

**Informal meeting on Smart Metering held on
2009-01-21**

1. Participants:

CEN, CENELEC, ETSI, Commission (DG ENTR + DG INFSO), ERGEG/CEER, EURELECTRIC, ESMIG, OIML, KNX Association, MARCOGAZ, AQUA, FACOGAZ, involved ESO technical body representatives

Chair: CENELEC Technical Director

2. Purpose of the meeting:

This meeting was called to (a) explore the ongoing activities in the field and (b) to agree on a way forward and this especially in the context of the Commission's draft mandate on Smart Metering.

An identified interest had been raised by ESMIG, CENELEC Co-operating Partner, for urgently starting standardization activities on Smart Metering. It had been a premise for both CENELEC and ESMIG that (a) the activity should be coordinated between the 3 ESO and (b) that all – major – stakeholders should be involved,

3. The views and requests from the industry:

ESMIG briefly set out the framework of the intended activities, referring in particular to the mushrooming of activities at national level, the lack of awareness about standardization activities from the industry side and the competitive technologies that are already existing on the market. In this context it is important for the ESOs and relevant stakeholders to pursue the safeguarding of a non-fragmented landscape of standardization in the Smart Metering field.

4. The legal framework:

The draft mandate, prepared in the context of the Measuring Instruments Directive (MID), foresees in a first phase the development of an open architecture for utility meters involving communication protocols enabling interoperability.

The ultimate objective of the mandate would be the development of European Standards that will enable interoperability of utility meters, set in the context of the wider perspective of energy efficiency and consumer awareness building of rational energy use.

5. Ongoing ESOs activities: The ESOs presented their current activities of possible relevance to Smart Meters

- CHESSE Module 6 on Billing and Metering
- CEN/TC 237 "Gas meters"
- CEN/TC 107 "Prefabricated district heating pipe systems"
- CEN/TC 294 "Communication systems for meters and remote reading of meters"
- CLC/TC 13 "Equipment for electrical energy measurement and load control"
- CLC/TC 205 "Home and Building Electronic Systems"
- ETSI/M2M "Machine to Machine Communications"

6. Way forward:

The ESOs proposed to set up a co-ordination group (including all relevant stakeholders) to deal on one hand with the Commission's mandate and the response to be given and on the other hand to ensure proper collaboration and demarcation of effort in the Smart Metering field. An interest to participate in the intended activities was stated by the following stakeholders: ESMIG, OIML, ERGEG/CEER, EURELECTRIC, KNX Association, AQUA, FACOGAZ, MARCOGAZ.

It was also noted that this co-ordination group might be able to contribute to a stakeholders' conference on standards in relation to smart houses that could take place in Brussels end of May 2009.

In accordance with the principles of consensus and a transparent approach, it was confirmed that any actions from the standardization side will be carried in full cooperation between the ESOs and other relevant stakeholders.

JPV/CV

SMART METERS

Draft standardisation mandate

Lucia Palmegiani
Policy Officer, DG ENTR I.5

CENELEC, Brussels, 21 January 2009

Points to cover

- ▶ **The Issue**
- ▶ **The Objective**
- ▶ **The Background**
- ▶ **The Description of the draft
standardisation mandate**
- ▶ **What ´s next**
- ▶ **The Deliverables**

The issue

Draft Standardisation mandate to ESOs in the field of measuring instruments for the development of an open architecture for utility meters involving communication protocols enabling interoperability.

The Objective

- **The general objective of this mandate is to create European standards that will enable interoperability of utility meters (water, gas, electricity, heat), which can then improve the means by which customers' awareness of actual consumption can be raised in order to allow timely adaptation to their demands ('SMART METERING')**

The Background

- ▶ **Competitiveness Council Conclusions on standardisation and innovation (Council on 25 September 2008)**
- ▶ **Directive 2006/32/EC on energy end-use efficiency and energy services**
- ▶ **Directive 2004/22/EC on measuring instruments (MID) concerns full harmonisation of utility meters**
- ▶ **Mandate M/374 of 20 October 2005 as base for to developing standards for utility meters**

Description of the mandated work (I)

ESOs are requested to develop a European standard comprising:

- a software and hardware open architecture for utility meters

that

- supports secure bidirectional communication upstream and downstream through standardised interfaces and data exchange formats

and

- allows advanced information and management and control systems for consumers and service suppliers.

