

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Industrial communication networks – Fieldbus specifications –
Part 4-22: Data-link layer protocol specification – Type 22 elements**

**Réseaux de communication industriels – Spécifications des bus de terrain –
Partie 4-22: Spécification du protocole de la couche liaison de données –
Éléments de type 22**



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE **XB**
CODE PRIX

ICS 25.040.40; 35.100.20; 35.110

ISBN 978-2-8322-1729-0

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CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	9
1.1 General.....	9
1.2 Specifications.....	9
1.3 Procedures.....	9
1.4 Applicability.....	9
1.5 Conformance.....	10
2 Normative references.....	10
3 Terms, definitions, symbols, abbreviations and conventions.....	10
3.1 Reference model terms and definitions.....	11
3.2 Service convention terms and definitions.....	12
3.3 Common terms and definitions.....	13
3.4 Additional Type 22 definitions.....	14
3.5 Common symbols and abbreviations.....	17
3.6 Additional Type 22 symbols and abbreviations.....	18
3.7 Conventions.....	20
4 Overview of the DL-protocol.....	21
4.1 Operating principle.....	21
4.2 Communication model.....	21
4.3 Topology.....	22
4.4 DLPDU processing.....	22
4.5 General communication mechanisms.....	23
4.6 Gateway.....	24
4.7 Interaction models.....	24
5 DLPDU structure.....	24
5.1 Overview.....	24
5.2 Data types and encoding rules.....	25
5.3 DLPDU identification.....	26
5.4 General DLPDU structure.....	27
5.5 Communication management DLPDUs.....	29
5.6 Cyclic data channel (CDC) DLPDUs.....	37
5.7 Cyclic data channel (CDC) DLPDU data.....	38
5.8 Message channel (MSC) DLPDUs.....	38
5.9 Message channel DLPDU data - MSC message transfer protocol (MSC-MTP).....	40
5.10 Time synchronization.....	43
6 Telegram timing and DLPDU handling.....	45
6.1 Communication mechanism.....	45
6.2 Device synchronization.....	47
7 Type 22 protocol machines.....	47
7.1 RTFL device protocol machines.....	47
7.2 RTFN device protocol machines.....	59
7.3 Message channel – Message transfer protocol (MSC-MTP).....	61
Bibliography.....	65

Figure 1 – DLPDU sequence.....	46
Figure 2 – Communication relationship RTFN device	46
Figure 3 – Overview RTFL device protocol machines	48
Figure 4 – Protocol machine send DLPDU procedure.....	49
Figure 5 – Protocol machine receive DLPDU procedure	49
Figure 6 – CDCL send cyclic data sequence	50
Figure 7 – CDCL receive cyclic data sequence	51
Figure 8 – MSCL send sequence	52
Figure 9 – MSCL receive sequence	53
Figure 10 – Network management protocol machine	54
Figure 11 – Net management sequence at system boot up	55
Figure 12 – Initialization sequence ordinary device	56
Figure 13 – PCS configuration sequence	57
Figure 14 – Delay measurement principle	58
Figure 15 – Overview RTFN device protocol machines	59
Figure 16 – CDCN connection setup and release	60
Figure 17 – CDCN unpublish data.....	61
Figure 18 – Segmentation sequence.....	62
Figure 19 – Expedited transfer sequence.....	62
Figure 20 – Toggling from expedited transfer to segmented transfer	63
Figure 21 – Segmentation sequence for broad- or multicast message without Acknowledgement.....	64
Table 1 – DLPDU element definition	20
Table 2 – Conventions for protocol machine description	21
Table 3 – Transfer syntax for bit sequences.....	25
Table 4 – Transfer syntax for data type Unsignedn	26
Table 5 – Transfer syntax for data type Signedn	26
Table 6 – Type 22 DLPDU inside an ISO/IEC 8802-3.....	27
Table 7 – Type 22 DLPDU inside a VLAN tagged ISO/IEC 8802-3 DLPDU.....	27
Table 8 – Type 22 DLPDU inside an UDP DLPDU.....	28
Table 9 – General structure of a Type 22 DLPDU	28
Table 10 – DLPDU header structure	29
Table 11 – Network verification prepare DLPDU	29
Table 12 – Network verification environment DLPDU	29
Table 13 – Network verification information DLPDU	29
Table 14 – Network verification acknowledgement DLPDU.....	30
Table 15 – RTFN scan network request DLPDU.....	30
Table 16 – RTFN scan network response DLPDU	30
Table 17 – Identification data.....	30
Table 18 – Identification data v2	31
Table 19 – PhyLinkPortX	32
Table 20 – RTF support	33

