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

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NATIONAL FOREWORD

See Eesti standard EVS-EN 62657-2:2015 sisaldab Euroopa standardi EN 62657-2:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 62657-2:2015 consists of the English text of the European standard EN 62657-2:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.05.2015.	Date of Availability of the European standard is 22.05.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 25.040.40, 33.040, 35.110

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62657-2

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ICS 25.040.40; 33.040; 35.110

English Version

Industrial communication networks - Wireless communication networks - Part 2: Coexistence management (IEC 62657-2:2013 , modified)

Réseaux de communication industriels - Réseaux de communication sans fil - Partie 2: Gestion de coexistence (IEC 62657-2:2013 , modifiée)

Industrielle Kommunikationsnetze - Funk-Kommunikationsnetze - Teil 2: Koexistenz-Management (IEC 62657-2:2013 , modifiziert)

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

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Foreword

This document (EN 62657-2:2015) consists of the text of IEC 62657-2:2013 prepared by SC 65C "Industrial networks" of IEC/TC 65 "Industrial-process measurement, control and automation", together with the common modifications prepared by CLC/TC 65X "Industrial-process measurement, control and automation".

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) 2016-03-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-03-16

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

Endorsement notice

The text of the International Standard IEC 62657-2:2013 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

1 Scope

Delete Examples 1 and 2.

3 Terms, definitions, abbreviated terms and conventions

In 3.2, **delete** the term 'R&TTE'.

4 Coexistence concept in industrial automation

In 4.2, **replace** the first paragraph by the following:

This part of EN 62657 gives guidance to manufacturers of wireless automation devices on how to fulfill requirements of applicable regional and local regulations.

7 Coexistence management process

In 7.1.1, **replace** the last paragraph by the following:

In all phases, the local and regional legal and regulatory issues shall be considered and shall be fulfilled.

Bibliography

Add the following notes for the standards indicated:

IEC 61360 Series	NOTE	Harmonized in EN 61360 Series (not modified).
IEC 61784-1	NOTE	Harmonized as EN 61784-1.
IEC 61784-2	NOTE	Harmonized as EN 61784-2.
IEC 62591	NOTE	Harmonized as EN 62591.

Replace the text of entries [20] and [21] by 'Void'.

CONTENTS

INTRODUCTION

The market is in need of network solutions, each with different performance characteristics and functional capabilities, matching diverse application requirements. Industrial automation applications cover different industrial application domains like:

– process automation, covering for example the following industry branches
  - oil & gas, refining,
  - chemical,
  - pharmaceutical,
  - mining,
  - pulp & paper,
  - water & wastewater,
  - steel
– electric power like
  - power generation (for example wind turbine),
  - power distribution (grid),
– factory automation, covering for example the following industry branches
  - food & beverage,
  - automotive,
  - machinery,
  - semiconductor.

Industrial automation applications require behaviors of wireless communication networks that are different from those that are used for example in telecommunications or for commercial like a remote control or toy. These industrial automation requirements are identified and provided in IEC/TS 62657-1.

In industrial automation, many different wireless communication networks may operate in the same premises. Examples of these networks are IEC 62591 [6] [1] (WirelessHART®[2]), IEC 62601 [7] (WIA-PA) and IEC/PAS 62734 [9] (ISA100.11a); all these networks use IEEE 802.15.4 [18] for the process automation applications. Other examples of wireless networks are specified in IEC 61784-1 [3] and IEC 61784-2 [4] CPs that use IEEE 802.11 [14] and IEEE 802.15.1 [16] for factory automation applications. Different to wired fieldbuses, the wireless communication interfaces can interfere with others on the same premises or environment, disturbing each other. Therefore, without a predictable assuredness of coexistence, it could be problematic to have multiple wireless communication networks in the same facility or environment, especially because the time-criticality, the safety and the security of the operation may not be ensured in such an environment.

This part of the IEC 62657 addresses the coexistence management for a predictable assuredness of coexistence.

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1 Figures in square brackets refer to the Bibliography.

2 WirelessHART is the registered trade name of the HART Communication Foundation. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

The IEC 62657 series has two parts:

- Part 1: Wireless communication requirements and spectrum considerations
- Part 2: Coexistence management

IEC/TS 62657-1 [8] provides general requirements of industrial automation and spectrum considerations that are the basis for industrial communication solutions. This second part of IEC 62657 specifies the coexistence management with a predictable assuredness of coexistence. It is intended to facilitate harmonization of future adjustments to international, national, and local regulations.

This Part 2 of IEC 62657 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.

This Part 2 of IEC 62657 provides guidance to the users of wireless communication networks on selection and proper use of wireless communication networks. To provide suitable wireless devices to the market, it also serves vendors in describing the behaviors of wireless devices to build wireless communication networks matching the application requirements.

This Part 2 of IEC 62657 is based on analyses of a number of International Standards, which focus on specific technologies. The intention of this standard is not to invent new parameters but to use already defined ones and to be technology independent.