SLOVENSKI STANDARD
SIST EN IEC 61784-2:2019

01-november-2019

Nadomešča:
SIST EN 61784-2:2015

Industrijska komunikacijska omrežja - Profili - 2. del: Dodatni profili procesnih vodil za omrežja, ki delujejo v realnem času po ISO/IEC 8802-3 (IEC 61784-2:2019)

Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3 (IEC 61784-2:2019)

Industrielle Kommunikationsnetze - Profile - Teil 2: Zusätzliche Feldbusprofile für Echtzeitnetzwerke basierend auf ISO/IEC 8802-3 (IEC 61784-2:2019)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Réseaux de communication industriels - Profils - Partie 2: Profils de bus de terrain supplémentaires pour les réseaux en temps réel basés sur l'ISO/CEI 8802-3 (IEC 61784-2:2019)

SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c4901660-cd12-41eb-8287-7bbefd4b29e4/sist-en-iec-61784-2-2019

Ta slovenski standard je istoveten z: **EN IEC 61784-2:2019**

ICS:

25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control
35.100.05	Večslojne uporabniške rešitve	Multilayer applications

SIST EN IEC 61784-2:2019 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST EN IEC 61784-2:2019

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbefd4b29e4/sist-en-iec-61784-2-2019

SIST EN IEC 61784-2:2019

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61784-2

May 2019

ICS 35.100.20; 35.240.50

Supersedes EN 61784-2:2014

English Version

Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC/IEEE 8802-3
(IEC 61784-2:2019)

Réseaux de communication industriels - Profils - Partie 2: Profils de bus de terrain supplémentaires pour les réseaux en temps réel basés sur l'ISO/CEI 8802-3
(IEC 61784-2:2019)

Industrielle Kommunikationsnetze - Profile - Teil 2: Zusätzliche Feldbusprofile für Echtzeitnetzwerke basierend auf ISO/IEC 8802-3
(IEC 61784-2:2019)

This European Standard was approved by CENELEC on 2019-05-15. 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.

iTeh STANDARD PREVIEW

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.

(standards.iteh.ai)

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.

SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbefd4b29e4/sist-en-iec-61784-2-2019

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, Serbia, 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: Rue de la Science 23, B-1040 Brussels

© 2019 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

SIST EN IEC 61784-2:2019

European foreword

The text of document 65C/943/FDIS, future edition 4 of IEC 61784-2, 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 IEC 61784-2:2019.

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)	2020-02-15
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2022-05-15

This document supersedes EN 61784-2:2014.

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Endorsement notice

SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbefd4b29e4/sist-en-iec-61784-2-2019

The text of the International Standard IEC 61784-2:2019 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:

ISO/IEC 9646 (series)	NOTE	Harmonized as EN ISO/IEC 9646 (series)

SIST EN IEC 61784-2:2019

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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
IEC 61158	series	Industrial communication networks - Fieldbus specifications	-	series
IEC 61158-1	2019	Industrial communication networks - Fieldbus specifications - Part 1: Overview and guidance for the IEC 61158 and IEC 61784 series	EN IEC 61158-1	2019
IEC 61158-2	2014	Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	EN 61158-2	2014
IEC 61158-3-2	2014	Industrial communication networks - Fieldbus specifications - Part 3-2: Data-link layer service definition - Type 2 elements	EN 61158-3-2	2014
IEC 61158-3-4	2019	Industrial communication networks - Fieldbus specifications - Part 3-4: Data-link layer service definition - Type 4 elements	EN IEC 61158-3-4	2019
IEC 61158-3-11	2007	Industrial communication networks - Fieldbus specifications - Part 3-11: Data-link layer service definition - Type 11 elements	EN 61158-3-11	2008
IEC 61158-3-12	2019	Industrial communication networks - Fieldbus specifications - Part 3-12: Data-link layer service definition - Type 12 elements	-	-
IEC 61158-3-13	2014	Industrial communication networks - Fieldbus specifications - Part 3-13: Data link layer service definition - Type 13 elements	EN 61158-3-13	2014
IEC 61158-3-14	2014	Industrial communication networks - Fieldbus specifications - Part 3-14: Data-link layer service definition - Type 14 elements	EN 61158-3-14	2014
IEC 61158-3-17	2007	Industrial communication networks - Fieldbus specifications - Part 3-17: Data-link layer service definition - Type 17 elements	EN 61158-3-17	2008
IEC 61158-3-19	2019	Industrial communication networks - Fieldbus specifications - Part 3-19: Data-link layer service definition - Type 19 elements	EN IEC 61158-3-19	2019
IEC 61158-3-21	2019	Industrial communication networks - Fieldbus specifications - Part 3-21: Data-link layer service definition - Type 21 elements	EN IEC 61158-3-21	2019

