IEC 61850-7-2

Edition 2.0 2010-08

INTERNATIONAL STANDARD

colour inside

Communication networks and systems for power utility automation – Part 7-2: Basic information and communication structure – Abstract communication service interface (ACSI)

iTeh Standards
(https://standards.iteh.ai)
Document Preview

IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/iec/5fd8700c-ba60-403d-b324-209abf7b1379/iec-61850-7-2-2010

IEC 61850-7-2:2010(E)

THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2010 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.

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: 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.

- Catalogue of IEC publications: www.iec.ch/searchpub

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 It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: www.iec.ch/online_news/justpub

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

- Electropedia: www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 20 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary online.

- Customer Service Centre: www.iec.ch/webstore/custserv

If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us:

Email: csc@iec.ch
Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/iec/5fd8700c-ba60-403d-b324-209abf7b1379/iec-61850-7-2-2010

IEC 61850-7-2

Edition 2.0 2010-08

INTERNATIONAL STANDARD

colour inside

Communication networks and systems for power utility automation – Part 7-2: Basic information and communication structure – Abstract communication service interface (ACSI)

iTeh Standards
(https://standards.iteh.ai)
Document Preview

IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/iec/5fd8700c-ba60-403d-b324-209abf7b1379/iec-61850-7-2-2010

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.200

ISBN 978-2-88912-065-9

® Registered trademark of the International Electrotechnical Commission

CONTENTS

FOREWORD 9
INTRODUCTION 11
1 Scope 12
2 Normative references 12
3 Terms and definitions 13
4 Abbreviated terms 14
5 ACSI overview and basic concepts 15
5.1 Conceptual model of IEC 61850 15
5.2 The meta-meta model 16
5.3 The meta model 16
5.3.1 General 16
5.3.2 Information modelling classes 17
5.3.3 Information exchange modelling classes 18
5.3.4 Relations between classes 20
5.4 The domain type model 21
5.5 The data instance model 21
6 TypeDefinitions 22
6.1 General 22
6.1.1 BasicTypes 22
6.1.2 CommonACSITypes 23
7 GenServerClass model 29
7.1 GenServerClass definition 29
7.1.1 GenServerClass syntax 29
7.1.2 GenServerClass attributes 30
7.2 Server class services 30
7.2.1 Overview of directory and GetDefinition services 30
7.2.2 GetServerDirectory 31
8 Application association model 32
8.1 Introduction 32
8.2 Concept of application associations 32
8.3 TWO-PARTY-APPLICATION-ASSOCIATION (TPAA) class model 32
8.3.1 TWO-PARTY-APPLICATION-ASSOCIATION (TPAA) class definition 32
8.3.2 Two-party application association services 34
8.4 MULTICAST-APPLICATION-ASSOCIATION (MCAA) class 37
8.4.1 MULTICAST-APPLICATION-ASSOCIATION (MCAA) class definition 37
8.4.2 MULTICAST-Application-association (MCAA) class attributes 37
9 GenLogicalDeviceClass model 38
9.1 GenLogicalDeviceClass definition 38
9.1.1 GenLogicalDeviceClass syntax 38
9.1.2 GenLogicalDeviceClass attributes 38
9.2 GenLogicalDeviceClass services 38
9.2.1 GetLogicalDeviceDirectory 38
10 GenLogicalNodeClass model 39
10.1 GenLogicalNodeClass definition 39
10.1.1 GenLogicalNodeClass diagram 39
10.1.2 GenLogicalNodeClass syntax 40

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/iec/5fd87f0c-ba61-403d-b324-209abf/61379/iec-61850-7-2-2010

