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Industrial communication networks – Fieldbus specifications – Part 6-2: Application layer protocol specification – Type 2 elements

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FOREWORD

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Attention is drawn to the fact that the use of the associated protocol type is restricted by its intellectual-property-right holders. In all cases, the commitment to limited release of intellectual-property-rights made by the holders of those rights permits a layer protocol type to be used with other layer protocols of the same type, or in other type combinations explicitly authorized by its intellectual-property-right holders.

NOTE Combinations of protocol types are specified in the IEC 61784-1 series and the IEC 61784-2 series.

IEC 61158-6-2 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.

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

a) update of normative and bibliographic references;
b) review of Get/Set_Attributes_All parameter format in 3.5.3;
c) new services in 4.1.2.1, 4.1.8.1 and 8.2, 8.3;
d) clarifications of services in 4.1.5;
e) definition of specific connection path in 4.1.6.12;
f) clarifications and updates of Get/Set_attribute_list services in 4.1.8.1;
g) clarifications, new attributes for the Identity object in 4.1.8.2;
h) new attributes, service parameters and service for the Message Router object in 4.1.8.3;
i) clarifications, new attribute and other extensions for the Assembly object in 4.1.8.4;
j) clarifications, new attributes, service parameters, services and diagnostics connection points for the Time Sync object in 4.1.8.6;
k) clarifications, new services and addition of diagnostics connection points for the Connection Manager object in 4.1.8.9;
l) clarifications and extensions of Path Segments in 4.1.9;
m) updates and extensions of class, attribute and service codes in 4.1.10;
n) clarifications and additions of error codes in 4.1.11;
o) update of STIME, UTIME and NTIME data types in 4.2.3 and 5.1.3.5;
p) updates of encapsulation protocol in 4.3.1;
q) addition of internal services in 7.1;
r) removal of obsoleted transport options and related services in Clause 9 and Clause 11;
s) updates of DMPM2 in Clause 11;
t) removal of all references to CPF and CPs (material moved to profile documents);
u) miscellaneous editorial corrections.

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 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 of the IEC 61158 series, published 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 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.

INTRODUCTION

This part of IEC 61158 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.