# IEC 61158-6-10

Edition 5.0 2023-03

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

colour inside

## Industrial communication networks – Fieldbus specifications – Part 6-10: Application layer protocol specification – Type 10 elements

## Réseaux de communication industriels – Spécifications des bus de terrain – Partie 6-10: Spécification du protocole de la couche application – Éléments de type 10

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# INDUSTRIAL COMMUNICATION NETWORKS – FIELDBUS SPECIFICATIONS –

## Part 6-10: Application layer protocol specification – Type 10 elements

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IEC 61158-6-10 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 fifth edition cancels and replaces the fourth edition published in 2019. This edition constitutes a technical revision.

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

a) integration of time-aware system basic functionality;
b) integration of time-aware network functionality;
c) integration of remote service interface functionality;
d) integration of SFP diagnosis functionality;
e) integration of media redundancy ring interconnection basic functionality.

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

| Draft | Report on voting |
|---|---|
| 65C/1204/FDIS | 65C/1245/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.

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 the parts of the IEC 61158 series, under the general title *Industrial communication networks – Fieldbus specifications*, can be found on the IEC web site.

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.

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# INTRODUCTION

This document is one of a series produced to facilitate the interconnection of automation system components. It is related to other standards in the set as defined by the “three-layer” fieldbus reference model described in IEC 61158-1.

The application protocol provides the application service by making use of the services available from the data-link or other immediately lower layer. The primary aim of this document is to provide a set of rules for communication expressed in terms of the procedures to be carried out by peer application entities (AEs) at the time of communication. These rules for communication are intended to provide a sound basis for development in order to serve a variety of purposes:

– as a guide for implementers and designers;
– for use in the testing and procurement of equipment;
– as part of an agreement for the admittance of systems into the open systems environment;
– as a refinement to the understanding of time-critical communications within OSI.

This document is concerned, in particular, with the communication and interworking of sensors, effectors and other automation devices. By using this document together with other standards positioned within the OSI or fieldbus reference models, otherwise incompatible systems can work together in any combination.

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