



# SLOVENSKI STANDARD

## SIST ENV 50230:2002

01-september-2002

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### Aeronautical ground lighting electrical installation - Control and monitoring systems: General requirements

Aeronautical ground lighting electrical installation - Control and monitoring systems:  
General requirements

Elektrische Flugplatzbefeuerungsanlagen - Steuerungs- und Überwachungssysteme -  
Allgemeine Anforderungen

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Ta slovenski standard je istoveten z: **ENV 50230:1997**

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#### **ICS:**

29.140.50	Instalacijski sistemi za razsvetljavo	Lighting installation systems
93.120	Gradnja letališč	Construction of airports

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EUROPEAN PRESTANDARD  
PRÉNORME EUROPÉENNE  
EUROPÄISCHE VORNORM

**ENV 50230**

February 1997

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ICS 93.120

Descriptors: Electrical installation, lighting, monitoring equipment, control equipment, aerodrome, requirement, performance, function

English version

**Aeronautical ground lighting electrical installation  
Control and monitoring systems: General requirements**

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CENELEC members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

## Foreword

This European Prestandard was prepared by the CENELEC BTTF 72-3, Lighting fittings for aerodromes.

The text of the draft was submitted to the CENELEC questionnaire and vote and was approved as ENV 50230 on 1996-07-02.

The following date was fixed:

- latest date by which the existence of the ENV  
has to be announced at national level (doa) 1996-12-01

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## Introduction

The International Civil Aviation Organization (ICAO) in its Annex 14 to the Convention on International Civil Aviation, paragraph 8.2 Electrical Systems and paragraph 8.3 Monitoring, presents provisions, either as international standards or recommended practices, regarding control and monitoring systems for visual aids:

'A system of monitoring visual aids should be employed to ensure lighting system reliability.

Where lighting systems are used for aircraft control purposes, such systems should be monitored automatically so as to provide an immediate indication of any fault which may affect the control function. This information should be automatically relayed to the air traffic service unit.'

And:

'For a precision approach runway, the electrical circuits for the main power supply, lighting and control shall be so designed that the failure of one circuit shall not leave the pilot without visual guidance or shall result in a misleading pattern.'

Different control and monitoring systems of airfield lighting exist nowadays. This is why the need appeared to define their general characteristics or requirements in order to guarantee compatibility between systems.

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## 1 Scope

This prestandard specifies general requirements for control and monitoring system of aviation ground lighting installation.

The purpose of this prestandard is to provide a set of requirements which are applicable to the control and monitoring system of aviation ground lighting installation.

## 2 Normative references

This prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ENV 50231	Aviation ground lighting electrical installation Constant current regulator: Equipment specifications and tests
ICAO	International standards and recommended practices Aerodromes Annex 14 to the Convention on International Civil Aviation, Volume 1 and 2, Aerodrome Design and Operations (Issued by International Civil Aviation Organisation)

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## 3 Definitions

For the purposes of this prestandard the following definitions apply, as well as those given in ICAO Annex 14.

### 3.1 ATC system

Air Traffic Control system is located in the control tower. It provides to the controllers information and help for control and monitoring airfield aerodrome lightings circuits, radionavigation circuits and others.

### 3.2 visual aids system

The visual aid system used for navigation consists of indicators and signalling devices, markings, lights signs and markers on airfield.

### 3.3 CCR

CCR is the Constant Current Regulator. It is used to provide a constant current in aerodrome lighting circuits.

### 3.4 RVR

The Runway Visual Range is the range over which the pilot of an aircraft on the centerline of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

### 3.5 Instrument runway CAT I, II and III

Classifications of the runways intended for the operation of aircraft using instrument approach procedures.

Category I,II III: instrument runway served by radionavigation aids called "ILS and/or MLS" and visual aids intended for operations down to specific limit heights and limit RVR. Category I requires less equipment (visual and radionavigation aids) than Category III.

## 4 General

The control and monitoring system for the airfield lighting system should be considered as a part of the visual aids system, and consequently should be addressed like a component of the ATC system. Therefore design and workmanship of such a system should fulfil the high requirements for availability and fail safe operation. Besides keeping the controller workload in a reasonable level, the system should be a powerful tool for the organisation of preventive maintenance to increase the availability of the airfield lighting system.

There should be a control and monitoring system:

- a) Suitable for every airport complexity and particular needs, and adaptable to changes in the airport physical characteristics (layout, installations, etc.) or in the airport procedures. It means a system designed on a modular basis.
- b) Having a conception inspired by safety, allowing for the redundancy of equipment or elements that prove crucial from a safety point of view.
- c) With a high degree of reliability and availability.
- d) Capable of data exchange with related systems.

