

**Presentation to TC 57 WG 10,
Power system IED communication
and associated data models,
IEC Central Office,
Geneva, Switzerland,
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IEC TC 57 WG 10 meeting 2017-02, Geneva

IEC Central Office
welcomes
all members of
TC 57 WG 10
in Geneva and
extends its
**best wishes for a
successful meeting**



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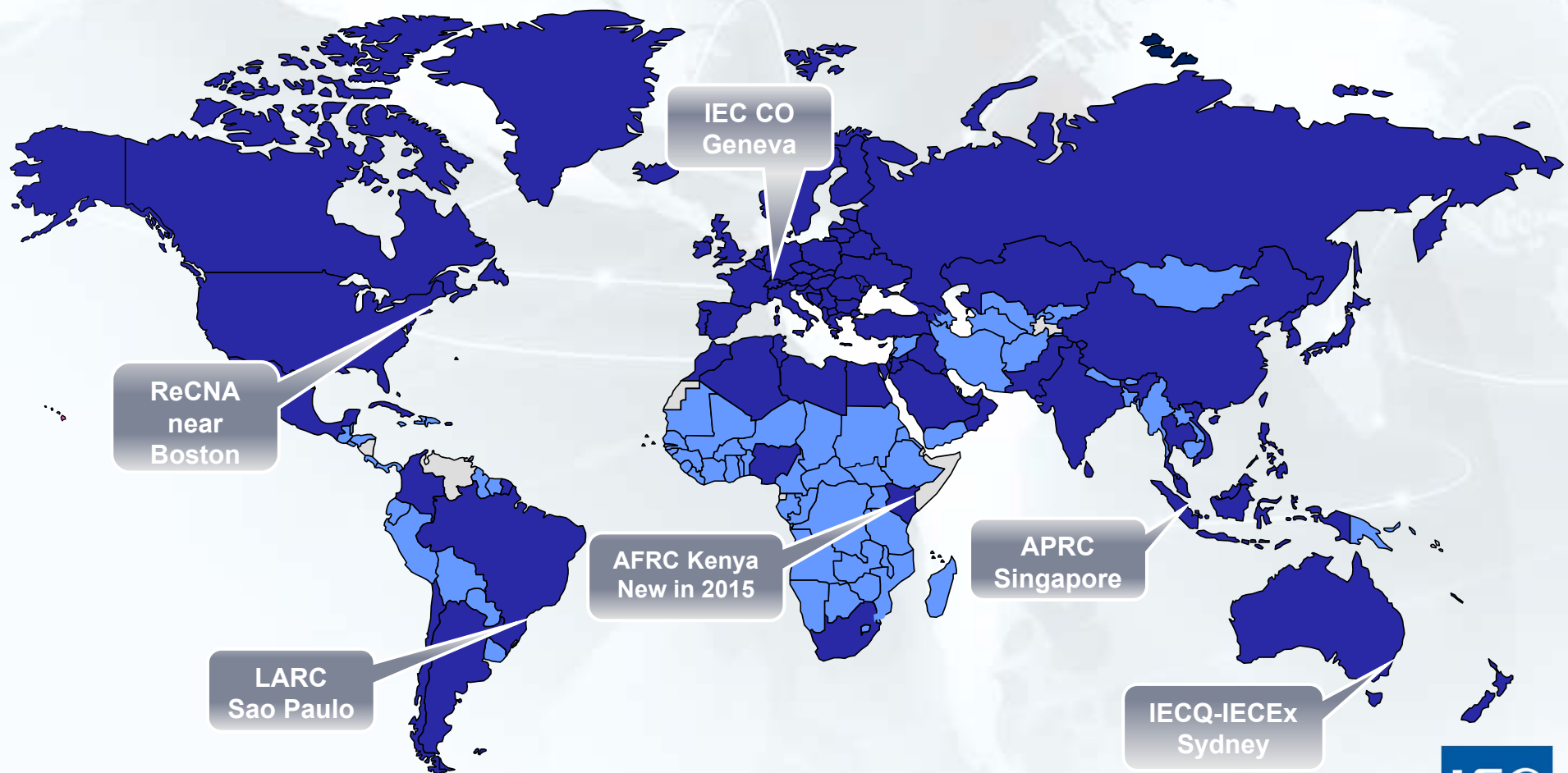
Information on IEC

- The International Electrotechnical Commission (IEC) is the leading global organization that develops and publishes **consensus-based International Standards** and manages conformity assessment systems for electric and electronic products, systems and services, collectively known as electrotechnology
- International standards **facilitate international trade**
- The IEC is **one of three global sister organizations (IEC, ISO, ITU)** that develop International Standards
- Founded in **1906**
- IEC provides a **platform to companies, industries and governments** for meeting, discussing and developing the International Standards they require

