

Panel Session: Standardization

Standardization process in IEC

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Alfredo Sanz

Member of PRIME Alliance's Management Committee

COO and Founder of ADD Semiconductor

alfredo.sanz@addsemi.com



Introduction

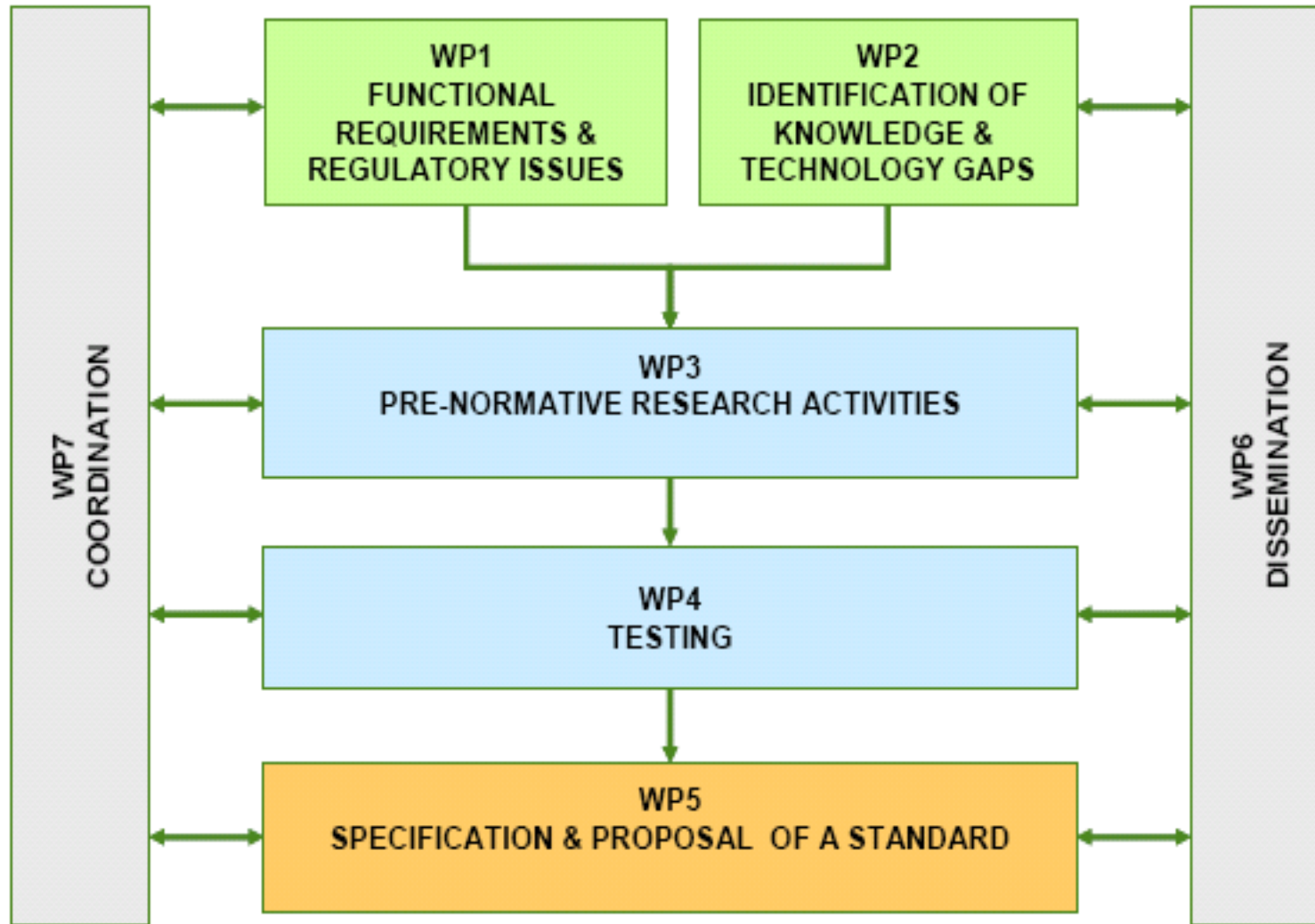
- This session will show the standardization process in IEC that the Open Meter project is promoting.
- This includes the coordinated standardization process in IEC of all the communications layers of
 - PRIME,
 - G3,
 - PLAN(SFSK in France)
 - Meters & More (FSK & BPSK in Italy and Spain)

Open Meter project

- **The main objective of the OPEN meter project is to specify a comprehensive set of open and public standards for AMI, supporting electricity, gas, water and heat metering, based on the agreement of all the relevant stakeholders in this area, and taking into account the real conditions of the utility networks so as to allow for full implementation.**
- The Scope of the project is to address knowledge gaps for the adoption of open-standards for smart multi-metering equipments and all relevant aspects – regulatory environments, smart metering functions, communication media, protocols, and data formats – are considered within the project.
- **The result of the project will be a set of draft standards**, based on already existing and accepted standards wherever possible. These standards include the IEC 61334 series PLC standards, the IEC 62056 DLMS/COSEM standards for electricity metering, the EN 13757 series of standards for utility metering other than electricity using M-Bus and other media. These existing standards will be complemented with new standards, based on innovative solutions developed within the project, to form the new body of AM / smart metering standards. The resulting draft standards will be fed into the European and International standardization process.
- The project is strongly coordinated with the smart metering standardization mandate given by the European Commission to the European Standardization Organizations, CEN, CENELEC and ETSI.

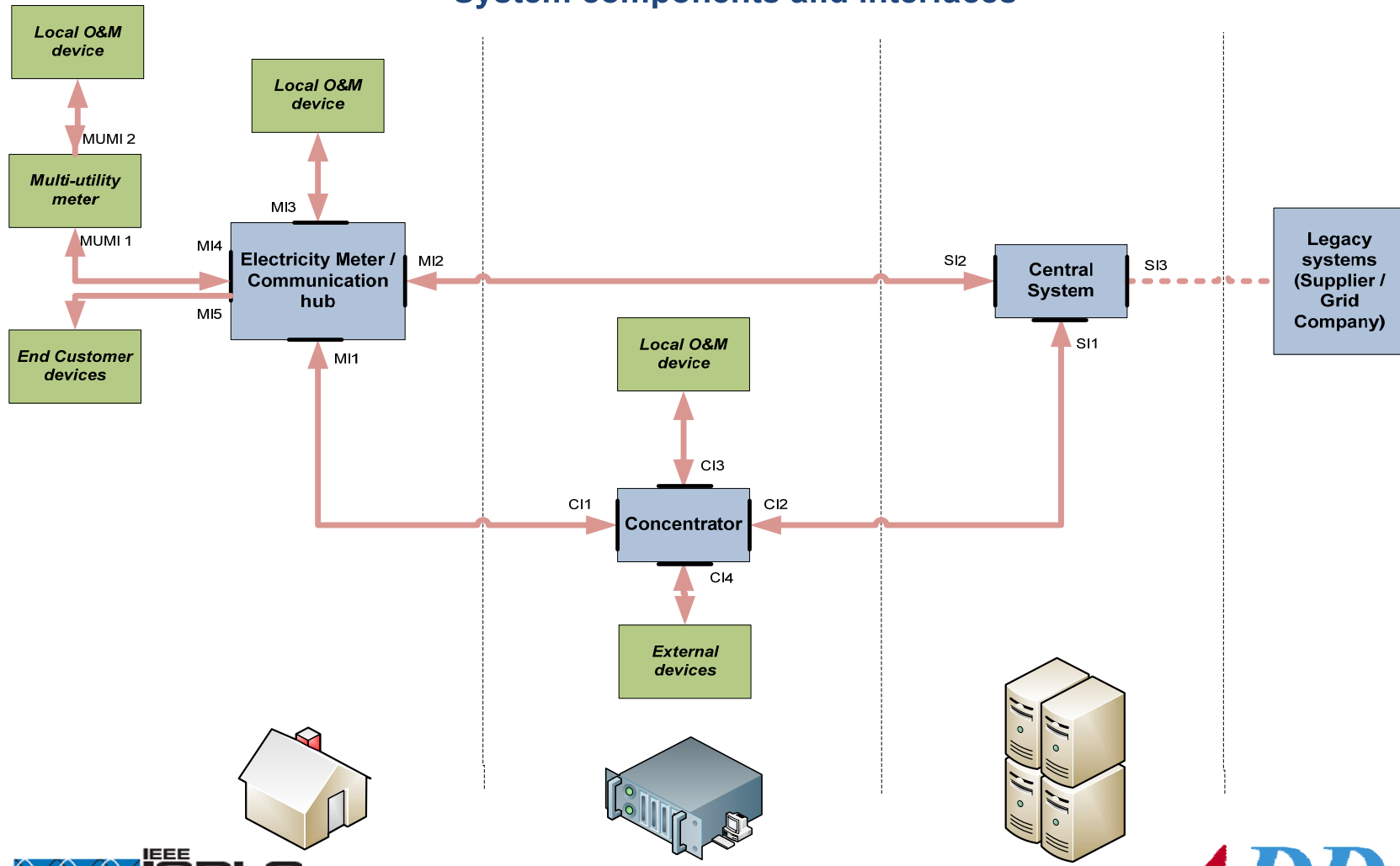


Open Meter project



Open Meter project

System components and interfaces