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbaf3f4b294/sist-en-iec-61784-2-2019

SIST EN IEC 61784-2:2019

IEC 61158-3-22	2014	Industrial communication networks - Fieldbus specifications - Part 3-22: Data-link layer service definition - Type 22 elements	EN 61158-3-22	2014
IEC 61158-3-25	2019	Industrial communication networks - Fieldbus specifications - Part 3-25: Data-link layer service definition - Type X elements	EN IEC 61158-3-25	2019
IEC 61158-4-2	2019	Industrial communication networks - Fieldbus specifications - Part 4-2: Data-link layer protocol specification - Type 2 elements	EN IEC 61158-4-2	2019
IEC 61158-4-4	2019	Industrial communication networks - Fieldbus specifications - Part 4-4: Data-link layer protocol specification - Type 4 elements	EN IEC 61158-4-4	2019
IEC 61158-4-11	2014	Industrial communication networks - Fieldbus specifications - Part 4-11: Data-link layer protocol specificationn - Type 11 elements	EN 61158-4-11	2014
IEC 61158-4-12	2019	Industrial communication networks - Fieldbus specifications - Part 4-12: Data-link layer protocol specification - Type 12 elements	EN IEC 61158-4-12	2019
IEC 61158-4-13	2014	Industrial communication networks - Fieldbus specifications - Part 4-13: Data-link layer protocol specificationn - Type 13 elements	EN 61158-4-13	2014
IEC 61158-4-14	2014	Industrial communication networks - Fieldbus specifications - Part 4-14: Data-link layer protocol specificationn - Type 14 elements	EN 61158-4-14	2014
IEC 61158-4-17	2007	Industrial communication networks - Fieldbus specifications - Part 4-17: Data-link layer protocol specification - Type 17 elements	EN 61158-4-17	2008
IEC 61158-4-19	2019	Industrial communication networks - Fieldbus specifications - Part 4 -19: Data-link layer protocol specification - Type 19 elements	EN IEC 61158-4-19	2019
IEC 61158-4-21	2019	Industrial communication networks - Fieldbus specifications - Part 4-21: Data-link layer protocol specification - Type 21 elements	EN IEC 61158-4-21	2019
IEC 61158-4-22	2014	Industrial communication networks - Fieldbus specifications - Part 4-22: Data-link layer protocol specificationn - Type 22 elements	EN 61158-4-22	2014
IEC 61158-4-25	2019	Industrial communication networks - Fieldbus specifications - Part 4-25: Data-link layer protocol specification - Type 25 elements	EN IEC 61158-4-25	2019
IEC 61158-5-2	2019	Industrial communication networks - Fieldbus specifications - Part 5-2: Application layer service definition - Type 2 elements	EN IEC 61158-5-2	2019
IEC 61158-5-4	2019	Industrial communication networks - Fieldbus specifications - Part 5-4: Application layer service definition - Type 4 elements	EN IEC 61158-5-4	2019
IEC 61158-5-10	2019	Industrial communication networks - Fieldbus specifications - Part 5-10: Application layer service definition - Type 10 elements	EN IEC 61158-5-10	2019
IEC 61158-5-11	2007	Industrial communication networks - Fieldbus specifications - Part 5-11: Application layer service definition - Type 11 elements	EN 61158-5-11	2008
IEC 61158-5-12	2019	Industrial communication networks - Fieldbus specifications - Part 5-12: Application layer service definition - Type 12 elements	EN IEC 61158-5-12	2019
IEC 61158-5-13	2014	Industrial communication networks - Fieldbus specifications - Part 5-13: Application layer service definition - Type 13 elements	EN 61158-5-13	2014