IEC Family: 171 countries

84 Members

87 Affiliates



The IEC in figures (2017-02)

- 102 technical committees and 77 subcommittees
- 543 working groups, 249 project teams, 596 maintenance teams, **approximately 15 000 experts**
- Total number of publications (2015-12-31): 6895 (including 6148 international standards)
- Number of publications issued in 2015: 564 (including 480 international standards)
- Average development time for IEC publications in 2015: 32 months

IEC Technical Committee 57

- Set up in 1964 under the title “Line traps”
- Current title: “Power systems management and associated information exchange”
- IEC TC 57 has come a long way since its creation in 1964, under the title “Line traps”, to its current position as one of the most visible IEC TCs, under the title “Power systems management and associated information exchange”
- Number of valid publications (IEC IS, TS, TR): 166
- Number of active projects in the programme of work, including PWIs (Preliminary Work Items): 65

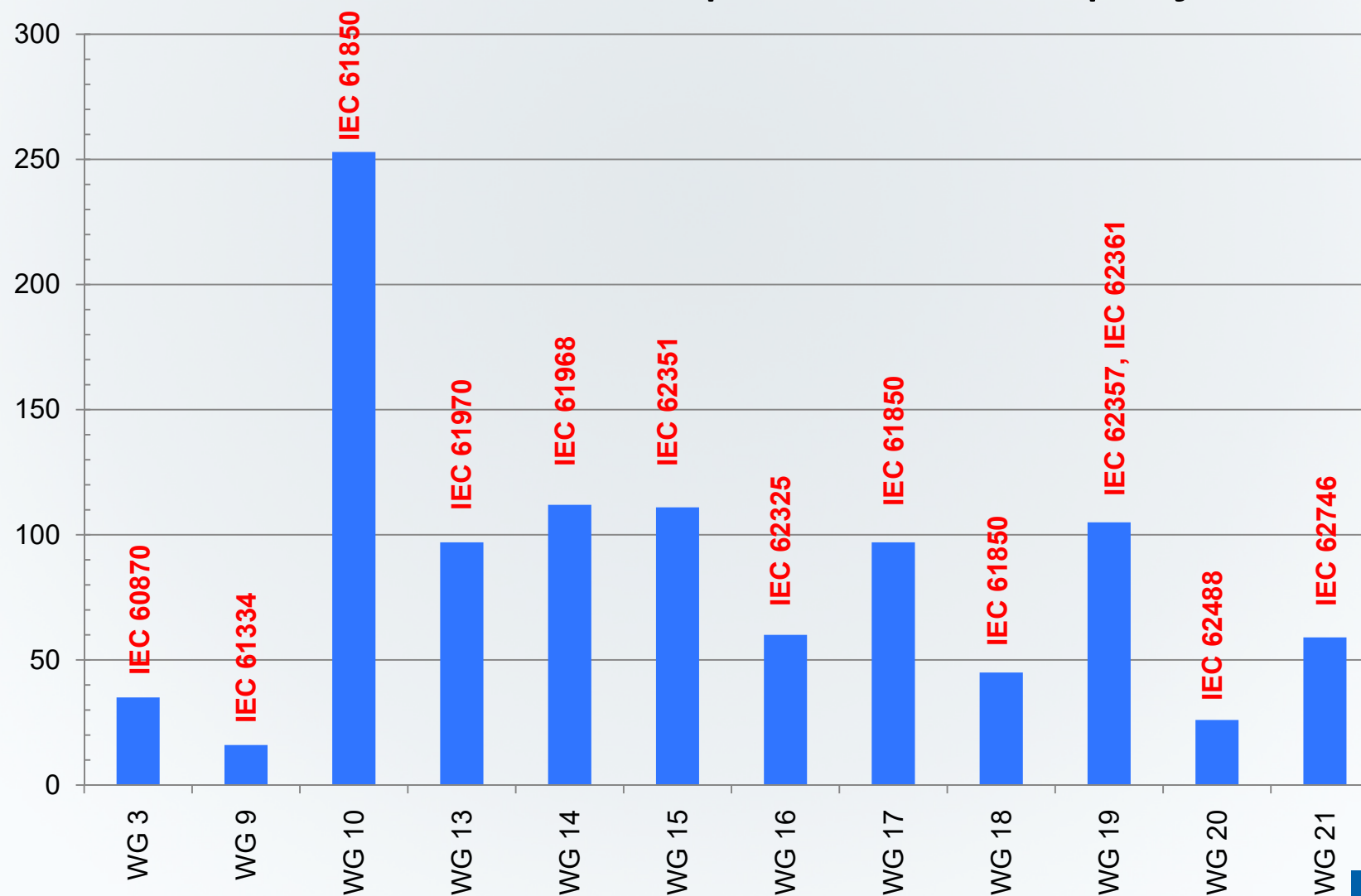
Most important TC 57 publications (short titles) (status 2017-02) (1/2)

