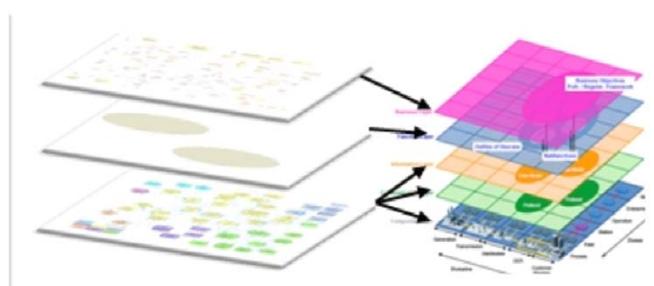
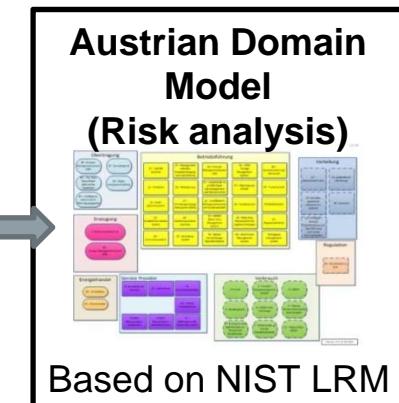
Why an Austrian Reference Architecture?



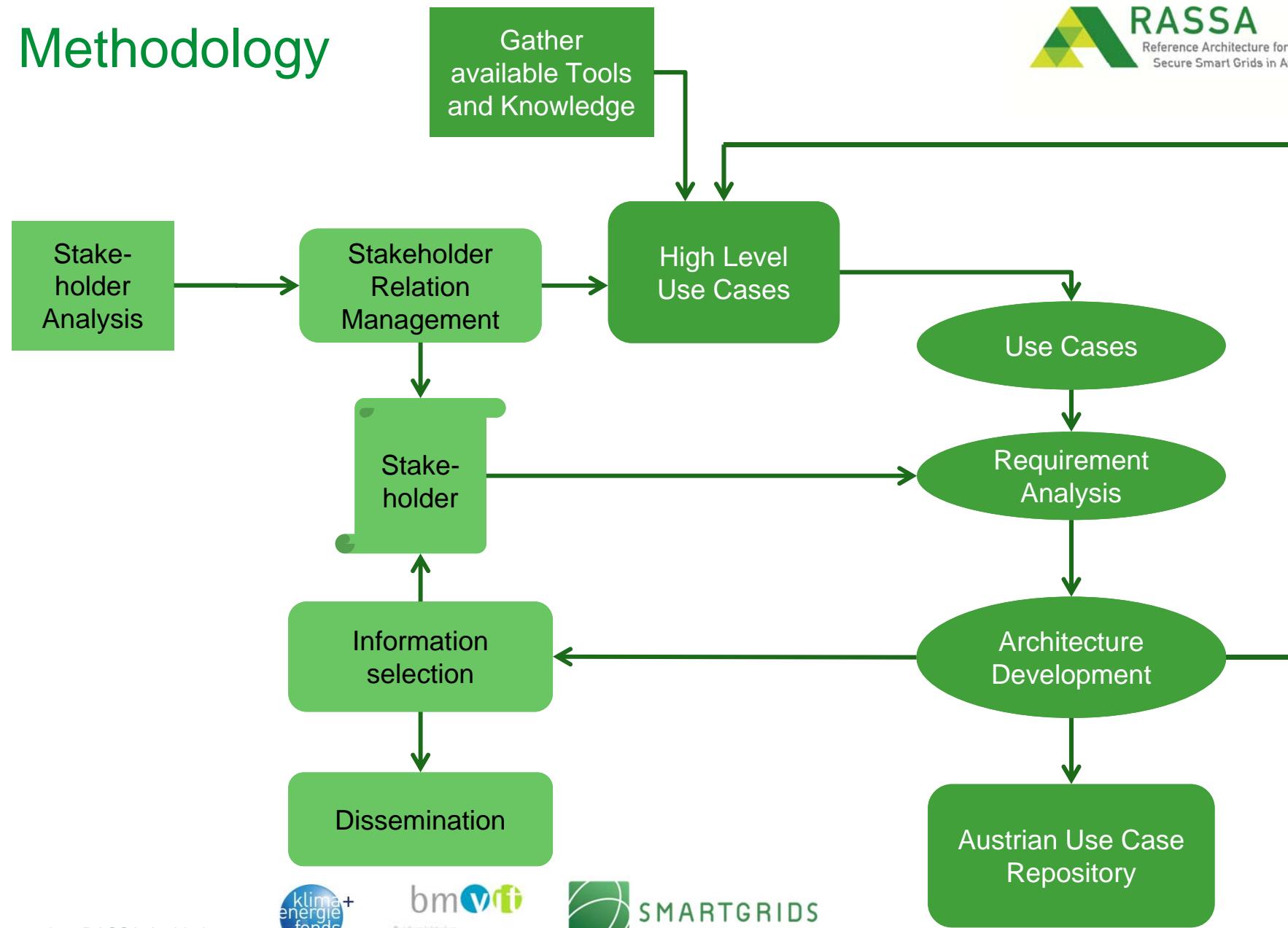
International



national



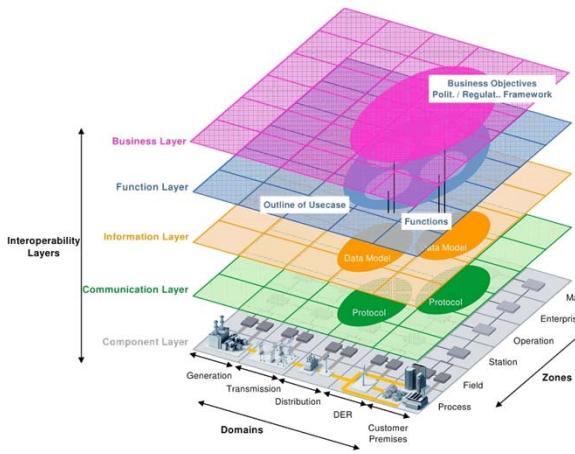
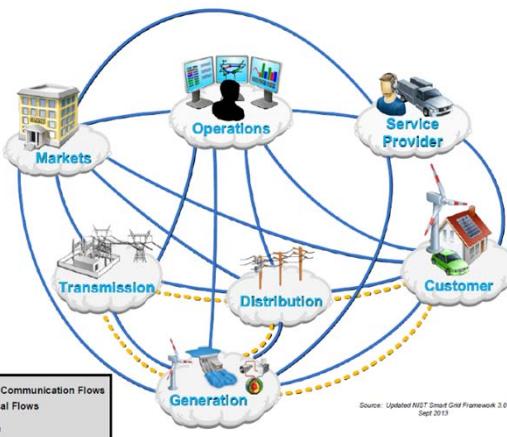
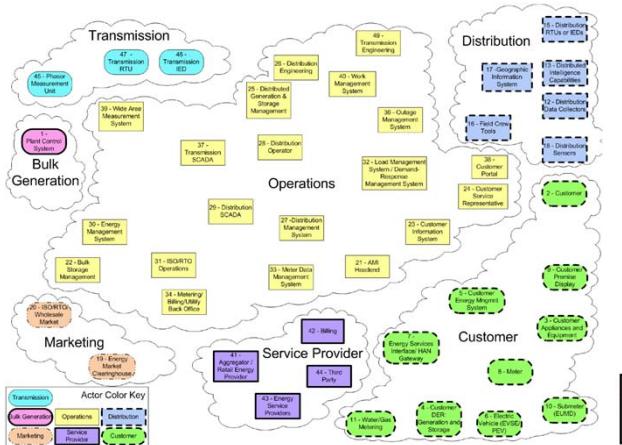
Methodology



Related activities (selection)

Standardization as starting point^{MM1}

Austrian data protection laws IEEE Communication standards
 BSI Protection Profiles GridWise interoperability Layers ...



NIST Guidelines for Smart Grid
Cyber Security, High-Level view

NIST Interoperability Standards
Smart Grid Framework 3.0

SGAM Smart Grid
Architecture Model by CEN-
CENELEC-ETSI

MM1

State of the Art:

Going wide angle US: NIST Reports like „Roadmap for Smart Grid Interoperability Standards“ SR-1108 or „Guidelines for Smart Grid Cyber Security“ IR 7628 have already worked on many Smart Grid aspects.

