

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Industrial networks – Coexistence of wireless systems –
Part 4: Coexistence management with central coordination of wireless
applications**

**Réseaux industriels – Coexistence des systèmes sans fil –
Partie 4: Gestion de coexistence avec coordination centralisée des applications
sans fil**



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2024 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications provided, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications, symboles graphiques et le glossaire. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 500 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 25 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Industrial networks – Coexistence of wireless systems –
Part 4: Coexistence management with central coordination of wireless
applications**

**Réseaux industriels – Coexistence des systèmes sans fil –
Partie 4: Gestion de coexistence avec coordination centralisée des applications
sans fil**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 25.040

ISBN 978-2-8327-0195-9

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	9
INTRODUCTION.....	11
1 Scope.....	12
2 Normative references	12
3 Terms, definitions, abbreviated terms and conventions.....	13
3.1 General.....	13
3.2 Terms and definitions specific for this document.....	13
3.3 Additional terms and definitions for the templates.....	14
3.4 Terms and definitions given in IEC 62657-2.....	15
3.5 SRF specific definitions.....	17
3.6 Abbreviated terms.....	18
3.7 Conventions used for service descriptions	19
4 Area of consideration.....	20
4.1 Coexistence conceptual model.....	20
4.2 Investigation of coexistence state	21
4.3 Implementing radio resources and their utilization.....	24
4.4 Coexistence management equipment.....	25
5 Wireless coexistence management system architecture.....	25
5.1 General.....	25
5.2 System elements	30
5.2.1 Wireless systems and wireless devices for automation applications.....	30
5.2.2 Central coordination point.....	31
5.2.3 Coordination database.....	34
5.2.4 Spectrum sensing system.....	35
5.3 Protocol reference architecture.....	36
5.3.1 General	36
5.3.2 Data plane.....	37
5.3.3 Management and control plane.....	38
5.4 System of wireless communication applications	39
5.4.1 CCP concept for sharing with incumbent radio systems	39
5.4.2 Protection of incumbent radio systems.....	39
5.4.3 CCP concept for intra-system coexistence.....	39
5.5 Interfaces.....	41
5.5.1 CCP.....	41
5.5.2 CCP managed wireless communication application and wireless device	42
5.5.3 Database.....	42
5.5.4 Spectrum sensing system.....	42
6 Parameter for coexistence assessment.....	42
7 Parameter for coexistence control	43
7.1 General.....	43
7.2 Application parameter	43
7.3 Radio parameter	43
8 Management and control services	45
8.1 General.....	45
8.2 Application communication requirements management services.....	45
8.2.1 Supported services	45

8.2.2	GetGeneralPlantCharacteristic	46
8.2.3	SetGeneralPlantCharacteristic	50
8.2.4	GetApplicationCommunicationRequirements	54
8.2.5	GetApplicationCommunicationStatus	57
8.2.6	SetApplicationCommunicationReport	60
8.2.7	NotificationApplicationCommunicationstatus	63
8.3	Wireless communication system and device subscription services	66
8.3.1	Supported services	66
8.3.2	SubscribeDevice	66
8.3.3	UnsubscribeDevice	70
8.3.4	SubscribeSystem	72
8.3.5	UnsubscribeSystem	76
8.3.6	GetDeviceAttributes	78
8.4	Wireless communication system and device configuration and control services	83
8.4.1	Supported services	83
8.4.2	SetTransmitPower	84
8.4.3	SetFrequencyChannel	86
8.4.4	SetBandwidth	89
8.4.5	SetFrequencyHoppingSequence	91
8.4.6	SetBlockedFrequencyList	94
8.4.7	SetDwellTime	96
8.4.8	SetMediumAccessControlMechanism	99
8.4.9	SetDeviceStatus	101
8.4.10	GetParameter	104
8.4.11	SetParameter	107
8.5	Medium resource management services	111
8.5.1	Supported services	111
8.5.2	GetMediumResourceReport	111
8.5.3	SetMediumResourceReport	115
8.5.4	NotifyMediumResource	119
8.5.5	SetMediumSensingReport	123
8.5.6	NotifyMediumSensingResults	127
8.6	Database access services	130
8.6.1	Supported service	130
8.6.2	GetRadioRegulation	130
Annex A (informative) Example of a CCP controlled WCA and incumbent services/applications within the 5,8 GHz band		135
Annex B (informative) Use of IEC CDD		137
Annex C (informative) Mapping of the services to templates		139
C.1	General	139
C.2	Templates of the management services	139
C.3	Templates of the subscription services	141
C.4	Templates of the Wireless communication system and device configuration and control services	144
C.5	Templates of the Medium resource management services	147
C.6	Templates of the Database access services	149
Annex D (informative) Wireless coexistence management with SRF Wireless Platform		151
D.1	General	151

