



**NSAI**  
Standards

Irish Standard  
I.S. EN 61158-3-3:2014

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

**I.S. EN 61158-3-3:2014**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN 61158-3-3:2014

*Published:*

2014-10-17

*This document was published under the authority of the NSAI and comes into effect on:*

2014-11-14

ICS number:

25.040.40

35.100.20

35.110

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

**EN 61158-3-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2014

ICS 25.040.40; 35.100.20; 35.110

Supersedes EN 61158-3-3:2008

English Version

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

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

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

This European Standard was approved by CENELEC on 2014-09-17. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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**

## Foreword

The text of document 65C/759/FDIS, future edition 2 of IEC 61158-3-3, 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 61158-3-3:2014.

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) 2015-06-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-09-17

This document supersedes EN 61158-3-3:2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

## Endorsement notice

The text of the International Standard IEC 61158-3-3:2014 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 61158-2	NOTE	Harmonized as EN 61158-2.
IEC 61158-4-3	NOTE	Harmonized as EN 61158-4-3.
IEC 61158-5-3	NOTE	Harmonized as EN 61158-5-3.
IEC 61158-6-3	NOTE	Harmonized as EN 61158-6-3.

## 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61158-1	-	Industrial communication networks - Fieldbus specifications - Part 1: Overview and guidance for the IEC 61158 and IEC 61784 series	EN 61158-1	-
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	-	-

This page is intentionally left blank



**IEC 61158-3-3**

Edition 2.0 2014-08

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

---

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

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





## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2014 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

#### IEC Catalogue - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

#### IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 14 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

#### IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)

More than 55 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [csc@iec.ch](mailto:csc@iec.ch).

### A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

### A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

#### Catalogue IEC - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

#### Recherche de publications IEC - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 14 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

#### Glossaire IEC - [std.iec.ch/glossary](http://std.iec.ch/glossary)

Plus de 55 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

#### Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [csc@iec.ch](mailto:csc@iec.ch).





**IEC 61158-3-3**

Edition 2.0 2014-08

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

---

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

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

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE **XB**  
CODE PRIX

---

ICS 25.040.40; 35.100.20; 35.110

ISBN 978-2-8322-1701-6

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
1.1 General.....	8
1.2 Specifications.....	8
1.3 Conformance.....	9
2 Normative references.....	9
3 Terms, definitions, symbols, abbreviations and conventions.....	9
3.1 Reference model terms and definitions.....	9
3.2 Service convention terms and definitions.....	11
3.3 Common data-link service terms and definitions.....	12
3.4 Additional Type 3 data-link specific definitions.....	13
3.5 Common symbols and abbreviations.....	15
3.6 Additional Type 3 symbols and abbreviations.....	16
3.7 Common conventions.....	18
3.8 Additional Type 3 conventions.....	19
4 Connectionless-mode data-link service.....	20
4.1 General.....	20
4.2 Model of the connectionless-mode data-link service.....	20
4.3 Sequence of primitives.....	22
4.4 Detailed description of DL services.....	25
5 DL-management Service.....	44
5.1 General.....	44
5.2 Facilities of the DLMS.....	44
5.3 Services of the DL-management.....	45
5.4 Overview of interactions.....	46
5.5 Detailed specification of services and interactions.....	48
Bibliography.....	68
Figure 1 – Relationships of DLSAPs, DLSAP-addresses and group DL-addresses.....	12
Figure 2 – SDA service.....	23
Figure 3 – SDN service.....	23
Figure 4 – SRD service.....	23
Figure 5 – MSRD service.....	24
Figure 6 – CS service.....	24
Figure 7 – Reset, Set value, Get value, Ident (local), DLSAP status, DLSAP activate, DLSAP activate responder, DLSAP activate subscriber and DLSAP deactivate services.....	47
Figure 8 – Event service.....	47
Figure 9 – Ident (remote) service.....	48
Table 1 – Summary of DL services and primitives.....	22
Table 2 – SDA data ack primitives and parameters.....	26
Table 3 – Values of DL_status for the SDA data ack service.....	28
Table 4 – SDN data primitives and parameters.....	29