Description of the mandated work (II)

The architecture must:

- be scalable to support from the simplest to the most complex applications**
- consider current relevant communication media and be adaptable for future communication media.**

The communication standard of the open architecture must allow the secure interfacing for data exchanges with the protected metrological block.

Description of the mandated work (III)

European standards should:

- **contain harmonised solutions for additional functionalities within an interoperable framework**
- **foreseen standardised solutions to achieve full interoperability**
- **be performance-based and permit innovation in the protocols that enable remote reading of utility meters and advanced information and management services for consumers and suppliers**
- **permit fully integrated instruments, modular and multi-part solutions.**

Description of the mandated work (IV)

- **ESOs should take into account international, European and national standards.**
- **Standards already existing at the European level may not be sufficient for a full coverage, although they may be a useful base for future development. Proactive integration of various draft national standards may aid a rapid development.**

What's next?

- **Draft mandate: deadline 22/01/2009**
- **MSS' comments to be taken into account**
- **Formal mandate to ESOs: Acceptance by the relevant Boards (6-8 weeks)**
- **3 months for the working programme**

Deliverables

- ▶ **Short term: 9 months**

Presentation of the European standard for communication

- ▶ **Medium term: within 30 months**

The harmonised solutions for additional functions (European standards) shall be completed

ESOs shall provide a combined progress report on the mandated work by the end of October 2010

Thank you!

For additional information
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Standardization Activities

in the Field of

Smart Metering

CENELEC TC 13

Smart Metering Coordination Meeting
Brussels, 21 January 2009

Agenda

- CLC TC 13 Scope
- Cooperation with IEC TC 13
- Activities on Smart Metering
- Revision on EN 62056 series
- Useful liaisons and co-operations

CLC TC 13

Proposed new CLC TC 13 Scope

To prepare European standards **(using whenever possible IEC standards)** for metering equipment and systems, **including smart metering systems**, for electrical energy measurement, **tariff- and load control, customer information and payment**, for use in power stations, along the network, and at energy end users, as well as to prepare European standards for meter test equipment and methods. The standards may include requirements and test methods to cover mechanical, environmental, electrical, safety, metrology, dependability aspects, as well as functional requirements, **data models and protocols for meter data exchange**.

