SLOVENSKI STANDARD

SIST EN 61993-1:2004

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Maritime navigation and radiocommunication equipment and systems - Part 1: Shipborne automatic transponder system installation using VHF digital selective calling (DSC) techniques - Operational and performance requirements, methods of testing and required test results (IEC 61993-1:1999)

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EUROPEAN STANDARD

NORME EUROPÉENNE

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Maritime navigation and radiocommunication equipment and systems Part 1: Shipborne automatic transponder system installation using VHF digital selective calling (DSC) techniques Operational and performance requirements, methods of testing and required test results (IEC 61993-1:1999)

Matériels et systèmes de navigation et de radiocommunication maritimes Partie 1: Installation de systèmes de répondeur automatique de bord de navires utilisant des techniques d'appel sélectif numérique en ondes métriques Exigences d'exploitation et de fonctionnement, méthodes d'essai et résultats d'essai exigés (CEI 61993-1:1999)

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschiffahrt Teil 1: Installationen für ein automatisches Transpondersystem für Schiffe, das die Technik des digitalen Selektivrufs (DSC) auf UKW einsetzt Betriebs- und Leistungsanforderungen, Prüfverfahren und geforderte Prüfergebnisse (IEC 61993-1:1999)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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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

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Ref. No. EN 61993-1:1999 E

Foreword

The text of document 80/212/FDIS, future edition 1 of IEC 61993-1, prepared by IEC TC 80, Maritime navigation and radiocommunication equipment and systems, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61993-1 on 1999-08-01.

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) 2000-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-08-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes B and ZA are normative and annexes A and C are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61993-1:1999 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard 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 European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60945	1996	Maritime navigation and radiocommunication equipment and systems General requirements - Methods of testing and required test results	EN 60945	1997
IEC 61097-3	1994	Global maritime distress and safety system (GMDSS) Part 3: Digital selective calling (DSC) equipment - Operational and performance requirements, methods of testing and required test results	-	-
IEC 61097-7	1996	Part 7: Shipborne VHF radiotelephone transmitter and receiver - Operational and performance requirements, methods of testing and required test results	-	-
IEC 61162	series	Maritime navigation and radiocommunication equipment and systems Digital interfaces Part 1: Single talker and multiple listeners	EN 61162	series
	1997	IMO International Convention for the Safety of Life at Sea (SOLAS) (consolidated edition)	-	-
IMO Resolution A.694	1991	General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids	-	-
IMO Resolution A.803	1995	Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling	-	-
IMO MSC. 74(69)	1998	Performance standards for an Universal sphipborne automatic identification systems (AIS)	-	-

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Publication	Year	Title	EN/HD	Year
	1997	ITU Radio regulations	-	-
ITU-R Recommendation M.489-2	1995	Technical characteristics of VHF radiotelephone equipment operating in the maritime mobile service in channels spaced by 25 kHz	-	-
ITU-R Recommendation M.493-9	1997	Digital selective-calling system for use in the maritime mobile service	-	-
ITU-R Recommendation M.541-8	1997	Operational procedures for the use of digital selective calling (DSC) equipment in the maritime mobile service	-	-
ITU-R Recommendation M.825-2	1997	Characteristics of a transponder system using digital selective-calling techniques for use with vessel traffic services and ship-to-ship identification	-	-
ITU-R Recommendation M.1371	1998	Technical characteristics for a universal shipborne automatic identification system using time division multiple access in the VHF maritime mobile band	-	-
ITU-T Recommendation V.11	1996	Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbits/s	-	-
ITU-T Recommendation V.24	1996	List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE)	-	-
ITU-T Recommendation V.28	1993	Electrical characteristics for unbalanced double-current interchange circuits	-	-

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INTERNATIONAL STANDARD

IEC 61993-1

First edition
1999-04

Maritime navigation and radiocommunication equipment and systems –

Part 1:
Shipborne automatic transponder system installation using VHF digital selective calling (DSC) techniques – Operational and performance requirements, methods of testing and required test results

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS –

Part 1: Shipborne automatic transponder system installation using VHF digital selective calling (DSC) techniques – Operational and performance requirements, methods of testing and required test results

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

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3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61993-1 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

The text of this standard is based on the following documents:

FDIS	Report on voting
80/212/FDIS	80/222/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annex B is an integral part of the standard.

Annexes A and C are for information only.

A bilingual version of this standard may be issued at a later date.

INTRODUCTION

In 1995 the IMO instigated work on the development of performance standards for a shipborne automatic identification system (AIS) using VHF digital selective calling (DSC) techniques.