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN IEC 61784-2:2019

IEC 61158-5-14	2014	Industrial communication networks - Fieldbus specifications - Part 5-14: Application layer service definition - Type 14 elements	EN 61158-5-14	2014
IEC 61158-5-15	2010	Industrial communication networks - Fieldbus specifications - Part 5-15: Application layer service definition - Type 15 elements	EN 61158-5-15	2012
IEC 61158-5-17	2007	Industrial communication networks - Fieldbus specifications - Part 5-17: Application layer service definition - Type 17 elements	EN 61158-5-17	2008
IEC 61158-5-19	2019	Industrial communication networks - Fieldbus specifications - Part 5-19: Application layer service definition - Type 19 elements	EN IEC 61158-5-19	2019
IEC 61158-5-21	2019	Industrial communication networks - Fieldbus specifications - Part 5-21: Application layer service definition - Type 21 elements	EN IEC 61158-5-21	2019
IEC 61158-5-22	2014	Industrial communication networks - Fieldbus specifications - Part 5-22: Application layer service definition - Type 22 elements	EN 61158-5-22	2014
IEC 61158-5-23	2019	Industrial communication networks - Fieldbus specifications - Part 5-23: Application layer service definition - Type 23 elements	EN IEC 61158-5-23	2019
IEC 61158-5-25	2019	Industrial communication networks - Fieldbus specifications - Part 5-25: Application layer service definition - Type 25 elements	EN IEC 61158-5-25	2019
IEC 61158-5-26	2019	Industrial communication networks - Fieldbus specifications - Part 5-26: Application layer service definition - Type 26 elements	EN IEC 61158-5-26	2019
IEC 61158-6-2	2019	Industrial communication networks - Fieldbus specifications - Part 6-2: Application layer protocol specification - Type 2 elements	EN IEC 61158-6-2	2019
IEC 61158-6-4	2019	Industrial communication networks - Fieldbus specifications - Part 6-4: Application layer protocol specification - Type 4 elements	EN IEC 61158-6-4	2019
IEC 61158-6-10	2019	Industrial communication networks - Fieldbus specifications - Part 6-10: Application layer protocol specification - Type 10 elements	-	-
IEC 61158-6-11	2007	Industrial communication networks - Fieldbus specifications - Part 6-11: Application layer protocol specification - Type 11 elements	EN 61158-6-11	2008
IEC 61158-6-12	2019	Industrial communication networks - Fieldbus specifications - Part 6-12: Application layer protocol specification - Type 12 elements	EN IEC 61158-6-12	2019
IEC 61158-6-13	2014	Industrial communication networks - Fieldbus specifications - Part 6-13: Application layer protocol specification - Type 13 elements	EN 61158-6-13	2014
IEC 61158-6-14	2014	Industrial communication networks - Fieldbus specifications - Part 6-14: Application layer protocol specification - Type 14 elements	EN 61158-6-14	2014
IEC 61158-6-15	2010	Industrial communication networks - Fieldbus specifications - Part 6-15: Application layer protocol specification - Type 15 elements	EN 61158-6-15	2012
IEC 61158-6-17	2007	Industrial communication networks - Fieldbus specifications - Part 6-17: Application layer protocol specification - Type 17 elements	EN 61158-6-17	2008
IEC 61158-6-19	2019	Industrial communication networks - Fieldbus specifications - Part 6-19: Application layer protocol specification - Type 19 elements	EN IEC 61158-6-19	2019