Going wide angle EU: SGAM with five interoperability layers - originally eight GridWise interoperability layers - widely accepted.

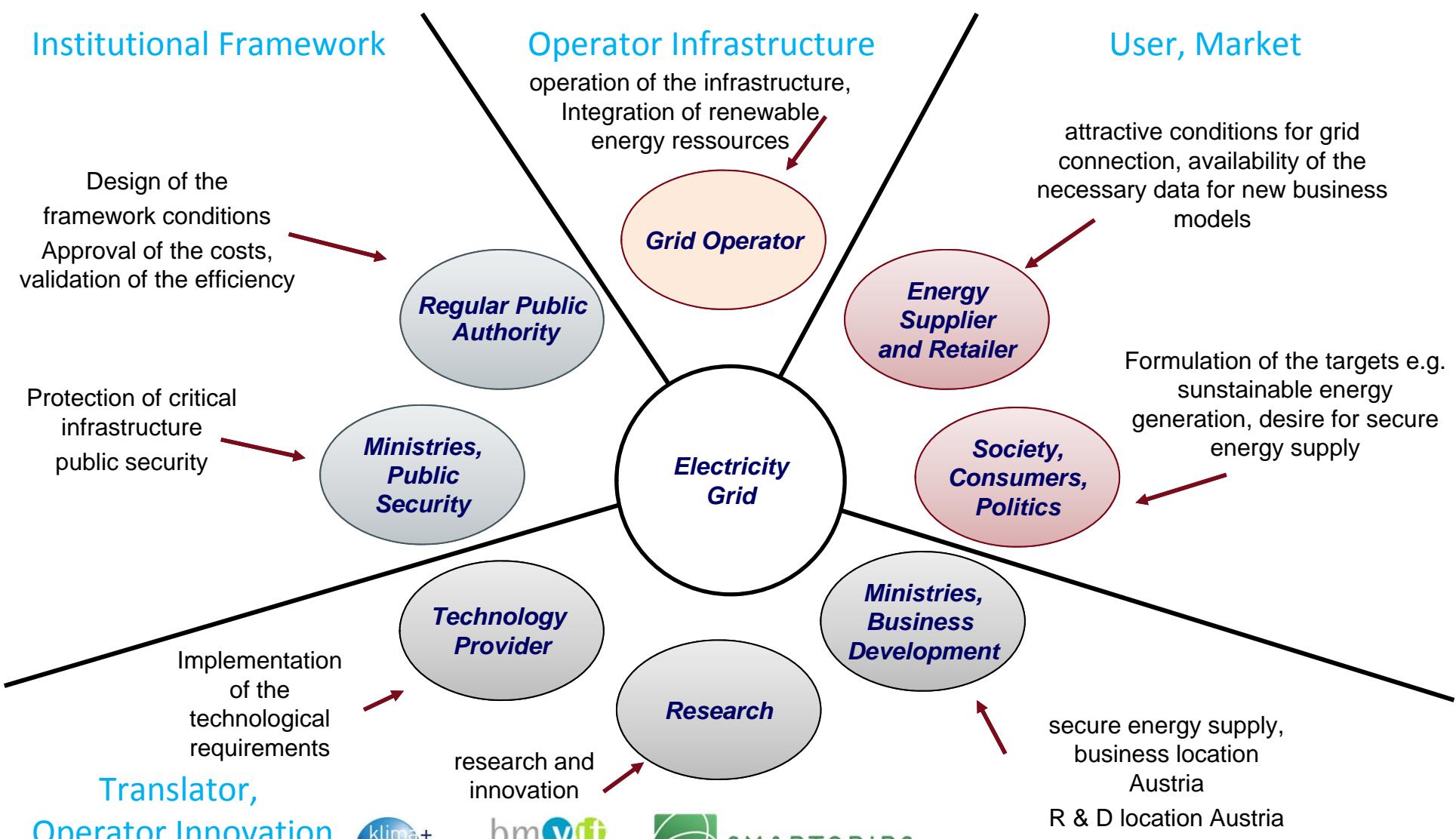
Or going very close: BSI Protection Profile, Common Criteria Profile for Gateway of Smart Metering System, Single Communication Standards in ICT technologies and more are covering the bottoms up approach for making Smart Grid Reference Architectures possible.

