IEC 61162-2

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COMMENTED VERSION

INTERNATIONAL STANDARD

colour inside

Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 2: Single talker and multiple listeners, high-speed transmission

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 2: Single talker and multiple listeners, high-speed transmission

FOREWORD

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This commented version (CMV) of the official standard IEC 61162-2:2024 edition 2.0 allows the user to identify the changes made to the previous IEC 61162-2:1998 edition 1.0. Furthermore, comments from IEC TC 80 experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 61162-2 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems. It is an International Standard.

This second edition cancels and replaces the first edition published in 1998. This edition constitutes a technical revision.

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

a) alternative hardware is given in 5.1 which may now be as specified in this document or as specified in IEC 61162-1;
b) the data transmission rate given in Clause 6 is now configurable. The default remains as 38 400 (bits/s) but higher rates may be provided;
c) the description of the data format protocol has been removed as this information is given in IEC 61162-1;
d) former Annex A and Annex B have been deleted as now of historic interest.

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

Draft	Report on voting
80/1065/CDV	80/1083/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 2: Single talker and multiple listeners, high-speed transmission

~~1 General~~

1 Scope

This part of IEC 61162 contains the requirements for data communication between maritime electronic instruments, navigation and radiocommunication equipment when interconnected via an appropriate interface.

This document is intended to support one-way serial data transmission from a single talker to one or more listeners. This data is in printable ASCII form and ~~may~~ can include any information as specified by approved sentences or information coded according to the rules for proprietary sentences. Typical messages ~~may~~ can be from 11 to a maximum of 79 characters in length and generally require repetition rates up to once per 20 ms.

The electrical definitions in this document are intended to accommodate higher data rates than are specified in IEC 61162-1. Since there is no provision for guaranteed delivery of messages and only limited error-checking capability, it is important this document ~~should be~~ is used with caution in all safety applications.

~~Annex A contains a list of relevant IMO resolutions and ITU recommendations to which this standard applies.~~ 1

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~~:1996~~, *Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results*

IEC 61162-1~~:1995~~, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

ITU-T Recommendation X.27/V.11~~:1996~~, *Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbits/s*

~~NMEA 0183 – Version 2.30:1998, *National marine electronics association (USA) – Standard for interfacing marine electronic navigational devices*~~ 2

~~EIA 485:1991, *Electrical characteristics of generators and receivers for use in balanced digital multipoint systems*~~ 2

IEC 61162-2

Edition 2.0 2024-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Maritime navigation and radiocommunication equipment and systems – Digital interfaces –
Part 2: Single talker and multiple listeners, high-speed transmission

Matériels et systèmes de navigation et de radiocommunication maritimes – Interfaces numériques –
Partie 2: Emetteur unique et récepteurs multiples, transfert rapide de données

IEC 61162-2:2024-04(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 2: Single talker and multiple listeners, high-speed transmission

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 2: Single talker and multiple listeners, high-speed transmission

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

ITU-T Recommendation X.27/V.11, *Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbits/s*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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MATÉRIELS ET SYSTÈMES DE NAVIGATION ET DE RADIOCOMMUNICATION MARITIMES – INTERFACES NUMÉRIQUES –

Partie 2: Émetteur unique et récepteurs multiples, transfert rapide de données

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L'IEC 61162-2 a été établie par le comité d'études 80 de l'IEC: Matériels et systèmes de navigation et de radiocommunication maritimes. Il s'agit d'une Norme internationale.

Cette deuxième édition annule et remplace la première édition parue en 1998. Cette édition constitue une révision technique.

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

a) deux options sont données en 5.1 pour le matériel, qui peut désormais être conforme au présent document ou à l'IEC 61162-1;
b) le débit d'émission de données indiqué à l'Article 6 est désormais configurable. La valeur par défaut reste 38 400 (bits/s), mais des débits supérieurs peuvent être prévus;
c) la description du protocole de format des données a été supprimée, cette information étant donnée dans l'IEC 61162-1;
d) les anciennes Annexe A et Annexe B ont été supprimées, leur intérêt étant désormais historique.

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

Projet	Rapport de vote
80/1065/CDV	80/1083/RVC

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

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/publications.

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MATÉRIELS ET SYSTÈMES DE NAVIGATION ET DE RADIOCOMMUNICATION MARITIMES – INTERFACES NUMÉRIQUES –

Partie 2: Émetteur unique et récepteurs multiples, transfert rapide de données

1 Domaine d’application

La présente partie de l'IEC 61162 contient les exigences de communication des données entre les instruments maritimes électroniques, les matériels de navigation et de radiocommunication, lorsqu'ils sont interconnectés par l'intermédiaire d'une interface appropriée.

Le présent document est destiné à prendre en charge l'émission unidirectionnelle de données série entre un seul émetteur et un ou plusieurs récepteurs. Ces données sont représentées au format ASCII imprimable et peuvent contenir toutes les informations spécifiées par des sentences approuvées ou des informations codées selon les règles de sentences propriétaires. Les messages types peuvent contenir de 11 à 79 caractères au maximum, le taux de répétition exigé étant généralement d'un message toutes les 20 ms au maximum.

Les définitions électriques du présent document ont pour objet de tenir compte des débits de données plus élevés que ceux spécifiés dans l'IEC 61162-1. En l'absence de disposition assurant l'émission des messages, et compte tenu de la fonctionnalité limitée de vérification des erreurs, il est important que le présent document soit utilisé avec précaution dans toutes les applications de sécurité.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu’ils 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 61162-1, *Matériels et systèmes de navigation et de radiocommunication maritimes – Interfaces numériques – Partie 1: Émetteur unique et récepteurs multiples*

Recommandation UIT-T X.27/V.11, *Caractéristiques électriques des circuits de jonction symétriques à double courant fonctionnant à des débits binaires jusqu'à 10 Mbit/s*