



SLOVENSKI STANDARD

SIST EN IEC 61162-460:2018

01-oktober-2018

Nadomešča:
SIST EN 61162-460:2016

Pomorska navigacijska in radiokomunikacijska oprema in sistemi - Digitalni vmesniki - 460. del: Več govorcev in poslušalcev - Povezovanje prek eterneta - Varnost in zaščita (IEC 61162-460:2018)

Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 460: Multiple talkers and multiple listeners - Ethernet interconnection - Safety and security (IEC 61162-460:2018)

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschifffahrt - Digitale Schnittstellen - Teil 460: Mehrere Datensender und mehrere Datenempfänger - Ethernet-Verbund - Funktionale und Informationssicherheit (IEC 61162-460:2018)

Matériels et systèmes de navigation et de radiocommunication maritimes - Interfaces numériques - Partie 460 : Emetteurs multiples et récepteurs multiples - Interconnexion Ethernet - Sûreté et sécurité (IEC 61162-460:2018)

Ta slovenski standard je istoveten z: EN IEC 61162-460:2018

ICS:

35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment
47.020.70	Navigacijska in krmilna oprema	Navigation and control equipment

SIST EN IEC 61162-460:2018 en

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EUROPEAN STANDARD

EN IEC 61162-460

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2018

ICS 47.020.70

Supersedes EN 61162-460:2015

English Version

Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 460: Multiple talkers and multiple listeners - Ethernet interconnection - Safety and security (IEC 61162-460:2018)

Matériels et systèmes de navigation et de radiocommunication maritimes - Interfaces numériques - Partie 460: Émetteurs multiples et récepteurs multiples - Interconnexion Ethernet - Sécurité et sécurité (IEC 61162-460:2018)

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschifffahrt - Digitale Schnittstellen - Teil 460: Mehrere Datensender und mehrere Datenempfänger - Ethernet-Verbund - Funktionale und Informationssicherheit (IEC 61162-460:2018)

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

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 61162-460:2018**European foreword**

The text of document 80/879/FDIS, future edition 2 of IEC 61162-460, 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 IEC 61162-460:2018.

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) 2019-03-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-06-08

This document supersedes EN 61162-460:2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61162-460:2018 was approved by CENELEC as a European Standard without any modification.

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

IEC 60812	NOTE	Harmonized as EN 60812.
IEC 61162 Series	NOTE	Harmonized as EN 61162 Series.
IEC 61162-1	NOTE	Harmonized as EN 61162-1.
IEC 61162-2	NOTE	Harmonized as EN 61162-2.
IEC 62388	NOTE	Harmonized as EN 62388.
IEC 62439 Series	NOTE	Harmonized as EN 62439 Series.
IEC 62439-1	NOTE	Harmonized as EN 62439-1.
IEC 62439-2	NOTE	Harmonized as EN 62439-2.
IEC 62439-3	NOTE	Harmonized as EN 62439-3.
IEC 62439-4	NOTE	Harmonized as EN 62439-4.
IEC 62439-5	NOTE	Harmonized as EN 62439-5.
IEC 62439-6	NOTE	Harmonized as EN 62439-6.
IEC 62940	NOTE	Harmonized as EN 62940.
ISO 9241-12	NOTE	Harmonized as EN ISO 9241-12 ¹ .

¹ Superseded by EN ISO 9241-112 (ISO 9241-112) and EN ISO 9241-125 (ISO 9241-125).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60945	-	Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results	EN 60945	-
IEC 61162-450	2018	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 450: Multiple talkers and multiple listeners - Ethernet interconnection	EN IEC 61162-450	2018
IEC 61924-2	2012	Maritime navigation and radiocommunication equipment and systems - Integrated navigation systems - Part 2: Modular structure for INS	EN 61924-2	2013
IEC 62288	2014	Maritime navigation and radiocommunication equipment and systems - Presentation of navigation-related information on shipborne navigational displays - General requirements, methods of testing and required test results	EN 62288	2014
IEEE 802.1D	2004	IEEE Standard for local and metropolitan area networks - Media Access Control (MAC) Bridges	-	-
IEEE 802.1Q	-	IEEE Standard for Local and metropolitan area networks - Media Access Control (MAC) Bridges and Virtual Bridges	-	-
IETF RFC 792	1981	Internet Control Message Protocol (ICMP)	-	-
IETF RFC 1112	1989	Host Extensions for IP Multicasting (SNMP)	-	-
IETF RFC 1157	1990	Simple Network Management Protocol (SNMP)	-	-
IETF RFC 2021	1997	Remote Network Monitoring Management Information Base	-	-

EN IEC 61162-460:2018

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IETF RFC 2236	1997	Internet Group Management Protocol, Version 2	-	-
IETF RFC 2819	2000	Remote Network Monitoring Management Information Base	-	-
IETF RFC 3411	2002	An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks	-	-
IETF RFC 3577	2003	Introduction to the RMON family of MIB modules	-	-
IETF RFC 4604	2006	Using Internet Group Management Protocol Version 3 (IGMPv3) and Multicast Listener Discovery Protocol Version 2 (MLDv2) for Source-Specific Multicast	-	-
IETF RFC 5424	2009	The Syslog Protocol	-	-

