A3 Analysis and Synthesis to Energy Efficiency Optimisation

Time: Tuesday, 14.09.2010, 11:20 a.m.
Location: Humboldt-Building, Room 011 / Foyer

Poster Session:

Chairman: P. Bretschneider, D. Westermann (DE-Ilmenau)

M. Liersch, J. Radon, R. Nürnberg, R. Stader (DE-Konstanz)

UniversalHomeServiceGateway – a hard- and software platform as a core component for Smart Grids

The „UniversalHomeServiceGateway“ (UHSG) provides a central platform for a „Smart Home“. It enables “Application Service Provider” to provide several software components to a customer, such as Smart Metering. By implementing standardized or proprietary interfaces the UHSG can easily be integrated into existing solutions such as the Smart Metering project which exists in cooperation between HTWG Konstanz and Stadtwerke Konstanz GmbH. With a powerful 32Bit ARM processor – 400 MHz, 64 MB RAM - it is capable of running a standard Linux with Java capabilities. Additionally it supports various hardware interfaces. This allows the use of more complex technologies and frameworks – such as the Java framework OSGi. The OSGi framework is a Java framework which allows installing, starting, stopping, updating or removing components at runtime. It is possible to manage the software components on an UHSG remotely via a management portal – software components can be installed, updated or removed. The project's hardware supports the RS485 bus with a proprietary Smart Metering protocol from a previous Smart Metering project as well as the IEC62056-21 “1107” protocol. Additional interfaces provided by the hardware are wireless MBUS, XBEE and Ethernet. It also supports a S0 impulse interface which is used by many electric meters that are currently in the field.