SLOVENSKI STANDARD
SIST EN 62657-2:2017/A1:2020

01-februar-2020

Industrijska komunikacijska omrežja - Brezžična komunikacijska omrežja - 2. del: Upravljanje soobstoja (IEC 62657-2:2017/A1:2019)

Industrial communication networks - Wireless communication networks - Part 2: Coexistence management (IEC 62657-2:2017/A1:2019)

Industrielle Kommunikationsnetze - Funk-Kommunikationsnetze - Teil 2: Koexistenz-Management (IEC 62657-2:2017/A1:2019)

Réseaux de communication industriels - Réseaux de communication sans fil - Partie 2: Gestion de coexistence (IEC 62657-2:2017/A1:2019)

Ta slovenski standard je istoveten z: **EN 62657-2:2017/A1:2019**

ICS:

25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control
35.110	Omreževanje	Networking

SIST EN 62657-2:2017/A1:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62657-2:2017/A1

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ICS 25.040.40; 33.040.40; 35.110

English Version

Industrial communication networks - Wireless communication networks - Part 2: Coexistence management (IEC 62657-2:2017/A1:2019)

Réseaux de communication industriels - Réseaux de communication sans fil - Partie 2: Gestion de coexistence (IEC 62657-2:2017/A1:2019)

Industrielle Kommunikationsnetze - Funk-Kommunikationsnetze - Teil 2: Koexistenz-Management (IEC 62657-2:2017/A1:2019)

This amendment A1 modifies the European Standard EN 62657-2:2017; it was approved by CENELEC on 2019-10-18. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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

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European foreword

The text of document 65C/968/FDIS, future IEC 62657-2/A1, prepared by SC 65C "Industrial networks" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62657-2:2017/A1:2019.

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)	2020-07-18
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2022-10-18

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The text of the International Standard IEC 62657-2:2017/A1:2019 was approved by CENELEC as a European Standard without any modification.

IEC 62657-2

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

Industrial communication networks – Wireless communication networks – Part 2: Coexistence management

Réseaux de communication industriels – Réseaux de communication sans fil – Partie 2: Gestion de coexistence

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ICS 25.040.40; 33.040.40; 35.110

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FOREWORD

This amendment has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation.

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

FDIS	Report on voting
65C/968/FDIS	65C/976/RVD

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

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

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

INTRODUCTION

This Amendment 1 to the second edition includes the following significant technical changes:

a) alignment of some definitions and specifications of coexistence parameters in order to facilitate their future inclusion in the IEC Common Data Dictionary (IEC CDD) maintained by the IEC.

3 Terms, definitions, abbreviated terms and conventions

3.1 Terms and definitions

Replace the existing terms and definitions by the following:

3.1.1
adjacent channel interference
interference that occurs from wireless devices using adjacent frequency channels

3.1.2
adjacent channel selectivity
ability of a radio receiver to respond to the desired signal and to reject signals in adjacent frequency channels

3.1.3
antenna gain
ratio of the power required at the input of a reference antenna to the power supplied to the input of the given antenna to produce, in a given direction, the same field strength at the same distance

[SOURCE: Federal Standard 1037C:1996, modified – Deletion of “loss-free” before “reference antenna”, deletion of the two notes and synonyms] [21]

3.1.4
antenna radiation pattern
variation of the field intensity of an antenna as an angular function with respect to the axis

3.1.5
antenna type
structure or device used to collect or radiate electromagnetic waves

3.1.6
application communication requirements
quantitative requirements specifying the required conditions and the required characteristics of wireless communication solutions at the communication interface that is met in order to achieve the purpose of the automation application

3.1.7
automation application
industrial automation application
application of measurement and automatic control in the industrial automation domain

3.1.8
automation application data length
user data length
number of octets that are exchanged at the reference interface

3.1.9
availability
<performance> ability of an item to be in a state to perform as required function under given conditions at a given instant of time or over a given time interval, assuming that the required external resources are provided

Note 1 to entry: This ability depends on the combined aspects of the reliability performance, the maintainability performance, and the maintenance support performance.

Note 2 to entry: Required external resources, other than maintenance resources, do not affect the availability performance of the item.

[SOURCE: IEC 60050-191:1990, 191-02-05, modified – Deletion of third note to entry]

3.1.10
bandwidth
frequency bandwidth
difference between upper cut-off frequency and lower cut-off frequency

3.1.11
bit rate of the physical link
measure of the number of binary digits transferred per second

3.1.12
cellular topology
cellular network topology
network topology where the geographical area is divided in cells

Note 1 to entry: A device can move from one cell to another cell. Devices that are in a cell communicate through a central hub. Hubs in different cells are interconnected.

3.1.13
center frequency
geometric mean of lower cut-off frequency and upper cut-off frequency of a frequency channel

3.1.14
channel number
unsigned integer number identifying a wireless communication channel in accordance to an authoritative document or rule

3.1.15
channel occupation
time in which the medium is busy

Note 1 to entry: Beyond the pure transfer of user data, this time includes all time slices necessary to process the transmission protocol, for example to transfer an acknowledgement.