D.2	Overview of SRF Wireless Platform	151
D.3	Effects of SRF Wireless Platform implementation.....	154
D.4	Functions of SRF Wireless Platform.....	156
D.4.1	Messages	156
D.4.2	Functions.....	160
D.4.3	Parameters.....	178
D.4.4	Message format.....	181
	Bibliography.....	184
	Figure 1 – Wireless coexistence conceptual model according to IEC 62657-2.....	21
	Figure 2 – Sources to determine parameters for coexistence state calculation.....	22
	Figure 3 – Coexistence state function	23
	Figure 4 – Parameters describing active influences and control parameters used to manage coexistence	24
	Figure 5 – Example instance of class CoexistenceSystem in accordance with IEC 62657-3	27
	Figure 6 – Elements of central coordinated coexistence management system.....	28
	Figure 7 – Data exchange in central coordinated coexistence management system	29
	Figure 8 – CCP managed wireless devices and CCP managed wireless systems.....	31
	Figure 9 – Overview of CCP.....	32
	Figure 10 – Protocol reference model of CCP managed wireless device	37
	Figure 11 – CCP for intra-system coexistence.....	41
	Figure 12 – Primitive flow of GetGeneralPlantCharacteristic	46
	Figure 13 – Sequence diagram (GetGeneralPlantCharacteristic).....	48
	Figure 14 – Primitive flow of SetGeneralPlantCharacteristic.....	50
	Figure 15 – Sequence diagram (SetGeneralPlantCharacteristic).....	52
	Figure 16 – Primitive flow of GetApplicationCommunicationRequirements	54
	Figure 17 – Sequence diagram (GetApplicationCommunicationRequirements).....	56
	Figure 18 – Primitive flow of SetApplicationCommunicationStatus	57
	Figure 19 – Sequence diagram (SetApplicationCommunicationStatus)	59
	Figure 20 – Primitive flow of SetApplicationCommunicationReport.....	61
	Figure 21 – Sequence diagram (SetApplicationCommunicationReport service parameters).....	62
	Figure 22 – Primitive flow of NotificationApplicationCommunicationstatus	64
	Figure 23 – Sequence diagram (NotificationApplicationCommunicationstatus).....	65
	Figure 24 – Primitive flow of SubscribeDevice.....	67
	Figure 25 – Sequence diagram (SubscribeDevice).....	69
	Figure 26 – Primitive flow of UnsubscribeDevice.....	70
	Figure 27 – Sequence diagram (UnsubscribeDevice).....	71
	Figure 28 – Primitive flow of SubscribeSystem.....	73
	Figure 29 – Sequence diagram (SubscribeSystem).....	75
	Figure 30 – Primitive flow of UnsubscribeSystem.....	76
	Figure 31 – Sequence diagram (UnsubscribeSystem).....	77
	Figure 32 – Primitive flow of GetDeviceAttributes.....	78
	Figure 33 – Sequence diagram (GetDeviceAttributes).....	81

