# SLOVENSKI STANDARD
## SIST EN 61158-3-24:2015

**01-marec-2015**

**Industrijska komunikacijska omrežja - Specifikacije za procesna vodila - 3-24. del: Specifikacija protokola na ravni podatkovnih povezav - Elementi tipa 24 (IEC 61158 -3-24:2014)**

Industrial communication networks - Fieldbus specifications - Part 3-24: Data-link layer service definition - Type-24 elements (IEC 61158-3-24:2014)

Industrielle Kommunikationsnetze - Feldbusse - Teil 3-24: Dienstfestlegungen des Data Link Layer (Sicherungsschicht) - Typ 24-Elemente (IEC 61158-3-24:2014)

Réseaux de communication industriels - Spécifications des bus de terrain - Partie 3-24: Définition des services de la couche liaison de données - Éléments de type 24 (CEI 61158-3-24:2014)

**Ta slovenski standard je istoveten z:** **EN 61158-3-24:2014**

**ICS:**

| | | |
|---|---|---|
| 25.040.40 | Merjenje in krmiljenje industrijskih postopkov | Industrial process measurement and control |
| 35.100.20 | Podatkovni povezovalni sloj | Data link layer |
| 35.110 | Omreževanje | Networking |

**SIST EN 61158-3-24:2015** **en,fr,de**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

**EN 61158-3-24**

October 2014

ICS 25.040.40; 35.100.20; 35.110

English Version

# Industrial communication networks - Fieldbus specifications - Part 3-24: Data-link layer service definition - Type-24 elements (IEC 61158-3-24:2014)

Réseaux de communication industriels - Spécifications des bus de terrain - Partie 3-24: Définition des services de la couche liaison de données - Éléments de type 24 (CEI 61158-3-24:2014)

Industrielle Kommunikationsnetze - Feldbusse - Teil 3-24: Dienstfestlegungen des Data Link Layer (Sicherungsschicht) - Typ 24-Elemente (IEC 61158-3-24:2014)

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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# Foreword

The text of document 65C/759/FDIS, future edition 1 of IEC 61158-3-24, 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 61158-3-24:2014.

The following dates are fixed:

- latest date by which the document has to be implemented at          (dop)     2015-06-17
  national level by publication of an identical national
  standard or by endorsement

- latest date by which the national standards conflicting with        (dow)     2017-09-17
  the document have to be withdrawn

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# Endorsement notice

The text of the International Standard IEC 61158-3-24:2014 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 61158-1          NOTE          Harmonized as EN 61158-1.

IEC 61784-1          NOTE          Harmonized as EN 61784-1.

IEC 61784-2          NOTE          Harmonized as EN 61784-2.

## 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 1    When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2    Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.


| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| 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 10731 | - | Information technology - Open Systems Interconnection - Basic Reference Model - Conventions for the definition of OSI services | - | - |
| ISO/IEC 19501 | 2005 | Information technology - Open Distributed Processing - Unified Modeling Language (UML) | - | - |

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# IEC 61158-3-24

Edition 1.0   2014-08

# INTERNATIONAL
# STANDARD

# NORME
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colour inside

Industrial communication networks – Fieldbus specifications –
Part 3-24: Data-link layer service definition – Type-24 elements

Réseaux de communication industriels – Spécifications des bus de terrain –
Partie 3-24: Définition des services de la couche liaison de données – Éléments de type 24

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## INDUSTRIAL COMMUNICATION NETWORKS – FIELDBUS SPECIFICATIONS –

## Part 3-24: Data-link layer service definition – Type-24 elements

### FOREWORD

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

International Standard IEC 61158-3-24 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation.

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

| FDIS | Report on voting |
|------|------------------|
| 65C/759/FDIS | 65C/769/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.

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 publication will remain unchanged until the stability date indicated on the IEC web site 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.

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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.

# 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.

Throughout the set of fieldbus standards, the term "service" refers to the abstract capability provided by one layer of the OSI Basic Reference Model to the layer immediately above. Thus, the data-link layer service defined in this standard is a conceptual architectural service, independent of administrative and implementation divisions.

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# INDUSTRIAL COMMUNICATION NETWORKS – FIELDBUS SPECIFICATIONS –

## Part 3-24: Data-link layer service definition – Type-24 elements

## 1  Scope

### 1.1  General

This part of IEC 61158 provides common elements for basic time-critical messaging communications between devices in an automation environment. The term "time-critical" is used to represent the presence of a time-window, within which one or more specified actions are required to be completed with some defined level of certainty. Failure to complete specified actions within the time-window risks failure of the applications requesting the actions, with attendant risk to equipment, plant and possibly human life.

This standard defines in an abstract way the externally visible service provided by the Type 24 fieldbus data-link layer in terms of

a)  the primitive actions and events of the service;

b)  the interrelationship between these actions and events, and their valid sequences;

c)  the parameters associated with each primitive action and event, and the form which they take.

The purpose of this standard is to define the services provided to

–  the Type 24 fieldbus application layer at the boundary between the application and data-link layers of the fieldbus reference model;

–  systems management at the boundary between the data-link layer and systems management of the fieldbus reference model.

### 1.2  Specifications

The principal objective of this standard is to specify the characteristics of conceptual data-link layer services suitable for time-critical communications, and thus supplement the OSI Basic Reference Model in guiding the development of data-link protocols for time-critical communications. A secondary objective is to provide migration paths from previously-existing industrial communications protocols.

This specification may be used as the basis for formal DL-Programming-Interfaces. Nevertheless, it is not a formal programming interface, and any such interface will need to address implementation issues not covered by this specification, including

a)  the sizes and octet ordering of various multi-octet service parameters, and

b)  the correlation of paired request and confirm, or indication and response, primitives.

### 1.3  Conformance

This standard does not specify individual implementations or products, nor does it constrain the implementations of data-link entities within industrial automation systems.

There is no conformance of equipment to this data-link layer service definition standard. Instead, conformance is achieved through implementation of the corresponding data-link protocol that fulfills the Type 24 data-link layer services defined in this standard.