These system descriptions contain only the functions and minimum requirements of a control and monitoring system independent from a particular hardware solution. The hardware design of a system should follow the individual needs of an airport and should also be in accordance with the latest state of the technology.



## 5 Overview of the control and monitoring system

Figure 1 shows an overview of the control and monitoring system with the peripherals and interfaces to the related systems.

In the centre of this diagram the control and monitoring system is placed. Around this circle the operators, components and systems are arranged which are linked to the control and monitoring system. The arrows show the direction and also a short description of the data flow.

Possible or necessary links between the peripherals themselves or to other systems are not subject of this description and are not shown in the diagram.

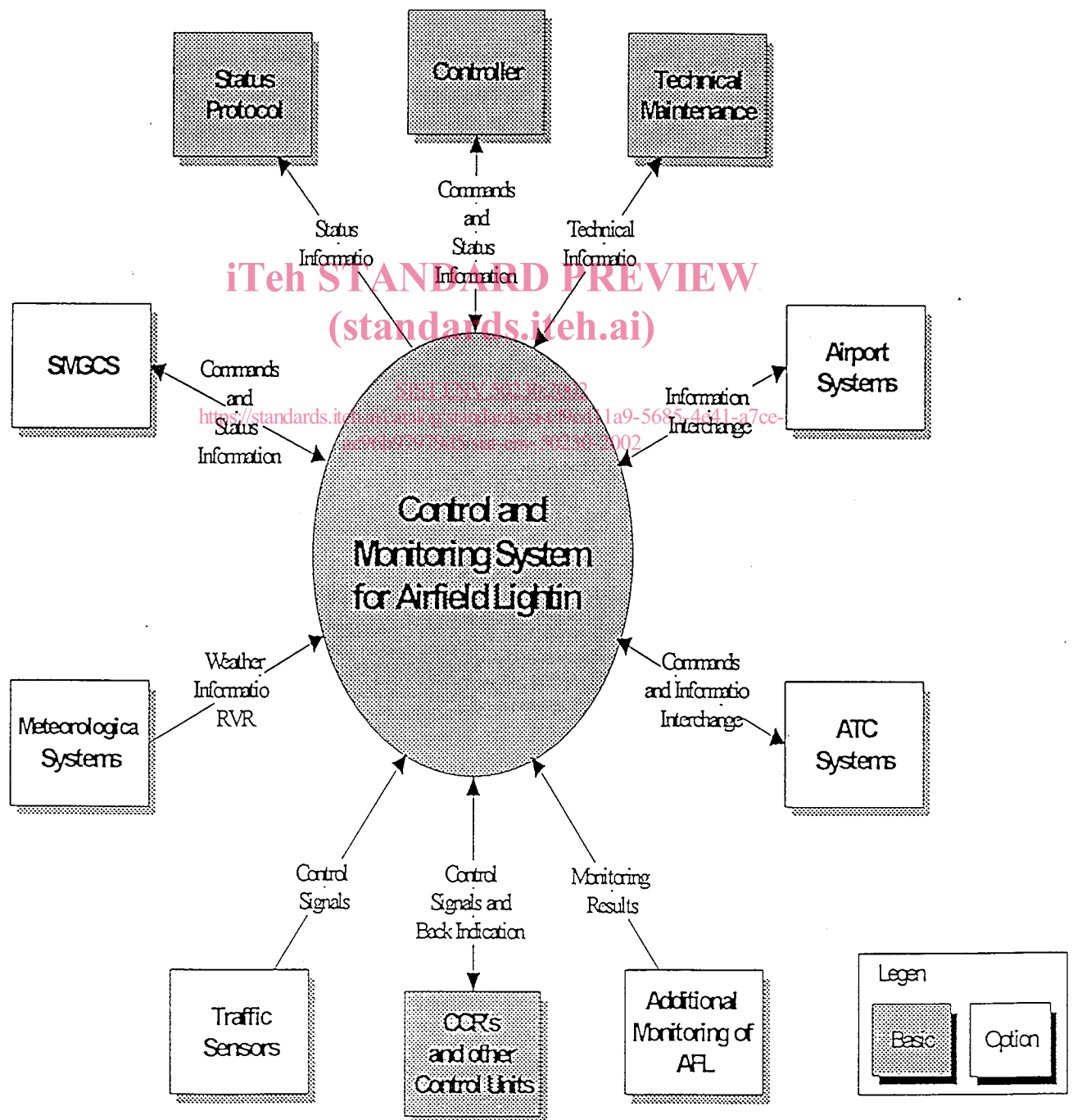


Figure 1: Overview diagram for the control and monitoring system