SLOVENSKI STANDARD
oSIST prEN IEC 61162-2:2023

01-maj-2023

Pomorska navigacijska in radiokomunikacijska oprema in sistemi - Digitalni vmesniki - 2. del: En govorec (pošiljatelj) in več poslušalcev (prejemnikov), povezava sistemov - hitri prenos

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

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschiffahrt - Digitale Schnittstellen - Teil 2: Ein Datensender und mehrere Datenempfänger, Hochgeschwindigkeitsübertragung

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

Ta slovenski standard je istoveten z: **prEN IEC 61162-2:2023**

ICS:

33.060.01	Radijske komunikacije na splošno	Radiocommunications in general
47.020.70	Navigacijska in krmilna oprema	Navigation and control equipment

oSIST prEN IEC 61162-2:2023 **en**

IEC

80/1065/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 61162-2 ED2**	
DATE OF CIRCULATION: **2023-03-17**	CLOSING DATE FOR VOTING: **2023-06-09**
SUPERSEDES DOCUMENTS: **80/1048/CD, 80/1060/CC**	

IEC TC 80 : MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS	
SECRETARIAT: United Kingdom	SECRETARY: Mr Kim Fisher
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT	☐ QUALITY ASSURANCE ☐ SAFETY
☒ SUBMITTED FOR CENELEC PARALLEL VOTING **Attention IEC-CENELEC parallel voting** The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of

- any relevant patent rights of which they are aware and to provide supporting documentation,
- any relevant “in some countries” clauses to be included should this proposal proceed. Recipients are reminded that the enquiry stage is the final stage for submitting "in some countries" clauses. See AC/22/2007.

TITLE:

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

PROPOSED STABILITY DATE: 2028

NOTE FROM TC/SC OFFICERS:

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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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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 Annexes A and 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
XX/XX/FDIS	XX/XX/RVD

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/standardsdev/publications.

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.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

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

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 standard 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 include any information as specified by approved sentences or information coded according to the rules for proprietary sentences. Typical messages may 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 standard 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, this standard should be used with caution in all safety applications.

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 61162-1, *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*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms and definitions 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 Terms and definitions

3.1.1
talker
any device which sends data to other devices

Note 1 to entry: The type of talker is identified by a two-character mnemonic as listed in IEC 61162-1.

3.1.2
listener
any device which receives data from another device

3.1.3
latency
time interval between an event and its resulting information, including time for processing, transmission and/or reception

3.2 Abbreviated terms

EMC electromagnetic compatibility

EUT equipment under test

4 Manufacturer's documentation

4.1 Standard documents

Installation manuals provided for equipment that is intended to meet the requirements of this document shall contain as a minimum the following information:

a) identification of the A, B and common (C) signal lines (see Figure 1;

b) the output drive capability as a talker;

c) a list of approved sentences, noting unused fields, proprietary sentences transmitted as a talker, data latency and transmission interval for each sentence;

d) the load requirements as a listener;

e) a list of sentences and associated data fields that are required by, or are acceptable to, a listener;

f) the current software and hardware revision if this is relevant to the interface;

g) an electrical description or schematic of the listener/talker input/output circuits citing actual components and devices used, including connector type and part number;

h) the version number and date of update of the standard for which compliance is sought;

i) list of supported baud rates (bits/s) including any limitations per each baud rate supported.

4.2 Additional information

As latency, filtering, error handling and data transmission interval can have a serious influence on the performance of a system, the manufacturer shall give careful consideration to these aspects. Documentation should include such data where applicable.

5 Hardware specification

5.1 General

One talker and multiple listeners may be connected in parallel over interconnecting wires. Because of EMC requirements shielded cables are recommended. The number of listeners depends on the output capability, the input drive requirements of the connected devices, and on the use of termination resistors.

There are two alternatives for the hardware:

1) method based on sub-clauses 5.2 to 5.6;
2) method based on IEC 61162-1.

5.2 Interconnecting wires

Interconnection between devices may be by means of a shielded two-conductor twisted-pair wire (A, B) plus any means to secure common signal ground potential (C) for transmitting and receiving devices. For this purpose, a third wire additional to the twisted pair or the inner shield of double-shielded cable with insulated shields may be used.