- IEC 60870, Telecontrol protocols
- IEC 61334, Distribution automation using distribution line carrier systems
- IEC 61850, Communication networks and systems for power utility automation
- IEC 61968, Application integration at electric utilities
- IEC 61970, Energy management system application program interface (EMS-API)

Most important TC 57 publications (short titles) (status 2017-02) (2/2)

- IEC 62325, Framework for energy market communications
- IEC 62351, Data and communications security for power systems management
- IEC 62357, Reference architecture
- IEC 62361, Interoperability in the long term
- IEC 62488, Power line communication systems
- IEC 62746, Systems interface between customer energy management system and the power management system

TC 57 Working Groups: Sizes and associated publications / projects



Sizes of the 10 largest WGs in IEC



Milestones in the work of TC 57 WG 10 (1/4)

WGs 10, 11 and 12 were set up in 1995 following approval of 3 NWIPs:

- **WG 10**: Communication standards for substations: Functional architecture and general requirements
- **WG 11**: Communication standards for substations: Communications within and between unit and substation levels
- **WG 12**: Communication standards for substations: Communication within and between process and unit levels

Original title of IEC 61850 series: “**Communication networks and systems in substations**”

Milestones in the work of TC 57 WG 10 (2/4)

Decision to create WGs 10, 11, and 12 taken at the **TC 57 plenary meeting in Minneapolis, USA, in May 1995.**

See 57/275/RM.

XII. Report on Status of work of AHWG “Substation Control and Protection Interfaces”

The convenor, Mr. Speh, gave a detailed presentation of the work done by the AHWG. He explained the framework of the whole task on communication in substations and the concept which has been worked out by the AHWG.

Four NP's were circulated to the National Committees for voting by May 31, 1995. Assuming the proposals will be approved, the Committee discussed the possible next steps.

The following decisions were made: three new working groups will be set up to deal with 57/210, 57/211 and 57/212, respectively. There was a clear majority for this decision. The Secretary will circulate a call to the National Committees for members joining the working groups. The convenors of the three working groups will be Mr. Dinges, Mr. Harmon and Mr. Jaussi, respectively.

Milestones in the work of TC 57 WG 10 (3/4)