3.1.16
characteristic of the area of operation
distinguishing properties of the area where the wireless communication network is operated

3.1.17
characteristic of wireless communication solution
parameters of wireless communication solutions which are implementations of wireless communication systems and devices

3.1.18
characteristic of wireless device solution
parameters related to individual nodes within a network implementing a wireless communication solution

3.1.19
characteristic of wireless device type
specification of transmitter and receiver parameters

3.1.20
characteristic of wireless network solution
parameters related to a network as a whole used implementing a wireless communication solution

3.1.21
characteristic of wireless system type
parameters describing the kind of wireless communication system

3.1.22
characteristic of wireless system type and wireless device type
parameters that characterize the model of a wireless system or a wireless device by providing the parameters to specify a wireless system type and a wireless device type

3.1.23
coexistence
wireless communication coexistence
state in which all wireless communication solutions of a plant using shared medium fulfil all their application communication requirements

Note 1 to entry: In IEEE 802.15.2-2003 [19] the coexistence is defined as a characteristic of a device.

3.1.24
coexistence assessment
undertaking of an investigation in order to arrive at a judgment, based on evidence of the suitability of a set of products and their installation to achieve coexistence

3.1.25
coexistence management
process to establish and to maintain coexistence that includes technical and organizational measures

3.1.26
coexistence management information
parameters for the wireless coexistence management process

3.1.27
coexistence manager
role of a nominated person to manage coexistence

3.1.28
coexistence planning
process that describes the allocation of wireless communication resources (time, frequencies, coding, space) to each wireless communication system in order to achieve coexistence

3.1.29
communication load
amount of user data to be transmitted from the automation application within a certain period of time

3.1.30
cut-off frequency
frequency limit, nearest to the frequency where the spectral power density drops below a certain level, defining the frequency bandwidth

3.1.31
data throughput
ratio of the number of user data per time period, transferred within a consumer at the reference interface to the application

3.1.32
device type information
manufacturer name, manufacturer contact, the type and version of hardware and software

3.1.33
distance between wireless devices
geographical distance between devices within a three-dimensional space

3.1.34
duty cycle
ratio of the transmitter sequence referenced to a given observation time for the used frequency channel

3.1.35
dwell time
period spent at a particular frequency during any single hop of a frequency hopping system

3.1.36
equivalent isotropic radiated power
product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna (absolute or isotropic gain)

[SOURCE: Radio Regulations (2012) – Art. 1 § 1.161, modified – Term modified from isotropically to isotropic and definition reformatted according to the ISO/IEC Directives Part 2]

3.1.37
effective radiated power
product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction

[SOURCE: Radio Regulations (2012) – Art. 1 § 1.162, modified – Deleted “(in a given direction)” and definition reformatted according to the ISO/IEC Directives Part 2]

3.1.38
electromagnetic interference
EMI
degradation of the performance of an equipment, transmission channel or system caused by an electromagnetic disturbance

Note 1 to entry: In French, the terms "perturbation électromagnétique" and "brouillage électromagnétique" designate respectively the cause and the effect, and should not be used indiscriminately.

Note 2 to entry: In English, the terms "electromagnetic disturbance" and "electromagnetic interference" designate respectively the cause and the effect, and should not be used indiscriminately.

[SOURCE: IEC 60050-161:1990/AMD1:1997, 161-01-06, modified – Corrected mistakes in the Notes to entry]

3.1.39
frequency band
range in the frequency spectrum that is assigned by regulatory organizations for use for specific applications or a group of applications

Note 1 to entry: The ITU as international regulatory organization assigns only radio communication services to a specific range in the frequency spectrum.

3.1.40
frequency channel
span of the frequency spectrum which is characterized by lower cut-off frequency and upper cut-off frequency or by center frequency and bandwidth

3.1.41
frequency hopping procedure
sequence of frequency channels used for transmission (hopping sequence) and dwell time

3.1.42
future expansion plan
possible installation of new wireless communication solutions and buildings that can affect coexistence

3.1.43
general plant characteristics
parameters that characterizes the plant in general with respect to all wireless communication applications

3.1.44
geographical dimension of the plant
length, width and height of the intended space of the wireless system

3.1.45
industrial automation application
control or management systems used in industrial production, including supervisory control and data acquisition systems, distributed control systems, and other control system configurations often found in the industrial sectors and critical infrastructures

3.1.46
industrial communication network
data communications sub-systems for industrial-process measurement and control as well as on instrumentation systems used for research, development or testing purposes

3.1.47
immunity
ability of an item to continue operating properly in the event of an interference, up to a certain level of interference, and to be resilient above this level

Note 1 to entry: Immunity of an item is achieved by adding to the robustness of the item the ability to be resilient to interference.

3.1.48
infrastructure device
device that is essential for building up a wireless communication system according to a technology or standard, but not having an interface to an automation application

EXAMPLE Router or base stations without interfaces to the wired industrial network or without automation application functions.

3.1.49
initiation of data transmission
method that specifies how the application initiates the data transfer

3.1.50
intermodulation sensitivity
levels of out-of-band interfering signals that, when mixed in the receiver front-end, produce an in-band third order non-linearity product

3.1.51
interference
radio frequency interference
effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radio communication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy

[SOURCE: Database ITU Terms and Definitions]

3.1.52
industrial, scientific and medical application
operation of equipment or appliances designed to generate and use locally radio frequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunications