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Motivation

- Intelligent interoperability sets new challenges for communications and security
- There is a need to elaborate communication architecture to support energy system requirements from the business layer down to the component layer
  - to fulfil monitoring aspects
  - to guarantee observability and
  - to control distributed generation, flexible demand and storage systems
  - to permit the participation of DER in energy markets
Communication

In general

- Evolved ICT opens new possibilities to develop advanced communication solutions to support TSO-DSO coordination and ancillary service provision in a reliable and secure way.

In practise, we need

- **To analyse** the need of information exchange and communication among different stakeholders in centralized and distributed coordination schemes.
- **To discover** what ICT technologies are available now and in the future, and understand possibilities and challenges associated with them.
- **To elaborate ICT architecture design** and provide communication layer specifications for the SmartNet simulation platform and pilots.
Approach for capturing ICT requirements

1. Identify the critical communication and security requirements for TSO-DSO and market interactions.
2. Map ICT requirements and functionalities to e.g. SGAM model.
3. Elaborate the ICT architecture design and prepare ICT specifications.
4. Provide communication layer specifications for the pilots and simulation platforms to be realized.
Transition from business actions to ICT specifications

Business layer

Component and communication layer

Information and function layer model
SGAM Modelling

Network and Component layers
Model applied to pilot systems
Work package outcomes

TSO-DSO Coordination and ancillary service provision

ICT Requirements Specification (completed)

Communication and ICT requirements

Analyze Requirements

Design ICT Architecture

Prepare ICT Specifications

ICT Architecture Design Specification (progressing)

Physical pilots realisation

Simulation environment
This presentation reflects only the author’s view and the Innovation and Networks Executive Agency (INEA) is not responsible for any use that may be made of the information it contains.
Thank You

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