



Relion® Protection and control

# 630 series 1.3 IEC 61850 Protocol Implementation Conformance Statement

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## 1 Scope

The purpose of this document is to serve as the PICS, protocol implementation conformance statement according to IEC 61850. It covers the content of the products within ABB 630 Series, version 1.3.

## 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; Modeling Implementation conformance statement
ABB 1MRS189727	630 series ver 1.3 - IEC 61850 PIXIT Protocol Extra Information
ABB 1MRS189728	630 series ver 1.3 - IEC 61850 TICS Tissue Implementation conformance statement

## 3 MMS conformance statements

The following MMS conformance statements are used to provide an overview and details about ABB 630 Series, with firmware 1.3:

- MMS conformance, initiate request general parameters,
- MMS conformance, initiate response general parameters,

The statements specify the communication features mapped to IEC 61850-8-1.

### 3.1 Initiate Request General Parameters

The MMS initiate request conformance statement is defined in Table A.1.

**Table A.1 – Initiate Request General Parameters**

	Client/ Subscriber	Server/ Publisher	Value/ Comments
<b>InitiateRequest</b>			
LocalDetailCalling	—	Y	
ProposedMaxServOutstandingCalling	—	Y	
ProposedMaxServOutstandingCalled	—	Y	
<b>InitRequestDetail</b>			
InitiateRequestDetail	—	Y	
ProposedVersionNumber	—	Y	
ProposedParameterCBB	—	Y	
ServicesSupportedCalling	—	Y	
AdditionalSupportedCalling	—	-	
AdditionalCbbSupportedCalling	—	-	
PrivilegeClassIdentityCalling	—	-	

### 3.2 Initiate Response General Parameters

The MMS initiate response conformance statement is defined in Table A.2.

**Table A.2 – Initiate Response General Parameters**

	Client/ Subscriber	Server/ Publisher	Value/ Comments
<b>InitiateResponse</b>			
LocalDetailCalled	—	Y	
NegotiatedMaxServOutstandingCalling	—	Y	
NegotiatedMaxServOutstandingCalled	—	Y	
InitResponseDetail	—	Y	
<b>InitiateResponseDetail</b>			
NegotiatedVersionNumber	—	Y	
NegotiatedParameterCBB	—	-	
ServicesSupportedCalled	—	-	
AdditionalSupportedCalled	—	-	
AdditionalCbbSupportedCalled	—	-	
PrivilegeClassIdentityCalled	—	-	

## 4 ACSI conformance statements

The following ACSI conformance statements are used to provide an overview and details about ABB 630 Series, with firmware 1.3:

- ACSI basic conformance statement,
- ACSI models conformance statement,
- ACSI service conformance statement

The statements specify the communication features mapped to IEC 61850-8-1.

## 5 ACSI basic conformance statement

The basic conformance statement is defined in Table A.3.

**Table A.3 – Basic conformance statement**

		Client/ Subscriber	Server/ Publisher	Value/ Comments
<b>Client-Server roles</b>				
B11	<b>Server</b> side (of TWO-PARTY-APPLICATION-ASSOCIATION)	—	Y	
B12	<b>Client</b> side of (TWO-PARTY-APPLICATION-ASSOCIATION)		—	
<b>SCSMs supported</b>				
B21	<b>SCSM:</b> IEC 6185-8-1 used		Y	
B22	<b>SCSM:</b> IEC 6185-9-1 used		N	
B23	<b>SCSM:</b> IEC 6185-9-2 used		N	
B24	<b>SCSM:</b> other		N	
<b>Generic substation event model (GSE)</b>				
B31	<b>Publisher</b> side	—	Y	
B32	<b>Subscriber</b> side		—	
<b>Transmission of sampled value model (SVC)</b>				
B41	<b>Publisher</b> side	—	N	
B42	<b>Subscriber</b> side		—	
— Y = supported N or empty = not supported				

## 6 ACSI models conformance statement

The ACSI models conformance statement is defined in Table A.4.

**Table A.4 – ACSI models conformance statement**

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If <b>Server</b> or <b>Client</b> side (B11/12) supported				
M1	<b>Logical device</b>		Y	
M2	<b>Logical node</b>		Y	
M3	<b>Data</b>		Y	
M4	<b>Data set</b>		Y	
M5	<b>Substitution</b>		Y	
M6	<b>Setting group control</b>		Y	
	<b>Reporting</b>			
M7	<b>Buffered report control</b>		Y	
M7-1	sequence-number		Y	
M7-2	report-time-stamp		Y	
M7-3	reason-for-inclusion		Y	
M7-4	data-set-name		Y	
M7-5	data-reference		Y	
M7-6	buffer-overflow		Y	
M7-7	entryID		Y	
M7-8	BufTim		Y	
M7-9	IntgPd		Y	
M7-10	GI		Y	
M7-11	conf-revision		Y	
M8	<b>Unbuffered report control</b>		Y	
M8-1	sequence-number		Y	
M8-2	report-time-stamp		Y	
M8-3	reason-for-inclusion		Y	
M8-4	data-set-name		Y	
M8-5	data-reference		Y	
M8-6	BufTim		Y	
M8-7	IntgPd		Y	
M8-8	GI		Y	
M8-9	conf-revision		Y	
	<b>Logging</b>		N	
M9	<b>Log control</b>		N	
M9-1	IntgPd		N	
M10	<b>Log</b>		N	