**First standard
published** in the
IEC 61850 series:
IEC 61850-3
issued in 2002-01-16

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
61850-3

Première édition
First edition
2002-01

Réseaux et systèmes de communication
dans les postes –

Partie 3:
Prescriptions générales

Communication networks and systems
in substations –

Part 3:
General requirements

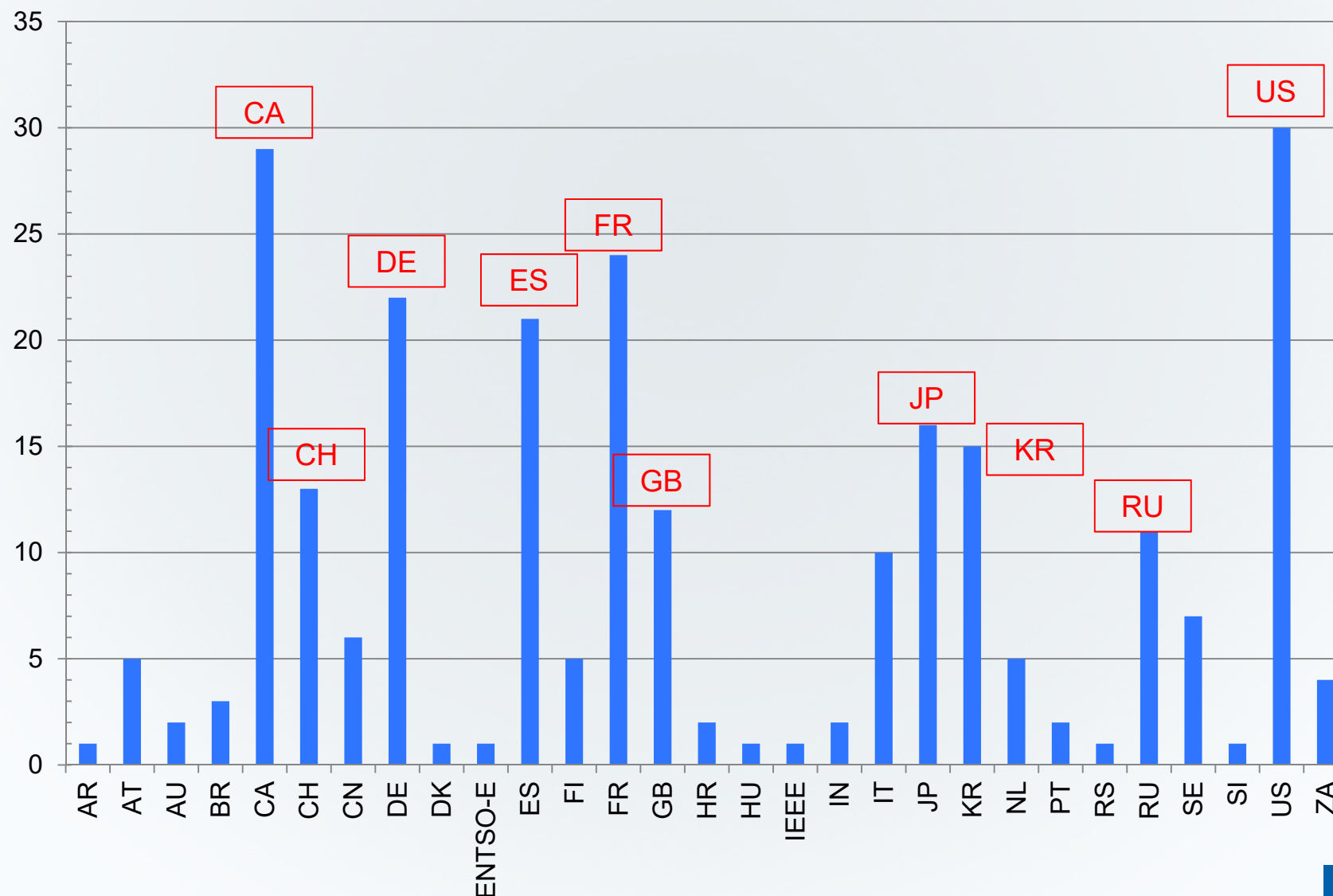


Numéro de référence
Reference number
CEI/IEC 61850-3:2002

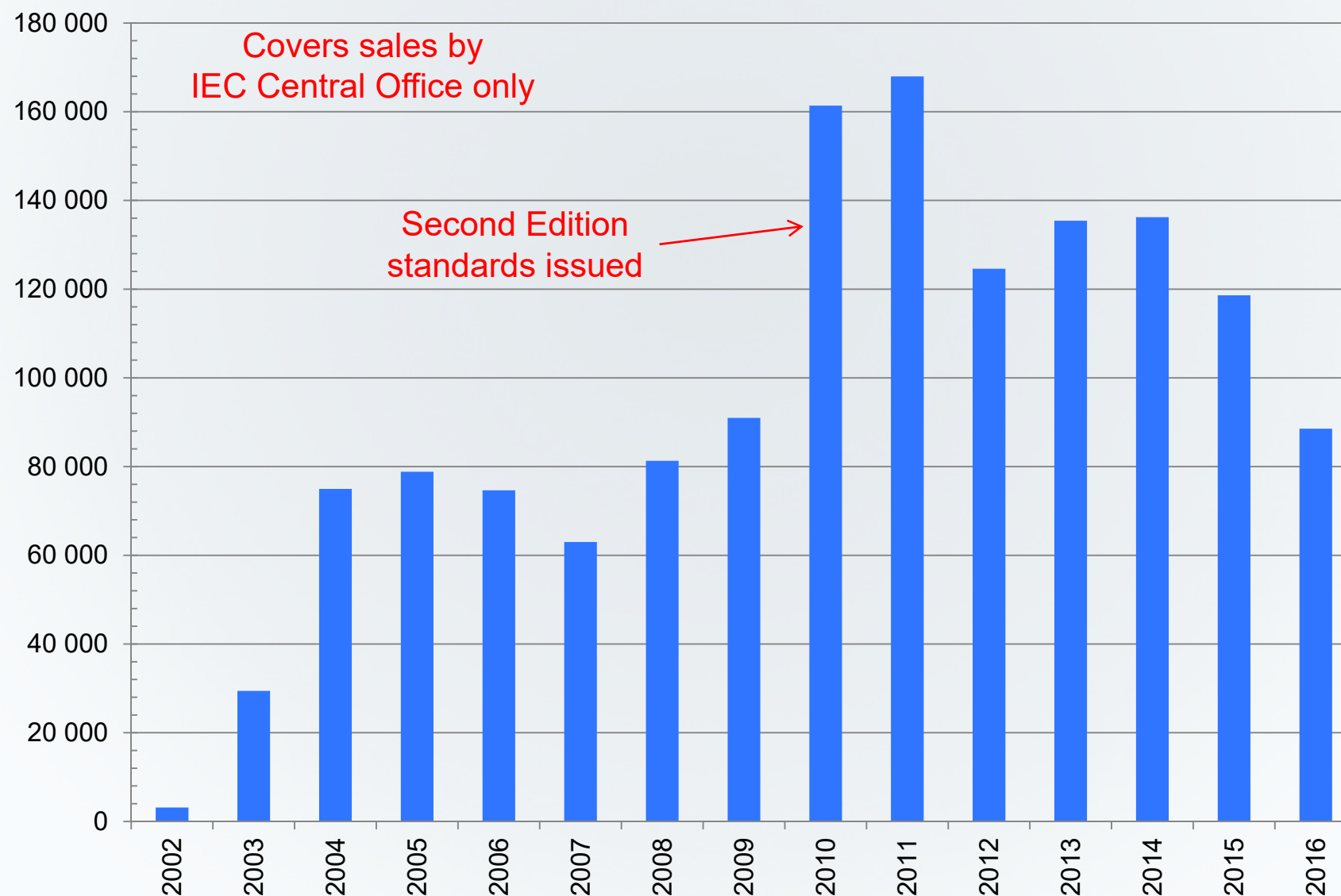
Milestones in the work of TC 57 WG 10 (4/4)