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN IEC 61784-2:2019

IEC 61158-6-21	2019	Industrial communication networks - Fieldbus specifications - Part 6-21: Application layer protocol specification - Type 21 elements	EN IEC 61158-6-21	2019
IEC 61158-6-22	2014	Industrial communication networks - Fieldbus specifications - Part 6-22: Application layer protocol specification - Type 22 elements	EN 61158-6-22	2014
IEC 61158-6-23	2019	Industrial communication networks - Fieldbus specifications - Part 6-23: Application layer protocol specification - Type 23 elements	EN IEC 61158-6-23	2019
IEC 61158-6-25	2019	Industrial communication networks - Fieldbus specifications - Part 6-25: Application layer protocol specification - Type 25 elements	EN IEC 61158-6-25	2019
IEC 61588	2009	Precision clock synchronization protocol for networked measurement and control systems	-	-
IEC 61784-1	2019	Industrial communication networks - Profiles Part 1: Fieldbus profiles	-	-
IEC 61784-5-2	2018	Industrial communication networks - Profiles - Part 5-2: Installation of fieldbuses - Installation profiles for CPF 2	EN IEC 61784-5-2	2018
IEC 61784-5-3	2018	Industrial communication networks - Profiles - Part 5-3: Installation of fieldbuses - Installation profiles for CPF 3	EN IEC 61784-5-3	2018
IEC 61784-5-6	2018	Industrial communication networks - Profiles - Part 5-6: Installation of fieldbuses - Installation profiles for CPF 6	EN IEC 61784-5-6	2018
IEC 61784-5-8	2018	Industrial communication networks - Profiles - Part 5-8: Installation of fieldbuses - Installation profiles for CPF 8	EN IEC 61784-5-8	2018
IEC 61784-5-11	2013	Industrial communication networks - Profiles - Part 5-11: Installation of fieldbuses - Installation profiles for CPF 11	EN 61784-5-11	2013
IEC 61784-5-21	2018	Industrial communication networks - Profiles - Part 5-21: Installation of fieldbuses - Installation profiles for CPF 21	EN IEC 61784-5-21	2018
IEC 61800	series	Adjustable speed electrical power drive systems	EN IEC 61800	series
IEC 61918	2018	Industrial communication networks - Installation of communication networks in industrial premises	EN IEC 61918	2018
-	-		EN IEC 61918:2018/AC:2019-03	
IEC 62439-2	-	Industrial communication networks - High availability automation networks - Part 2: Media Redundancy Protocol (MRP)	EN 62439-2	-
ISO/IEC 7498-1	-	Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model	-	-
ISO/IEC 8802-2	-	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 2: Logical link control	-	-
ISO/IEC/IEEE 8802-3	2017	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Standard for Ethernet	-	-

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbc8f4b20c4/sist-en-iec-61784-2-2019

