SLOVENSKI STANDARD
SIST EN 62320-1:2008/A1:2009

01-april-2009

Pomorska navigacijska in radiokomunikacijska oprema in sistemi - Sistemi za avtomatično identifikacijo (AIS) - 1. del: Bazne postaje AIS - Minimalne operativne in tehnične zahteve, preskusne metode in zahtevani rezultati preskušanj (IEC 62320-1:2007/A1:2008)

Maritime navigation and radiocommunication equipment and systems - Automatic Identification System (AIS) - Part 1: AIS Base Stations - Minimum operational and performance requirements, methods of testing and required test results (IEC 62320-1:2007/A1:2008)

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschifffahrt – Automatische Identifikationssysteme (AIS) - Teil 1: AIS-Basisstationen - Mindest-Betriebs- und -Leistungsanforderungen, Prüfverfahren und geforderte Prüfergebnisse (IEC 62320-1:2007/A1:2008)

Equipements et systèmes de navigation et de radiocommunication maritimes - Systèmes d'identification automatique (AIS) - Partie 1: Stations de base AIS - Exigences minimales opérationnelles et de performance, méthodes de mesure et résultats de test minimum attendus (CEI 62320-1:2007/A1:2008)

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English version

Maritime navigation and radiocommunication equipment and systems - Automatic Identification System (AIS) - Part 1: AIS Base Stations - Minimum operational and performance requirements, methods of testing and required test results

(IEC 62320-1:2007/A1:2008)

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This amendment A1 modifies the European Standard EN 62320-1:2007; it was approved by CENELEC on 2009-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 80/522/CDV, future amendment 1 to IEC 62320-1:2007, 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 amendment A1 to EN 62320-1:2007 on 2009-02-01.

The following dates were fixed:

– latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2009-11-01
– latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2012-02-01

Endorsement notice

The text of amendment 1:2008 to the International Standard IEC 62320-1:2007 was approved by CENELEC as an amendment to the European Standard without any modification.

IEC 62320-1

Edition 1.0 2008-10

INTERNATIONAL STANDARD

AMENDMENT 1

Maritime navigation and radiocommunication equipment and systems – Automatic identification system (AIS) – Part 1: AIS Base Stations – Minimum operational and performance requirements, methods of testing and required test results

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

This amendment has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

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

CDV	Report on voting
80/522/CDV	80/543/RVC

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

NOTE The amendment clarifies some of the tests and adds an extra sentence to Annex A.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

CONTENTS

Replace, in the list of CONTENTS, the existing Annex A title by the following new Annex A title:

Annex A (normative) Additional AIS Base Station sentences

4.5 Base Station input/output sentence formatters

Replace the existing Table 1 by the following new Table 1:

Table 1 – Base Station input/output sentence formatters

Sentence formatter	Input independent	Input dependent	Output independent	Output dependent	Description
ABK			**X**		Addressed and binary broadcast acknowledgement
ABM	**X**				Addressed binary and safety related message
ACA	**X**		**Q**		AIS regional channel assignment message
ACM	**X**				Preparation and initiation of an AIS Base Station addressed channel message (VDL Message 22)
ACK	**X**	**X**			Acknowledge alarm

Sentence formatter	Input independent	Input dependent	Output independent	Output dependent	Description
ADS			X	X	AIS Device Status (output interval configured by BCE and upon status change)
AGA	X		Q		Preparation and initiation of an AIS Base Station broadcast of a group assignment message (Message 23)
ALR			X	X	Set alarm state
AIR	X				AIS interrogation request (VDL Message 15)
ASN	X				Preparation and initiation of an AIS Base Station broadcast of assignment VDL Message 16
BBM	X				Broadcast binary message
BCE	X	X	Q	Q	General Base Station configuration extended
BCF	X	X	Q	Q	General Base Station configuration
CAB	X	X	Q	Q	Control AIS Base Station
CBM					Not supported by this IEC standard
DLM	X		Q		Data Link Management slot allocations for Base Station (VDL Message 20 – FATDMA reservations)
ECB	X		Q		Configure broadcast rates for Base Station messages with epoch planning support
FSR			X	X	Frame summary of AIS reception, defined by SPO. The manufacturer shall declare the parameters that are supported
SID	X	X			Installation of a station's identification
SPO	X	X	Q	Q	Select AIS device's reception processing and output
TFR			X	X	Transmit feed-back report – Base Station report on status of requested transmission. Automatic status response of TSA+VDM
TSA	X	X			Transmit Slot Assignment – used to identify AIS time slot used to transmit the content of a VDM sentence. TSA shall preceed the VDM sentence
TSP	X				Transmit Slot Prohibit
TSR			X		Transmit Slot Prohibit status Report. Automatic status response of TSP
VDM	X	X	X	X	VHF Data-link message
VDO			X	X	VHF Data-link Own-vessel message
VER			Q	Q	Version information about equipment. Provided in response to ABQ
VSI			X	X	VDL Signal Information, defined by SPO. The manufacturer shall declare the parameters that are