- WGs 11 and 12 were disbanded in December 2003 and their activities transferred to WG 10 with an **extended title, task and membership**
- **New title of WG 10:** Power system IED communication and associated data models
- Convenor of WG 10: Mr. Christoph Brunner (CH)
- **New title of IEC 61850 series** (“Edition 2” standards): “Communication networks and systems for power utility automation”

Number of experts in TC 57 WG 10 per NC



Sales figures of IEC 61850 standards (CHF)



Principles to be observed in the development of international standards (according to WTO)

Principles laid down by WTO (World Trade Organization) and followed by IEC, ISO and ITU:

- Observe
 1. Transparency
 2. Openness
 3. Impartiality and consensus
 4. Efficiency and relevance
 5. Coherence
- Address the concerns of developing countries
- Reference: Document [G/TBT/1/Rev.10](#), 9 June 2011 (11-2857) of WTO

IEC and ISO standards are based on consensus

- **Consensus: essential procedural principle and a necessary** condition for the preparation of International Standards that will be internationally accepted and used
- **Definition of consensus** (see ISO/IEC Guide 2)
"consensus: General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments.
NOTE Consensus need not imply unanimity."
- In IEC (and ISO) consensus development takes place at **multiple levels**: at WG level, at NC level, at TC level, etc.



Thank you for your attention!

Any questions?

Questions also to cj@iec.ch

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BACKUP

Principles for the development of international standards (excerpts from WTO decisions)

1. Transparency

“All **essential information regarding current work programmes**, as well as on proposals for standards, guides and recommendations under consideration and on the final results should be made **easily accessible to at least all interested parties**.” “Procedures should be established so that **adequate time and opportunities are provided for written comments**.”

2. Openness

“Membership of an international standardizing body should be open **on a non-discriminatory basis** to relevant bodies of at least all WTO Members. This would include openness without discrimination with respect to the **participation at the policy development level and at every stage of standards development**.”

Principles for the development of international standards (excerpts from WTO decisions)

3. Impartiality and consensus

“All relevant bodies of WTO Members should be provided with meaningful opportunities to contribute to the elaboration of an international standard so that the **standard development process will not give privilege to, or favour the interests of, a particular supplier/s, country/ies or region/s. Consensus procedures** should be established that seek to take into account the views of all parties concerned and to reconcile any conflicting arguments.”

4. Efficiency and relevance

“International standards need **to be relevant and to effectively respond to regulatory and market needs, as well as scientific and technological developments** in various countries. They **should not distort the global market, have adverse effects on fair competition**, or stifle innovation and technological development.”

Principles for the development of international standards (excerpts from WTO decisions)

4. Efficiency and relevance (cont.)

“In addition, they **should not give preference to the characteristics or requirements of specific countries or regions** when different needs or interests exist in other countries or regions. Whenever possible, international standards should be **performance based** rather than based on design or descriptive characteristics.”

5. Coherence

“In order to avoid the development of conflicting international standards, it is important that international standardizing bodies **avoid duplication of, or overlap with, the work of other international standardizing bodies**. In this respect, cooperation and coordination with other relevant international bodies is essential.”