SIST EN IEC 61784-2:2019

ISO/IEC 8802-11	-	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements-- Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications	-	-
ISO/IEC 9834-8	-	Information technology - Procedures for the operation of object identifier registration authorities - Part 8: Generation of universally unique identifiers (UUIDs) and their use in object identifiers	-	-
ISO/IEC 11801	2002	Information technology - Generic cabling for customer premises	-	-
+ 1	2008		-	-
+ 2	2010		-	-
ISO 15745-3	-	Industrial automation systems and integration - Open systems application integration framework -- Part 3: Reference description for IEC 61158 based control systems	-	-
ISO 15745-4	2003	Industrial automation systems and integration - Open systems application integration framework - Part 4: Reference description for Ethernet-based control systems	-	-
+ A1	2006		-	-
IEEE 802	2001	Local and metropolitan area networks: Overview and architecture	-	-
IEEE 802.1AB	-	IEEE Standard for Local and metropolitan area networks - Station and Media Access Control Connectivity Discovery	-	-
IEEE 802.1AS	-	IEEE Standard for Local and Metropolitan Area Networks - Timing and Synchronization for Time-Sensitive Applications in Bridged Local Area Networks	-	-
IEEE 802.1D	2004	IEEE Standard for local and metropolitan area networks - Media Access Control (MAC) Bridges	-	-
IEEE 802.1Q	-	IEEE Standard for Local and metropolitan area networks - Bridges and Bridged Networks	-	-
IEEE 802.11	-	IEEE Standard for Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications	-	-
IEEE 802.15.1	-	IEEE Standard for Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 15.1: Wireless medium access control (MAC) and physical layer (PHY) specifications for wireless personal area networks (WPANs)	-	-
IETF RFC 768	-	User Datagram Protocol	-	-
IETF RFC 791	-	INTERNET PROTOCOL DARPA INTERNET PROGRAM PROTOCOL SPECIFICATION	-	-
IETF RFC 792	-	Internet Control Message Protocol	-	-

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/...-8287-...

SIST EN IEC 61784-2:2019

IETF RFC 793	-	TRANSMISSION CONTROL PROTOCOL DARPA INTERNET PROGRAM PROTOCOL SPECIFICATION	-	-
IETF RFC 826	-	Ethernet Address Resolution Protocol: Or Converting Network Protocol Addresses to 48.bit Ethernet Address for Transmission on Ethernet Hardware	-	-
IETF RFC 894	-	Standard for the Transmission of IP Datagrams over Ethernet Networks	-	-
IETF RFC 919	-	Broadcasting Internet Datagrams	-	-
IETF RFC 922	-	Broadcasting Internet datagrams in the presence of subnets	-	-
IETF RFC 950	-	Internet Standard Subnetting Procedure	-	-
IETF RFC 1034	-	Domain names - concepts and facilities	-	-
IETF RFC 1112	-	Host Extensions for IP multicasting	-	-
IETF RFC 1122	-	Requirements for Internet Hosts - Communication Layers	-	-
IETF RFC 1123	-	Requirements for Internet Hosts - Application and Support	-	-
IETF RFC 1127	-	A Perspective on the Host Requirements RFCs	-	-
IETF RFC 1157	-	Simple Network Management Protocol (SNMP)	-	-
IETF RFC 1213	-	Management Information Base for Network Management of TCP/IP-based Internets: MIB-II	-	-
IETF RFC 1305	-	Network Time Protocol (Version 3) - Specification, Implementation and Analysis	-	-
IETF RFC 2131	-	Dynamic Host Configuration Protocol	-	-
IETF RFC 2236	-	Internet Group Management Protocol, Version 2	-	-
IETF RFC 2544	-	Benchmarking Methodology for Network Interconnect Devices	-	-
IETF RFC 2988	-	Computing TCP's Retransmission Timer	-	-
IETF RFC 4836	-	Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs)	-	-

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bb0f2f8e29d/sist-en-iec-61784-2-2019

SIST EN IEC 61784-2:2019

IEC 61784-2

Edition 4.0 2019-04

INTERNATIONAL STANDARD

colour inside

Industrial communication networks – Profiles – Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC/IEEE 8802-3

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbefd4b29e4/sist-en-iec-61784-2-2019

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 35.100.20; 35.240.50

ISBN 978-2-8322-6725-7

Warning! Make sure that you obtained this publication from an authorized distributor.