Figure 34 – Primitive flow of SetTransmitPower service	84
Figure 35 – Sequence diagram (SetTransmitPower)	85
Figure 36 – Primitive flow of SetFrequencyChannel service	86
Figure 37 – Sequence diagram (SetFrequencyChannel)	88
Figure 38 – Primitive flow of SetBandwidth service	89
Figure 39 – Sequence diagram (SetBandwidth)	90
Figure 40 – Primitive flow of SetFrequencyHoppingSequence service	91
Figure 41 – Sequence diagram (SetBandwidth)	93
Figure 42 – Primitive flow of SetBlockedFrequencyList service	94
Figure 43 – Sequence diagram (SetBlockedFrequencyList)	95
Figure 44 – Primitive flow of SetDwellTime service	96
Figure 45 – Sequence diagram (SetDwellTime)	98
Figure 46 – Primitive flow of SetMediumAccessControlMechanism service	99
Figure 47 – Sequence diagram (SetMediumAccessControlMechanism)	100
Figure 48 – Primitive flow of SetDeviceStatus service	102
Figure 49 – Sequence diagram (SetDeviceStatus)	103
Figure 50 – Primitive flow of GetParameter service for CMWCA	104
Figure 51 – Primitive flow of GetParameter service for CMWD	105
Figure 52 – Sequence diagram (GetParameter)	106
Figure 53 – Primitive flow of SetParameter service for CMWCA	108
Figure 54 – Primitive flow of SetParameter service for CMWD	108
Figure 55 – Sequence diagram (SetParameter)	110
Figure 56 – Primitive flow of GetMediumResourceReport service for CMWCA	111
Figure 57 – Primitive flow of GetMediumResourceReport service for CMWD	111
Figure 58 – Sequence diagram (GetMediumResourceReport)	114
Figure 59 – Primitive flow of SetMediumResourceReport service for CMWCA	116
Figure 60 – Primitive flow of SetMediumResourceReport service for CMWD	116
Figure 61 – Sequence diagram (SetMediumResourceReport)	118
Figure 62 – Primitive flow of NotifyMediumResource service for CMWCA	120
Figure 63 – Primitive flow of NotifyMediumResource service for CMWD	120
Figure 64 – Sequence diagram (NotifyMediumResource)	122
Figure 65 – Primitive flow of SetMediumSensingReport service for SSN	124
Figure 66 – Primitive flow of SetMediumSensingReport service for SSF in CMWD	124
Figure 67 – Sequence diagram (SetMediumSensingReport)	126
Figure 68 – Primitive flow of NotifyMediumSensingResults service for SSN	128
Figure 69 – Primitive flow of NotifyMediumSensingResults service for SSF in CMWD	128
Figure 70 – Sequence diagram (NotifyMediumSensingResults)	129
Figure 71 – Primitive flow of GetRadioRegulation service	131
Figure 72 – Sequence diagram (GetRadioRegulation)	133
Figure A.1 – CCP controlled WCA and incumbent services and applications	135
Figure A.2 – Overview of incumbent service/applications	136
Figure B.1 – Fostering wireless coexistence management	138
Figure D.1 – CCP system elements of SRF Wireless Platform	151

