Smart Meters Coordination Group

Common functional communications standards for smart metering systems

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OBJECTIVES

– EC Standardization mandate M/441 on Smart Metering

– To improve customer awareness of actual consumption in order to allow timely adaptation to their demands

– By means of:

- European standards allowing **interoperability** of utility meters (for electricity, gas, water and heat)

- Fully integrated solutions, modular and multi-part solutions

- **Architecture** must be scalable and adaptable to future communications media

- **Secure data exchange**

ADDITIONAL FUNCTIONALITIES

– **F1** – Remote reading of metrological register(s) and provision to designated market organisations *(Automatic Meter Reading)*

– **F2** – Two-ways communication between the metering system and designated market organisation(s) *(information exchange)*

– **F3** – To support advance tariffing and payment systems *(e.g. prepayment)*

– **F4** – To allow remote disablement and enablement of supply and flow/power limitation *(gas flow shut down, reopening?)*

– **F5** – To provide secure communication enabling the smart meter to export metrological data for display and potential analysis to the end consumer or a third party designated by the end consumer *(customer display)*

– **F6** – To provide information via web portal/gateway to an in-home/building display or auxiliary equipment *(to facilitate energy services)*

ACHIEVEMENTS

- **CEN-CLC-ETSI Technical Report 50572:2011**

  - 'Functional reference architecture for communications in smart metering systems'
  - Adopted in December 2011, freely available on CEN-CLC website

- **Ongoing work programme**

  - More than 60 standards available and 40 under preparation

- **Use Cases**

  - Guidelines for the development of Smart Metering Use Cases
  - Report on Smart Metering Use Cases

- **Security and Privacy Approach for Smart Metering**

  - Parts 1 & 2 available and Part 3 under finalization

- **Report of activities at the end of 2012 available on the CEN-CLC website**

DEMAND RESPONSE

– Demand Response functionalities **still evolving as implementations further develop**

– Standardization framework is considered **robust and flexible** to accommodate future Use Cases and the evolution of suitable standards

– **Necessary standards exist or are under development** - in CLC/TC 13 'Equipment for electrical energy measurement and load control', CLC/TC 294 'Communication systems for meters and remote reading of meters', CLC/TC 205 'Home and Building Electronic Systems (HBES)' and CLC/TC 57 'Power systems management and associated information exchange'

Conclusions

– CEN-CENELEC-ETSI Smart Meters Coordination Group was **pioneer** for smart metering standardisation

– More than 60 **European standards already exist** allowing national smart metering implementation projects

– **Many others are under development** - standardisation work will continue to cope with technical improvements and new technologies

– Broad consensus on using the **IEC / EN 62056 COSEM data model** for future implementations of electricity smart meters

– **Close liaison with CEN-CENELEC-ETSI Smart Grid Coordination Group**

– Work on demand response / flexibility, in particular the **home & building interface** delegated under M/490
  - Standards exist or are under development