



IEC/TC OR SC:	SECRETARIAT:	DATE:
81	ITALY	2016/11/30

Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

### A. STATE TITLE AND SCOPE OF TC

Title of TC: Lightning protection

#### Scope

To prepare international standards and guides for lightning protection for structures, as well for persons, installations, services and contents.

The objective of the standards will be:

- To develop requirements for design and installation of Lightning Protection Systems for structures,
- To develop requirements for design and installation of Surge Protection Measures for structures as they relate to protection from lightning effects,
- To develop basic requirements for protection against electromagnetic effects due to lightning,
- To give general guidance to IEC member countries that may have need of such requirements and
- To facilitate international exchanges that may be hampered by differences in national regulations.

### B. MANAGEMENT STRUCTURE OF THE TC

#### Working Groups:

- WG 11 To prepare IEC 62561 series
- WG 18 Application guide of IEC 62305-3, Ed 3

#### Maintenance Teams:

- MT 3 Maintenance of IEC 62305-4
- MT 8 Maintenance of IEC 62305-1 and -3
- MT 9 Maintenance of IEC 62305-2
- MT 14 Maintenance of IEC 62561-1, -2, -3 and -4
- MT 16 Maintenance of IEC 62858
- MT 17 Maintenance of IEC 62793

#### Ad-Hoc Group:

- AHG 19 Conformity assessment in the field of lightning protection

### **C. BUSINESS ENVIRONMENT**

The international trade in lightning protection measures integrated in plants or buildings is of increasing importance: more than 1.2 billion USD (3/4 of them in SPD), worldwide are estimated today. Consequential losses, where suitable protection measures are not provided, is some order of magnitude higher.

The business environment is affected by the worldwide economy as well as the availability of the worldwide market to the industry which is directly influenced by the acceptance of international standards developed by TC 81.

### **D. MARKET DEMAND**

The market of LPS system and components continues its movement from a national & regional market to a global market having three dominant segments - North America, Europe, and Asia-Pacific. The South American market is also emerging as a user of international Lightning Protection standards. This globalization creates a greater demand for harmonized national standards on components with quality conformance assessment and has supported the trend towards international standards.

The customers include, but are not limited to designers, installers, manufacturers, consumers, engineering companies, manufacturers, consultants, authorities having jurisdiction, academia, and other Technical Committees (TCs and SCs) in IEC. There is a demand from other TCs such as SC 37A, TC 64, TC 82, SC 86A, TC 88, TC 100 for a guide on the best way to include the requirements of the TC 81 standards into other standards.

Many of the standards produced by the TC 81 become European (EN) standards and are referenced from other EN standards that are harmonized with European directives. The IEC standards are used by several extra-European countries while the European countries prefer to adopt the IEC standards only once approved as CENELEC standards.

### **E. TRENDS IN TECHNOLOGY AND IN THE MARKET**

It is not foreseen that there will be an important impact of technological innovation in the near future work of TC 81.

External lightning protection systems are ultimately validated by empirical experience. Scientific research reported at peer-reviewed technical conferences is increasing the knowledge in many aspects of lightning protection such as protection models, lightning attachment mechanisms, earth ionization physics, and lightning location and warning statistics. TC 81 encourages the International Scientific Community as well as the Industry, to continue investigating and innovating in the lightning protection field.

Trends in technology are resulting in more sensitive electronic equipment in structures. Smart structures not only include residences but with the development of the Industrial Internet of Things it is making its way into the manufacturing processes and smart offices. Green buildings and LEED certification are also driving the design of lighting and heating control techniques that process internal sensors in determining the most economical solution. This results in an increase in the use of embedded computers being installed in more and more electrotechnical equipment, resulting in greater lightning sensitivity. This trend demands that TC 81 develop standards that address this increased sensitivity to lightning effects.

With the increase in cellular communications and wireless technologies, an increasing number of tall structures are installing towers on the roof and renting roof space for transmitters. This trend is increasing the demand for improved lightning protection methods to be considered such as the use of isolating materials.

A future trend that needs to be nurtured is to develop techniques by which lightning vulnerabilities can be better tracked. This would involve gaining access to incident data bases such as those that may be available from the insurance industry, authorities having jurisdiction, and industry representatives. This information is necessary in future evolutions of lightning risk assessments in the Risk Management standard.

Along with a trend toward an increasing need for improved product testing requirements for the LPS components manufacturers, a recent trend in many markets, (notably North America and Europe) is looking to Thunderstorm Warning Systems as an effective tool to reduce exposure to lightning risks..

**F. SYSTEMS APPROACH ASPECTS (REFERENCE - AC/33/2013)**

TC 81 will actively continue to promote the establishment of liaisons to other committees;

cooperation with system committees is still in our focus.

<b>TC 81 as a customer of standards</b>	SC 37A	Low-voltage surge protective devices
<b>TC 81 as a customer/supplier of standards</b>	TC 64	Electrical installations and protection against electric shock
<b>TC 81 as a supplier of standards</b>	TC 82	Solar photovoltaic energy systems
	TC 86A	Fibre optics-Fibres and cables
	TC 88	Wind turbines
	TC 100	Audio, video and multimedia systems and equipment

Cooperation established:

- Exchange documents, e.g. AJWG/SC 37A, TC 64, SC 86A, IEEE/SPDC MT3
- Liaison officers, experts participating in product/system committees, e.g. TC 64, SC 37A.
- Experts working in other organisation and reporting to TC 81 for information, e.g. ITU-T, CENELEC

**G. CONFORMITY ASSESSMENT**

A presentation on the IEC Conformity Assessment program was received from the Secretary of IECEx as a part of the 2016 IEC TC 81 plenary meeting. An Ad Hoc Group was formed to study the need for a Conformity Assessment program for component certification standards and the Certification of Personnel Competency.

The Ad Hoc Group will report its findings at the next plenary meeting.

**H. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES**

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS
1. To expand the use and knowledge of TC 81's publications in those countries not having conflicting or no standards	To consider ways to promoting TC 81 standards to NCs and industry through workshops, presentation at international conferences and trade shows under the IEC logo.	Ongoing, starting from issue of IEC 62305, Ed.2.
2. Keep TC 81 standards up to date to reflect user requirements both in the marketplace and customer IEC and ISO Technical committees.	Identify & review standards developed by sister committees to incorporate their best practices into TC 81 documents.	Ongoing taking in consideration the stability date of standards.
3. Develop a complete "System standards" by preparing an updated Edition of IEC 62305 series covering system aspects of lightning protection of structures.	MT 3, MT 8 and MT 9 are charged with the development of IEC 62305, Ed.2. To continue to attract more expert from lightning protection to increase to pool of knowledge.	Time frame indicated by the Maintenance Cycle.
4. Develop a set of "Product standards" by preparing an updated Edition of IEC 62561 series covering the requirements for components of lightning protection systems	MT 14, MT15 and WG 11 are charged with the development of IEC 62561, Ed.1.  A greater participation of experts outside of the EU will be encouraged.	Time frame indicated by the Maintenance Cycle.
5. Develop standards on "Ancillary Protection Measures" by preparing an updated Edition of IEC 62793 " Thunderstorm Warning System" and IEC 62858 "Lightning Location Systems"	MT 12 is charged with the development of IEC 62858, Ed.1. and MT 13 is charged with the development of IEC 62793, Ed.1.  A greater participation of experts outside of the EU will be encouraged.	Time frame indicated by the Maintenance Cycle.