Sentence formatter	Input independent	Input dependent	Output independent	Output dependent	Description
					supported and the corresponding accuracy. The VSI shall follow its associated VDM/VDO
NOTE 1 "X" indicates input to, or output from, the AIS Base Station. "Q" indicates that the sentence may be externally requested using the IEC 61162-1 "$xxABQ,xxx" query sentence (see Annex A) method(s) in order for the identified sentence to be output. NOTE 2 Sentence formatters shown in shaded rows are described in IEC 61162-1.					

5.3 Minimum requirements for the TDMA transmitter of the AIS Base Station

Replace the existing Table 5 by the following new Table 5:

Table 5 – Minimum required TDMA transmitter characteristics

Transmitter parameters	25 kHz channels	12,5 kHz channels
Carrier power error	± 1,5 dB	± 1,5 dB
Carrier frequency error	± 500 Hz	± 500 Hz
Spectrum mask for slotted transmissions	–25 dBc at ± 10 kHz –70 dBc at ± 25 kHz	0 dBc at ± 2,5 kHz –60 dBc at ± 12,5 kHz
Transmitter test sequence and modulation accuracy	'0' bit start for test signals 1 and 2 1 760 Hz + 352 Hz/ –176 Hz for test signal 1 2 400 Hz ± 240 Hz for test signal 2	'0' bit start for test signals 1 and 2 535 Hz + 108 Hz/ –54 Hz for test signal 1 1 200 Hz ± 120 Hz for test signal 2
Transmitter output power versus time	Power within mask shown in Figure 11 and timings given in Table 12	Not applicable
Intermodulation attenuation	≥ 40 dB	Not applicable

6.2.1 General rules

Replace the eleventh bullet and text by the following:

- when the UTC sync source is unavailable, the AIS Base Station shall use UTC indirect or shall be synchronised to another Base Station;

6.3.1 General rules

Replace the third bullet and text by the following:

- when the UTC sync source is unavailable, the independent AIS Base Station shall use UTC indirect or the semaphore rules as defined by ITU-R M.1371;

Add, after the last bullet and text, the following:

- all VDL messages shall be as short as possible.

6.3.4.8 AIS Base Station response to VDM input

Add, after the second paragraph, the following new text:

A transmission initiated by a VDM input shall not replace a scheduled message.

Messages 4, 11 and 20 shall not be transmitted.

Messages 15 and 16 shall not be transmitted if a slot offset is provided unless the slot offset is recalculated by the base station. Messages that have a Comm.state shall have the Synch.state bits of the Comm.state set to the current status of the station. The remaining Comm.state bits shall be set to zero to prevent false slot allocations.

The repeat indicator shall be set to greater than zero before transmitting.

After receiving a VDM sentence, the Base Station responds with the appropriate TFR sentence.

6.3.5 Autonomous channel management

Add the following text as a new second paragraph:

The “in use” data field of the ACA sentence defines the status of the region (0 = not in use, 1 = in use). The manufacturer shall declare the number of regions supported.

6.4 BIIT conditions

Replace the existing text by the following text:

The AIS Base Station shall monitor the following BIIT conditions and shall generate the appropriate ALR sentences on the PI. The ALR sentence shall be output at least once per minute. The alarm conditions are noted in Table 9 and the resulting alarm status is sent via PI sentence ADS. If an alarm is active (acknowledged or not), the ADS alarm status field is set to A; if no alarm is active the field is set to V.

6.5.3 DGNSS dedicated port option

Replace the existing text by the following:

The AIS Base Station may be configured to transmit DGNSS corrections (Message 17) that are input via a dedicated RTCM SC104 format DGNSS port.

Base Stations shall convert the RTCM SC104 format to VDL format before transmission.

This option shall only be available for the independent operation and care should be taken to minimise the impact on the VDL.

8.1.4.1 Standard test signal number 1

Replace the existing text by the following text:

For TDMA Type 1: A test signal consisting of a 26 ms packet (1 slot) of 010101.