® Registered trademark of the International Electrotechnical Commission

SIST EN IEC 61784-2:2019

CONTENTS

FOREWORD 17
INTRODUCTION 19
1 Scope 20
2 Normative references 20
3 Terms, definitions, abbreviated terms, acronyms, and conventions 26
3.1 Terms and definitions 26
3.2 Abbreviated terms and acronyms 30
3.3 Symbols 31
3.3.1 CPF 2 symbols 32
3.3.2 CPF 3 symbols 33
3.3.3 CPF 4 symbols 34
3.3.4 CPF 6 symbols 34
3.3.5 CPF 10 symbols 35
3.3.6 CPF 11 symbols 36
3.3.7 CPF 12 symbols 37
3.3.8 CPF 13 symbols 37
3.3.9 CPF 14 symbols 38
3.3.10 CPF 15 symbols 39
3.3.11 CPF 16 symbols 39
3.3.12 CPF 17 symbols 40
3.3.13 CPF 18 symbols 41
3.3.14 CPF 20 symbols 42
3.3.15 CPF 21 symbols 43
3.4 Conventions 43
3.4.1 Conventions common to all layers 43
3.4.2 Physical layer 45
3.4.3 Data-link layer 45
3.4.4 Application layer 46
4 Conformance to communication profiles 46
5 RTE performance indicators 47
5.1 Basic principles of performance indicators 47
5.2 Application requirements 48
5.3 Performance indicators 48
5.3.1 Delivery time 48
5.3.2 Number of RTE end-stations 49
5.3.3 Basic network topology 49
5.3.4 Number of switches between RTE end-stations 49
5.3.5 Throughput RTE 49
5.3.6 Non-RTE bandwidth 49
5.3.7 Time synchronization accuracy 50
5.3.8 Non-time-based synchronization accuracy 50
5.3.9 Redundancy recovery time 50
6 Conformance tests 50
6.1 Concept 50
6.2 Methodology 51
6.3 Test conditions and test cases 51

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbefd4b29e4/sist-en-iec-61784-2-2019

SIST EN IEC 61784-2:2019

6.4 Test procedure and measuring 51
6.5 Test report 52
7 Communication Profile Family 2 (CIP™) – RTE communication profiles 52
7.1 General overview 52
7.2 Profile 2/2 53
7.2.1 Physical layer 53
7.2.2 Data-link layer 53
7.2.3 Application layer 53
7.2.4 Performance indicator selection 53
7.3 Profile 2/2.1 57
7.3.1 Physical layer 57
7.3.2 Data-link layer 57
7.3.3 Application layer 59
7.3.4 Performance indicator selection 61
8 Communication Profile Family 3 (PROFIBUS & PROFINET) – RTE communication profiles 63
8.1 General overview 63
8.1.1 CPF 3 overview 63
8.1.2 Administrative numbers 63
8.1.3 Node Classes 64
8.1.4 Protocol and timing parameters 66
8.1.5 Communication classes 76
8.1.6 Media redundancy classes 79
8.1.7 Media classes 80
8.1.8 Application classes 81
8.1.9 Records 86
8.1.10 Communication feature list 94
8.1.11 Conformance class behaviors 94
8.2 Profile 3/4 101
8.2.1 Physical layer 101
8.2.2 Data link layer 101
8.2.3 Application layer 102
8.2.4 Performance indicator selection 110
8.3 Profile 3/5 117
8.3.1 Physical layer 117
8.3.2 Data link layer 117
8.3.3 Application layer 118
8.3.4 Performance indicator selection 125
8.4 Profile 3/6 126
8.4.1 Physical layer 126
8.4.2 Data link layer 126
8.4.3 Application layer 127
8.4.4 Performance indicator selection 133
9 Communication Profile Family 4 (P-NET) – RTE communication profiles 137
9.1 General overview 137
9.2 Profile 4/3, P-NET on IP 138
9.2.1 Physical layer 138
9.2.2 Data-link layer 138
9.2.3 Application layer 139

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-7bbefd4b29e4/sist-en-iec-61784-2-2019

