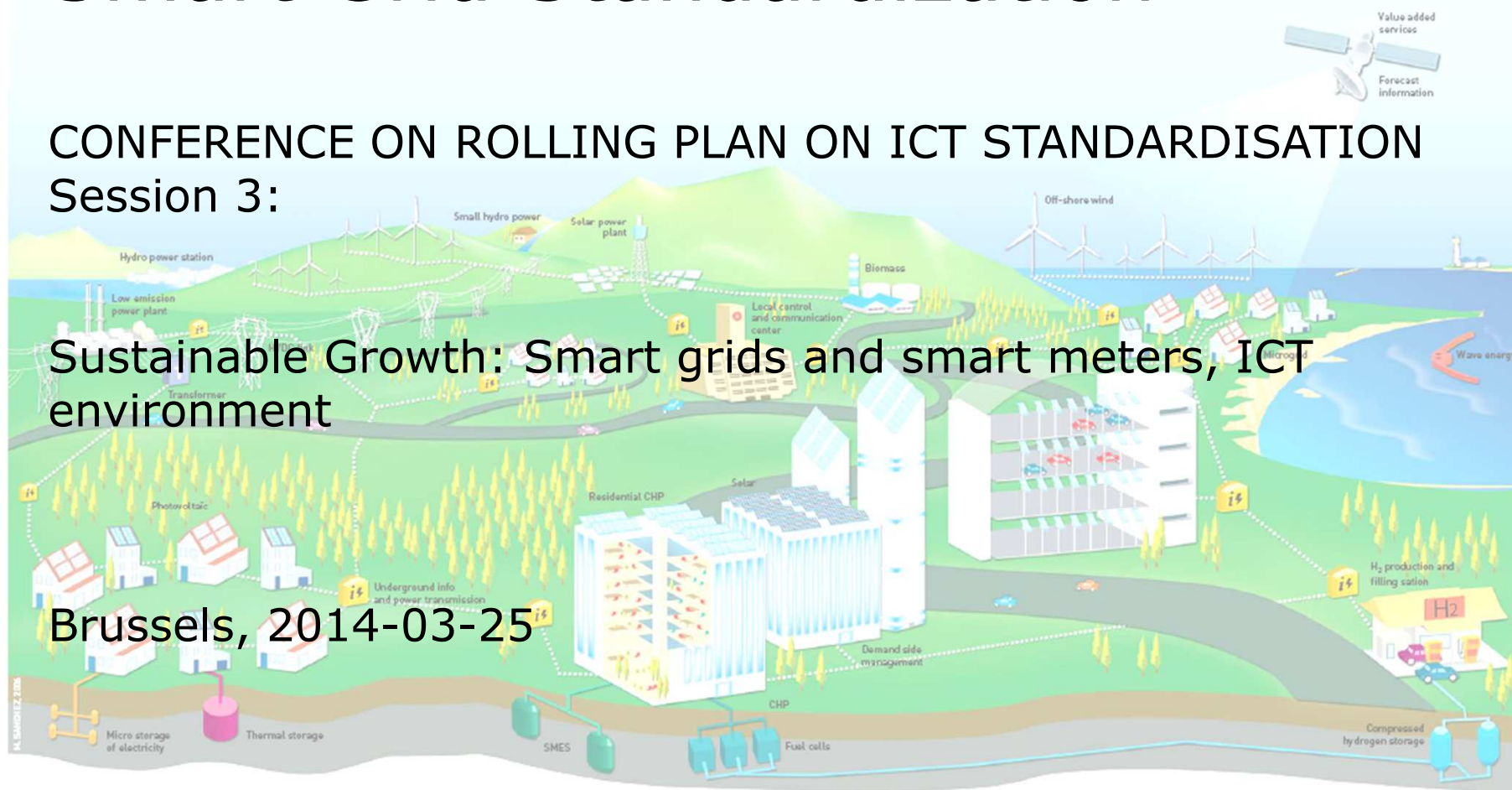


Smart Grid Standardization

CONFERENCE ON ROLLING PLAN ON ICT STANDARDISATION
Session 3:

