SLOVENSKI STANDARD
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Pomorska navigacijska in radiokomunikacijska oprema in sistemi – Digitalni vmesniki - 420. del: Več govorcev (pošiljateljev) in več poslušalcev (prejemnikov); povezava sistemov - Zahteve spremljevalnega standarda in osnovni spremljevalni standardi

Maritime navigation and radiocommunication equipment and systems - Digital interfaces -- Part 420: Multiple talkers and multiple listeners - Ship systems interconnection - Companion standard requirements and basic companion standards

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschifffahrt - Digitale Schnittstellen -- Teil 420: Mehrere Datensender und mehrere Datenempfänger - Schiffssystemzusammenschaltung - Anforderungen an Begleitnormen und Basisbegleitnormen

Matériels et systèmes de navigation et de radiocommunications maritimes - Interfaces numériques -- Partie 420: Emetteurs multiples et récepteurs multiples - Interconnexion des systèmes embarqués - Exigences standard de la couche utilisateur et standard utilisateurs de base

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Maritime navigation and radiocommunication equipment and systems - Digital interfaces
Part 420: Multiple talkers and multiple listeners – Ship systems interconnection – Companion standard requirements and basic companion standards
(IEC 61162-420:2001)

Matériels et systèmes de navigation et de radiocommunications maritimes - Interfaces numériques
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(CEI 61162-420:2001)

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschifffahrt – Digitale Schnittstellen
Teil 420: Mehrere Datensender und mehrere Datenempfänger - Schiffssystemzusammenschaltung - Anforderungen an Begleitnormen und Basisbegleitnormen
(IEC 61162-420:2001)

This European Standard was approved by CENELEC on 2002-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 61162-420:2002 E

Foreword

The text of document 80/312/FDIS, future edition 1 of IEC 61162-420, prepared by IEC TC 80, Maritime navigation and radiocommunication equipment and systems, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61162-420 on 2002-02-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-11-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-02-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A, B, C, D, E, F and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61162-420:2001 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

Publication	Year	Title	EN/HD	Year
IEC 61162-1	2000	Maritime navigation and radiocommunication equipment and systems - Digital interfaces Part 1: Single talker and multiple listeners	EN 61162-1	2000
IEC 61162-2	1998	Part 2: Single talker and multiple listeners, high-speed transmission	EN 61162-2	1998
IEC 61162-3	- [1)]	Part 3: Serial data instrument network	-	-
IEC 61162-400	- [2)]	Part 400: Multiple talkers and multiple listeners - Ship systems interconnection - Introduction and general principles	EN 61162-400	- [2)]
IEC 61162-401	- [2)]	Part 401: Multiple talkers and multiple listeners - Ship systems interconnection - Application profile	EN 61162-401	- [2)]
ISO/IEC 8859-1	1998	Information technology - 8-bit single-byte coded graphic character sets Part 1: Latin alphabet No.1	-	-

1) To be published.

2) Undated reference.

INTERNATIONAL STANDARD

IEC 61162-420

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Maritime navigation and radiocommunication equipment and systems – Digital interfaces –

Part 420: Multiple talkers and multiple listeners – Ship systems interconnection – Companion standard requirements and basic companion standards

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 420: Multiple talkers and multiple listeners – Ship systems interconnection – Companion standard requirements and basic companion standards

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 61162-420 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

The text of this standard is based on the following documents:

FDIS	Report on voting
80/312/FDIS	80/327/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The special typographical conventions and nomenclature used in this standard are defined in IEC 61162-400 annex A.

Annexes A, B, C, D, E and F form an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until June, 2005. At this date, the publication will be

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

INTRODUCTION

International Standard IEC 61162 is a four part standard which specifies four digital interfaces for applications in marine navigation, radiocommunication and system integration.

The four parts are:

IEC 61162-1 Single talker and multiple listeners

IEC 61162-2 Single talker and multiple listeners, high speed transmission

IEC 61162-3 Multiple talkers and multiple listeners – Serial data instrument network

IEC 61162-4 Multiple talkers and multiple listeners – Ship systems interconnection. Part 4 of this standard is sub-divided into a number of individual standards with part numbers in the 400 series.

IEC 61162-420 contains the specification of a description language for IEC 61162-4 series companion standards (user layer specifications), a framework for the organization of such companion standard descriptions and also the descriptions of basic components that can be used as a starting point to build IEC 61162-4 series components and networks.

Later standards in the companion standard series (IEC 61162-42x) are expected to address more concrete interface requirements for specific navigational equipment.

Relationship with the other parts of the IEC 61162 series of standards is defined in annex B to IEC 61162-400.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 420: Multiple talkers and multiple listeners – Ship systems interconnection – Companion standard requirements and basic companion standards

1 Scope and object

International Standard IEC 61162-420 specifies the requirement for and basic components of the IEC 61162-4 series companion standards. These components are referred to as follows:

a) **PCS** (PISCES companion standards) which contain the rules for creation of companion standards. The general principles underlying the PCS are described in clause 4.

b) **PCSDL** (PCS description language). Part of the PCS is the definition of the syntax for the various types of companion standard documents that make them readable by computer tools. The PCSDL is described in clause 5.

c) **function block** description. The function block description is a high level and graphical description of applications using the IEC 61162-4 series interface standard. The function block syntax is specified in clause 7.

d) **PFS** (PISCES foundation specifications) which contain a framework for classification of applications adhering to the IEC 61162-4 standard. The PFS will also provide a minimum level of interoperability between different manufacturers' applications using this framework. The PFS is described in clause 6.

Clause 5 contains the complete reference to the PCS description language. Subclause 5.2 explains the basic concept of the PCS which is given by the distinction between four types of specifications: applications, interfaces, information and data types. General conventions with respect to the syntax of the PCS can be found in 5.3. All PCS documents are based on a similar structure. This approach is intended to make it easier to become familiar with the syntax and semantics of the PCS which is defined in 5.3.1. The four subclauses thereafter explain in detail the syntax and semantics of the four different types of specifications generated by the PCS.

Clause 6 describes the relationship between the different classes of IEC 61162-4 applications and gives an overview of their functionality. The annexes contain the detailed PCS definitions for the classes.

The objective of companion standards is to provide definitions of the information that is transferred within an integrated ship control system and of how these information items can be accessed or provided. Furthermore, the standard shall allow the definition of the actual network interfaces which the applications use to connect to the system. The description format is machine-readable, allowing an automatic compilation of the description into interface software.

A companion standard allows the reader to, at will, shift the focus between a technical specification and a definition of interfaces and information items. The development team can determine information attributes like unit, power, accuracy and the structure of the system architecture and create a common interpretation basis for data before the system implementation. The formalisms underlying the specification language will at the same time provide an unambiguous and precise description of the equipment interfaces which allow the use of computer tools to automatically generate interface program codes or to inspect and manipulate interfaces on-line, for example for debugging and monitoring purposes.