SIST EN IEC 61784-2:2019

9.2.4 Performance indicator selection 139
10 Communication Profile Family 6 (INTERBUS®) – RTE communication profiles 143
10.1 General overview 143
10.2 Profile 6/4 145
10.2.1 Mapping 145
10.2.2 Type 10 service and protocol selection 146
10.2.3 Type 8 service and protocol selection 146
10.3 Profile 6/5 147
10.3.1 Mapping 147
10.3.2 Type 10 service and protocol selection 148
10.3.3 Type 8 service and protocol selection 148
10.3.4 Performance indicator selection 148
10.4 Profile 6/6 149
10.4.1 Mapping 149
10.4.2 Type 10 service and protocol selection 149
10.4.3 Type 8 service and protocol selection 149
10.4.4 Performance indicator selection 149
11 Communication Profile Family 10 (Vnet/IP) – RTE communication profiles 150
11.1 General overview 150
11.2 Profile 10/1 151
11.2.1 Physical layer 151
11.2.2 Data link layer 151
11.2.3 Application layer 154
11.2.4 Performance indicator selection 155
12 Communication Profile Family 11 (TCnet) – RTE communication profiles 160
12.1 General overview 160
12.2 Profile 11/1 160
12.2.1 Physical layer 160
12.2.2 Data-link layer 160
12.2.3 Application layer 164
12.2.4 Performance indicator selection 165
12.3 Profile 11/2 171
12.3.1 Physical layer 171
12.3.2 Data-link layer 172
12.3.3 Application layer 176
12.3.4 Performance indicator selection 176
12.4 Profile 11/3 181
12.4.1 Physical layer 181
12.4.2 Data-link layer 181
12.4.3 Application layer 185
12.4.4 Performance indicator selection 185
13 Communication Profile Family 12 (EtherCAT®) – RTE communication profiles 192
13.1 General overview 192
13.2 Profile CP 12/1 192
13.2.1 Physical layer 192
13.2.2 Data-link layer 194
13.2.3 Application layer 198
13.2.4 Performance indicator selection 200

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/...
7bbefd4b29e4/sist-en-iec-61784-2-2019

SIST EN IEC 61784-2:2019

13.3 Profile CP 12/2 203
13.3.1 Physical layer 203
13.3.2 Data-link layer 203
13.3.3 Application layer 207
13.3.4 Performance indicator selection 209
14 Communication Profile Family 13 (Ethernet POWERLINK) – RTE communication profiles 211
14.1 General overview 211
14.2 Profile 13/1 212
14.2.1 Physical layer 212
14.2.2 Data-link layer 212
14.2.3 Application layer 212
14.2.4 Performance indicator selection 213
15 Communication Profile Family 14 (EPA)- RTE communication profiles 218
15.1 General overview 218
15.2 CPF 14 (EPA) communication concept 219
15.2.1 General 219
15.2.2 Network Topology 219
15.2.3 EPA devices 220
15.3 Profile 14/1 220
15.3.1 Physical layer 220
15.3.2 Data-link layer 221
15.3.3 Network Layer 221
15.3.4 Transport Layer 221
15.3.5 Application layer 221
15.3.6 Performance indicator selection 222
15.4 Profile 14/2 225
15.4.1 Physical layer 225
15.4.2 Data-link layer 225
15.4.3 Network Layer 226
15.4.4 Transport Layer 226
15.4.5 Application layer 227
15.4.6 Performance indicator selection 228
15.5 Profile 14/3 230
15.5.1 Physical layer 230
15.5.2 Data-link layer 230
15.5.3 Network Layer 231
15.5.4 Transport Layer 231
15.5.5 Application layer 232
15.5.6 Performance indicator selection 233
15.6 Profile 14/4 236
15.6.1 Physical layer 236
15.6.2 Data-link layer 236
15.6.3 Network layer 237
15.6.4 Transport layer 238
15.6.5 Application layer 238
15.6.6 Performance indicatior selection 239
16 Communication Profile Family 15 (MODBUS-RTPS) – RTE communication profiles 241
16.1 General overview 241

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN IEC 61784-2:2019
https://standards.iteh.ai/catalog/standards/sist/c490f66b-cd12-41eb-8287-f0d2e4f2e7e4/sist-en-iec-61784-2-2019