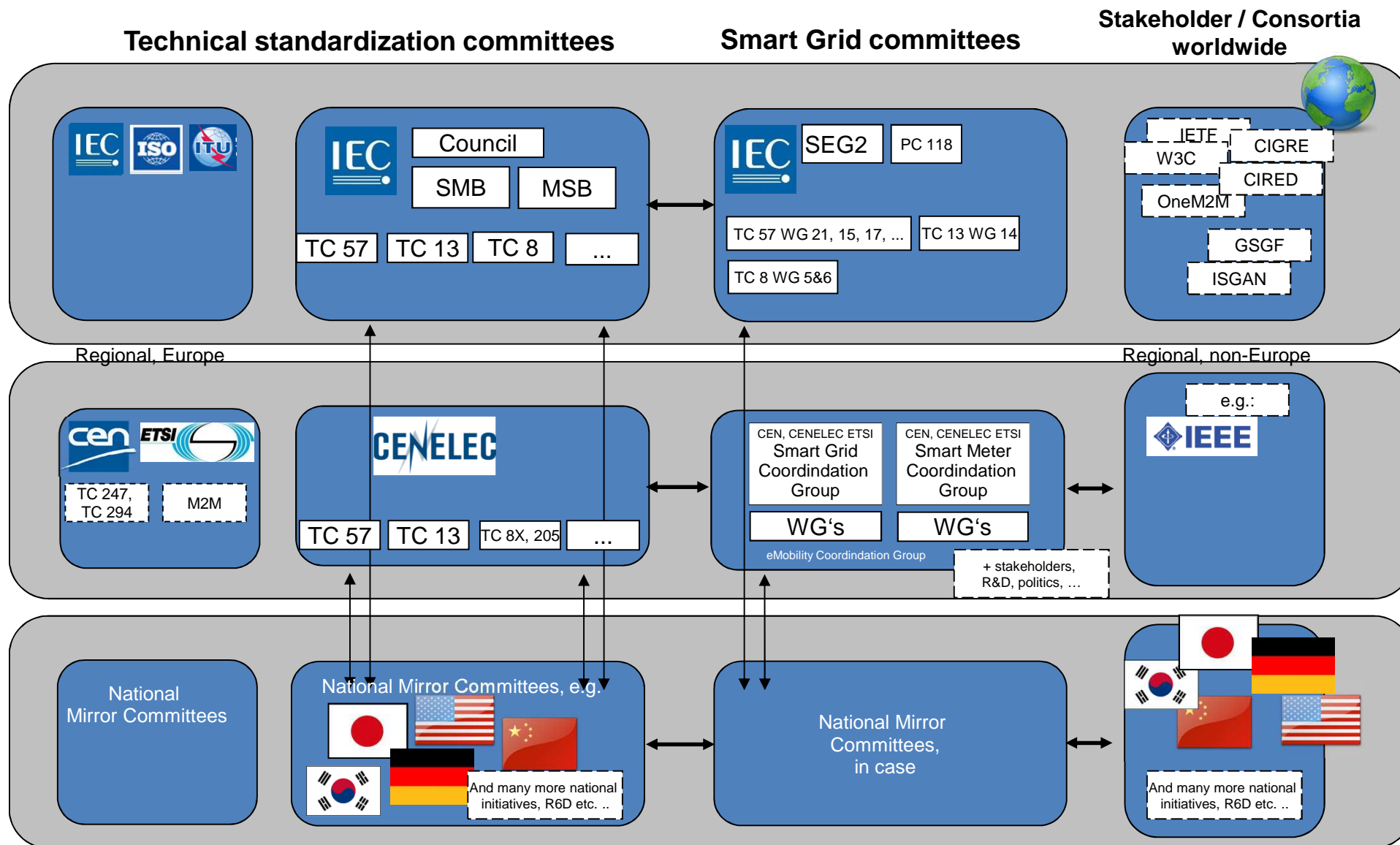
Sustainable Growth: Smart grids and smart meters, ICT environment

Brussels, 2014-03-25





There are a lot of Smart Grid standardization activities worldwide



Not at all complete



CENELEC



SG-CG – Who are we?



EDSO
for smart grids



Associations



DIGITALEUROPE



entsoe



SMART GRID Coordination Group (established June 2011)

Observers from US, J,
...

TC ITS SM-CG TC ATTM TC ERM
TC BRAN ETSI TC M2M
Board TC TISPAN TC SCP
TC PLT

TC 205 TC 13
TC 57 CENELEC SM-CG
TC 8X

TC 287 cen TC 247

ENER
ENTR
INFO
FP7
JRC
RTD
JUST
European Commission



CO
JTC 1 SC 27



CEI
bsi.



AENOR

National
Committees

SESKO

SEK
SVENSK
ELSTANDARD

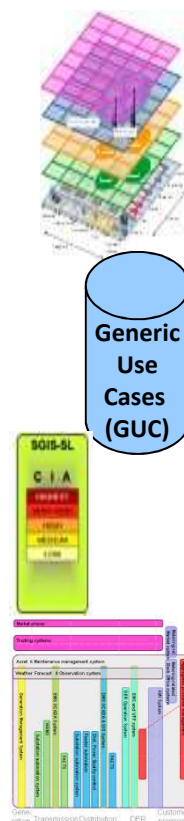


Smart Grid Coordination Group (SG-CG) of CEN, CENELEC and ETSI

Phase 1

- From 6/2011 until 12/2012

- Reference Architecture -> SGAM, conceptual model
- Sustainable processes -> Use Cases
- Smart Grid Information security (SGIS) – SGIS Toolbox
- First of standards
 - Prioritisation, work programme
 - First set of standards
- Framework for new standardization process for complex systems



Phase 2

- currently under development until end of 2014
- Methodology (Use Cases, reference architecture, SGAM, conceptual model, market and flexibility, new applications)
- SGIS
- Set of Standards (Update)
- Interoperability (recommendations, Excel tool)

All reports of phase 1 are available under

<http://www.cencenelec.eu/standards/HotTopics/SmartGrids/Pages/default.aspx>



Other Coordination Groups and Mandates relevant for Smart Grid

- **M/441 Smart Metering**

- Smart Meter Coordination Group (SMCG) of CEN, CENELEC, ETSI

- **M/468 Electromobility**

- eMobility Co-ordination Group (eM-CG) CEN, CENELEC
 - Common WG with SG-CG for Smart Charging