Table 21 – RTF2 support	33
Table 22 – UseDHCP	34
Table 23 – DeviceRole	34
Table 24 – RTFN connection management DLPDU	35
Table 25 – CDCN connection still alive DLPDU	35
Table 26 – ID data	35
Table 27 – RTFL control DLPDU	35
Table 28 – RTFL configuration DLPDU	36
Table 29 – RTFL configuration acknowledgement DLPDU	36
Table 30 – RTFL configuration 2 DLPDU	37
Table 31 – RTFL configuration acknowledgement 2 DLPDU	37
Table 32 – CDCL DLPDU	37
Table 33 – CDCN DLPDU	38
Table 34 – CDC DLPDU data arrangement	38
Table 35 – CDC DLPDU data	38
Table 36 – MSCL DLPDU	39
Table 37 – MSCL control	39
Table 38 – MSCN DLPDU	40
Table 39 – MSC-MTP frame structure	40
Table 40 – Address type	41
Table 41 – MSC-MTP Init structure	41
Table 42 – MSC-MTP Init_Fast structure	42
Table 43 – MSC-MTP Send structure	42
Table 44 – MSC-MTP Acknowledgement structure	42
Table 45 – MSC-MTP Abort structure	43
Table 46 – Data structure of a message	43
Table 47 – DelayMeasurement start encoding	43
Table 48 – DelayMeasurement read encoding	44
Table 49 – PCS configuration encoding	44
Table 50 – Time synchronization service request	44
Table 51 – Time synchronization service response	44

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL COMMUNICATION NETWORKS –
FIELDBUS SPECIFICATIONS –****Part 4-22: Data-link layer protocol specification –
Type 22 elements**

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

International Standard IEC 61158-4-22 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 2010. This edition constitutes a technical revision.

This edition includes the following technical changes with respect to the previous edition.

- Introduction of new topology scan PDUs.

- Bug fix of missing version field in some PDUs.
- Introduction of new Physical Link descriptors.

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

FDIS	Report on voting
65C/762/FDIS	65C/772/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 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 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.

Withdrawn

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 data-link protocol provides the data-link service by making use of the services available from the physical layer. The primary aim of this standard is to provide a set of rules for communication expressed in terms of the procedures to be carried out by peer data-link entities (DLEs) 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:

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

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

NOTE Use of some of the associated protocol types is restricted by their 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 particular data-link layer protocol type to be used with physical layer and application layer protocols in Type combinations as specified explicitly in the profile parts. Use of the various protocol types in other combinations may require permission from their respective intellectual-property-right holders.

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WO-2006/069691 A1	[PI]	Control system with a plurality of spatially distributed stations and method for transmitting data in said control system
DE-10 2004 063 213 B4	[PI]	Steuerungssystem mit einer Vielzahl von räumlich verteilten Stationen sowie Verfahren zum Übertragen von Daten in einem solchen Steuerungssystem
EP-1 828 858 A1	[PI]	Control system with a plurality of spatially distributed stations and method for transmitting data in said control system
JP-4 848 469 B2	[PI]	Control system with a plurality of spatially distributed stations and method for transmitting data in said control system
CN-101 111 807	[PI]	Control system with a plurality of spatially distributed stations and method for transmitting data in said control system
US-8 144 718 B2	[PI]	Control system having a plurality of spatially distributed stations, and method for transmitting data in such a control system

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