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IEC 61162-460

Edition 2.0 2018-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Maritime navigation and radiocommunication equipment and systems – Digital interfaces –
Part 460: Multiple talkers and multiple listeners – Ethernet interconnection –
Safety and security**

[SIST EN IEC 61162-460:2018](https://standards.iteh.ai/catalog/standards/sist/65e0030b-18c5-4319-bdb0-f8270511010e/iec-61162-460-2018)

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**Matériels et systèmes de navigation et de radiocommunication maritimes –
Interfaces numériques –
Partie 460: Émetteurs multiples et récepteurs multiples – Interconnexion
Ethernet – Sûreté et sécurité**

INTERNATIONAL
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INTERNATIONALE

ICS 47.020.70

ISBN 978-2-8322-5522-3

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itted by the network monitoring function

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MARITIME NAVIGATION AND RADIOCOMMUNICATION
EQUIPMENT AND SYSTEMS –
DIGITAL INTERFACES –****Part 460: Multiple talkers and multiple listeners –
Ethernet interconnection – Safety and security**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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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International Standard IEC 61162-460 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

This second edition of IEC 61162-460 cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) 460-Switches and 460-Forwarders are required to implement IGMP snooping;
- b) connection between secure and non-secure areas requires a 460-Forwarder as an isolation element;

- c) SFI collision detection added as function of network monitoring;
- d) 460-Gateway and 460-Wireless gateway are no longer required to report to the network monitoring;
- e) all alerts from network monitoring have standardized alert identifiers.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
80/879/FDIS	80/884/RVD

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This International Standard is to be used in conjunction with IEC 61162-450:2018.

A list of all parts in the IEC 61162 series, published under the general title *Maritime navigation and radiocommunication equipment and systems – Digital interfaces*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 460: Multiple talkers and multiple listeners – Ethernet interconnection – Safety and security

1 Scope

This part of IEC 61162 is an add-on to IEC 61162-450 where higher safety and security standards are needed, for example due to higher exposure to external threats or to improve network integrity. This document provides requirements and test methods for equipment to be used in an IEC 61162-460 compliant network as well as requirements for the network itself and requirements for interconnection from the network to other networks. This document also contains requirements for a redundant IEC 61162-460 compliant network.

This document does not introduce new application level protocol requirements to those that are defined in IEC 61162-450.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

IEC 61162-450:2018, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 450: Multiple talkers and multiple listeners – Ethernet interconnection*

IEC 61924-2:2012, *Maritime navigation and radiocommunication equipment and systems – Integrated navigation systems – Part 2: Modular structure for INS – Operational and performance requirements, methods of testing and required test results*

IEC 62288:2014, *Maritime navigation and radiocommunication equipment and systems – Presentation of navigation-related information on shipborne navigational displays – General requirements, methods of testing and required test results*

IEEE 802.1D-2004, *IEEE Standard for Local and metropolitan area networks: Media Access Control (MAC) Bridges*

IEEE 802.1Q, *IEEE Standard for Local and metropolitan area networks: Virtual Bridged Local Area Networks*

INTERNET SOCIETY (ISOC). RFC 792, *Internet Control Message Protocol (ICMP), Standard STD0005 (and updates)* [online]. Edited by J. Postel. September 1981 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc792>

INTERNET SOCIETY (ISOC). RFC 1112, *Host Extensions for IP Multicasting* [online]. Edited by S. Deering. August 1989 [viewed 2018-01-08]. Available at <https://www.ietf.org/rfc/rfc1112.txt>

INTERNET SOCIETY (ISOC). RFC 1157, *A Simple Network Management Protocol (SNMP)* [online]. Edited by J. Case et al. May 1990 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc1157>

INTERNET SOCIETY (ISOC). RFC 2021, *Remote Network Monitoring Management Information Base* [online]. Edited by S. Waldbusser. January 1997 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc2021>

INTERNET SOCIETY (ISOC). RFC 2236, *Internet Group Management Protocol, Version 2* [online]. Edited by W. Fenner. November 1997 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc2236>

INTERNET SOCIETY (ISOC). RFC 2819, *Remote Network Monitoring Management Information Base* [online]. Edited by S. Waldbusser. May 2000 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc2819>

INTERNET SOCIETY (ISOC). RFC 3411, *An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks* [online]. Edited by D. Harrington. December 2002 [viewed 2018-01-08]. Available at <https://www.ietf.org/rfc/rfc3411.txt>

INTERNET SOCIETY (ISOC). RFC 3577, *Introduction to the RMON family of MIB modules* [online]. Edited by S. Waldbusser. August 2003 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc3577>

INTERNET SOCIETY (ISOC). RFC 4604, *Using Internet Group Management Protocol Version 3 (IGMPv3) and Multicast Listener Discovery Protocol Version 2 (MLDv2) for Source-Specific Multicast* [online]. Edited by H. Holbrook et al. August 2006 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc4604>

INTERNET SOCIETY (ISOC). RFC 5424, *The Syslog Protocol* [online]. Edited by R. Gerhards. March 2009 [viewed 2018-01-08]. Available at <https://tools.ietf.org/html/rfc5424>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61162-450 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

450-Node

device compliant with IEC 61162-450 and which satisfies additional requirements specified in this document

Note 1 to entry: This also includes nodes only implementing the ONF function block.