		Client/ Subscriber	Server/ Publisher	Value/ Comments
M11	<b>Control</b>		Y	
If <b>GSE</b> (B31/32) is supported				
M12	<b>GOOSE</b>		Y	
M13	<b>GSSE</b>		N	
If <b>SVC</b> (41/42) is supported				
M14	Multicast SVC		N	
M15	Unicast SVC		N	
If <b>Server or Client</b> side (B11/12) supported				
M16	<b>Time</b>		Y	
M17	<b>File Transfer</b>		Y	
Y = service is supported				
N or empty = service is not supported				

## 7 ACSI service conformance statement

The ACSI service conformance statement is defined Table A.5.

**Table A.5 – ACSI service Conformance statement**

	Services	AA: TP/MC	Client (C)	Server (S)	Comments
<b>Server</b>					
S1	ServerDirectory	TP		Y	
<b>Application association</b>					
S2	Associate			Y	
S3	Abort			Y	
S4	Release			Y	
<b>Logical device</b>					
S5	LogicalDeviceDirectory	TP		Y	
<b>Logical node</b>					
S6	LogicalNodeDirectory	TP		Y	
S7	GetAllDataValues	TP		Y	
<b>Data</b>					
S8	GetDataValues	TP		Y	Limited to max 150 elements/read request
S9	SetDataValues	TP		Y	
S10	GetDataDirectory	TP		Y	
S11	GetDataDefinition	TP		Y	

	Services	AA: TP/MC	Client (C)	Server (S)	Comments
<b>Data set</b>					
S12	GetDataSetValues	TP		Y	
S13	SetDataSetValues	TP		N	
S14	CreateDataSet	TP		N	
S15	DeleteDataSet	TP		N	
S16	GetDataSetDirectory	TP		Y	

<b>Substitution</b>					
S17	SetDataValues	TP		Y	

<b>Setting group control</b>					
S18	SelectActiveSG	TP		Y	
S19	SelectEditSG	TP		N	
S20	SetSGValues	TP		N	
S21	ConfirmEditSGValues	TP		N	
S22	GetSGValues	TP		N	
S23	GetSGCBValues	TP		Y	

<b>Reporting</b>					
<b>Buffered report control block (BRCB)</b>					
S24	Report	TP		Y	
S24-1	data-change (dchg)			Y	
S24-2	qchg-change (qchg)			Y	
S24-3	data-update (dupd)			Y	
S25	GetBRCBValues	TP		Y	
S26	SetBRCBValues	TP		R	See PIXIT
<b>Unbuffered report control block (URCB)</b>					
S27	Report	TP		Y	
S27-1	data-change (dchg)			Y	
S27-2	qchg-change (qchg)			Y	
S27-3	data-update (dup)			Y	
S28	GetURCBValues	TP		Y	
S29	SetURCBValues	TP		R	See PIXIT

<b>Logging</b>					
<b>Log control block</b>					
S30	GetLCBValues	TP		N	
S31	SetLCBValues	TP		N	
<b>Log</b>					
S32	QueryLogByTime	TP		N	
S33	QueryLogByEntry	TP		N	
S34	GetLogStatusValues	TP		N	

	Services	AA: TP/MC	Client (C)	Server (S)	Comments
<b>Generic substation event model (GSE)</b>					
GOOSE-CONTROL-BLOCK					
S35	SendGOOSEMessage	MC		Y	
S36	GetReference	TP		N	
S37	GetGOOSEElementNumber	TP		N	
S38	GetGoCBValues	TP		Y	
S39	SetGoCBValues	TP		N	
GSSE-CONTROL-BLOCK					
S40	SendGSSEMessage	MC		N	
S41	GetReference	TP		N	
S42	GetGSSEElementNumber	TP		N	
S43	GetGsCBValues	TP		N	
S44	SetGsCBValues	TP		N	

<b>Transmission of sampled value model (SVC)</b>					
Multicast SVC					
S45	SendMSVMessage	MC		N	
S46	GetMSVCBValues	TP		N	
S47	SetMSVCBValues	TP		N	
Unicast SVC					
S48	SendUSVMessage	TP		N	
S49	GetUSVCBValues	TP		N	
S50	SetUSVCBValues	TP		N	

<b>Control</b>					
S51	Select			N	
S52	SelectWithValue	TP		Y	
S53	Cancel	TP		Y	
S54	Operate	TP		Y	
S55	Command-Termination	TP		Y	
S56	TimeActivated-Operate	TP		N	

<b>File transfer</b>					
S57	GetFile	TP		Y	
S58	SetFile	TP		N	
S59	DeleteFile	TP		Y	
S60	GetFileAttributeValues	TP		Y	

<b>Time</b>					
T1	Time resolution of internal clock			30	nearest negative power of 2 in seconds
T2	Time accuracy of internal clock				T0

	Services	AA: TP/MC	Client (C)	Server (S)	Comments
				Y	T1
					T2
					T3
					T4
					T5
T3	Supported TimeStamp resolution	-		30	nearest negative power of 2 in seconds



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