



2. COIN-Ausschreibung „Kooperation und Netzwerke“

Projekt: SEmantic SmArt Metering: Enablers for Energy Efficiency

Förderungsnehmer:

ftw. Forschungszentrum Telekommunikation Wien Betriebs-GmbH, Wien

Kurzfassung

The high-level societal goal of the project **SESAME** (SEmantic SmArt Metering: Enablers for Energy Efficiency) is to **facilitate home owners and building managers in saving energy within their environments and in optimizing their energy costs, while actively controlling and maintaining their preferred quality of living.**

To achieve its goal SESAME will design a technical solution that **integrates smart metering and building automation** in order to offer energy-optimization capability for both the energy consumer and provider. This solution will enable both parties to profit from the deregulated energy market, by leveraging information about the energy usage, about the user needs, and about the potentials for optimization through a smart environment control.

SESAME will investigate **two integration settings** of a smart metering system and a building automation system. The first one will be based on the current state-of-the-art where advanced energy meters are exclusively controlled by an external operator, and hence the building automation system can receive metering data only from remote sources. The second setting goes beyond and assumes integration based on local communications and co-location of a meter and a central controller in a building automation system. For both settings **ontology-based modeling, multi-objective policy-based reasoning methods** and **service-oriented architecture (SOA) design** with appropriate **security and privacy preserving mechanisms** will be used.

For the **energy end-consumers** the project will design a **knowledge acquisition solution** that supports creation and maintenance of policies describing preferences in energy use (e.g., green energy), as well as the rules for controlling the devices on the basis of the real-life sensor data from actuation of appliances.

Targeting **energy providers and grid operators**, the project will design a foundation for a new type of **energy services** for interaction with the end customers. *Energy Information Services* automatically channel relevant energy information (e.g., pricing) over the Internet into the user policy framework for employment in the reasoning mechanisms. *Energy Optimization Services* enable the users to co-control their environment (switching on/off of devices, configuring actuators, etc.) according to their policies and together with the energy supplier, for achievement of a higher level of energy optimization.

The project will be realized within a network coordinated by an Austrian research center – **Forschungszentrum Telekommunikation Wien Betriebs-GmbH (FTW)**, and four innovative enterprises (SMEs), two of which are from Austria - **eSYS Informationssysteme GmbH (eSYS - Attnang-Puchheim)**, and **Semantic Web Company (SWC - Vienna)**, one from Serbia – **E-Smart Systems d.o.o. Belgrade (e-Sma)**, and one from Russia – **The Experimental Factory of Scientific Engineering (EZAN - Chernogolovka)**. The network combines all relevant expertise both in supplementary and complementary way: semantic technologies are covered by FTW and SWC; the services technology by FTW and E-Sma; security by eSYS and E-Sma; hardware design by EZAN, eSYS and E-Sma; advanced metering expertise is brought in by E-Sma; the building automation expertise is brought in by EZAN, and the energy sector requirements are covered by SWC and E-Sma. Therefore the network has the potential to achieve the envisaged innovation. Additionally the partners plan to strongly benefit from the collaborative work by extending their expertise and building new one, and by establishing further sustainable collaboration leading to joint market approach.