

Maritime navigation and radiocommunication equipment and systems - Class B shipborne equipment of the automatic identification system (AIS) - Part 2: Self-organising time division multiple access (SOTDMA) techniques (IEC 62287-2:2013)

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ICS 47.020.70

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**Maritime navigation and radiocommunication equipment and systems -
Class B shipborne equipment
of the automatic identification system (AIS) -
Part 2: Self-organising time division multiple access (SOTDMA)
techniques
(IEC 62287-2:2013)**

Matériels et systèmes de navigation et de
radiocommunications maritimes -
Transpondeur embarqué du système
d'identification automatique (AIS) de
classe B -
Partie 2: Technique d'accès multiple par
répartition dans le temps auto-adaptatif
(SOTDMA)
(CEI 62287-2:2013)

Navigations- und
Funkkommunikationsgeräte und -systeme
für die Seeschifffahrt – Geräte der Klasse
B des automatischen
Identifikationssystems (AIS) für Schiffe –
Teil 2: Sich selbst abstimmende
Zeitmultiplex-Vielfachzugriffstechniken
(SOTDMA)
(IEC 62287-2:2013)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 80/685/FDIS, future edition 1 of IEC 62287-2, prepared by IEC TC 80 "Maritime navigation and radiocommunication equipment and systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62287-2:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-01-22
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-04-22

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62287-1:2010	NOTE	Harmonized as EN 62287-1:2011 (not modified).
ISO 9000	NOTE	Harmonized as EN ISO 9000.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60945 + corr. April	2002 2008	Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results	EN 60945	2002
IEC 61108	Series	Maritime navigation and radiocommunication equipment and systems - Global navigation satellite systems (GNSS)	EN 61108	Series
IEC 61108-4	-	Maritime navigation and radiocommunication equipment and systems - Global navigation satellite systems (GNSS) - Part 4: Shipborne DGPS and DGLONASS maritime radio beacon receiver equipment - Performance requirements, methods of testing and required test results	EN 61108-4	-
IEC 61162	Series	Maritime navigation and radiocommunication equipment and systems - Digital interfaces	EN 61162	Series
IEC 61162-1	-	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners	EN 61162-1	-
IEC 61993-2	-	Maritime navigation and radiocommunication equipment and systems - Automatic Identification Systems (AIS) - Part 2: Class A shipborne equipment of the automatic identification system (AIS) - Operational and performance requirements, methods of test and required test results	EN 61993-2	-
ITU Radio regulations	2012	Appendices	-	-
ITU-R Recommendation M.1084-5	-	Interim solutions for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service	-	-
ITU-R Recommendation M.825-3	1998	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.1371-4	2010	Technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band	-	-

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – CLASS B SHIPBORNE EQUIPMENT OF THE AUTOMATIC IDENTIFICATION SYSTEM (AIS) –

Part 2: Self-organising time division multiple access (SOTDMA) techniques

1 Scope

This part of IEC 62287 specifies operational and performance requirements, methods of testing and required test results for Class B “SO” shipborne AIS equipment using Self-organised TDMA (SOTDMA) techniques as described in Recommendation ITU-R M.1371. This standard takes into account other associated IEC International Standards and existing national standards, as applicable.

The main differences between Class B “CS” (IEC 62287-1) and Class B “SO” units are that the Class B “SO”:

- covers all 25 kHz channels listed in Recommendation ITU-R M.1084-5;
- only uses the internal GNSS, no position sensor input is allowed;
- requires use of VDL Message 17 for correction of the internal GNSS;
- has a presentation interface;
- has additional reporting intervals, down to 5 s;
- has two power settings, with a high level of 5 W;
- has the capability to transmit binary messages.

It is applicable for AIS equipment used on craft that are not covered by a mandatory carriage requirement of AIS under SOLAS Chapter V.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60945:2002, *Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results*

IEC 61108 (all parts), *Maritime navigation and radio communication equipment and systems – Global navigation satellite systems (GNSS)*

IEC 61108-4, *Maritime navigation and radio communication equipment and systems – Global navigation satellite systems (GNSS) – Part 4: Shipborne DGPS and DGLONASS maritime radio beacon receiver equipment – Performance requirements, methods of testing and required test results*

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

IEC 61162-1, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

IEC 61993-2, *Maritime navigation and radio communication equipment and systems – Automatic identification systems (AIS) – Part 2: Class A shipborne equipment of the universal automatic identification system (AIS) – Operational and performance requirements, methods of test and required test results*

ITU Radio regulations 2012, *Appendices*

ITU-R Recommendation M.825-3:1998, *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.1084-5, *Interim solutions for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service*

ITU-R Recommendation M.1371-4:2010, *Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile band*

3 Abbreviations

AIS	Automatic Identification System
BER	Bit Error Rate
BIIT	Built-In Integrity Tests
BT	Bandwidth Time
COG	Course over ground
CRC	Cyclic Redundancy Check
CSD	Compass Safe Distance
DGNSS	Differential Global Navigation Satellite Service
DLS	Data Link Service
DSC	Digital Selective Calling
EUT	Equipment under test
FM	Frequency Modulation
GMSK	Gaussian Minimum Shift Keying
GNSS	Global Navigation Satellite Service
IMO	International Maritime Organization
ITDMA	Incremental Time Division Multiple Access
ITU	International Telecommunication Union
LME	Link Management Entity
MAC	Medium access control
MMSI	Maritime Mobile Service Identity
MSSA	Multi-channel slot selection access
NM	Nautical mile (1 NM = 1 852 m)
NRZI	Non Return to Zero Inverted
OSI	Open Systems Interconnection model
PER	Packet Error Rate
PI	Presentation Interface
RAIM	Receiver autonomous integrity monitoring