Starting with this broad and detailed foundation, a holistic approach for a national secure smart grid reference architecture is motivated by following slide.

Marcus Meisel; 15.09.2015

RASSA Process Preliminary Results

Stakeholders & their Requirements



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RASSA Process Preliminary Results

Scope of the Austrian Reference Architecture

similar to NIST 7628

1. Advanced Metering Infrastructure 2. Active Distribution Grid Operation and Automation

- 3. Distribution Network Planning
- 4. Transmission System Operation

- 5. Generation
- 6. Markets

7. Customer Premises 8. Electric Mobility 9. Big Data

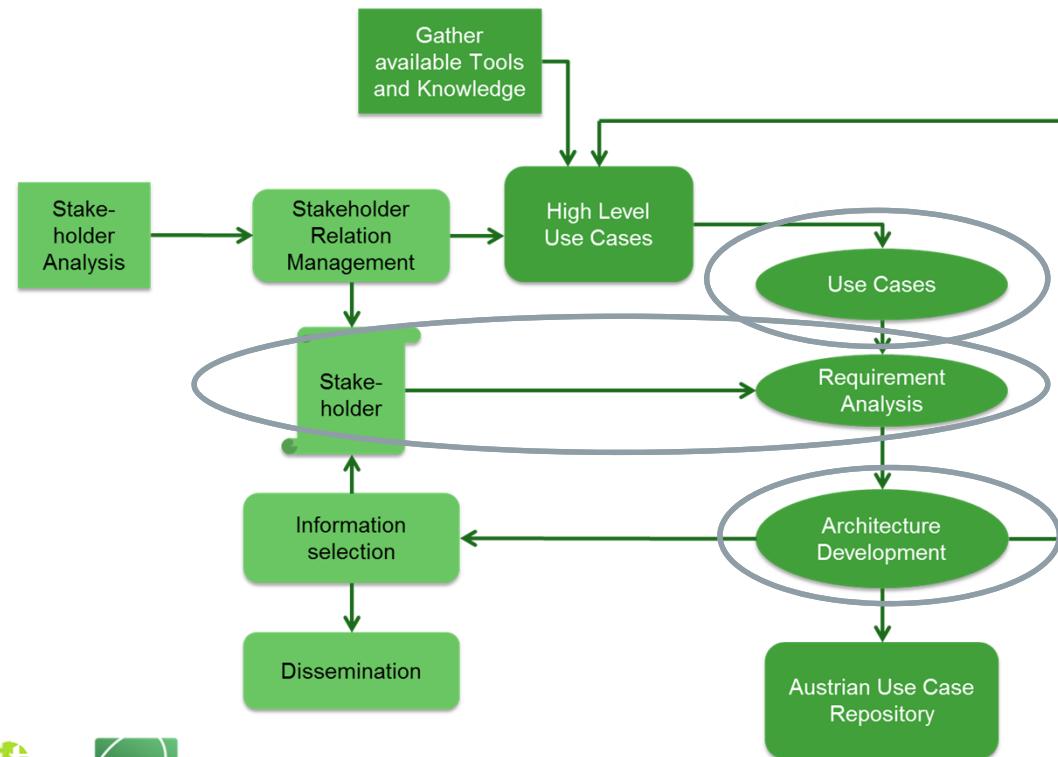
- Remote reading of Meter Data
- Meter Firmware Update / Upgrade

- Monitoring
- Control (e.g. use of flexibility)

