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Järnvägsanläggningar – Specifikation av tillförlitlighet, funktionssannolikhet, driftsäkerhet, tillgänglighet, underhållsmässighet och säkerhet (RAMS)

Railway specifications –
The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS)

Som svensk standard gäller europastandarden EN 50126:1999. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50126:1999.

ICS 29.280; 45.020

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EUROPEAN STANDARD

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English version

Railway applications - The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS)

Applications ferroviaires - Spécification et démonstration de la fiabilité, de la disponibilité, de la maintenablité et de la sécurité (FDMS)

Bahnanwendungen - Spezifikation und Nachweis der Zuverlässigkeit, Verfügbarkeit, Instandhaltbarkeit, Sicherheit (RAMS)

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

Ref. No. EN 50126:1999 E

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 9X, Electrical and electronic applications in railways.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50126 on 1998-10-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2000-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2000-04-01

Annexes designated “normative” are part of the body of the standard.
Annexes designated “informative” are given for information only.
In this standard, annexes A to E are informative.

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Introduction

This European Standard provides Railway Authorities and the railway support industry, throughout the European Union, with a process which will enable the implementation of a consistent approach to the management of reliability, availability, maintainability and safety, denoted by the acronym RAMS. Processes for the specification and demonstration of RAMS requirements are cornerstones of this standard. This European Standard aims to promote a common understanding and approach to the management of RAMS.

This European Standard can be applied systematically by a railway authority and railway support industry, throughout all phases of the lifecycle of a railway application, to develop railway specific RAMS requirements and to achieve compliance with these requirements. The systems-level approach defined by this European Standard facilitates assessment of the RAMS interactions between elements of complex railway applications.

This European Standard promotes co-operation between a railway authority and railway support industry, within a variety of procurement strategies, in the achievement of an optimal combination of RAMS and cost for railway applications. Adoption of this European Standard will support the principles of the European Single Market and facilitate European railway inter-operability.

The process defined by this European Standard assumes that railway authorities and railway support industry have business-level policies addressing Quality, Performance and Safety. The approach defined in this standard is consistent with the application of quality management requirements contained within the ISO 9000 series of International standards.

1 Scope

1.1 This European Standard:

- defines RAMS in terms of reliability, availability, maintainability and safety and their interaction;
- defines a process, based on the system lifecycle and tasks within it, for managing RAMS;
- enables conflicts between RAMS elements to be controlled and managed effectively;
- defines a systematic process for specifying requirements for RAMS and demonstrating that these requirements are achieved;
- addresses railway specifics;
- does not define RAMS targets, quantities, requirements or solutions for specific railway applications;
- does not specify requirements for ensuring system security;
- does not define rules or processes pertaining to the certification of railway products against the requirements of this standard;
- does not define an approval process by the safety regulatory authority.

1.2. This European Standard is applicable:

- to the specification and demonstration of RAMS for all railway applications and at all levels of such an application, as appropriate, from complete railway routes to major systems within a railway route, and to individual and combined sub-systems and components within these major systems, including those containing software; in particular:
  - to new systems;
  - to new systems integrated into existing systems in operation prior to the creation of this standard, although it is not generally applicable to other aspects of the existing system;
  - to modifications of existing systems in operation prior to the creation of this standard, although it is not generally applicable to other aspects of the existing system.
- at all relevant phases of the lifecycle of an application;
- for use by Railway Authorities and the railway support industry.

NOTE: Guidance on the applicability is given in the requirements of this standard.