10.1.3 GenLogicalNodeClass attributes 41
10.2 GenLogicalNodeClass services 42
10.2.1 Overview 42
10.2.2 GetLogicalNodeDirectory 42
10.2.3 GetAllDataValues 43
11 Generic data object class model 45
11.1 GenDataObjectClass diagram 45
11.2 GenDataObjectClass syntax 45
11.3 GenDataObjectClass attributes 46
11.3.1 DataObjectName 46
11.3.2 DataObjectRef – data object reference 46
11.3.3 m/o/c 46
11.3.4 DataObjectType 46
11.4 GenDataObjectClass services 46
11.4.1 General definitions and overview 46
11.4.2 GetDataValues 47
11.4.3 SetDataValues 48
11.4.4 GetDataDirectory 49
11.4.5 GetDataDefinition 50
12 Generic common data class model 50
12.1 General 50
12.2 GenCommonDataClass 51
12.2.1 GenCommonDataClass diagram 51
12.2.2 GenCommonDataClass syntax 51
12.2.3 GenCommonDataClass attributes 52
12.3 GenDataAttributeClass 52
12.3.1 GenDataAttributeClass diagram 52
12.3.2 GenDataAttributeClass syntax 53
12.3.3 GenDataAttributeClass attributes 53
12.4 GenConstructedAttributeClass 57
12.4.1 GenConstructedAttributeClass diagram 57
12.4.2 GenConstructedAttributeClass syntax 57
12.4.3 GenConstructedAttributeClass attributes 57
12.5 GenSubDataAttributeClass 57
12.5.1 SubDataAttributeClass diagram 57
12.5.2 SubDataAttributeClass syntax 58
12.5.3 GenSubDataAttributeClass attributes 58
12.6 Referencing data objects and their components 58
12.6.1 General 58
12.6.2 Reference syntax 59
12.6.3 Base types and their relation 59
12.6.4 Example of using references 60
13 DATA-SET class model 61
13.1 General 61
13.2 DATA-SET class definition 62
13.2.1 DATA-SET class syntax 62
13.2.2 DATA-SET class attributes 63
13.3 DATA-SET class services 63
13.3.1 Overview 63

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/sist/60e403d1-b324-200d-bf7b-1370/iec-61850-7-2-2010

13.3.2 GetDataSetValues 64
13.3.3 SetDataSetValues 65
13.3.4 CreateDataSet 66
13.3.5 DeleteDataSet 66
13.3.6 GetDataSetDirectory 67
14 Service tracking 68
14.1 General 68
14.2 Common service tracking (CST) 68
15 Modelling of control block classes 70
15.1 General 70
15.2 Control block class models 70
15.2.1 Control block attributes 71
15.2.2 Control block services 71
15.2.3 Attribute type 71
15.3 Control block tracking services 71
15.3.1 General 71
15.3.2 Common data classes for control block service tracking 72
16 SETTING-GROUP-CONTROL-BLOCK class model 82
16.1 General 82
16.2 SGCB class definition 83
16.2.1 SGCB class syntax 83
16.2.2 SGCB class attributes 84
16.3 SGCB class services 85
16.3.1 Overview 85
16.3.2 SelectActiveSG 85
16.3.3 SelectEditSG 86
16.3.4 SetEditSGValue 87
16.3.5 ConfirmEditSGValues 88
16.3.6 GetEditSGValue 89
16.3.7 GetSGCBValues 90
17 REPORT-CONTROL-BLOCK and LOG-CONTROL-BLOCK class models 91
17.1 Overview 91
17.2 REPORT-CONTROL-BLOCK class model 93
17.2.1 Basic concepts 93
17.2.2 BUFFERED-REPORT-CONTROL-BLOCK (BRCB) class definition 93
17.2.3 BRCB class services 103
17.2.4 UNBUFFERED-REPORT-CONTROL-BLOCK (URCB) class definition 116
17.2.5 URCB class services 117
17.3 LOG-CONTROL-BLOCK class model 118
17.3.1 General 118
17.3.2 LCB class definition 119
17.3.3 LOG class definition 124
17.3.4 Reason code for log entries 127
17.3.5 LOG services 127
18 Generic substation event class model (GSE) 131
18.1 Overview 131
18.2 GOOSE-CONTROL-BLOCK (GoCB) class 132
18.2.1 GoCB definition 132
18.2.2 GOOSE service definitions 134

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/sist/8818700c-ba60-403d-b324-209abf7b1379/iec-61850-7-2-2010