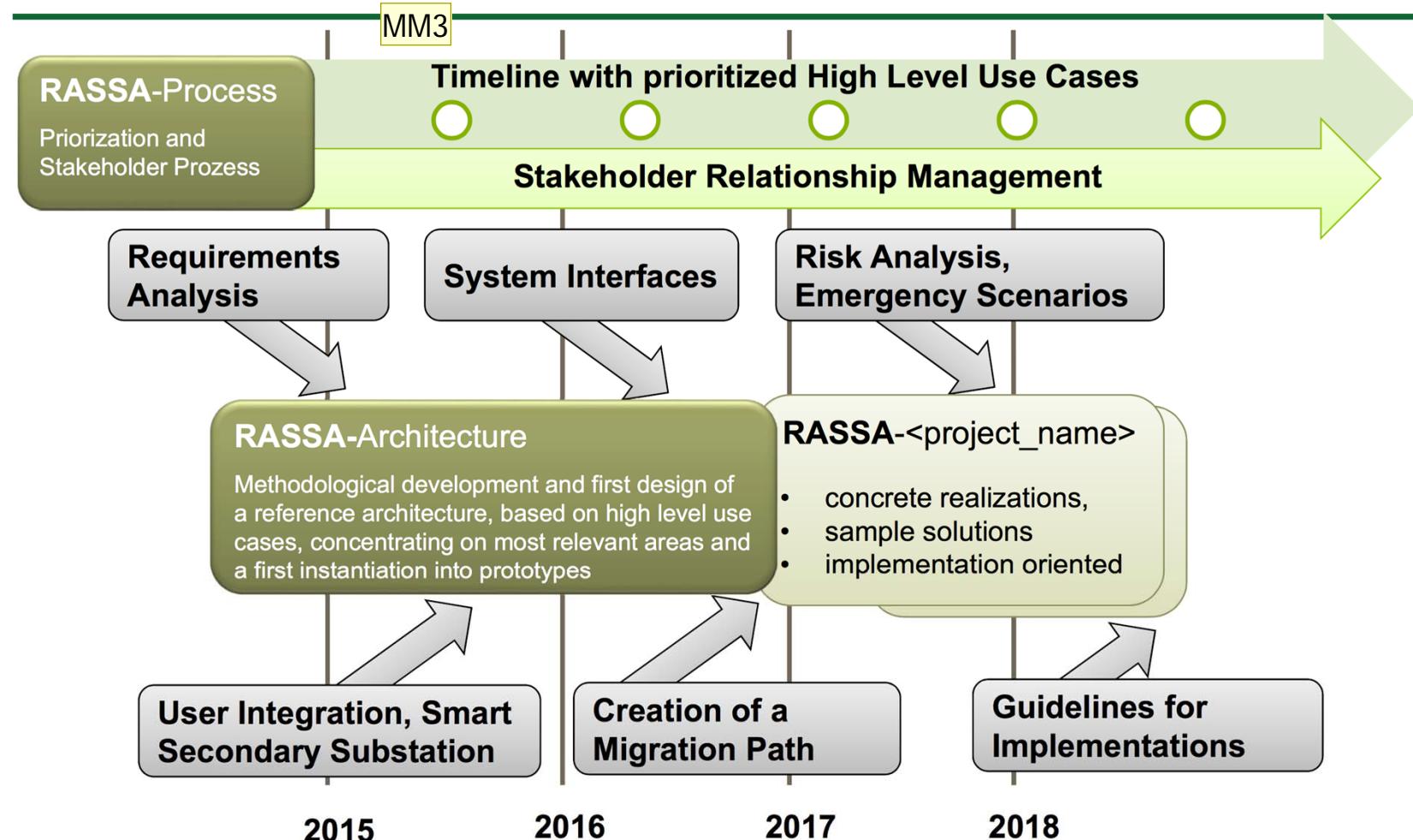
- Smart Metering + Energy Feedback, including Security
- DSM / DR
- EV Charging

Next Steps

- Detailed development and documentation of use cases
- Expert interviews resulting in use case related requirements
- Define methodology for reference architecture definition



RASSA Initiative Overview



MM3

Timeline of the projects so far part of the growing RASSA initiative. Specially mentioning the Stakeholder Process

Marcus Meisel; 15.09.2015

Contact



Dr. Angela Berger

angela.berger@smartgrids.at

+43 1 588 39 58

Technologieplattform Smart Grids
Austria

twitter.com/SmartGridsAT

<http://www.smartgrids.at>

Dr. Lucie Langer

lucie.langer@ait.ac.at

+43 664 8251438

AIT Austrian Institute of Technology GmbH
Digital Safety & Security Department
<http://www.ait.ac.at/ict-security>

Georg Kienesberger

kienesberger@ict.tuwien.ac.at

Vienna University of Technology

Institute of Computer Technology
Energy&IT Research

<http://www.ict.tuwien.ac.at>

<http://energyit.ict.tuwien.ac.at>



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