2. COIN-Ausschreibung
„Kooperation und Netzwerke"

Projekt: Robust Facility Communication

Förderungsnehmer: Salzburg Research Forschungsgesellschaft m.b.H., Salzburg

Kurzfassung

This COIN application entitled "ROFCO – Robust Facility Communication" addresses research & development for next generation in-building communication infrastructure. Today's situation of in-building ICT (information and communication technologies) infrastructures can be characterised by heterogeneous islands of information and standalone applications. Systems have become ever more complex; at the same time the dependencies with manufacturers are increasing and it is virtually impossible for customers to switch suppliers and/or integrate applications or services from other vendors.

Some approaches, in particular the BACnet standard, have tried to address this issue by providing a standardised layer for interoperability. However, since the initial inception of BACnet in the late 80ies requirements have changed substantially, e.g. new applications require open interfaces to plug-in services from various providers; mission critical applications such as evacuation support require more robustness of the infrastructure; etc.

To overcome the shortages of existing solutions, the "Fachverband der Gebäudeautomation" /MeGA/ argues for "IP based Multi-services networks" for future buildings /Weber/.

The ROFCO consortium develops such an innovative All-IP (i.e. Internet Protocol) based network as standardised, interoperable and robust infrastructure for future in-building communication. As IP is a generic standard, this allows for the integration of multiple devices. Furthermore, IP can be easily implemented also on small devices. And finally, the broad acceptance of IP guarantees that a plethora of existing IP based applications and services can be integrated.

The main technical issues in realising an All-IP solution are in migrating existing proprietary systems and in addressing safety and security aspects for mission critical applications. ROFCO addresses these e.g. by investigating options for soft migration of legacy systems via IP overlay networks. To support safety and security features, research will be conducted concerning methods like redundancy / overprovisioning, priority scheduling and anomaly detection.

ROFCO brings together research partners (Salzburg Research's Advanced Networking Center (ANC) group with a proven track record in network communications; the VRVIS competence centre as experts in visualisation) and industrial partners with backgrounds in networking (Underground8), in-building communication infrastructure (CopaData, Flexit), facility control (cTrixs). Additionally a partner from legislation and standardisation (Prüfstelle für Brandschutztechnik) will support the consortium with its expertise.

By bringing IP technology to the new application domain of in-house communication, the participating companies benefit not only from existing know-how in IP technologies, but also from easy integration of 3rd party products and services. Thus, the openness and standard conformity of the ROFCO concept allows for innovative new solutions by combining the strengths of the participating companies as well as of other vendors (e.g. a heating control system with a user management for individual control). Finally it enables network redundancy and the measurement of end-to-end Quality-of-Service (QoS).