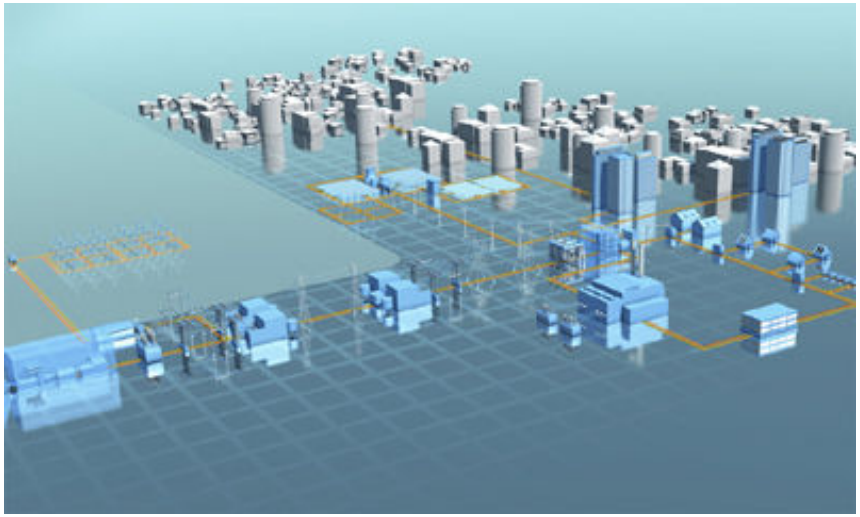
EX-FI

Smart Energy / Grids Session



Key Issues

General challenges:

- Connecting IT (Information Technology) to ET (Energy Technology)
- Safety is an essential point, the power network is a critical infrastructure
- What is the benefit for the consumers for introducing e.g. Smart Metering?
  - max. gain: 14 cent per kwh → max 50€ gain per year
  - Tariff benefits vs. non-tariff benefits
  - To be understood in detail: role of energy tariff system: which kind of control can be achieved?
- Handling renewable energy sources
- Bring together conservative sector with fast moving IT business: compare different lifecycles
- Anytime, anywhere energy services
- Clear, safe and seamless migration path
- Should the Smart Grid usage area include the home space?
- Prioritization of the discussed scenarios

Discussion

1) Use Cases and Scenarios for Large-Scale Experimentations

- Smart metering: this is the key to enable smart grid, “if you cannot measure it, you cannot improve it”
- Load balancing / demand side management
- Fine-grained Home automation (requiring a HAN), equipping home appliances with communication modules
- Interfacing to Smart Buildings
- Support for multiple energy providers, energy brokers and energy service providers involved in a single entity / building
- Community-based micro-grids
- Reduction of waste of energy and resources
- Distribution automation / smart grid control
- Total lifecycle management wrt. energy
- Cloud services / data center services for Smart Grid
- Electric vehicle management
- Community-based micro-grid, Supporting groups of people offering renewable energy by operating private wind turbines and solar panels

Discussion

2) Innovative Internet Functionality and Technologies
3) Expected Core Technology Platform Functionalities

- open architecture,
- scalable open platform
- industry-driven open standards and interoperability
- connectivity (internet protocol, plug and play, heterogeneous network) ,Communication services: (soft) real-time support, mobile broadband (e.g. LTE),QoS coupled with cost efficiency
- SoA support
- sensor, actuator networks
- security, trust and privacy
- business cases / market models
- decision making at real-time, real-time pricing
- distributed computing / networking, cloud computing
- context-awareness
- management platform to integrate manifold devices
  - element/object management system
  - data collection and management
- handling of huge amounts of data
- usability, human-to-network interfaces, visualization
- disaster recovery and risk management
- name services

Discussion

4) Experimentation Environments for New Services and Appl.

- pan European test environment required
- extensive usage of existing test beds
- very good experience from previous in-live testing
- “Smart Eco City”-style
- involvement of regulatory bodies