Figure D.2 – Overview of SRF Wireless Platform	152
Figure D.3 – Architecture of SRF Wireless Platform	153
Figure D.4 – Overview of SRF Wireless Platform layer structure	154
Figure D.5 – Experimental results of the SRF Wireless Platform demonstration (time variation of transmission time)	155
Figure D.6 – Experimental results of the SRF Wireless Platform demonstration (frequency of transmission time)	156
Table 1 – Explanations of radio channels	22
Table 2 – Level of effectiveness of wireless automation	34
Table 3 – List of parameters for coexistence assessment	42
Table 4 – List of application parameters for coexistence control	43
Table 5 – List of radio parameters for coexistence control	44
Table 6 – GetGeneralPlantCharacteristic service parameters	46
Table 7 – GetGeneralPlantCharacteristic service message format	49
Table 8 – SetGeneralPlantCharacteristic service parameters	50
Table 9 – SetGeneralPlantCharacteristic service message format	53
Table 10 – GetApplicationCommunicationRequirements service parameters	54
Table 11 – GetApplicationCommunicationRequirements service message format	57
Table 12 – GetApplicationCommunicationStatus service parameters	58
Table 13 – GetApplicationCommunicationStatus service message format	60
Table 14 – SetApplicationCommunicationReport service parameters	61
Table 15 – SetApplicationCommunicationReport service message format	63
Table 16 – NotificationApplicationCommunicationstatus service parameters	64
Table 17 – NotificationApplicationCommunicationstatus service message format	66
Table 18 – SubscribeDevice service parameters	67
Table 19 – SubscribeDevice service message format	69
Table 20 – UnsubscribeDevice service parameters	70
Table 21 – UnsubscribeDevice service message format	72
Table 22 – SubscribeSystem service parameters	73
Table 23 – SubscribeSystem service message format	75
Table 24 – UnsubscribeSystem service parameters	76
Table 25 – UnsubscribeSystem service message format	78
Table 26 – GetDeviceAttributes service parameters	79
Table 27 – GetDeviceAttributes service message format	81
Table 28 – SetTransmitPower service parameter	84
Table 29 – SetTransmitPower service message format	86
Table 30 – SetFrequencyChannel service parameter	87
Table 31 – SetFrequencyChannel service message format	88
Table 32 – SetBandwidth service parameter	89
Table 33 – SetBandwidth service message format	91
Table 34 – SetFrequencyHoppingSequence service parameter	92
Table 35 – SetFrequencyHoppingSequenceservice message format	93
Table 36 – SetBlockedFrequencyList service parameter	94

Table 37 – SetBlockedFrequencyListservice message format	96
Table 38 – SetDwellTime service parameter	97
Table 39 – SetDwellTimeservice message format	98
Table 40 – SetMediumAccessControlMechanism service parameter	99
Table 41 – SetMediumAccessControlMechanism service message format	101
Table 42 – SetDeviceStatus service parameter	102
Table 43 – SetDeviceStatusservice message format	104
Table 44 – GetParameter service parameter	105
Table 45 – GetParameterservice message format	107
Table 46 – SetParameter service parameter	108
Table 47 – SetParameterservice message format	110
Table 48 – GetMediumResourceReport service parameter	112
Table 49 – GetMediumResourceReport service message format	115
Table 50 – SetMediumResourceReport service parameter	116
Table 51 – SetMediumResourceReport service message format	119
Table 52 – NotifyMediumResource service parameter	120
Table 53 – NotifyMediumResourceservice message format	123
Table 54 – SetMediumSensingReport service parameter	125
Table 55 – SetMediumSensingReportservice message format	127
Table 56 – NotifyMediumSensingResults service parameter	128
Table 57 – NotifyMediumSensingResults service message format	130
Table 58 – GetRadioRegulation service parameter	131
Table 59 – GetRadioRegulation service message format	134
Table A.1 – Incumbent services and applications	136
Table C.1 – GetGeneralPlantCharacteristic service parameter template	140
Table C.2 – SetGeneralPlantCharacteristic service parameter template	141
Table C.3 – GetApplicationCommunicationRequirements service parameter template	141
Table C.4 – SubscribeDevice service parameter template	142
Table C.5 – UnsubscribeDevice service parameter template	142
Table C.6 – SubscribeSystem service parameter template	142
Table C.7 – UnsubscribeSystem service parameter template	143
Table C.8 – GetDeviceAttributes service parameter template	143
Table C.9 – SetTransmitPower service parameter template	144
Table C.10 – SetFrequencyChannel service parameter template	144
Table C.11 – SetBandwidth service parameter template	145
Table C.12 – SetFrequencyHoppingSequence service parameter template	145
Table C.13 – SetBlockedFrequencyList service parameter template	145
Table C.14 – SetDwellTime service parameter template	146
Table C.15 – SetMediumAccessControlMechanism service parameter template	146
Table C.16 – SetDeviceStatus service parameter template	146
Table C.17 – GetParameter service parameter template	147
Table C.18 – SetParameter service parameter template	147
Table C.19 – GetMediumResourceReport service parameter template	147