Table 5 – Values of DL_status for the SDN data service .....	31
Table 6 – SRD data reply primitives and parameters .....	32
Table 7 – Values of Update_status for the SRD data reply service .....	33
Table 8 – Additional values of DL_status for the SRD data reply service.....	34
Table 9 – SRD reply-update primitives and parameters.....	34
Table 10 – Values of DL_status for the SRD reply-update service.....	36
Table 11 – MSRD MCT data reply primitives and parameters.....	37
Table 12 – MSRD DXM data reply primitive and parameters .....	39
Table 13 – CS time event primitives and parameters .....	41
Table 14 – Values of DL_status for the CS time event service .....	42
Table 15 – CS clock value primitives and parameters .....	42
Table 16 – Values of CS_status for the CS clock value service .....	44
Table 17 – Values of DL_status for the CS clock value service .....	44
Table 18 – Summary of DL-management services and primitives .....	47
Table 19 – Reset primitives and parameters .....	48
Table 20 – Values of DLM_status for the reset service.....	48
Table 21 – Set value primitives and parameters .....	49
Table 22 – Mandatory DLE-variables .....	50
Table 23 – Optional DLE-variables.....	50
Table 24 – Permissible values of mandatory DLE-variables .....	51
Table 25 – Permissible values of optional DLE-variables .....	51
Table 26 – Meaning of the values for the parameter isochronous_mode .....	52
Table 27 – Default reaction times and operating parameters for a master station for asynchronous transmission.....	52
Table 28 – Default reaction times and operating parameters for a slave station with asynchronous transmission.....	52
Table 29 – Default reaction times and operating parameters for master stations for coupling of synchronous and asynchronous transmission segments.....	53
Table 30 – Default reaction times and operating parameter for slave stations for coupling of synchronous and asynchronous transmission segments.....	53
Table 31 – Values of DLM_status for the set value service .....	53
Table 32 – Get value primitives and parameters .....	54
Table 33 – Additional mandatory DLE-variables in master stations .....	54
Table 34 – Permissible values of the additional DLE-variables in master stations .....	55
Table 35 – Values of DLM_status for the get value service .....	55
Table 36 – Event primitive and parameters .....	55
Table 37 – Mandatory DLL events and fault types .....	56
Table 38 – Permissible values of TSH.....	56
Table 39 – Ident primitives and parameters .....	57
Table 40 – Ident_list for the ident service.....	57
Table 41 – Values of DLM_status for the ident service (local) .....	58
Table 42 – Values of DLM_status for the ident service (remote).....	58
Table 43 – DLSAP status primitives and parameters.....	58
Table 44 – Values of DLM_status for the DLSAP status service .....	59

Table 45 – DLSAP activate primitives and parameters .....	60
Table 46 – DLSAP activate service_list.....	60
Table 47 – DLSAP activate DLSDU_length_list (SDA, SDN, SRD, MSRD and CS).....	61
Table 48 – DLSDU lengths of SDA and SDN as used in the DLSAP activate service.....	62
Table 49 – DLSDU lengths of SRD and MSRD as used in the (master station) DLSAP activate service.....	62
Table 50 – DLSDU lengths of CS as used in the DLSAP activate service .....	62
Table 51 – Values of DLM_status for the DLSAP activate service .....	62
Table 52 – DLSAP activate responder primitives and parameters .....	63
Table 53 – DLSDU_length_list for the DLSAP activate responder service .....	63
Table 54 – DLSDU length of SRD and MSRD as used in the DLSAP activate responder service.....	64
Table 55 – Values of DLM_status for the DLSAP activate responder service .....	65
Table 56 – DLSAP activate subscriber primitives and parameters .....	65
Table 57 – DLSDU_length_list for the DLSAP activate subscriber service.....	66
Table 58 – DLSDU lengths of MSRD as used in the DLSAP activate subscriber service (master and slave stations).....	66
Table 59 – Values of DLM_status for the DLSAP activate subscriber service .....	66
Table 60 – DLSAP deactivate primitives and parameters .....	67
Table 61 – Values of DLM_status for the DLSAP deactivate service .....	67

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL COMMUNICATION NETWORKS –  
FIELDBUS SPECIFICATIONS –****Part 3-3: Data-link layer service definition –  
Type 3 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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 IEC 61784-1 and IEC 61784-2.

International Standard IEC 61158-3-3 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:

- Two notes in definitions modified.

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 ISO/IEC Directives, Part 2.

The 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.

## 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.

## **INDUSTRIAL COMMUNICATION NETWORKS – FIELDBUS SPECIFICATIONS –**

### **Part 3-3: Data-link layer service definition – Type 3 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 3 fieldbus data-link layer in terms of

- a) the primitive actions and events of the service;
- b) the parameters associated with each primitive action and event, and the form which they take; and
- c) the interrelationship between these actions and events, and their valid sequences.

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

- the Type 3 fieldbus application layer at the boundary between the application and data-link layers of the fieldbus reference model, and
- 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 do they 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 1 data-link layer services defined in this standard.

## 2 Normative references

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 All parts of the IEC 61158 series, as well as IEC 61784-1 and IEC 61784-2 are maintained simultaneously. Cross-references to these documents within the text therefore refer to the editions as dated in this list of normative references.

IEC 61158-1, *Industrial communication networks – Fieldbus specifications – Part 1: Overview and guidance for the IEC 61158 and IEC 61784 series*

ISO/IEC 7498-1, *Information technology – Open Systems Interconnection – Basic Reference Model – 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*

## 3 Terms, definitions, symbols, abbreviations and conventions

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

### 3.1 Reference model terms and definitions

This standard is based in part on the concepts developed in ISO/IEC 7498-1 and ISO/IEC 7498-3, and makes use of the following terms defined therein.

<b>3.1.1</b>	<b>DL-address</b>	[7498-3]
<b>3.1.2</b>	<b>DL-address-mapping</b>	[7498-1]
<b>3.1.3</b>	<b>called-DL-address</b>	[7498-3]
<b>3.1.4</b>	<b>calling-DL-address</b>	[7498-3]
<b>3.1.5</b>	<b>centralized multi-end-point-connection</b>	[7498-1]
<b>3.1.6</b>	<b>DL-connection</b>	[7498-1]

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-