



# Contributions to SmartGrid Security Centre

Christian Johansen  
for WP1

<http://www.IoTSec.no>, [#IoTSec](#)



- Key Ideas for the Smart Grid Security Centre
- Applicability of approaches to SGSC
- Interest for external partners



- Models for Smart Infrastructures
  - Focused on Smart Home and Smart Grid (with Smart Meter at the interaction)



- Models for Smart Infrastructures
  - Focused on Smart Home and Smart Grid (with Smart Meter at the interaction)
- Verification of the models against standard security properties
  - Use Maude modelling system
  - Maude is also at the basis of the PROSA verification tool



- Models for Smart Infrastructures
  - Focused on Smart Home and Smart Grid (with Smart Meter at the interaction)
- Verification of the models against standard security properties
  - Use Maude modelling system
  - Maude is also at the basis of the PROSA verification tool
- Information-flow privacy in service-oriented systems



- Models for Smart Infrastructures
  - Focused on Smart Home and Smart Grid (with Smart Meter at the interaction)
- Verification of the models against standard security properties
  - Use Maude modelling system
  - Maude is also at the basis of the PROSA verification tool
- Information-flow privacy in service-oriented systems
- Semantics technologies for describing Security and Privacy concepts
  - Ontologies to describe Privacy concepts





- Models for Smart Infrastructures
  - Focused on Smart Home and Smart Grid (with Smart Meter at the interaction)
- Verification of the models against standard security properties
  - Use Maude modelling system
  - Maude is also at the basis of the PROSA verification tool
- Information-flow privacy in service-oriented systems
- Semantics technologies for describing Security and Privacy concepts
  - Ontologies to describe Privacy concepts
- Multi-metrics framework for measurable security and privacy
  - A complex system like Smart Meter can be analysed broken down into components
  - Each component asses manually by experts for security and privacy
  - The platform brings these into one single value

# Applicability to the SGSC



- Long term benefit for SGSC
  - Work on Smart Home is of interest for DSO in the long run



# Applicability to the SGSC



- Long term benefit for SGSC
  - Work on Smart Home is of interest for DSO in the long run
- Short term benefits for SGSC
  - Use the Multi-metrics to assess current and near future devices, like
    - Smart Meters
    - IoT introduced by DSO with the purpose to maintenance of infrastructure

# Interest for external partners



- Our work can be provided in the form of consultancy services

# Interest for external partners



- Our work can be provided in the form of **consultancy services**
- Competence on Modelling framework and security/privacy analysis
  - Security Ceremonies for analysing Human Aspect in Security



- Our work can be provided in the form of **consultancy services**
- Competence on Modelling framework and security/privacy analysis
  - Security Ceremonies for analysing Human Aspect in Security
- The multi-metrics framework may become a software product



- Our work can be provided in the form of **consultancy services**
- Competence on Modelling framework and security/privacy analysis
  - Security Ceremonies for analysing Human Aspect in Security
- The multi-metrics framework may become a software product
- Our work can also be integrated as plug-ins into existing software for monitoring the Grid

- Our work can be provided in the form of **consultancy services**
- Competence on Modelling framework and security/privacy analysis
  - Security Ceremonies for analysing Human Aspect in Security
- The multi-metrics framework may become a software product
- Our work can also be integrated as plug-ins into existing software for monitoring the Grid
  - E.g.: software of eSmart Systems
- Training of students to become experts that Externals can make use of





- Our work can be provided in the form of consultancy services
- Competence on Modelling framework and security/privacy analysis
  - Security Ceremonies for analysing Human Aspect in Security
- The multi-metrics framework may become a software product
- Our work can also be integrated as plug-ins into existing software for monitoring the Grid
  - E.g.: software of eSmart Systems
- Training of students to become experts that Externals can make use of
- CPS Lab at IFI can be one platform where Externals can get a first interaction with our consultancy services very cheaply