

SLOVENSKI STANDARD

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Industrijska komunikacijska omrežja - Specifikacije za procesna vodila - 4-2. del: Specifikacija protokola na nivoju podatkovnih povezav (IEC 61158-4-2:2010)

Industrial communication networks - Fieldbus specifications - Part 4-2: Data-link layer
protocol specification (IEC 61158-4-2:2010)

Industrielle Kommunikationsnetze - Feldbusse - Teil 4-2: Protokollspezifikation des Data
Link Layer (Sicherheitsschicht) (IEC 61158-4-2:2010)

Réseaux de communication industriels - Spécifications des bus de terrain - Partie 4-2:
Spécification des protocoles des couches de liaison de données - Éléments de type 2
(CEI 61158-4-2:2010)

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English version

**Industrial communication networks -
Fieldbus specifications -
Part 4-2: Data-link layer protocol specification -
Type 2 elements
(IEC 61158-4-2:2010)**

Réseaux de communication industriels -
Spécifications de bus de terrain -
Partie 4-2: Spécification du protocole de
couche de liaison de données -
Éléments de Type 2
(CEI 61158-4-2:2010)

Industrielle Kommunikationsnetze -
Feldbusse -
Teil 4-2: Protokollspezifikation des Data
Link Layer (Sicherungsschicht) -
Typ 2-Elemente
(IEC 61158-4-2:2010)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 65C/605/FDIS, future edition 2 of IEC 61158-4-2, prepared by SC 65C, "Industrial networks", of IEC/TC 65, "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61158-4-2:2012.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-12-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-03-28

This document supersedes EN 61158-4-2:2008.

EN 61158-4-2:2012 includes the following significant technical changes with respect to EN 61158-4-2:2008:

- Clause 2 and Bibliography: update of normative and bibliographic references;
- 3.5: update of abbreviations;
- 7.6: updates of the Ethernet Link object;
- 7.7: minor update of the Devicenet object (additional attribute);
- new 7.9 and 7.10: new DLR and QoS objects;
- new Clause 10: new DLR protocol.

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Endorsement notice

The text of the International Standard IEC 61158-4-2:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

- | | |
|---------------------|--|
| IEC/TR 61158-1:2010 | NOTE Harmonized as CLC/TR 61158-1:2010 (not modified). |
| IEC 61158-2:2010 | NOTE Harmonized as EN 61158-2:2010 (not modified). |

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61131-3	-	Programmable controllers - Part 3: Programming languages	EN 61131-3	-
IEC 61158-3-2	2007	Industrial communication networks - Fieldbus specifications - Part 3-2: Data-link layer service definition - Type 2 elements	EN 61158-3-2	2008
IEC 61158-5-2	2010	Industrial communication networks - Fieldbus specifications - Part 5-2: Application layer service definition - Type 2 elements	EN 61158-5-2	2012
IEC 61158-6-2	2010	Industrial communication networks - Fieldbus specifications - Part 6-2: Application layer protocol specification - Type 2 elements	EN 61158-6-2	2012
IEC 61588	2009	Precision clock synchronization protocol for networked measurement and control systems	-	-
IEC 61784-3-2	-	Industrial communication networks - Profiles - Part 3-2: Functional safety fieldbuses - Additional specifications for CPF 2	EN 61784-3-2	-
IEC 62026-3	2008	Low-voltage switchgear and controlgear - Controller-device interfaces (CDIs) - Part 3: DeviceNet	EN 62026-3	2009
ISO/IEC 3309	-	Information technology - Telecommunications - and information exchange between systems - High-level data link control (HDLC) procedures - Frame structure	-	-
ISO/IEC 7498-1	-	Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model	-	-
ISO/IEC 7498-3	-	Information technology - Open Systems Interconnection - Basic Reference Model: Naming and addressing	-	-
ISO/IEC 8802-3	-	Information technology - Telecommunications - and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 11898	1993	Road vehicles - Interchange of digital information - Controller area network (CAN) for high-speed communication	-	-
IETF RFC 1643	-	Definitions of Managed Objects for the Ethernet-like interface types	-	-
IETF RFC 1213	-	Management Information Base for Network Management of TCP/IP-based Internets: MIB-II	-	-
IEEE 802.1D	-	IEEE Standard for Local and Metropolitan Area Networks - Media Access Control (MAC) Bridges	-	-
IEEE 802.1Q	-	IEEE Standard for Local and Metropolitan Area Networks - Virtual Bridged Local Area Networks	-	-

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**Industrial communication networks – Fieldbus specifications –
Part 4-2: Data-link layer protocol specification – Type 2 elements**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL COMMUNICATION NETWORKS –
 FIELDBUS SPECIFICATIONS –**
**Part 4-2: Data-link layer protocol specification –
 Type 2 elements**

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.
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International Standard IEC 61158-4-2 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial process measurement, control and automation.

This second edition cancels and replaces the first edition published in 2007. This edition constitutes a technical revision.

The main changes with respect to the previous edition are listed below.

- Clause 2 and Bibliography: update of normative and bibliographic references;
- subclause 3.5: update of abbreviations;
- subclause 7.6: updates of the Ethernet Link object;
- subclause 7.7: minor update of the Devicenet object (additional attribute);
- new subclauses 7.9 and 7.10: new DLR and QoS objects;
- new Clause 10: new DLR protocol.