CLC TC 13

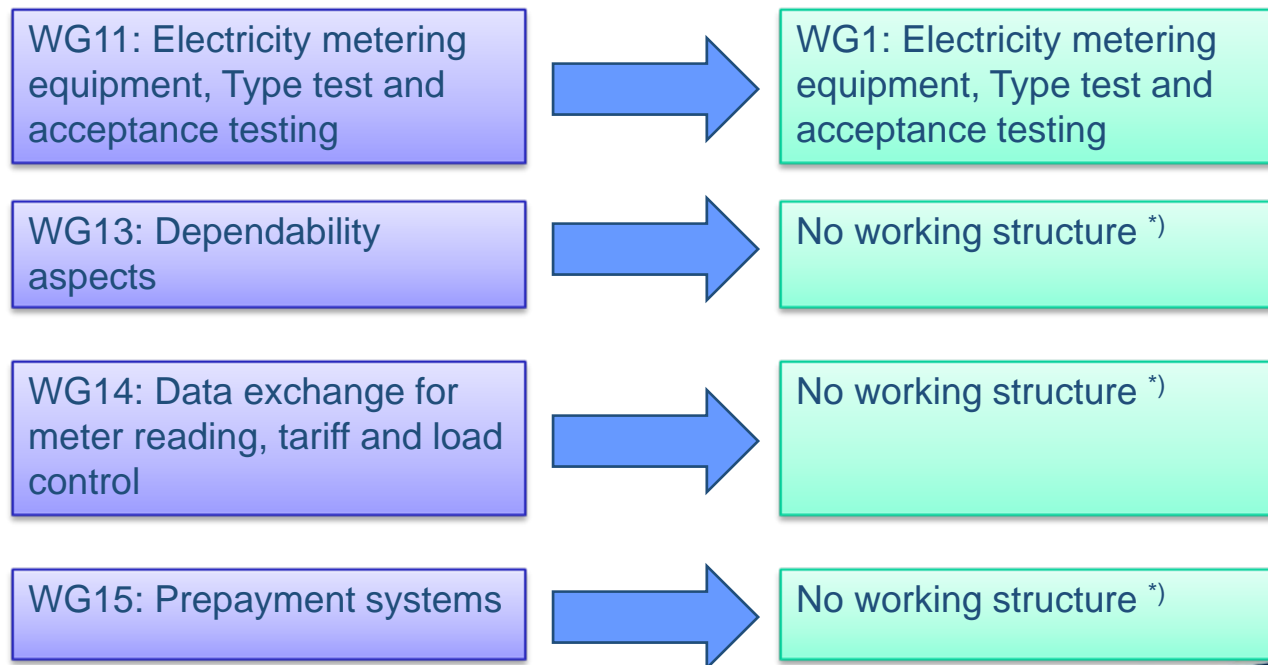
Cooperation with IEC TC 13

- Traditionally there is a close cooperation with IEC based on the Dresden Agreement
- Most of the standards are developed on IEC level and adopted as EN standards
- CLC TC13 mainly mirrors IEC TC13 standardization
- CLC TC 13 WG 1 was first established for developing standards under the MID Mandate M/347

TC 13 Working Group Structure

IEC TC 13

CENELEC TC 13



*) For CLC voting EN Annexes are developed by the European experts

Activities in the Field of Smart Metering

WG 11: Electricity metering equipment (CLC TC 13 WG 1)

| | Type test | Acceptance test | Safety Requirements |
|--------------------------------|---|---|--|
| General Requirements | EN 50470-1:2006 Metering Equipment | EN 62052-21:2004 Tariff and load control equipment | EN 62058-11:2008 General requirements |
| Particular Requirements | EN 50470-2:2006 Electromechanical kWh Meters Class A and B | EN 62054-11:2004 Ripple control receivers | EN 62058-21:2008 E-mechanical meters |
| | EN 50470-3:2006 Static kWh Meters Class A, B and C | EN 62054-21:2004 Time Switches | EN 62058-31:2008 Static meters |
| | EN 62053-22 Static kWh meters Cl. 0.2S & 0.5S | | |
| | EN 62053-23 Static kvarh Meters Cl. 2 & 3 | | |
| | EN 62053-31 Pulse output devices | | |
| | EN 62053-52 Symbols | | |
| | EN 62053-61 Power Consumption and Voltage requirements | | |



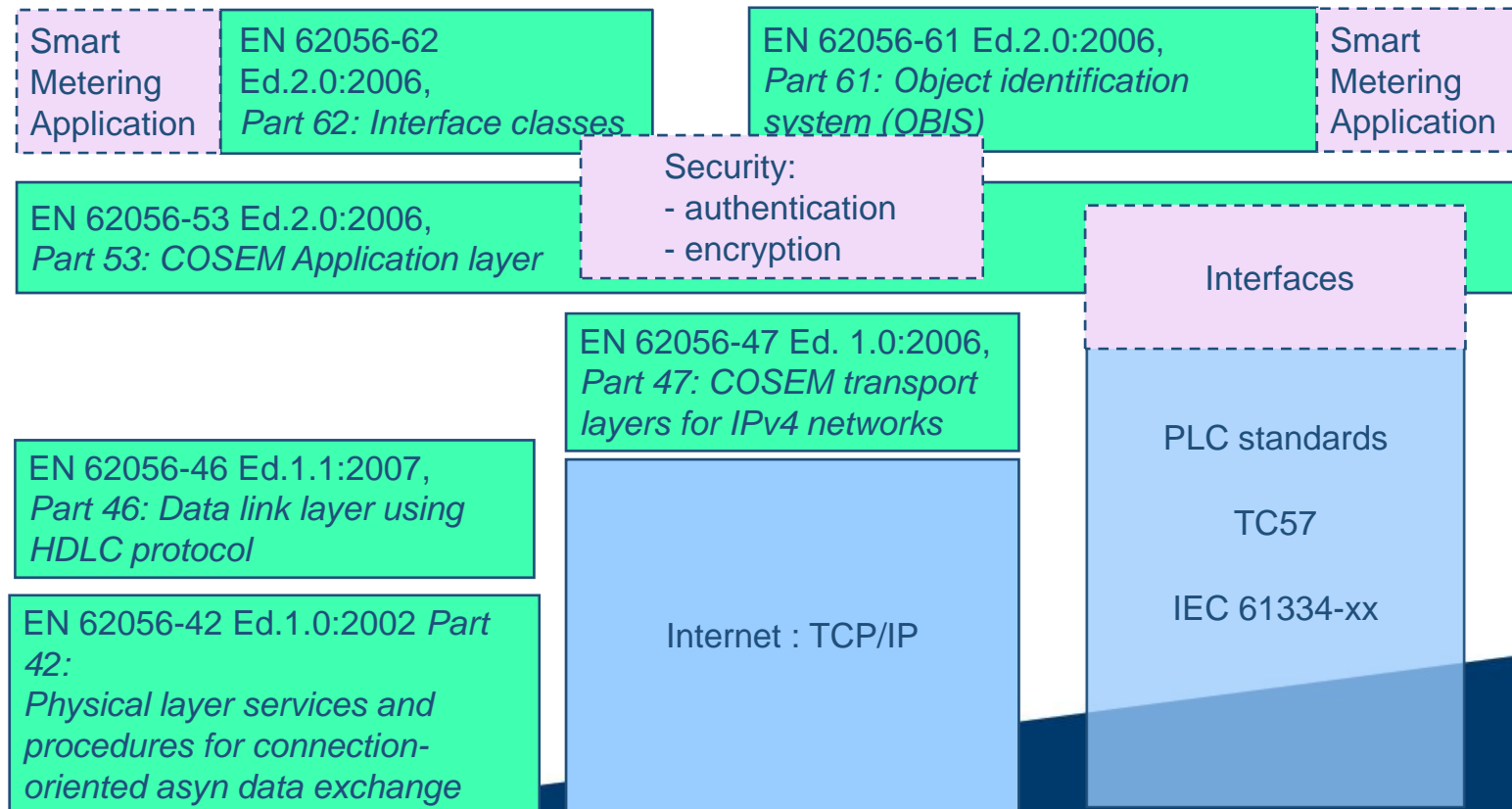
Specific Requirements from MID (mandate M/347)



Relevant for Smart Metering

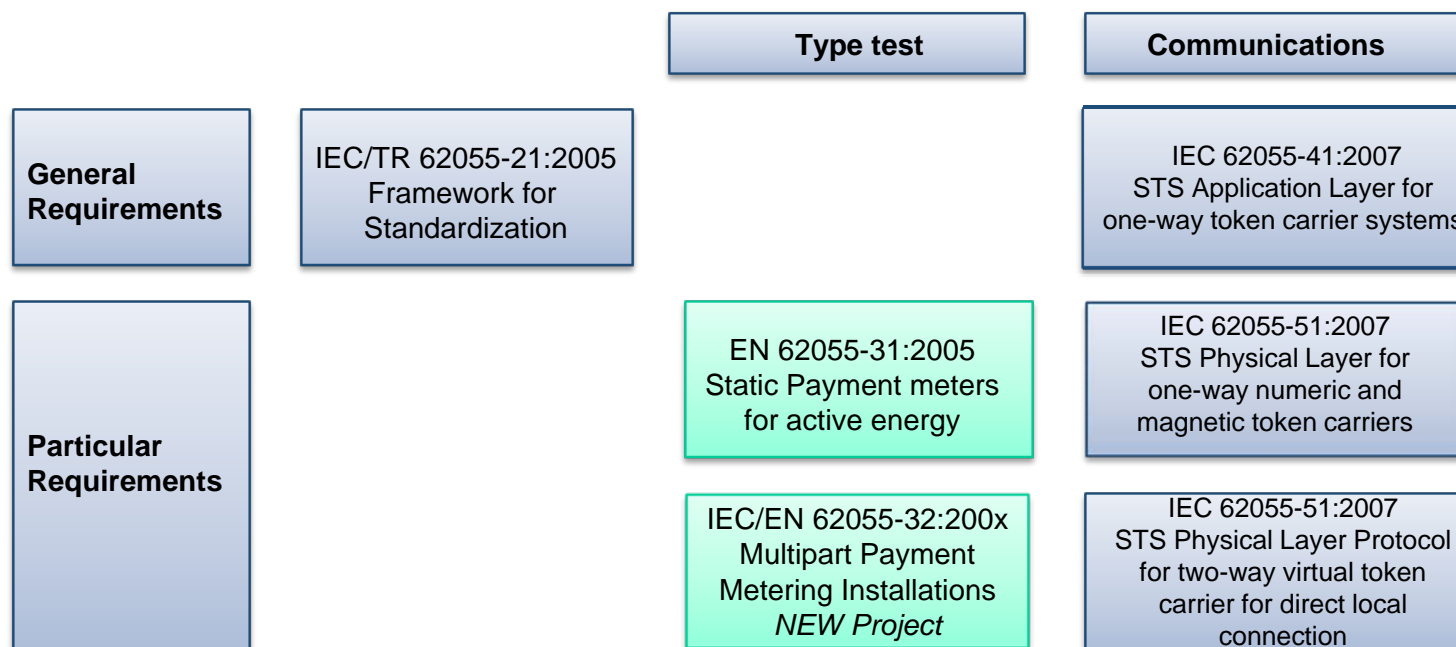
Activities in the Field of Smart Metering

WG 14: Data exchange for meter reading, tariff and load control



Activities in the Field of Smart Metering

WG 15: Payment Systems



Relevant for Smart Metering

Revision of IEC/EN 62056 series

- Extensions for smart metering: IEC 62056-61, -62
- Extension of security issues: IEC 62056-53, -61, -62
- Interfaces to existing IEC 61334 PLC standards: IEC 62056-53
- Revision of DLMS/COSEM parts by DLMS UA
 - integration of new communication means
 - extension of the application models to Smart Metering
- Revision of IEC 61334 parts in cooperation with TC 57

Useful Liaisons/Co-operations

- D-liaison partner: DLMS-User Association
 - DLMS-User Association as bridgehead to the market
 - Revision of DLMS/COSEM parts
- Internal liaison: IEC TC 57
 - Metering requirements for Smart Grid
 - Security requirements
- CENELEC/ESMIG Cooperation Agreement
- Participation in the new SMB SG 3 on Smart Grid

Standardization Activities CLC TC 13

Thank you for your attention!

The mission of TC205

▶ The scope :

To prepare standards for all aspects of Home and Building Electronic Systems in relation to the Information Society

▶ Definition

HBES systems and devices are intended to be used for control, monitoring, operation or management of building services and/or home electronic systems which can interact via a communication network.

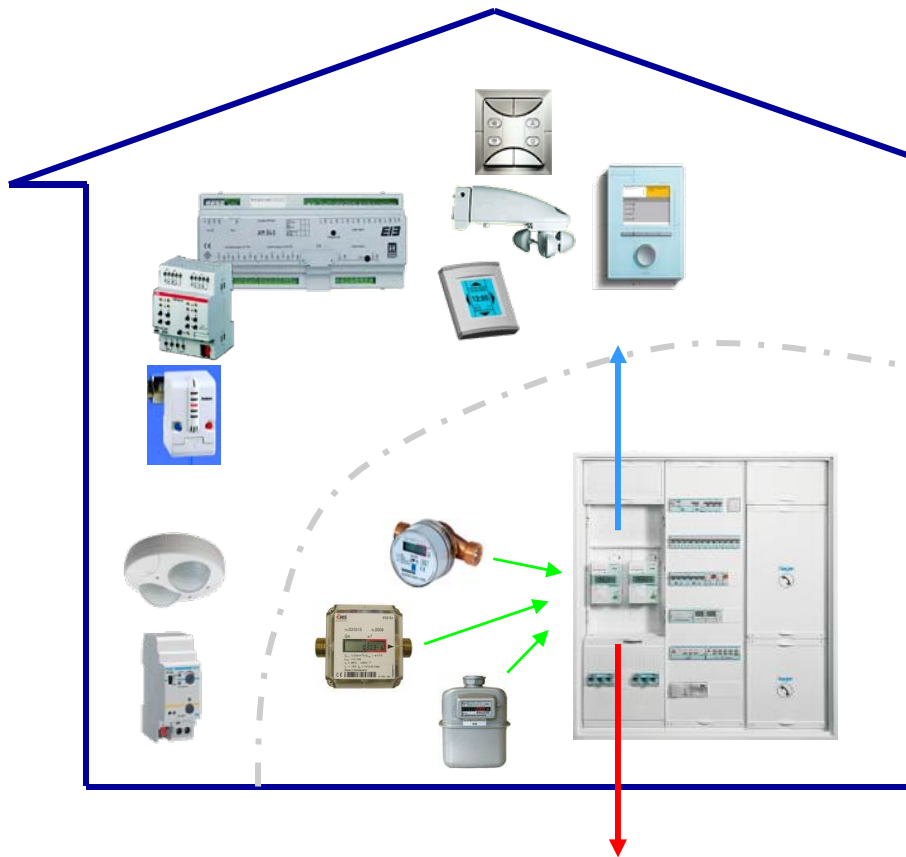
▶ The standardisation work includes

- Electrical safety and EMC standards
- Functional safety and security
- **The HBES Open Communication System**

The HBES Open Communication System

- ▶ The HBES Open Communication System is an automated, decentralised and distributed process control system, dedicated to the needs of home and building applications such as control, monitoring, measurement, alarm and low speed data transfer.
- ▶ On the HBES Open Communication System Device Network, all devices form distributed applications, which are able to interact with one another
- ▶ Comprehensive communication media range
 - Twisted Pair
 - Powerline
 - Radio Frequency
 - Communication over IP.
- ▶ Specification are laid down in EN50090 series
 - Endorsed by TC247 for BACS application : EN 13321-1 and -2
 - Interworking rules (standardized Datapoint Types and “Functional Block” objects)
 - Radio Frequency : Frequencies and medium access shared with CEN TC294

HBES and Smart Metering



- Downstream : **HBES standard**
Communication support and interoperability
 - **Energy consumption display**
 - **Automated energy management**
 - **Remote access by end-user**

- Delivery point :
interoperability support
 - **Data collection**
 - **Synergy with CEN TC 294**

- Upstream :
interoperability support
 - **Data transmission to utilities**
 - **Utility services**
 - **Automatic Remote Reading**
 - **SC205A powerline standard**

CLC TC205 possible contribution

- ▶ Downstream communication supported by

HBES Open Communication System EN 50090 series

- ▶ Implementation of **Interoperability standard** for Smart Metering
 - Downstream applications
 - Whole application field

- ▶ **Synergies** with metering in CEN TC 294

Thank you for your attention

Questions ?