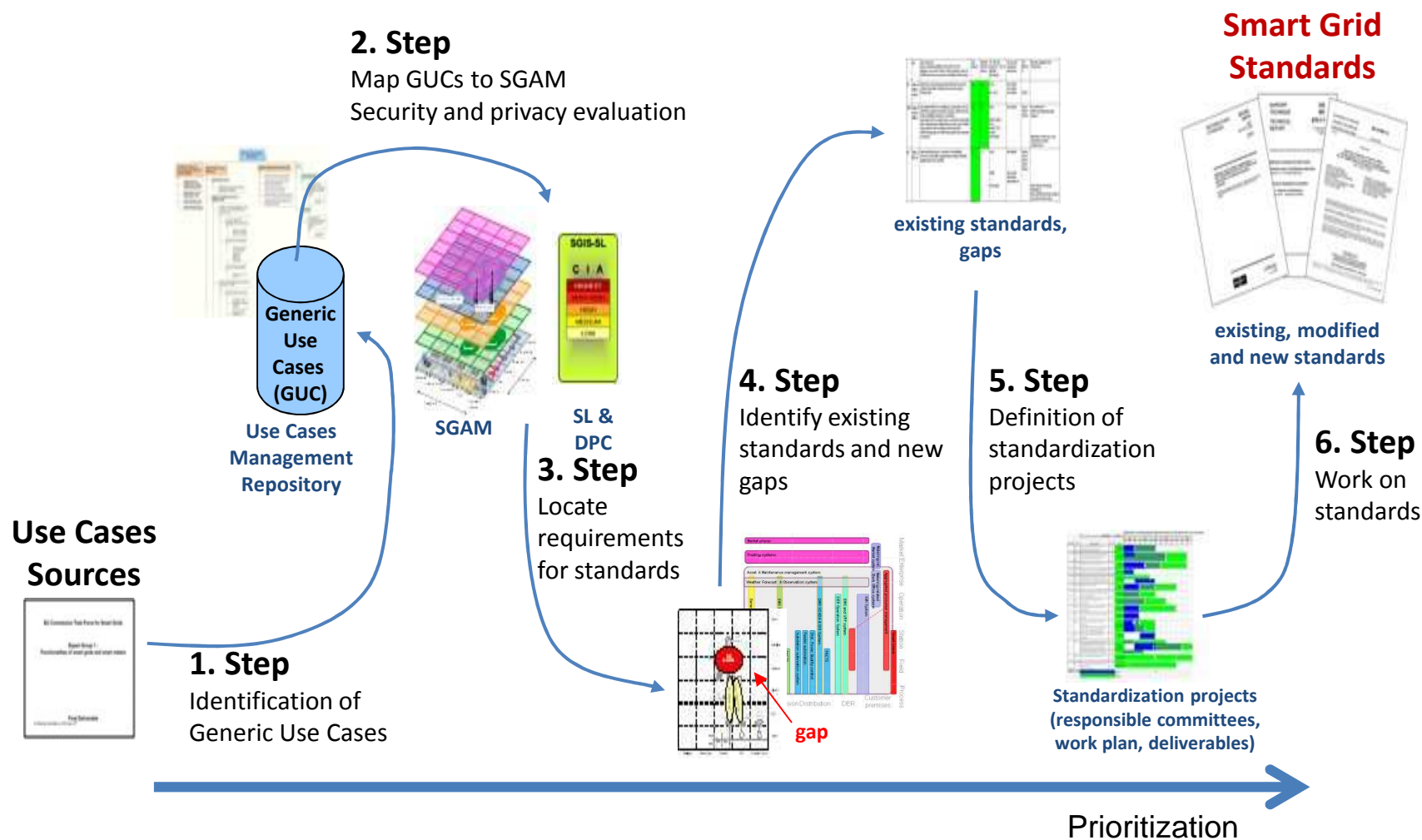
- **Smart Cities (new)**

- Coordination Group “Smart and Sustainable Cities and Communities” (SSCC-CG) CEN, CENELEC

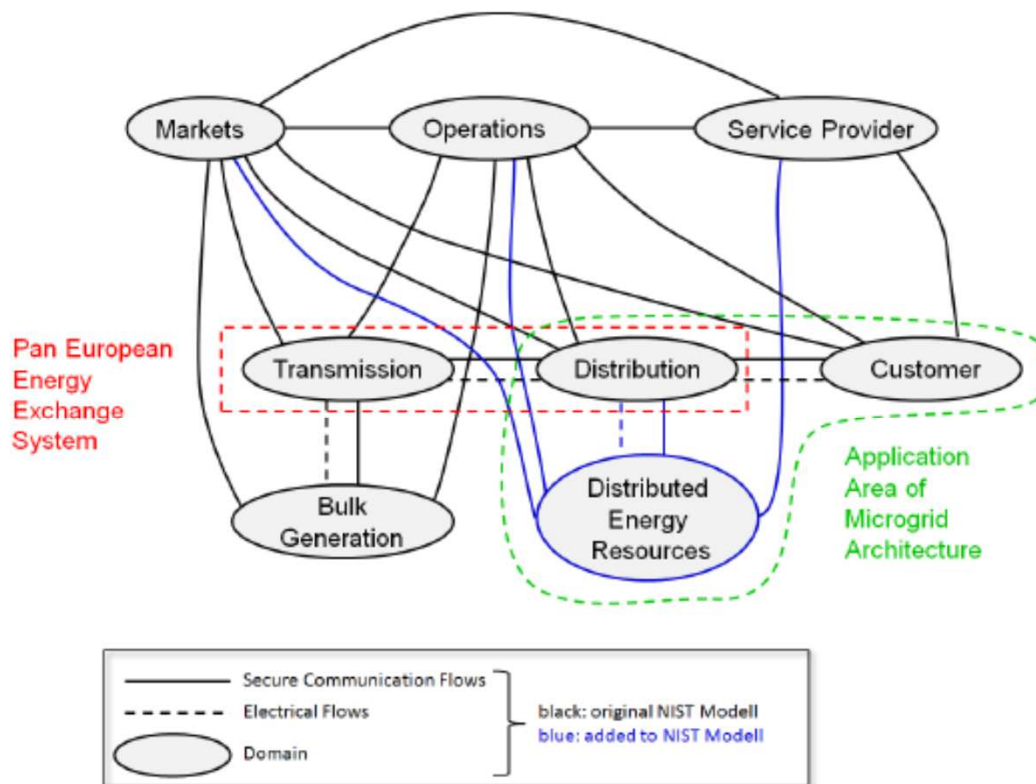
⇒ **There are liaisons between the SG-CG and the other CG's.**