These performance standards were developed into a draft resolution which was expected to be adopted by the IMO Maritime Safety Committee. However, there were objections to this on the grounds that some requirements for AIS were not met by the draft resolution.

The outcome has been that IMO has now developed further performance standards for a “Universal AIS” as a resolution which was adopted by the IMO Maritime Safety Committee in May 1998 as MSC. 74(69) annex 3.

During this period, some countries have gone ahead and implemented operational systems based upon the original IMO draft performance standards for AIS. There is therefore a need for a technical testing standard for such equipment.

At their plenary meeting in September 1997, technical committee 80 came to the following decisions:

– a draft technical standard which had been prepared on the basis of the original IMO performance standards would go ahead with the reference 61993-1, but would not directly refer to any IMO resolution for AIS;
– work would commence at the earliest opportunity on preparing a technical standard for a “Universal AIS” based rigorously upon the IMO resolution MSC.74(69) and a new recommendation ITU-R M.1371. This standard would have the reference 61993-2.

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS –

Part 1: Shipborne automatic transponder system installation using VHF digital selective calling (DSC) techniques – Operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 61993 specifies the performance requirements, technical characteristics, operational requirements, methods of testing and required test results for shipborne automatic transponder system installations using VHF digital selective calling (DSC) techniques and is associated with IEC 60945. When a requirement in this standard is different from IEC 60945, the requirement in this standard shall take precedence.

The shipborne transponder installation is intended to assist in the efficient operation of ship-reporting systems and vessel traffic services (VTS) by enabling operators to identify, poll and automatically locate and track ships when they are approaching, entering and sailing within the limits of a ship-reporting system.

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The system may also be used for the identification of ships by a ship and ships by aircraft. A description of the system is given in annex C.

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This standard

– incorporates the technical characteristics included in ITU-R Recommendation M.825 for transponder systems using DSC and the technical characteristics included in ITU-R Recommendation M.489 for VHF radiotelephone equipment;

– incorporates the technical characteristics of DSC equipment and the operational procedures for its use contained in Recommendations ITU-R M.493 and ITU-R M.541;

– incorporates applicable parts of the performance standards of IMO Resolution A.803 for shipborne VHF radio installations;

– takes account of IMO Resolution A.694 for general requirements; and

– conforms with the International Telecommunication Union (ITU) Radio Regulations where applicable.

This standard for a transponder system is not intended to meet the requirements for a universal automatic identification system (AIS), as detailed in IMO Resolution MSC.74(69) annex 3.

NOTE – All text in this standard whose meaning complies with that in the normative references, namely IMO Resolution A.803(19) and ITU-R Recommendations M.825, M.489, M.493 and M.541 is followed by a reference to the source (number of IMO Resolution or ITU-R Recommendation and paragraph number) in brackets.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61993. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However parties to agreements based on this part of IEC 61993 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative documents referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60945:1996, *Maritime navigation and radiocommunication equipment and systems – General requirements, methods of testing and required test results*

IEC 61097-3:1994, *Global maritime distress and safety system (GMDSS) – Part 3: Digital selective calling (DSC) equipment – Operational and performance requirements, methods of testing and required testing results*

IEC 61097-7:1996, *Global maritime distress and safety system (GMDSS) – Part 7: Shipborne VHF radiotelephone transmitter and receiver – Operational and performance requirements, methods of testing and required test results*

IEC 61162 (all parts), *Maritime navigation and radiocommunicaation equipment and systems – Digital interfaces*

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IMO International Convention for Safety of Life at Sea (SOLAS) 1974, as amended

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IMO Resolution A.694:1991, *General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids*

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IMO Resolution A.803:1995, *Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling*

IMO MSC.74(69):1998, *annex 3 – Performance standards for an Universal shipborne automatic identification system (AIS)*

ITU Radio Regulations:1997

ITU-R Recommendation M.489-2:1995, *Technical characteristics of VHF radiotelephone equipment operating in the maritime mobile service in channels spaced by 25 kHz*

ITU-R Recommendation M.493-9:1997, *Digital selective-calling system for use in the maritime mobile service*

ITU-R Recommendation M.541-8:1997, *Operational procedures for the use of digital selective calling (DSC) equipment in the maritime mobile service*

ITU-R Recommendation M.825-2:1997, *Characteristics of a transponder system using digital selective-calling techniques for use with vessel traffic services and ship-to-ship identification*

ITU-R Recommendation M.1371:1998, *Technical characteristics for a universal shipborne automatic identification system using time division multiple access in the VHF maritime mobile band*

ITU-T Recommendation V.11:1996, *Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s*

ITU-T Recommendation V.24:1996, *List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE)*