ETSI Standardization Activities

Machine-to-Machine Communications

Marylin Arndt

Convenor M2M Ad-Hoc Group

Joachim Koss

ETSI Board Member

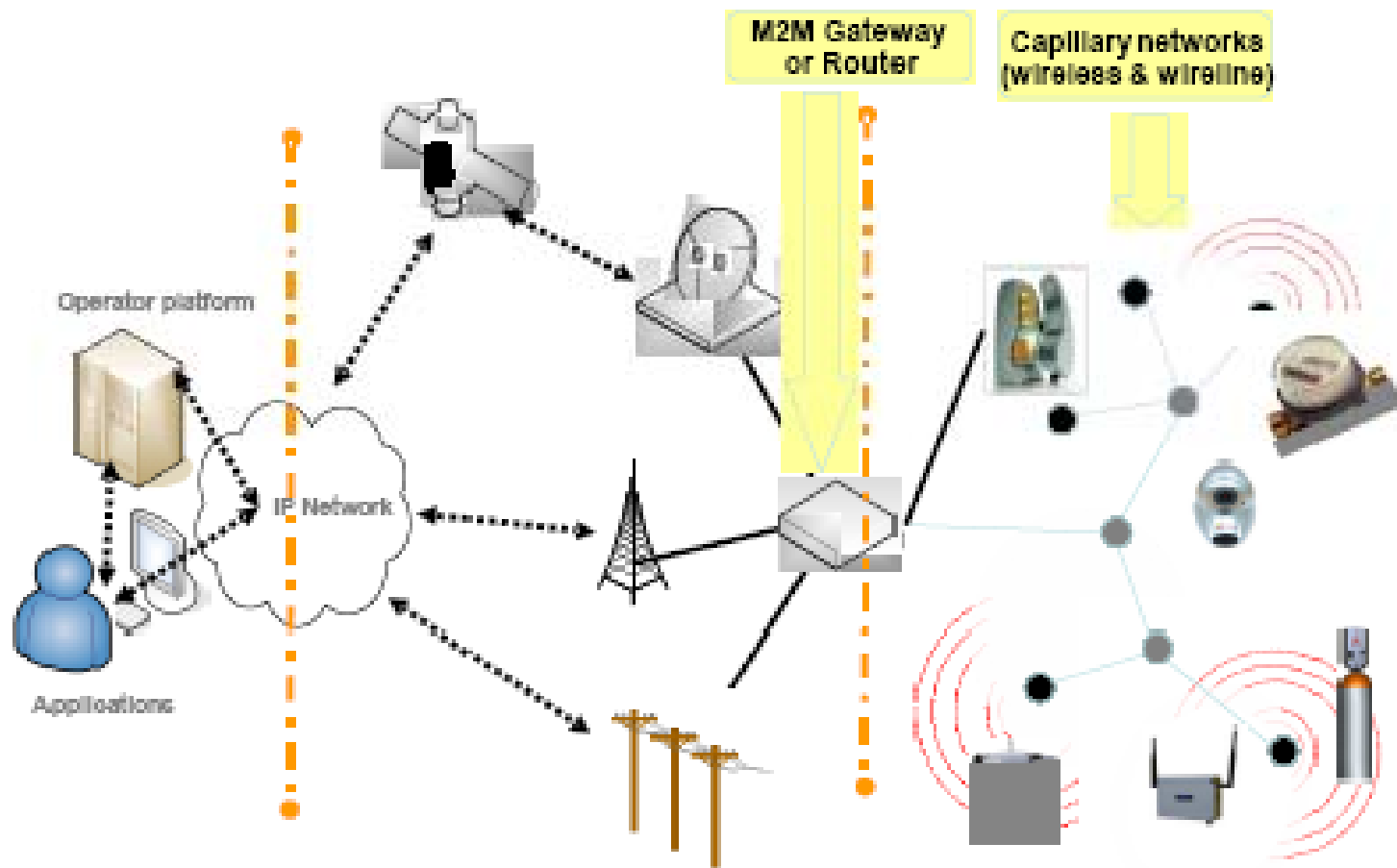
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Smart Metering Coordination Meeting, 2009-01-21

M2M Communications

- ❑ **M2M Communications – in 2007 ETSI GA declared as an strategic technical topic**
- ❑ **M2M Workshop – June 2008**
 - Strong participation from M2M industrial actors and operators
 - Recommends ETSI to deal with M2M standardization issues
- ❑ **Board created an Ad-Hoc group – investigation on M2M standardization needs**
 - report – identify use cases and M2M applications (e.g. Home Automation, Smart Metering) with their differences and commonalities, gaps of standardization, June until November
 - **Conclusions**
 - Many disjoint or vertical industry standardized solutions
 - No group looking at end-to-end view in Europe
 - Nobody dealing with end-to-end interoperability
 - Need to interface different technologies
 - Need an ETSI Technical Committee for M2M standardization
- ❑ **ETSI Board decision – Creation of a new M2M Technical Committee for Machine-to-Machine Communications**
- ❑ **1st meeting of new TC M2M – 26th January 2009**

Global M2M System Overview



International M2M Standardization Activities

- ❑ **Multiple SDOs are dealing with specific scopes of M2M Networks and Applications (e.g. ZigBee) instead of having a global end-to-end-view**
- ❑ **ITU-T**
 - **Started in 2006**
 - **Sensor Networks**
- ❑ **ISO/IEC JTC1 SC6**
 - **Started 2008**
 - **Applications**

Smart Metering Standards
Co-operation Group

↔ Overall Strategy

CENELEC
Coop.Partners:
ESMIG
EURELECTRIC
KNX Association
OIML

DG TREN
DG ENTR
DG INF SO

CENELEC

CEN

ETSI

Regulators

