SVENSK STANDARD SS-EN 62657-1

Fastställd	Utgåva	Sida	Ansvarig kommitté
2018-04-11	1	1 (1+62)	SEK TK 65

Industriella nätverk för datatrafik – Trådlös kommunikation – Del 1: Fordringar och spektrumaspekter

Industrial communication networks – Wireless communication networks – Part 1: Wireless communication requirements and spectrum considerations

Som svensk standard gäller europastandarden EN 62657-1:2017. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62657-1:2017.

Nationellt förord

Europastandarden EN 62657-1:2017

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62657-1, First edition, 2017 - Industrial communication networks - Wireless communication networks - Part 1: Wireless communication requirements and spectrum considerations**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 25.040.00; 33.040.40; 35.240.50

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62657-1

October 2017

ICS 25.040; 33.040.40; 35.240.50

English Version

Industrial communication networks - Wireless communication networks - Part 1: Wireless communication requirements and spectrum considerations (IEC 62657-1:2017)

Réseaux de communication industriels - Réseaux de communication sans fil - Partie 1: Exigences de communication sans fil et considérations relatives au spectre
(IEC 62657-1:2017)

Industrielle Kommunikationsnetze - Funk-Kommunikationsnetze - Teil 1: Anforderungen und Überlegungen zur Frequenznutzung
(IEC 62657-1:2017)

This European Standard was approved by CENELEC on 2017-07-24. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 62657-1:2017 E

SEK Svensk Elstandard

European foreword

The text of document 65C/874/FDIS, future edition 1 of IEC 62657-1, 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 62657-1:2017.

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)	2018-04-27
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2020-10-27

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62657-1:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61784-1	NOTE	Harmonized as EN 61784-1.
IEC 62479:2010	NOTE	Harmonized as EN 62479:2010 (modified).
IEC 62591	NOTE	Harmonized as EN 62591.
IEC 62601	NOTE	Harmonized as EN 62601.
IEC 62734	NOTE	Harmonized as EN 62734.
IEC 60079-0	NOTE	Harmonized as EN 60079-0.
IEC 60079-11	NOTE	Harmonized as EN 60079-11.
IEC 60079-25	NOTE	Harmonized as EN 60079-25.
ISO/IEC 80079-34:2011	NOTE	Harmonized as ISO/IEC 80079-34:2011 (modified).
IEC 61508	NOTE	Harmonized in EN 61508 series.
IEC 61804-3	NOTE	Harmonized as EN 61804-3.
IEC 62443	NOTE	Harmonized in EN 62443 series.
IEC 62453	NOTE	Harmonized in EN 62453 series.

IEC 62714	NOTE	Harmonized in EN 62714 series.
IEC 62769	NOTE	Harmonized in EN 62769 series.
IEC 62952	NOTE	Harmonized in EN 62952 series.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60079-10-1	-	Explosive atmospheres - Part 10-1: Classification of areas - Explosive gas atmospheres	EN 60079-10-1	-
IEC 60079-10-2	-	Explosive atmospheres - Part 10-2: Classification of areas - Explosive dust atmospheres	EN 60079-10-2	-
IEC 61511	series	Functional safety - Safety instrumented systems for the process industry sector	EN 61511	series
IEC 61784-2	-	Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3	EN 61784-2	-
IEC 61784-3	-	Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions	EN 61784-3	-
IEC 62657-2	2017	Industrial communication networks - Wireless communication networks – Part 2: Coexistence management	EN 62657-2	2017
ETSI TR 102 889-2 V1.1.1 (2011-08)	2011	Electromagnetic compatibility and Radio spectrum Matters (ERM); System Reference Document; Short Range Devices (SRD); Part 2: Technical characteristics for SRD equipment for wireless industrial applications using technologies different from Ultra-Wide Band (UWB)	-	-

Publication	Year	Title	EN/HD	Year
ETSI EN 300 328 V2.1.1 (2016-11)	2016	Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INDUSTRIAL COMMUNICATION NETWORKS – WIRELESS COMMUNICATION NETWORKS –

Part 1: Wireless communication requirements and spectrum considerations

FOREWORD

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International Standard IEC 62657-1 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation.

This first edition cancels and replaces the first edition of IEC TS 62657-1 published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC TS 62657-1:2014:

a) update of requirements for wireless industrial applications;
b) addition of performance indicators and their measurement.

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

FDIS	Report on voting
65C/874/FDIS	65C/878/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.

A list of all parts of the IEC 62657 series, under the general title *Industrial communication networks – Wireless communication networks*, can be found on the IEC website.

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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This document provides general requirements of industrial automation and spectrum considerations that are the basis for industrial communication solutions. This document is intended to facilitate harmonization of future adjustments to international, national, regional and local regulations.

IEC 62657-2 provides the coexistence management concept and process. Based on the coexistence management process, a predictable assuredness of coexistence can be achieved for a given spectrum with certain application requirements.

INDUSTRIAL COMMUNICATION NETWORKS – WIRELESS COMMUNICATION NETWORKS –

Part 1: Wireless communication requirements and spectrum considerations

1 Scope

This part of IEC 62657 provides the wireless communication requirements dictated by the applications of wireless communication systems in industrial automation, and requirements of related context. The requirements are specified in a way that is independent of the wireless technology employed. The requirements are described in detail and in such a way as to be understood by a large audience, including readers who are not familiar with the industry applications.

Social aspects, environmental aspects, health aspects and market requirements for wireless communication systems in industrial automation are described to justify the wireless communication requirements.

This document also provides a rationale to successfully articulate the solutions of the wireless communication requirements proposed for the short-term and long-term. Coexistence management according to IEC 62657-2 is already applied in the short-term.

This document describes requirements of the industrial automation applications that can be used to ask for additional dedicated, worldwide unique spectrum. This additional spectrum is intended to be used for additional wireless applications while continuing using the current industrial, scientific and medical (ISM) bands.

This document provides useful information for the automation field professionals who are not familiar with the spectrum and wireless technologies.

Building automation is excluded from the scope because of the different usage constraints (for most non-industrial buildings it is normally difficult for the owner/operator to impose control over the presence and operation of radio equipment).

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 60079-10-1, *Explosive atmospheres – Part 10-1: Classification of areas – Explosive gas atmospheres*

IEC 60079-10-2, *Explosive atmospheres – Part 10-2: Classification of areas – Explosive dust atmospheres*

IEC 61511 (all parts), *Functional safety – Safety instrumented systems for the process industry sector*

IEC 61784-2, *Industrial communication networks – Profiles – Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3*

IEC 61784-3, *Industrial communication networks – Profiles – Part 3: Functional safety fieldbuses – General rules and profile definitions*

IEC 62657-2:—[1], *Industrial communication networks – Wireless communication networks – Part 2: Coexistence management*

ETSI TR 102 889-2 V.1.1.1 (2011), *Electromagnetic compatibility and Radio spectrum Matters (ERM); System Reference Document; Short Range Devices (SRD); Part 2: Technical characteristics for SRD equipment for wireless industrial applications using technologies different from Ultra-Wide Band (UWB)*

ETSI EN 300 328 V2.1.1 (2016), *Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

[1] Under preparation. Stage at the time of publication: IEC FDIS 62657-2:2017.