Mandate M/490 – SG-CG

New process for standardization

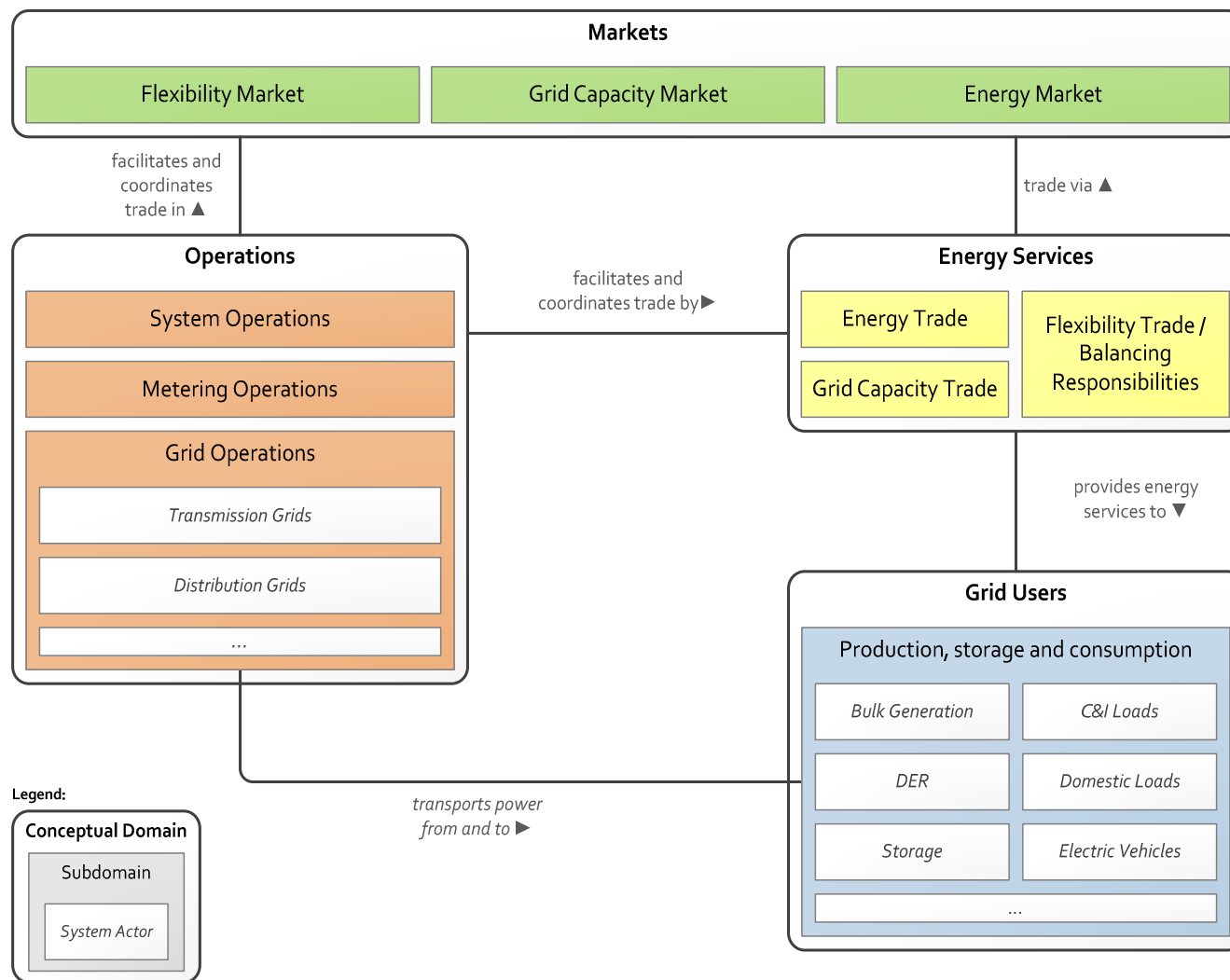


Conceptual Model

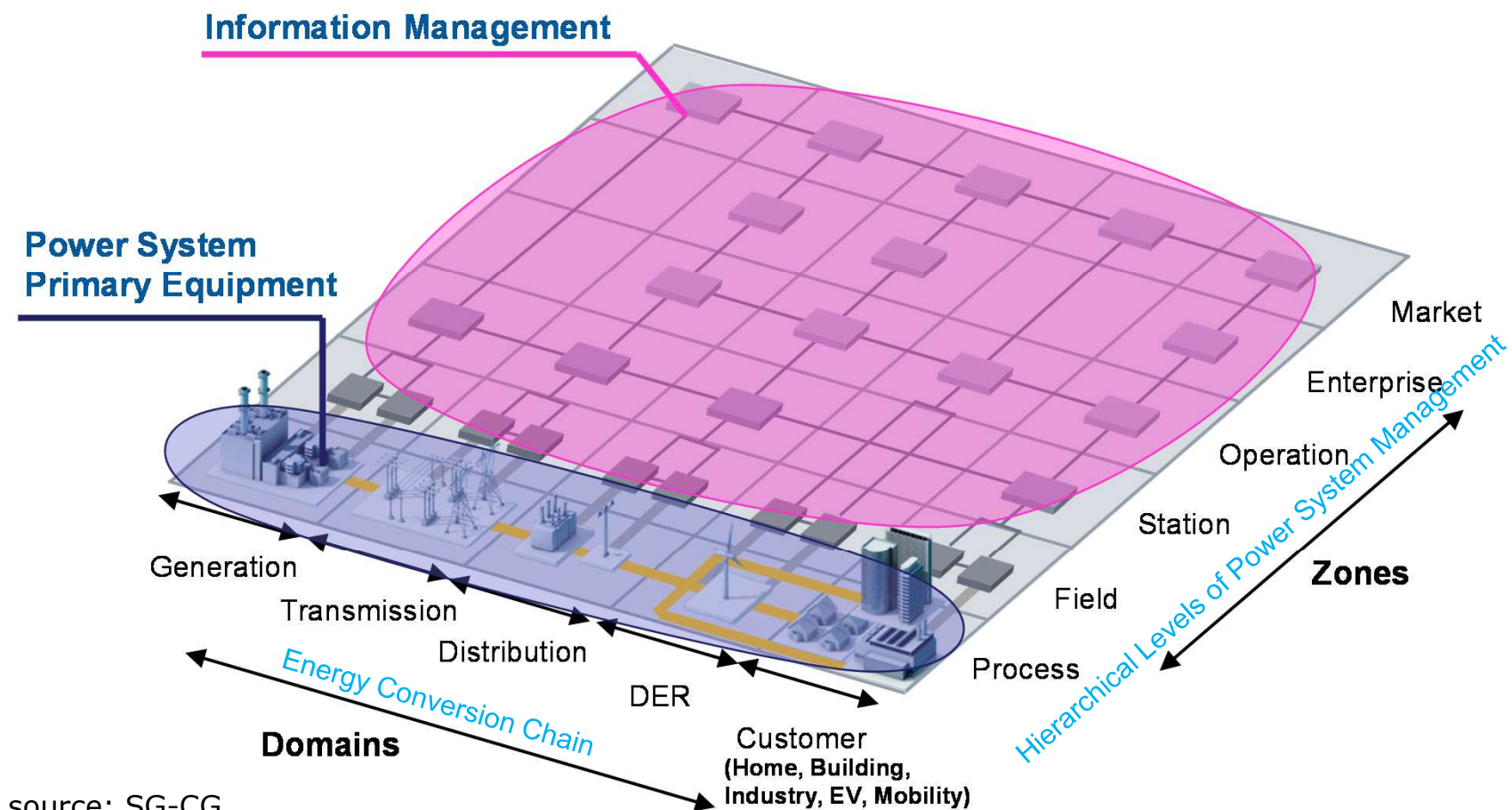


source: SG-CG
based on NIST

New Conceptual Model – integrating Market Model and Flexibility Concept

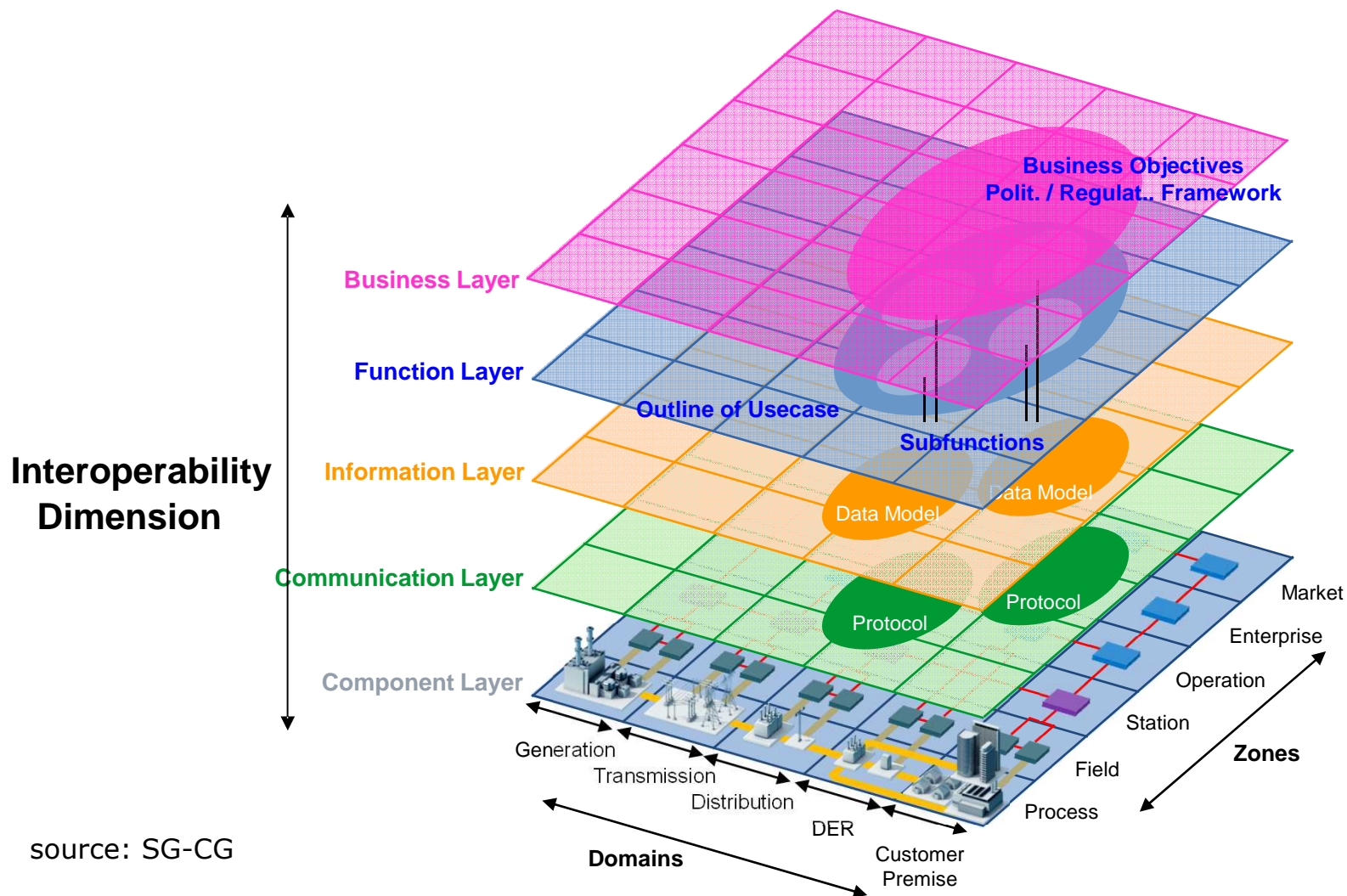


