



# REFERENCE ARCHITECTURE FOR SECURE SMART GRIDS IN AUSTRIA (RASSA)

The objective of the research project RASSA is to develop a reference architecture for smart grids in Austria that is based on existing standards such as the Smart Grid Architecture Model (SGAM), developed by CEN-CENELEC-ETSI and NISTIR 7628 Guidelines for Smart Grid Cyber Security.

The reference architecture will serve as a blueprint and starting point for further smart grid solutions. By re-using the principles and design patterns provided by the reference architecture, secure and interoperable smart grid systems can be efficiently implemented. Thus, within the RASSA Architecture project a secure customer interface is being implemented. Another goal is to develop concrete guidelines for steering the migration from the current to the future system landscape. The common vision is a holistic concept for secure smart grids in Austria.

## CHALLENGES

The introduction of smart grid technology is going along with ICT interconnection of so far isolated components. This poses to major challenges to future power grids. On one hand side the interoperability between components on different system layers and of different manufacturers needs to be assured. On

the other hand the smart grid needs to be highly resilient towards cyber-attacks. In order to develop efficient measures all relevant stakeholders like grid operators, regulators, and public authorities need to get involved in the development process. However, the aforementioned challenges need to be addressed as soon as possible in order to prevent incompatible siloed solutions that hinder the implementation of a widely accepted reference architecture in Austria.

## KEY OUTCOMES

- Digital model of the smart grid reference architecture
- Set of verified security requirements
- Privacy preserving smart home application
- Assessment of user privacy concerns and preferences
- Prototypical implementation of use cases using the reference architecture
  - Inverter monitoring and control
  - Grid monitoring
  - Current differential protection
- Guidelines for the using the smart grid reference architecture considering different kinds of stakeholders
- Definition of a smart grid migration path



## RESEARCH TOPICS

- Improve security and resilience of smart grids control systems
- Development of an operator independent reference architecture agreed upon with all stakeholders
- Design of a detailed but generic enough model of the architecture to support diverse use case scenarios
- Development of a smart grid migration path
- Definition of guidelines for different stakeholder
- Secure, and data protection regulation complaint customer interface

## PARTNER

- AIT Austrian Institute of Technology GmbH
- Bundesministerium für Landesverteidigung und Sport
- Energie AG Oberösterreich Data GmbH
- Energy Institute at the J. Kepler University Linz
- Fachhochschule Salzburg
- Kärnten Netz GmbH
- Nokia
- Secure Business Austria
- Siemens AG Österreich
- Sprecher Automation GmbH
- Technische Universität Wien
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