IEC 62657-4

Edition 2.0 2025-02

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



IEC 62657-4:2025-02(en-fr)



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ICS 25.040

ISBN 978-2-8327-0195-9

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INDUSTRIAL NETWORKS – COEXISTENCE OF WIRELESS SYSTEMS –

Part 4: Coexistence management with central coordination of wireless applications

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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) [viewed 2024-09-03]

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