Smart Grid Architecture Model (SGAM) - the Smart Grid Plane

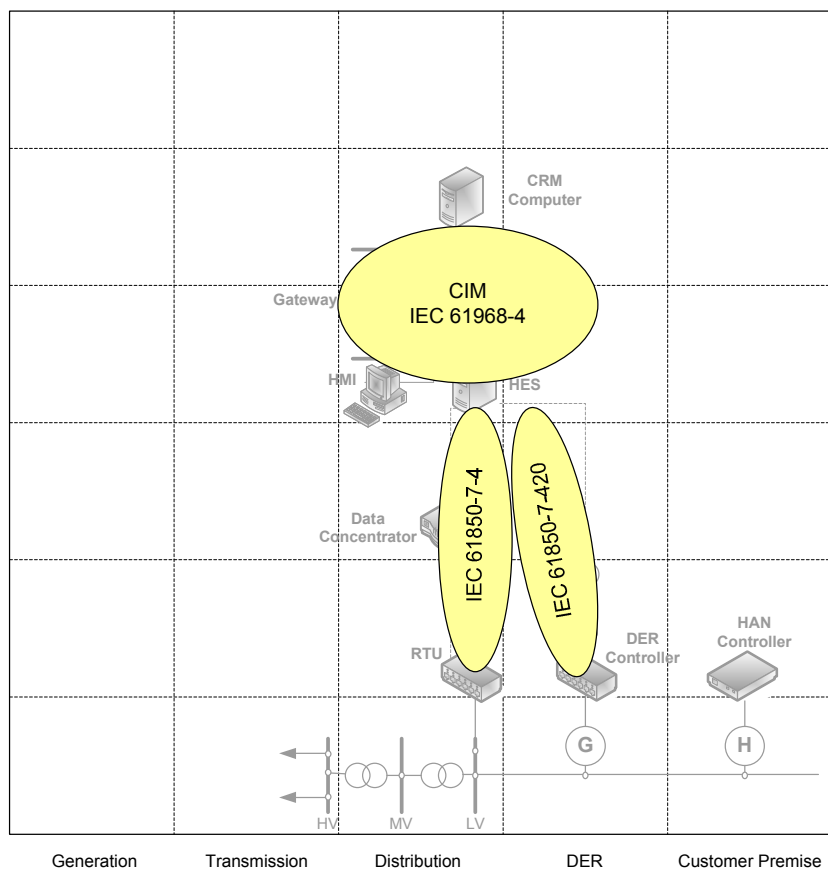


source: SG-CG