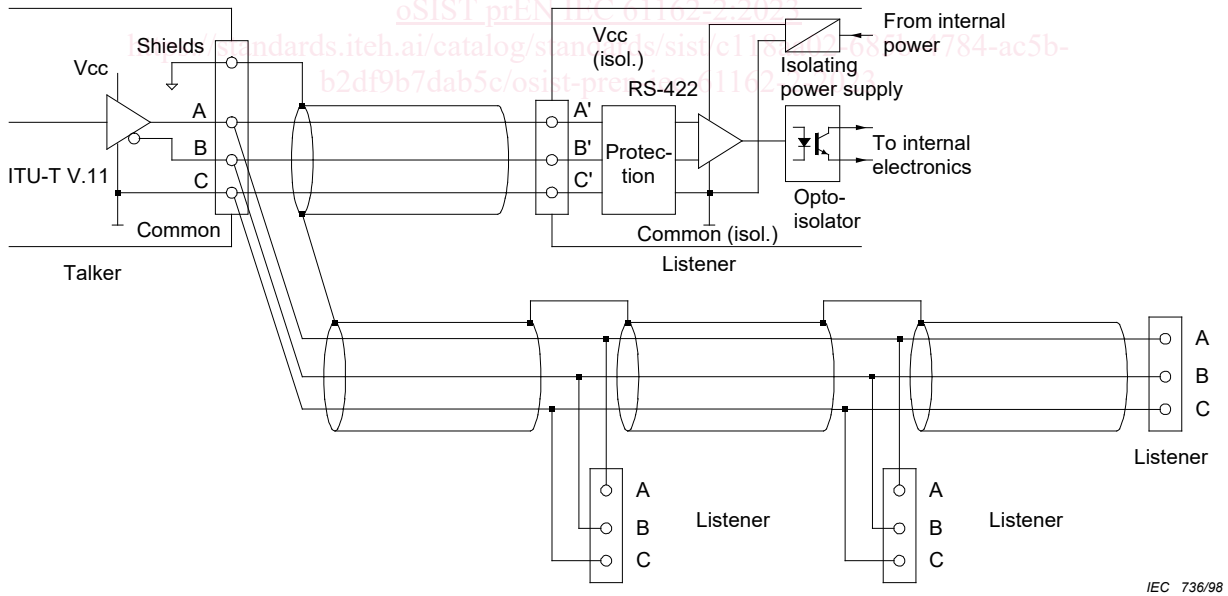

Figure 1 – Talker/listener connections

5.3 Conductor definitions

The conductors referred to in this document are the signal lines A, B, C (common) and shield.

5.4 Electrical connection/shield requirements

All signal and common line connections A, B and C are connected in parallel.

With single-shielded cables and a separate wire as common line C (signal ground), the shield shall be connected to the talker chassis and shall not be connected to any listener. However, the shield shall be continuous (unbroken) between all listeners (see Figure 1 and Figure 2a)).

With double-shielded cables and the inner shield used as common line C (signal ground), the outer shield shall be connected to the talker chassis and shall not be connected to any listener. However, the outer shield shall be continuous (unbroken) between all listeners (see Figure 1 and Figure 2b)).

With double-shielded cables and a separate wire as common line C (signal ground), the inner shield shall be connected to the talker chassis and shall not be connected to any listener. However, the inner shield shall be continuous (unbroken) between all listeners. The outer shield may be connected to the chassis on either side if required (see Figure 1 and Figure 2c)).

The cabling shall be designed in a way that stubs are avoided or kept as short as possible. If long cables are necessary, termination at the end of the line according to ITU-T Recommendation X.27/V.11 shall be considered.

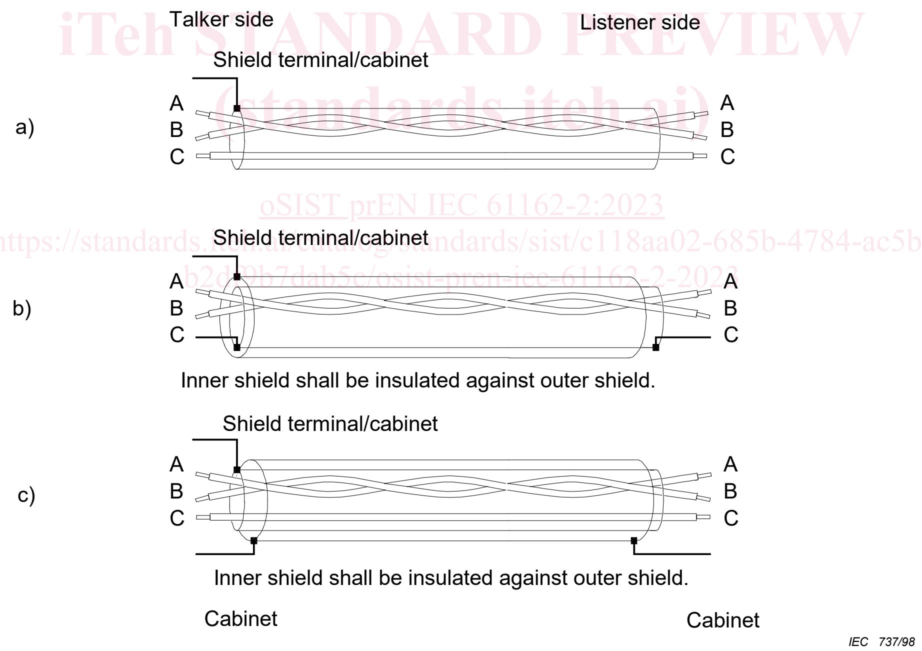

Figure 2 – Cables – Electrical shield requirements

5.5 Connector

No standard connector is specified. Wherever possible readily available commercial connectors shall be used. Manufacturers shall provide means for user identification of the connections used.