Relion® Protection and control

630 series 1.3
IEC 61850 Tissue Implementation Extra Information

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Table of content:

1 Introduction

This document serves as the PIXIT document for the IEC 61850 implementation in the 630 products.

The intention is to declare how the IEC 61850 is applied and used in the ABB 630 Series, version 1.3. The document is organized according to the IEC 61850 standard and lists the different aspects within the defined scope of this paper.

2 Related documents

Document Id	Title
IEC 61850-5 (2003)	Communication Networks and Systems in Substations – Part 5: Communication requirements for functions and device models
IEC 61850-6 (2003)	Communication Networks and Systems in Substations Part 6: Configuration description language for communication in electrical substations related to IEDs
IEC 61850-7-1 (2003)	Communication Networks and Systems in Substations Part 7-1: Basic communication structure for substation and feeder equipment – Principles and models
IEC 61850-7-2 (2003)	Communication Networks and Systems in Substations Part 7-2: Basic communication structure for substations and feeder equipment – Abstract communication service interface (ACSI)
IEC 61850-7-3 (2003)	Communication Networks and Systems in Substations Part 7-3: Basic communication structure for substation and feeder equipment – Common data classes
IEC 61850-7-4 (2003)	Communication Networks and Systems in Substations Part 7-4: Basic communication structure for substation and feeder equipment – Compatible logical node classes and data classes
IEC 61850-8-1 (2003)	Communication Networks and Systems in Substations Part 8-1: Specific communication service mapping (SCSM) – Mapping to MMS(ISO/IEC 9506 Part 1 and Part 2)
IEC 61850-10 (2005)	Communication Networks and Systems in Substations Part 10: Conformance testing
ABB 1MRS189725	630 series ver 1.3 - IEC 61850 MICS; Model Implementation conformance statement
ABB 1MRS189726	630 series ver 1.3 - IEC 61850 PICS; Protocol Implementation conformance statement
ABB 1MRS189727	630 series ver 1.3 - IEC 61850 PIXIT; Protocol Implementation conformance statement

3 Included Tissues

The following Tissues in this chapter, according to the nomenclature of UCA users group, are supported in the ABB 630 Series product family, version 1.3.

3.1 Introduction

This chapter contains the information about the tissues conformance statement

The following is applied in this chapter: The conformance (M/O/-) column indicates:

Mx.y; Mandatory, tissue is included in the UCA Device conformance test procedures version x.y and stated as mandatory

O ; Optional, the tissue is not yet included in the test procedures or it's a recommendation or it's optional in the IEC 61850 documents

tbd; To be defined, the proposal is not defined in such detail to be implemented or tested

- ; Not applicable, just editorial, no change for implementation and testing

The supported (Sup) column indicates:

Y ; Yes the tissue is implemented in the device

N ; No the tissue is not implemented in the device

na ; Not applicable, the tissue is not applicable for the device

3.2 IEC 61850 part 6 Tissues

Part 6 Tissue No	Clause/ Subclause	Paragraph Figure/ Table	Final change	M/O/-	Sup
1	Annex A5		"[1-2]?\d{1,2}\.[1-2]?\d{1,2}\.[1-2]?\d{1,2}\.[1-2]?\d{1,2}"	M 1.1	Y
3	Annex B		Check the ENUMs and complete the appendix: AutoRecSt, FltLoop, PmpCtl; The ICD/SCD files should include these ENUMS when used	M 1.1	Y
5	Annex A	SCL_Enums.xsd	Add definition for the following 8-1 attributes in part 6 / XML schema: SBO, SBOw, Oper, Cancel, Check	M 1.1	Y
7			The unique key in SCL schema is the name without FC, therefore it is not possible to specify the same attribute with different FCs. This is also not needed: the only attribute with two FCs are setting parameters (FC=SG, SE), where each specification with SG implicitly means an SE on MMS level, if editing is supported at all.	O	Y
8	Annex B		Use name Watts for code 62 instead of W	O	Y
9	Annex A		Change XML schema to allow control blocks without a dataset reference	O	Y
10	Annex A		Add the bType *Check* to the schema, to be used for the Check attribute.	O	Y
11			IED-Name could be used as a host name. To ensure interoperability the IP address shall be mandatory in the SCD-File.	O	Y

3.3 IEC 61850 part 7-2 Tissues

Part 7-2 Tissue no	Clause/ Subclause	Paragraph Figure/ Table	Final change	M/O/-	Sup
30	17.5.2.3		Change sentence to "The parameter T shall be the time when the client send the control request**s**"	M 1.1	Y
34	15.1	Figure 26; and figure 27	Add note: "Applications may choose to publish both transitions of transient or pulsed data attribute values (e.g. a trip). Other applications could choose to publish only on a significant event (e.g. start)."	M 1.1	Y
38	15.2.1 15.2.1.4		Change GoCB attribute name from "AppID" to "GoID".	M 1.1	Y
39	15.2.1		Add Attribute "DstAddress" after the Attribute "NdsCom" "15.2.1.8 DstAddress The attribute DstAddress shall be the SCSM specific addressing information like media access address, priority, and other information."	M 1.1	Y
43	17.5.2.3		Change "The parameter T shall be the time when the client sends the control requests. Add NOTE: "Control requests can be Select, Operate, or Cancel."	M 1.1	Y
44	17.		Add new AddCause value: Object-not-selected 18	M 1.1	Y
46	17.3.3	33, 34	Canceling a command as long as no Oper_resp+ has been received. Compare new state diagram	O	Y
52	15.2.3.6		The SqNum shall be set to 0 to indicate the first GOOSE transmission initiated by a value (increment of StNum) change.	M	Y

IEC 61850 Part 7-3 Tissues

Part 7 Tissue no	Clause/ Subclause	Paragraph Figure/ Table	Final change	M/O /-	Sup
-			-	-	

3.4 IEC 61850 Part 7-4 Tissues

Part 7-4 No	Clause/ Subclause	Paragraph Figure/ Table	Final change	M/O /-	Sup
75	5.7.1	Str, Op	Str and Op in GAPC shall be optional.	M 1.1	Y
76	6	CBOpCap SwOpCap	Put it into optional. In Retrofit situation the information may not be available for the SAS.	M 1.1	Y
252	5.4.22	AlmThm	Declared as SPS (former ACT)	M 1.1	Y
343		ATCC.ParOp	Declared as SPS		Y

IEC 61850 Part 8-1 Tissues

Part 8-1 Tissue no	Clause / Subclause	Paragraph Figure/ Table	Final change	M/O /-	Sup
109	Annex B	Table B1	Extent address spaces in 5th byte: **GOOSE** 01-0c-cd-01-00-00 bis 01-0c-cd-01-FF-FF **GSE** 01-0c-cd-02-00-00 bis 01-0c-cd-02-FF-FF **Multicast Sampled values** 01-0c-cd-04-00-00 bis 01-0c-cd-04-FF-FF Table B1 is informative, no restriction, it is just a recommendation	O	Y
116			A MMS GetNameList request with a non-existing domain shall be responded by “Confirmed Error-PDU”	M 1.1	Y
545	23.1		The LD/ldname directories are only needed, if files exist, which belong to some LD; if only files exist which belong to the whole server, then the root directory (as mentioned in the existing note) is sufficient.	0	Y

3.5 IEC 61850 Part 10 Tissues

Part 10 Tissue no	Clause/ Subclause	Paragraph Figure/ Table	Final change	M/O /-	Sup

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