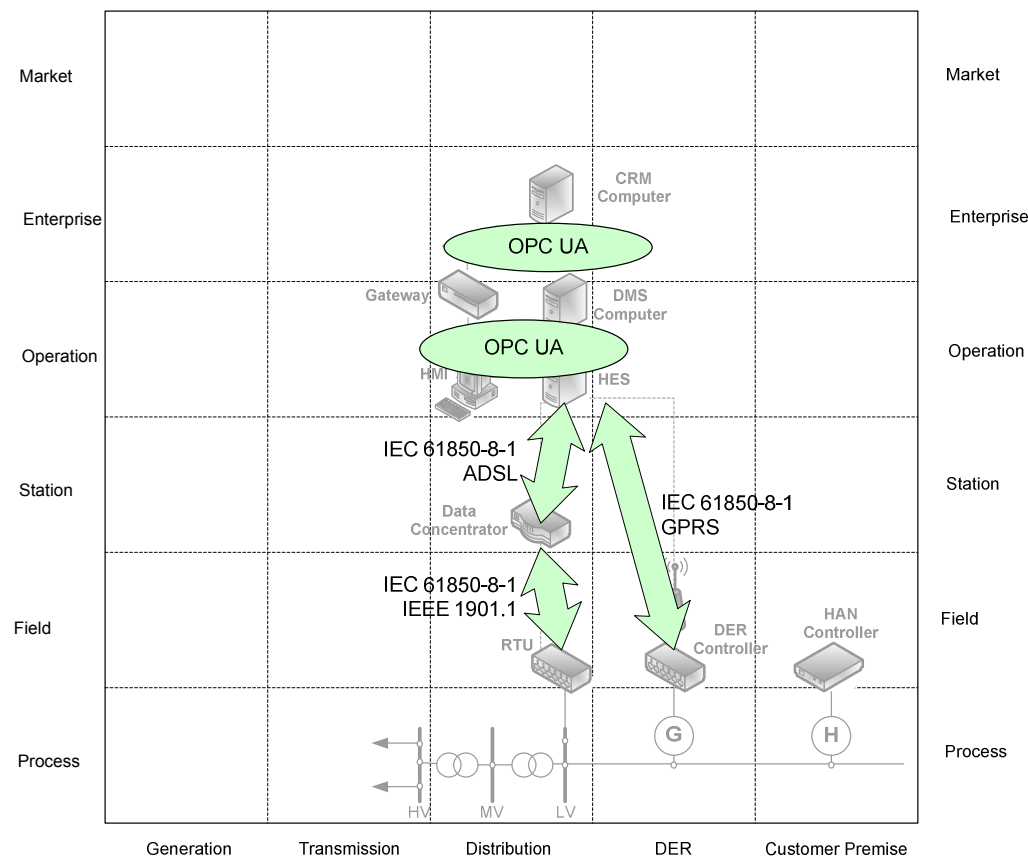
SGAM Layers



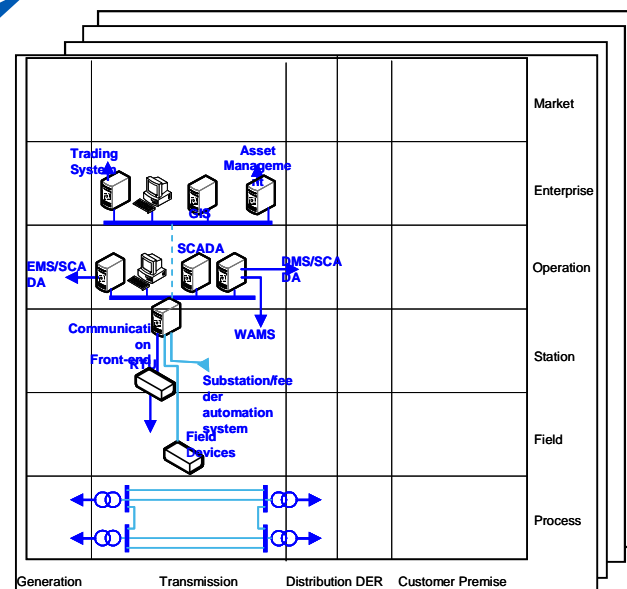
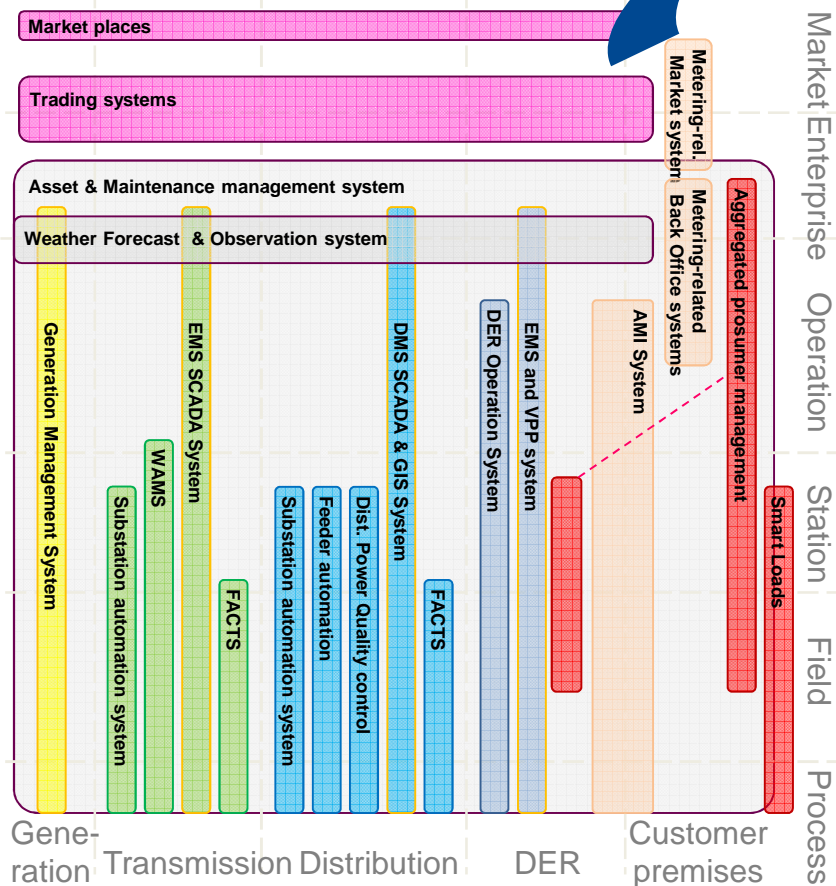
source: SG-CG



