

# INTERNATIONAL STANDARD



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**Industrial networks – Wireless communication network and communication profiles – WIA-FA**



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International Standard IEC 62948 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation. The text of this standard is based on the following documents:

This first edition cancels and replaces the IEC PAS 62948 published in 2015. This edition constitutes a technical revision.

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

FDIS	Report on voting
65C/877/FDIS	65C/885/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this 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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

**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.**

# INDUSTRIAL NETWORKS – WIRELESS COMMUNICATION NETWORK AND COMMUNICATION PROFILES – WIA-FA

## 1 Scope

This International Standard specifies the system architecture and communication protocol of WIA-FA (Wireless Networks for Industrial Automation – Factory Automation) based on IEEE STD 802.11-2012 physical layer (PHY).

This document applies to wireless network systems for factory automation measuring, monitoring and control.

## 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 61588, *Precision clock synchronization protocol for networked measurement and control systems*

IEEE STD 802.11-2012, *IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements – Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications*

## 3 Terms, definitions, abbreviated terms, and conventions

### 3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1.1

##### **absolute timeslot number**

number of timeslots counted from the start of the network

Note 1 to entry: The value is the sequence number of the current timeslot, which is incremented by one each timeslot. Once the maximum value ( $2^{48}-1$ ) is reached, the value is reset to 0.

#### 3.1.2

##### **access device**

device installed in the industrial field, which forwards the sensor data, alarms and network management related information of the field devices to the gateway device, or forwards control signals, management information and configuration information of the gateway device to field devices