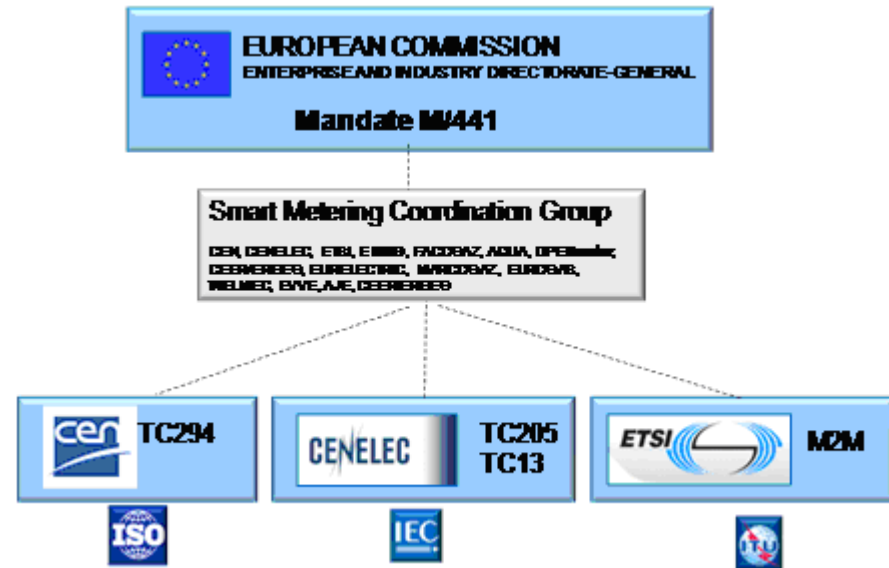


OPEN meter Project in the EU standardizations activities

- The coordination between the OPEN meter Project and the EU standardizations activities has been adapted considering mandate M/441 for smart metering standardization issued by the European Commission.
- The OPEN meter Project profits from the thrust of standardization activities created by the mandate.
- During year one the WP5 approach towards the standardization organizations was to create awareness and to prepare the standardization organizations for the results of the OPEN meter Project.
- In year two the focus is shifted towards the delivery and the adaptation of the results of WP 1 to 4 for smooth integration into the on-going standardization projects.

The standardization Environment

- The objective of WP5 is to perform the last step of the OPEN meter Project: to launch the official standardization process for the results achieved in WP1 to WP4.
- In order to successfully achieve this objective, two steps were identified:
 - - Step1: The appropriate standardization committees were evaluated and prepared for cooperation with OPEN meter.
 - - Step2: The OPEN meter Project must provide the appropriate documents which can be launched as extensions to existing standards or as new standards
- The execution of the M/441 mandate is coordinated by the newly established “Smart Metering Coordination Group”.
- The OPEN meter Project is represented in the M/441 Coordination Group (SMCG) to make sure that the standardization proposals resulting from OPEN meter are aligned with the work of SMCG