18.2.3 Generic object oriented substation event (GOOSE) message 139
19 Transmission of sampled value class model 140
19.1 Overview 140
19.2 Transmission of sampled values using multicast 142
19.2.1 MSVCB class definition 142
19.2.2 Multicast sampled value class services 144
19.3 Transmission of sampled values using unicast 147
19.3.1 USVCB class definition 147
19.3.2 Unicast sampled value services 150
19.4 Sampled value format 153
19.4.1 MsvID or UsvID 154
19.4.2 OptFlds 154
19.4.3 DatSet 154
19.4.4 Sample [1..n] 155
19.4.5 SmpCnt 155
19.4.6 RefrTm 155
19.4.7 ConfRev 155
19.4.8 SmpSynch 155
19.4.9 SmpRate 155
19.4.10 SmpMod 155
19.4.11 Simulation 155
20 CONTROL class model 156
20.1 Introduction 156
20.2 Control with normal security 158
20.2.1 Direct control with normal security 158
20.2.2 SBO control with normal security 160
20.3 Control with enhanced security 162
20.3.1 Introduction 162
20.3.2 Direct control with enhanced security 162
20.3.3 SBO control with enhanced security 163
20.4 Time-activated operate 166
20.5 CONTROL class service definitions 167
20.5.1 Overview 167
20.5.2 Service parameter definition 168
20.5.3 Service specification 172
20.6 Tracking of control services 178
20.6.1 General 178
20.6.2 Control service tracking (CTS) 178
21 Time and time-synchronization model 179
21.1 General 179
21.2 External information 180
22 Naming conventions 181
22.1 Class naming and class specializations 181
22.2 Referencing an instance of a class 182
22.3 Scope 183
23 File transfer model 184
23.1 File class 184
23.1.1 FileName 184
23.1.2 FileSize 184

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/iec/5fd8700a-ba60-403d-b324-209abf7b1379/iec-61850-7-2-2010

23.1.3 LastModified 184
23.2 File services 185
23.2.1 GetFile 185
23.2.2 SetFile 185
23.2.3 DeleteFile 186
23.2.4 GetFileAttributeValues 186
Annex A (normative) ACSI conformance statement 188
Annex B (normative) Formal definition of IEC 61850-7-2 Common Data Classes 195
Annex C (informative) Generic substation state event (GSSE) control block (GsCB) 203
Bibliography 212
Index 213

Figure 1 – Excerpt of conceptual model of IEC 61850 16
Figure 2 – Basic conceptual class model of the ACSI 17
Figure 3 – Conceptual service model of the ACSI 19
Figure 4 – Core of the conceptual meta model and relationship 21
Figure 5 – Data instance model (conceptual) 22
Figure 6 – Overview about GetDirectory and GetDefinition services 30
Figure 7 – Normal operation 33
Figure 8 – Aborting association 33
Figure 9 – Principle of multicast application association 37
Figure 10 – Basic conceptual model of the GenLogicalNodeClass 40
Figure 11 – Basic conceptual class model of the GenDataObjectClass 45
Figure 12 – Excerpt of GenDataObjectClass services 47
Figure 13 – Class diagram of the GenCommonDataClass 51
Figure 14 – Conceptual Class diagram of the GenCommonDataClass 51
Figure 15 – Class diagram of the GenDataAttributeClass 52
Figure 16 – Relation of TrgOp and Reporting 56
Figure 17 – Class diagram of the GenConstructedAttributeClass 57
Figure 18 – Relation of types (example) 60
Figure 19 – Example of a data object 61
Figure 20 – Dynamic creation of data set instances 62
Figure 21 – Control block service mapping 72
Figure 22 – Basic model of the settings model 83
Figure 23 – Basic building blocks for reporting and logging 92
Figure 24 – BRCB state machine 95
Figure 25 – General queue of entries for report handler 96
Figure 26 – Buffer time 98
Figure 27 – State Machine for Sequence Number Generation 99
Figure 28 – Logical state machine for general interrogation 101
Figure 29 – Report example on the use of sequence number 105
Figure 30 – Entry discard that does not cause indication of loss of information in enabled state 106
Figure 31 – Indication of loss of information due to resource constraints in enable state 107

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 61850-7-2:2010

Figure 32 – Data set members and reporting 108
Figure 33 – Report example 109
Figure 34 – Log model overview 119
Figure 35 – GoCB model 131
Figure 36 – Model for transmission of sampled values 141
Figure 37 – Principle of the control model 156
Figure 38 – State machine of direct control with normal security 159
Figure 39 – Direct control with normal security 160
Figure 40 – State machine of SBO control with normal security 161
Figure 41 – State machine of direct control with enhanced security 163
Figure 42 – State machine SBO control with enhanced security 164
Figure 43 – Select before operate with enhanced security – positive case 165
Figure 44 – Select before operate with enhanced security – negative case (no status change) 165
Figure 45 – Time-activated operate 167
Figure 46 – Time model and time synchronization (principle) 180
Figure 47 – Specializations 181
Figure 48 – Object names and object reference 183
Figure C.1 – GsCB model 203

iTeh Standards
(https://standards.iteh.ai)
Document Preview

Table 1 – ACSI model classes with related services 20
Table 2 – BasicTypes 23
Table 3 – ObjectName type 24
Table 4 – ObjectReference type 24

IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/iec/5fd8700c-ba60-403d-b324-209abf7b1379/iec-61850-7-2-2010

Table 5 – ServiceError type 25
Table 6 – PACKED-LIST type 26
Table 7 – TimeStamp type 26
Table 8 – TimeQuality definition 27
Table 9 – TimeAccuracy 28
Table 10 – TriggerConditions type 28
Table 11 – ReasonForInclusion 29
Table 12 – GenServerClass definition 29
Table 13 – TWO-PARTY-APPLICATION-ASSOCIATION (TPAA) class definition 33
Table 14 – MULTICAST-APPLICATION-ASSOCIATION (MCAA) class definition 37
Table 15 – GenLogicalDeviceClass (GenLD) class definition 38
Table 16 – GenLogicalNodeClass definition 40
Table 17 – GenDataObjectClass definition 46
Table 18 – GenCommonDataClass definition 52
Table 19 – GenDataAttributeClass definition 53
Table 20 – Functional constraint values 54
Table 21 – TrgOp 56
Table 22 – GenConstructedAttributeClass definition 57
Table 23 – GenSubDataAttributeClass definition 58

Table 24 – DATA-SET (DS) class definition 63
Table 25 – Common service tracking common data class (CST) definition 69
Table 26 – ServiceType type 70
Table 27 – CB class definition 71
Table 28 – Buffered report tracking service (BTS) definition 73
Table 29 – Unbuffered report tracking service (UTS) definition 74
Table 30 – Log control block tracking service (LTS) definition 76
Table 31 – Log tracking service (OTS) definition 77
Table 32 – GOOSE Control block tracking service (GTS) definition 78
Table 33 – MSVCB tracking service (MTS) definition 79
Table 34 – USVCB tracking service (NTS) definition 80
Table 35 – SGCB tracking service (STS) definition 81
Table 36 – SGCB class definition 84
Table 37 – BRCB class definition 94
Table 38 – Report format specification 104
Table 39 – URCB class definition 116
Table 40 – LCB class definition 120
Table 41 – LOG class definition 125
Table 42 – GOOSE control block class definition 132
Table 43 – GOOSE message definition 139
Table 44 – MSVCB class definition 142
Table 45 – USVCB class definition 148
Table 46 – Sampled value (SV) format definition 154
Table 47 – Generic behavior and negative responses 157
Table 48 – Control services 167
Table 49 – T definition 168
Table 50 – Test definition 169
Table 51 – Check condition definition 169
Table 52 – operTm definition 169
Table 53 – Additional cause diagnosis definition 170
Table 54 – AddCause semantic 171
Table 55 – Control service tracking (CTS) definition 179
Table 56 – FILE class definition 184
Table A.1 – Basic conformance statement 189
Table A.2 – ACSI models conformance statement 190
Table A.3 – ACSI service conformance statement 191
Table C.1 – GSSE control block class definition 204
Table C.2 – GSSE message definition 210

iTeh Standards
(https://standards.iteh.ai)
Document Preview

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

Part 7-2: Basic information and communication structure – Abstract communication service interface (ACSI)

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.

iTeh Standards
(https://standards.iteh.ai)
Document Preview
IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/iec/...a60-403d-b324-209abf7b1379/iec-61850-7-2-2010

International Standard IEC 61850-7-2 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

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

FDIS	Report on voting
57/1065/FDIS	57/1083/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 second edition cancels and replaces the first edition published in 2003. It constitutes a technical revision.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The major technical changes with regard to the previous edition are as follows:

- class diagrams have been updated,
- data types not required have been removed,
- errors and typos haven been corrected,
- substitution model has been moved to IEC 61850-7-3,
- service tracking for control blocks have been added,
- the view concept will be according to the new work on role bases access (RBA),
- security issues are solved by the IEC 62351 series, and
- several terms have been harmonized with those in the other parts.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this document, the following print types are used:

– **bold** is used to highlight defined terms,

– Tahoma is used where the difference between a capital i (I) and a small L (l) is important to see.

