IEC 61162-460

Edition 2.0 2018-05

REDLINE VERSION

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

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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

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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.

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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 standard extends the informative guidance given in Annex D of IEC 61162-450:2011.~~ 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:~~2011~~ 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*

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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].
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INTERNET SOCIETY (ISOC). RFC 5424, *The Syslog Protocol* [online]. Edited by R. Gerhards. March 2009 [viewed 2018-01-08].
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INTERNATIONAL STANDARD

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

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

IEC 61162-460:2018-05(en-fr)

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

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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

AVANT-PROPOS

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La Norme internationale IEC 61162-460 a été établie par le comité d'études 80 de l'IEC: Matériels et systèmes de navigation et de radiocommunication maritimes.

Cette deuxième édition de l'IEC 61162-460 annule et remplace la première édition parue en 2015. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) les commutateurs-460 et les redirecteurs-460 sont exigés pour la mise en œuvre de la surveillance du trafic des protocoles Internet de gestion de groupe (IGMP – *Internet group management protocol*);

b) le raccordement entre des zones protégées et des zones non protégées exige un redirecteur-460 en tant qu'élément isolant;

c) ajout de la détection de collision par ID de fonction du système (SFI – *system function ID*) comme fonction de surveillance du réseau;

d) la consignation de la passerelle-460 et de la passerelle sans fil-460 à la surveillance du réseau n'est plus exigée;

e) toutes les alertes issues de la surveillance du réseau ont des identificateurs d'alerte normalisés.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
80/879/FDIS	80/884/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette norme.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Cette Norme internationale doit être utilisée conjointement avec l'IEC 61162-450:2018.

Une liste de toutes les parties de la série IEC 61162, publiées sous le titre général *Matériels et systèmes de navigation et de radiocommunication maritimes – Interfaces numériques*, peut être consultée sur le site web de l'IEC.

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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

1 Domaine d'application

La présente partie de l'IEC 61162 vient s'ajouter à la norme IEC 61162-450 lorsque des normes plus rigoureuses en matière de sûreté et de sécurité sont nécessaires, par exemple en raison d'une exposition plus importante aux menaces externes ou afin de renforcer l'intégrité du réseau. Le présent document spécifie des exigences et des méthodes d'essai pour les matériels à utiliser dans un réseau conforme à l'IEC 61162-460 ainsi que des exigences relatives au réseau proprement dit et des exigences relatives à l'interconnexion du réseau avec d'autres réseaux. Le présent document comprend également des exigences s'appliquant aux réseaux redondants conformes à l'IEC 61162-460.

Le présent document n'introduit pas de nouvelles exigences relatives aux protocoles des niveaux d'application par rapport à celles définies dans l'IEC 61162-450.

2 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60945, *Matériels et systèmes de navigation et de radiocommunication maritimes – Spécifications générales – Méthodes d'essai et résultats exigibles*

IEC 61162-450:2018, *Matériels et systèmes de navigation et de radiocommunication maritimes – Interfaces numériques – Partie 450: Emetteurs multiples et récepteurs multiples – Interconnexion Ethernet*

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* (disponible en anglais seulement)

IEC 62288:2014, *Matériels et systèmes de navigation et de radiocommunication maritimes – Présentation des informations relatives à la navigation sur des affichages de navigation de bord – Exigences générales, méthodes d'essai et résultats d'essai exigés*

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