

## THE ORGANIZERS

Legal requirements demand that energy companies increase their use of energy from renewable sources and liberalize their market, i.e. open up to fiercer competition.

The use of energy from renewable sources in particular requires changes to be made to the electricity distribution network. Reasons for this include the fact that the amount of energy from, say, solar or wind power fed into the grid will increase. The number of feed-in points will soar. As this form of energy production is not in alignment with our consumption habits, we need to establish smart energy management. This requires comprehensive integrated communication within the smart grid. Challenges include the need to identify suitable energy storage technology and the realization of more secure and reliable metering processes.

TÜV SÜD, Fraunhofer ESK and Fraunhofer AISEC offer workshops tailored to the needs and issues of businesses, held in-house or at TÜV SÜD Akademie. The consolidated know-how of the three suppliers covers the full scope of technology issues in smart metering. The lecturers, experts in international standardization, are familiar with the technological challenges involved in the operation of smart meters and the data transmission it involves, and with the relevant data protection and data security aspects.

### **TÜV SÜD AG**

TÜV SÜD is one of the world's leading technical service providers, supporting its clients across their entire value chain by providing consulting, testing, certification and training services. Over 16,000 skilled employees have performed more than 280,000 product certifications and 30,000 management system certifications at over 600 locations worldwide. Clients benefit from interdisciplinary full-service solutions and from TÜV SÜD's over 140 years of experience.

### **Fraunhofer ESK**

Fraunhofer ESK has expertise in a wide range of areas in information and communication technology (ICT) from transmission technology, protocols and systems to smart applications. Fraunhofer ESK bundles its know-how in its areas of expertise of adaptive communication systems, software methodology and mobile solutions, and applies it to automotive engineering, industrial communication and communication solutions.

### **Fraunhofer AISEC**

Fraunhofer AISEC is one of the international leading research institutions for applied and integrated security in IT. The 70-plus members of Fraunhofer AISEC develop safety and security technologies customized to the needs of companies in business, industry and the public sector. This includes solutions for more data security and effective protection against cybercrime, including economic espionage and sabotage.



## SMART METERING TECHNOLOGY

## WORKSHOP

## SECURE COMMUNICATION IN CONFORMITY WITH STANDARDS

## MODULE 1: NETWORK MANAGEMENT

Energy producers and suppliers of electricity meters must face the challenges of an increasingly flexible electricity market. By analysing actual case studies, the workshop aims at providing participants with an introduction to state-of-the-art network management, and smart metering in particular, and enables them to discuss approaches to establishing smart metering in their own business.

The workshop targets decision-makers and specialists from energy supply companies and manufacturers of metering systems. Workshop Module 2 builds on the knowledge gained in Module 1 but can also be booked separately.



Dr.-Ing. **Royth v. Hahn**  
TÜV SÜD AG  
+49 89 5190-2003, roythphilipp.vonhahn@tuev-sued.de

Dipl.-Ing. **Mike Heidrich**  
Fraunhofer ESK  
+49 89 547088-366, mike.heidrich@esk.fraunhofer.de

Dr. **Christoph Krauß**  
Fraunhofer AISEC  
+49 89 322-9986-111, christoph.krauss@aisec.fraunhofer.de

Module 1 addresses basic issues of smart metering, focusing in particular on standardization and connectivity. Participants familiarize themselves with the relevant standards and gain an overview of the present state of activities at national and international level.

- Smart metering in the Smart Grid
  - Smart metering scenarios
- Standardization
  - Smart meters as measuring devices
  - Smart metres as components of the smart grid, e.g. IEC 61850
  - Technical and regulatory requirements for smart metering
  - International benchmarking
- Connectivity
  - Needs analysis regarding communication technology
  - Overview of technologies
  - Wired technologies:  
power line, twisted-pair cabling, ect.
  - Wireless technologies:  
WLAN, wireless M-Bus, ZigBee, ect.
  - Model solutions

## MODUL 2: SAFETY AND SECURITY SOLUTIONS

Module 2 addresses issues in functional safety and information security. The participants learn about the criteria that smart metering systems and their communication units must fulfil to be safe and secure, and gain an overview of the relevant directives and standards.

- Smart metering
  - Requirements for safe and secure communication
  - Requirements for safe and secure smart metering systems
  - User profiles and privacy
- Technical standards and directives
  - BSI protection profile
  - TR 03109
  - IEC 62351
  - Comparison with international requirements, recommendations and solutions, e.g. NISTIR 7628
- Application examples