source: SG-CG



Mapping of Systems on SGAM



Reference
Architecture
of each
system

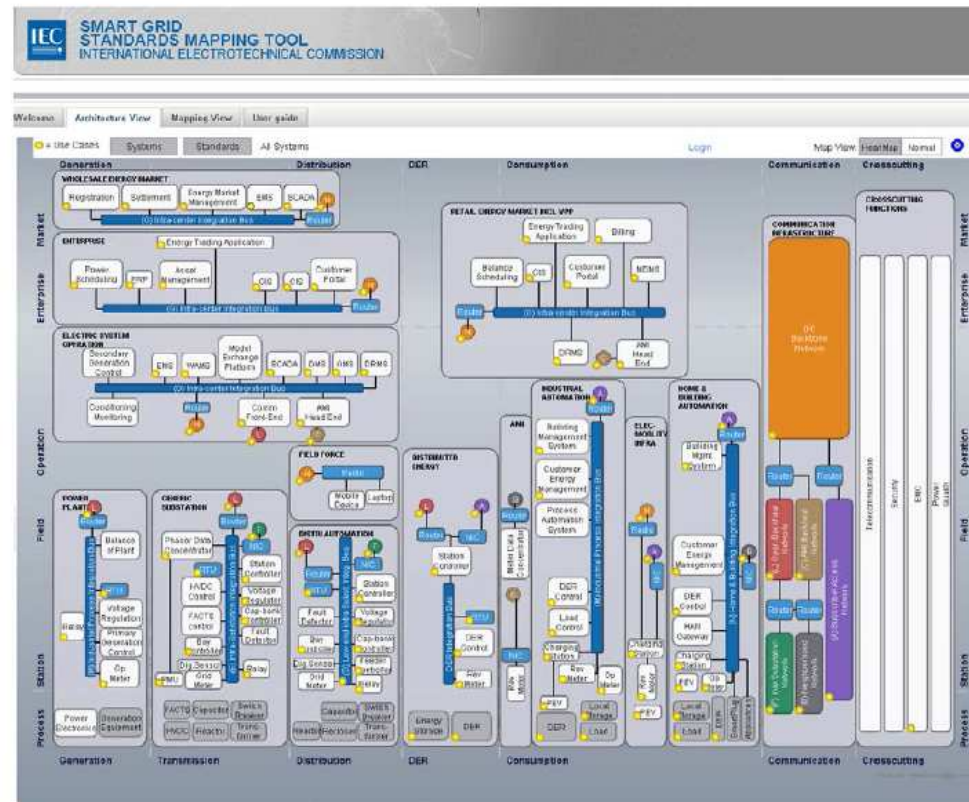
source: SG-CG

Layer	Standard	Comments
Information	EN 61970-1	Energy management system Application Program Interface
	EN 61970-2	
	EN 61970-301	
	EN 61970-401	
	EN 61970-453	
Communication	EN 61970-501	Framework market communication
	IEC/TR 62325	
	EN 60870-5-101	
Communication	EN 60870-5-104	Telecontrol protocols
	EN 60870-6	
	IEC/EN 61850 (all parts)	
Information	IEC 62351	See substation automation system in 8.3.1
Information (guidelines)	IEC 62357	Security - all parts
	IEC 62357	Reference architecture power system information exchange
Information	IEC 62361	Harmonization of quality codes

En un campo de actuación muy extenso y con el detalle necesario, siempre coordinado internacionalmente.

Mapping chart

- IEC has devopped an interactive web tool to make standard selection easier



- SG-CG is considering this tool for “profiling” the European set of standards

Con resultados ya alcanzados y un programa que se cumple a final de este año.

Achievements and Next Steps

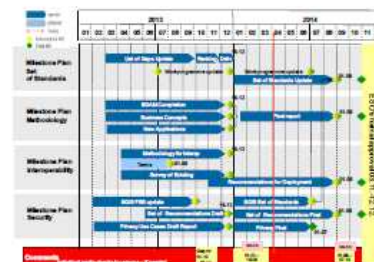


General Achievements

- On time
(All Work packages on time)
- Quality
(wide acceptance of results, e.g. best practice ICT Rolling plan exclusively refers to SG-CG work, no additional actions necessary)
- International acknowledgement
(results used and referred to by e.g. IEC, NIST, Japan etc.)

Next Steps

- Finalization of reports
(Deadline 01.09.14; final approval end of 2014)
(Update of Set of Standards; Prioritization of Assessment and Testing needs)
- Dissemination of Results
(Qualitative Assessment, Workshops on SG-CG results, Proposal for EC conference beginning of 2015)



Para cada equipo y cada función se conocerán las normas disponibles y las que deben desarrollarse dentro de la prioridad a establecer.

SG-CG key messages for discussion

- **System Approach** for standardization developed
 - **Set of standards as selection guide** provided
 - Not only a list of standards -> **guidance** by means of SGAM and system breakdown
 - Not only CEN, CENELEC or ETSI standards considered
 - Ranking of standards: EN, IEC/ISO/ITU, consortia specifications e.g. IEEE, IETF, W3C
 - Set of standards contains approx 70% - 80% ICT standards
 - SG-CG represents not only Technical Committees but all relevant European associations (stakeholders of various sectors) in this field: ENTSO-E, Eurelectric, Digitaleurope, T&D Europe, ... and others
 - **Consensus and cooperation between ETSI and CEN/CENELEC** in the SG-CG can be seen as best-practice example.
 - **Worldwide influence of the SG-CG**

With the M/490 mandate and the work of SG-CG, Europe caught up the already existing discussions on international and national level, and took partly the leadership in the worldwide development of Smart Grid standardization (SGAM, set of standards approach, use cases, ... -> e.g. mapping tool of IEC).
- ⇒ **Rolling plan acknowledges** the work done and under preparation by the SG-CG.
- Rolling Plan for ICT Standardisation, 05/12/2013, page 62
(6.2) Proposed other activities around standardisation
[No other activities required.](#)
- ⇒ We already have today a lot of smart grids standardization activities
-> **Crystallization points**
- SG-CG on European level is the crystallization point on European level and
 - IEC on international level (in agreement with ISO and ITU)



- Thank you for your attention