



IEC/TC or SC 97	Secretariat SPAIN	Date 2006-09-15
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Title of TC Electrical installations for lighting and beaconing of aerodromes
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A. Background

TC 97 was established in 1994 evolving from standardisation work in a CENELEC task force (BTTF 72-3).

- First meeting 1995, September 13/14 in London.
- Second meeting 1998, March 2/4 in Kista.
- Third meeting 2000, March 29/30 in New York.
- Fourth meeting 2002, January 29/30 in Madrid.
- Fifth meeting 2006, June 15/16 in Rome.

Scope

To prepare international standards for the design, installation, operation and maintenance of aeronautical ground lighting of aerodromes.

The activity covers requirements which apply to the whole system from the incoming power to the aerodrome up to and including the luminaires used in aeronautical ground lighting.

The activity will not cover:

- electrical installations already standardised by TC 64;
- luminaires not used as aeronautical ground lights standardised by TC34;
- special cables for the constant current series circuit standardised by TC20.

NOTE: Operational requirements for aeronautical ground lights are specified in Annex 14 to the Convention on International Civil Aviation (Volume I, Aerodrome Design and Operations).

Projects in development: To be decided.

List of working groups and project teams: To be created.

List of P-members of the committee:

Belgium	Canada	China	Denmark
Finland	France	Germany	Italy
Japan	Korea (Republic of)	Norway	Spain
Sweden	Switzerland	United Kingdom	

List of O-members of the committee:

Australia	Czech Republic	Netherlands	Poland
Portugal	Singapore	South Africa	Ukraine

Liaisons with the following IEC TCs: TC1, TC20, TC23, TC34, TC64, TC77, TC96, TC99

Liaisons with international organisations: CIE, ACI and ICAO.

<p>B. Environment</p> <p>B.1 Business environment</p> <p>Although various forms of ownership may exist, aerodromes are commonly considered as belonging to the public sector. Civil Aviation Authorities are the regulatory bodies.</p> <p>Standards and Recommended Practices (SARPs) applicable to the design and operation of aerodromes are published in Annex 14 to the Convention on International Civil Aviation (Chicago 1944). SARPs are adopted by the Council of ICAO pursuant to Article 37 of the Convention. SARPs are specifications, which are recognised as necessary or desirable in the interest of safety, regularity or efficiency of international air navigation. Signatories to the Convention have an obligation to conform to the SARPs as far as practicable. SARPs are addressing operational and performance requirements but do not include technical requirements on electrical systems.</p> <p>Aerodrome lighting systems are characterised by several light units spread out over a relatively large area. In most cases the most cost-effective system design is achieved by the use of current controlled circuits (series system) instead of the voltage controlled circuits used in installations covered by standards prepared by TC 64. Existing standards for series circuit products are industry (de facto) standards and a few national standards. A widely used set of standards covering series circuits is that published within the family of Advisory Circulars by the Federal Aviation Administration of the USA (FAA).</p> <p>TC 97 is doing a pioneering work by preparing International Standards for series circuit systems.</p>
<p>B.2 Market demand</p> <p>Anticipated users of the standards prepared by TC 97 are electrical engineers involved in systems design, procurement of equipment and construction of aerodrome lighting systems, and the industry supplying equipment for such systems. Testing and certification institutions are also expected users of the standards. In addition, TC 97 is expecting that standards on installation and maintenance of the constant current series circuits will be used by the regulatory bodies as reference material. ICAO is a liaison organisation to TC 97. A more active representation in the structure of TC 97 would, however, be desirable. ICAO has invited TC 97 to participate in a project with the task of providing guidance material for the application of Annex 14 SARPs relating to aerodrome electrical systems. A lack of familiarity with IEC Standards in aviation circles has been observed.</p> <p>No competing standards on international level have been identified.</p> <p>All standards in preparation by TC 97 are genuine new standards. No significant problems with the application of horizontal standards have been identified by TC97.</p>
<p>B.3 Trends in technology and trade</p> <p>The technologies used in aerodrome lighting systems are in a rapidly developing stage. It is expected that new, more efficient light sources (e.g. LEDs) will become commercially available in the future and new, more demanding operational requirements will result in a need for new, sophisticated control and monitoring systems.</p> <p>The requirement to maintain the aerodrome movement rate under all local weather conditions within a specified visibility minimum whilst maintaining the required level of safety, implies the provision of an Advanced Surface Movement Guidance and Control System - A-SMGCS. An advanced visual aids system is a fundamental element of an A-SMGCS. It is expected that new products will evolve from the development of such visual aids systems.</p>
<p>B.4 Ecological environment</p> <p>The same considerations as for electrical installations in general apply to electrical installations of aerodromes.</p>

<p>C. Work programme</p> <p>C.1 Current work</p> <p>See programme of work</p>
<p>C.2 Resources/infrastructure needed</p> <p>Invitations for future meetings every second year are welcome.</p> <p>Administrative support of convenors and project leaders is welcome.</p>

D. Future work

Future work items have been classified by the TC according to their allocated priorities.

- Class I (highest priority items):
 - IEC 61820 Ed.1 to cover urgently needed system requirements for the constant current series circuit,
 - IEC 61824 on Flashing lights,
 - IEC 62144 on Control and monitoring systems,
 - IEC 62294 on Connecting devices,
 - IEC 6XXXX on Mounting interfaces,
 - IEC 6XXXX on Visual docking systems,
 - IEC 6XXXX on light sources other than incandescent lamps.
- Class II (high priority items): Void
- Class III (low priority items):
 - Taxiing guidance signs and PAPI.

In the long-term view the committee needs to find means to meet the market needs in a more efficient way. More complete preliminary drafts are desirable and a closer co-operation with other TCs should be established. Recruitment of new experts may be needed in particular areas.

There is also a market need for work in the area of **power quality** requirements for aerodrome electrical systems.

In addition, the Committee has identified a need for work on the special **terminology** used in its technical area.

E. Maintenance cycle

Publication no.	Date of publication	Review date	Maintenance result date	Responsibility (Maintenance Team)
IEC 61821	2002-03-12		2008	
IEC 61822	2002-06-21		2008	
IEC/TS 62143	2002-07-05		2008	
IEC 61823	2002-12-13		2008	
IEC/TS 61827	2004-05-14		2008	

Name or signature of the secretary

J. LÓPEZ (on behalf of Mrs. C. MARTÍN)