Contributions of the Open Meter project

Y	5(6)2056-1y Framework All TRs in this column	5(6)2056-2y Local interface OM: MI3	5(6)2056-3y Lower layers Twisted Pair	5(6)2056-4y Lower layers	5(6)2056-5y Application L	5(6)2056-6y Data models	5(6)2056-7y Profiles HAN OM: MI5 MUMI1-MI4	5(6)2056-8y Profiles NAN/LAN OM: MI1-C11	5(6)2056-9y Profiles WAN OM: MI2-SI2 CI2-SI2
0	Standardization framework, architecture								
1	Use Cases + Services	Direct local data exchange	Use of LAN on twisted pair with carrier signalling "Euridis"	PSTN with Link+ protocol	Euridis AL (with DLMS)	Object identification system (OBIS)	DLMS/COSEM on Euridis		
2	Mapping the COSEM model to services			PL for CO async data exchange	Euridis DLMS Mgt. Server	COSEM Interface classes	DLMS/COSEM on M-Bus wired		
3					COSEM AL (with xDLMS)		DLMS/COSEM on M-Bus w-less	DLMS/COSEM on PLC S-FSK	
4				PLC PRIME PHY + MAC				DLMS/COSEM on PLC PRIME	
5		Local interface one way "TIC"		PLC G3 PHY + MAC			DLMS/COSEM w-less (also for NAN)	DLMS/COSEM on PLC G3	
6				DL using HDLC protocol			DLMS/COSEM on 3-layer HDLC (local IF)		DLMS/COSEM on 3-layer HDLC (PSTN, GSM)
7				COSEM TL for IPv4 + IPv6					DLMS/COSEM on IP
8					SML container services				COSEM on SML services
OM	Mapping the MORE model to services	MORE local if		PLC MORE PHY + MAC	MORE AL	MORE data model	MORE on PLC (in home)	MORE on PLC	MORE on IP

PL: Physical layer – MAC: Medium Access Control sublayer – DL: Data link layer – TL: Transport layer – AL: Application layer – CO: Connection oriented
Existing standards – Contributions from OPEN mete – OM:D5.1/2

Standard map update

		General										
		prTR 5XXXX: Smart metering standardization framework										
		prTR 5YYYY: Smart metering use cases and functions										
		EN 62056-1-0 Electricity metering data exchange – The DLMS/COSEM suite - Standardisation framework										
		EN/TR 52056-1-1: Mapping use cases and functions to the COSEM data model										
		EN/TR 5ZZZZ-1: Mapping use cases to the SMITP data model										
		M	C			G1	G2	H1	H1, H2	G1	C	G2
		EN 62056-6-1 OBIS, EN 62056-6-2 COSEM interface classes Electricity – Gas – Water – Heat										
Data model	Communication profiles		EN 62056-21 Direct local data exchange									
	Lower layers	Upper layers	EN 62056-7-1 Comm. profile for twisted pair with carrier signalling EN 52056-7-2 The wired M-Bus profile EN 52056-7-3 The wireless M-Bus profile EN 62056-8-3 The PLC S-FSK profile EN/TS 52056-8-4 The PLC OFDM Type 1 profile EN/TS 52056-8-5 The PLC OFDM Type 2 profile EN 62056-9-7 The TCP-UDP/IP profile DLMS/COSEM The G2 IF profile under consideration EN 62056-7-6 The S-layer CO HDLC profile EN 62056-7-2 Customer interface using TP with carrier signalling EN 62056-9-8 The SML profile									
		EN 62056-5-3 DLMS/COSEM application layer + EN 61334-4-511 CIASE										
		EN 62056-3-1 Use of LANs on twisted pair with carrier signalling EN 13757-2 wired M-Bus Phy + MAC EN 13757-3 M-Bus application layer (used as a wrapper) EN 13757-4 wireless M-Bus Phy + MAC EN 62056-46 CO HDLC data link layer EN 61334-4-32 LLC layer EN 62056-47 COSEM transport layer TCP-UDP/IPv4 – IPv6 EN 62056-46 CO HDLC data link layer EN 62056-42 Phy layer										
		EN/TS 52056-2 OFDM Type 1 "PRIME" Phy + MAC + Conv EN/TS 52056-2 "G3" OFDM Type 2 "Adapt" Phy + MAC GPRS / Ethernet lower layers										
		EN 62056-5-8 SML container services										
		EN/TS 52056-4 PLC B-PSK Phy + MAC + LLC TCP/IPv4 GPRS / Ethernet lower layers										
		EN/TS 52056-5 Application layer										
		EN/TS 52056-2 Local data exchange opto EN/TS 52056-8 The PLC B-PSK profile EN/TS 52056-9 The public IP networks profile										
		EN 5ZZZZ SMITP „Meters&More” suite										
		EN 62056 / EN 52056 / EN 13757-1 DLMS/COSEM suite EN 62056 established by IEC TC13. EN 52056 established by CENELEC TC13. EN 13757 established by CEN TC294.										

DLMS/COSEM PRIME PLC architecture