Table C.20 – SetMediumResourceReport service parameter template	148
Table C.21 – NotifyMediumResource service parameter template	148
Table C.22 – SetMediumSensingReport service parameter template	149
Table C.23 – NotifyMediumSensingResults service parameter template.....	149
Table C.24 – GetRadioRegulation service parameter template.....	150
Table D.1 – Comparison between IEC 62657-4 and SRF Wireless Platform	154
Table D.2 – Correspondence list of messages of SRF Wireless Platform and services in IEC 62657-4.....	157
Table D.3 – Correspondence list of functions of SRF Wireless Platform and IEC 62657-4	161
Table D.4 – Correspondence list of parameters of SRF Wireless Platform and IEC 62657-4	178
Table D.5 – Examples of JSON Format.....	181

Currently in preview, click buy full version

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL NETWORKS –
COEXISTENCE OF WIRELESS SYSTEMS –****Part 4: Coexistence management with central coordination
of wireless applications****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62657-4 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

This second edition cancels and replaces the first edition published in 2022. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition.

- a) The data item (parameter) to be exchanged between CCP and CMWCA and CMWD to ensure interoperability between CCP providers and device providers.
- b) The sequence of services conducted between CCP and CMWCA and CMWD are now defined. When the CCP providers and the device providers implement similar process, clearly defined sequence and unified execution specifications ensure interoperability as expected.
- c) The message formats of sequence diagram to be exchanged between CCP and CMWCA and CMWD are defined. By defining the message formats, the hierarchical structure of each data (parameter), and implementing the same message format by the CCP provider and the device provider, enables to exchange data correctly and ensure interoperability.

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

Draft	Report on voting
65C/1330/FDIS	65C/1338/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/publications.

A list of all parts in the IEC 62657 series, published under the general title *Industrial networks – Coexistence of wireless systems*, 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

The IEC 62657 series provides background, foundations, process and examples to achieve wireless coexistence. With a coexistence management process according to IEC 62657-2, a predictable assuredness of coexistence can be achieved for a given spectrum while ensuring that application requirements continue to be met. The present document provides an automated coexistence management.

INDUSTRIAL NETWORKS – COEXISTENCE OF WIRELESS SYSTEMS –

Part 4: Coexistence management with central coordination of wireless applications

1 Scope

This part of IEC 62657 specifies a concept and methods for central coordination (CC) of automation applications using wireless communications to extend the coexistence management according to IEC 62657-2. It establishes system elements, interfaces and relationships for a central coordination. Functions, data, and data exchange for assessing and maintaining the coexistence state are specified.

This document specifies the central coordination point (CCP) approach as one example of the usage of the formal description given in IEC 62657-3.

This document is applicable to develop, implement, or modify procedures or solutions.

This document provides requirements for automated coexistence management systems.

This document provides requirements for:

- determination of the coexistence state,
- automated coexistence management procedures,
- CC amendments for existing wireless communication solutions,
- CC functions that coordinate legacy and new wireless communication systems,
- CC sequences and message formats for data exchange.

This document is not restricted to a specific radio frequency range nor is it restricted to a specific wireless communication technology.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes the 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 62657-2:2025, *Industrial networks – Coexistence of wireless systems – Part 2: Coexistence management*¹

ISO/IEC 10731, *Information technology – Open Systems Interconnection – Basic Reference Model – Conventions for the definition of OSI services*

IETF RFC 8259, Tim Bray, *The JavaScript Object Notation (JSON) Data Interchange Format*, available at [RFC 8259 – The JavaScript Object Notation \(JSON\) Data Interchange Format \(ietf.org\)](https://www.rfc-editor.org/rfc/rfc8259) [viewed 2024-09-03]

¹ Under preparation. Stage at the time of publication: IEC/FDIS 62657-2:2024.