A list of all parts of the IEC 61850 series, under the general title: *Communication networks and systems for power utility automation*, can be found on the IEC website.

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.

A bilingual version of this publication may be issued at a later date.

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.

iTeh Standards (https://standards.iteh.ai) Document Preview

INTRODUCTION

This document is part of a set of definitions which details a layered utility communication architecture. This architecture has been chosen to provide abstract definitions of classes and services such that the definitions are independent of specific protocol stacks, implementations, and operating systems.

The IEC 61850 series is intended to provide interoperability between a variety of devices. Communication between these devices is achieved by the definition of a hierarchical class model (for example, logical device, logical node, data, data set, report control, or log) and services provided by these classes (for example, get, set, report, define, delete) in IEC 61850-7-x.

This part of IEC 61850 defines the abstract communication service interface (ACSI) for use in the utility application domain that requires real-time cooperation of intelligent electronic devices. The ACSI has been defined so as to be independent of the underlying communication systems. Specific communication service mappings[1)] (SCSM) are specified in IEC 61850-8-x and IEC 61850-9-x.

This part of IEC 61850 defines the abstract communication service interface in terms of

– a hierarchical class model of all information that can be accessed via a communication network,
– services that operate on these classes, and
– parameters associated with each service.

The ACSI description technique abstracts away from all the different approaches to implement the cooperation of the various devices.

iTeh Standards
(https://standards.iteh.ai)
Document Preview

NOTE 1 Abstraction in ACSI has two meanings. First, only those aspects of a real device (for example, a breaker) or a real function that are visible and accessible over a communication network are modelled. This abstraction leads to the hierarchical class models and their behaviour defined in IEC 61850-7-2, IEC 61850-7-3, and IEC 61850-7-4. Second, the ACSI abstracts from the aspect of concrete definitions on how the devices exchange information; only a conceptual cooperation is defined. The concrete information exchange is defined in the SCSMs.

https://standards.iteh.ai/catalog/standards/sist/[illegible]-2010

NOTE 2 This part of IEC 61850 does not provide comprehensive tutorial material. It is recommended that IEC 61850-5 and IEC 61850-7-1 be read first in conjunction with IEC 61850-7-2 and IEC 61850-7-3.

NOTE 3 Examples use names of classes (for example XCBR for a class of a logical node) defined in IEC 61850-7-4 and IEC 61850-7-3. The normative names are defined in IEC 61850-7-4 and IEC 61850-7-3 only.

---

1) The ACSI is independent of the specific mapping. Mappings to standard application layers or middle ware technologies are possible.

COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

Part 7-2: Basic information and communication structure – Abstract communication service interface (ACSI)

1 Scope

This part of IEC 61850 applies to the ACSI communication for utility automation. The ACSI provides the following abstract communication service interfaces.

a) Abstract interface describing communications between a client and a remote server for
   - real-time data access and retrieval,
   - device control,
   - event reporting and logging,
   - setting group control,
   - self-description of devices (device data dictionary),
   - data typing and discovery of data types, and
   - file transfer.

b) Abstract interface for fast and reliable system-wide event distribution between an application in one device and many remote applications in different devices (publisher/sub-scriber) and for transmission of sampled measured values (publisher/subscriber).

iTeh Standards
(https://standards.iteh.ai)
Document Preview

2 Normative references

IEC 61850-7-2:2010
https://standards.iteh.ai/catalog/standards/sist/[illegible]/iec-61850-7-2-2010

The following referenced documents are indispensable for the application 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.

IEC 61850-2, *Communication networks and systems in substations – Part 2: Glossary*

IEC 61850-5, *Communication networks and systems in substations – Part 5: Communication requirements for functions and devices models*

IEC 61850-6, *Communication networks and systems for power utility automation – Part 5: Configuration description language for communication in electrical substations related to IEDs*

IEC 61850-7-1, *Communication networks and systems for power utility automation – Part 7-1: Basic communication structure – Principles and models*[2)]

IEC 61850-7-3, *Communication networks and systems for power utility automation – Part 7-3: Basic communication structure – Common data classes*[2)]

IEC 61850-7-4, *Communication networks and systems for power utility automation – Part 7-4: Basic communication structure – Compatible logical node classes and data object classes*

---

2) To be published.