

GE
Grid Solutions

Multilin Agile

P14D, P14N, P94V

PICS
Protocol Implementation Conformance - IEC 61850 Edition 2

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1 PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS)

1.1 INTRODUCTION

This specification is the Protocol Implementation Conformance Statement (PICS) and presents the ACSI conformance statements as defined in Annex A of Part 7-2 of the IEC 61850 standard specifications.

This document is applicable for Multilin Agile range products (P14N, P14D and P94V) with firmware version 06 and IEC 61850 version 6.

Note:

This range is undergoing a transition, with 30TE models being branded as Multilin Agile, whereas the 20TE model carries P40 Agile Enhanced branding for a transition period. Both 20TE and 30TE products are similar, with any differences between them highlighted by reference to the case size. For more information refer to instruction manual MAP14-TM-EN-5.pdf on the Grid Solutions web page.

1.2 ACSI BASIC CONFORMANCE STATEMENT

The basic conformance statement is defined in Table 1.

Client-Server Roles		Client/ Subscriber	Server/ Publisher	Value/ Comments
B11	Server side (of TWO-PARTY-APPLICATION-ASSOCIATION)		Y	
B12	Client side of (TWO-PARTY-APPLICATION-ASSOCIATION)			
SCSMs supported				
B21	SCSM: IEC 6185-8-1 used		Y	
B22	SCSM: IEC 6185-9-1 used			Ed2: Deprecated
B23	SCSM: IEC 6185-9-2 used			
B24	SCSM: other			
Generic substation event model (GSE)				
B31	Publisher side		Y	
B32	Subscriber side	Y		
Transmission of sampled value model (SVC)				
B41	Publisher side			
B42	Subscriber side	Y		
– Y = supported N or empty = not supported				

Table 1: Basic conformance statement

1.3 ACSI Models Conformance Statement

The ACSI models conformance statement is defined in Table 2.

Client-Server Roles		Client/ Subscriber	Server/ Publisher	Value/ Comments
If Server or Client side (B1) is supported				
M1	Logical Device	Y		
M2	Logical Node	Y		
M3	Data	Y		
M4	Data set		Y	

Client-Server Roles		Client/ Subscriber	Server/ Publisher	Value/ Comments
M5	Substitution			
M6	Setting group control			
	Reporting			
M7	Buffered report control		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	Unbuffered report control		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	
	Logging			
M9	Log control			
M9-1	IntgPd			
M10	Log			
M11	Control		Y	
M17	File Transfer		Y	
M18	Application Association		Y	
M19	GOOSE Control Block		Y	
M20	Sample Value Control Block			
If GSE (B31/32) is supported				
M12	GOOSE	Y	Y	
M13	GSSE			Deprecated
If SVC (41/42) is supported				
M14	Multicast SVC			
M15	Unicast SVC			
For all IEDs				
M16	Time	Y	Y	
Y = service is supported N or empty = service is not supported				

Table 2: Basic conformance statement

1.4 ACSI Service Conformance Statement

The ACSI service conformance statement is defined in Table 2 (depending on the statements in Table 1).

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Server						
S1	1, 2	GetSeverDirectory(LOGICAL-DEVICE)	TP		Y	
Application Association						
S2-1	1, 2	Associate Request	TP			
S2-2		Associate Response			Y	
S3-1	1, 2	Abort Request	TP			
S3-2		Abort Processing			Y	
S4-1		Release Request				
S4-2	1, 2	Release Response	TP		Y	
Logical Device						
S5	1, 2	GetLogicalDeviceDirectory	TP		Y	
Logical Node						
S6	1, 2	GetLogicalNodeDirectory	TP		Y	
S7	1, 2	GetAllDataValues	TP		Y	
Data						
S8	1, 2	GetDataValues	TP		Y	
S9	1, 2	SetDataValues	TP		Y	
S10	1, 2	GetDataDirectory	TP		Y	
S11	1, 2	GetDataDefinition	TP		Y	
Data Set						
S12	1, 2	GetDataSetValues	TP		Y	
S13	1, 2	SetDataSetValues	TP			
S14	1, 2	CreateDataSet	TP			
S15	1, 2	DeleteDataSet	TP			
S16	1, 2	GetDataSetDirectory	TP		Y	
Substitution						
S17	1	SetDataValues	TP			
Setting Group Control						
S18	1, 2	SelectActiveSG	TP			
S19	1, 2	SelectEditSG	TP			
S20	1, 2	SetSGValues	TP			
S21	1, 2	ConfirmEditSGValues	TP			
S22	1, 2	GetSGValues	TP			
S23	1, 2	GetSGCBValues	TP			

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Reporting						
Buffered Report Control Block (BRCB)						
S24		Report	TP		Y	
S24-1	1, 2	data-change (dchg)			Y	
S24-2	1, 2	qchg-change (qchg)			Y	Partially implemented: <ul style="list-style-type: none"> • Test bit when the unit is set in Test Mode • OutOfRange for metering
S24-3	1, 2	data-update (dupd)				
S25	1, 2	GetBRCBValues	TP		Y	
S26	1, 2	SetBRCBValues	TP		Y	
Unbuffered Report Control Block (URCB)						
S27		Report	TP		Y	
S27-1	1, 2	data-change (dchg)			Y	
S27-2	1, 2	qchg-change (qchg)		1, 2	Y	Partially implemented: <ul style="list-style-type: none"> • Test bit when the unit is set in Test Mode • OutOfRange for metering
S27-3	1, 2	data-update (dupd)				
S28	1, 2	GetURCBValues	TP		Y	
S29	1, 2	SetURCBValues	TP		Y	
Logging						
Log Control Block						
S30	1, 2	GetLCBValues	TP			
S31	1, 2	SetLCBValues	TP			
Log	1, 2					
S32	1, 2	QueryLogByTime	TP			
S33	1, 2	QueryLogByEntry	TP			
S34	1, 2	GetLogStatusValues	TP			
Generic Substation Event Model (GSE)						
GOOSE						
S35	1, 2	SendGOOSEMessage	MC	Y	Y	IED supports GOOSE publish & subscription
GOOSE-CONTROL-BLOCK						
S36	1, 2	GetReference	TP			
S37	1, 2	GetGOOSEElementNumber	TP			
S38	1, 2	GetGoCBValues	TP		Y	
S39	1, 2	SetGoCBValues	TP		Y	
GSSE						
S40	1	SendGSSEMessage	MC			Deprecated
GSSE-CONTROL-BLOCK						
S41	1	GetReference	TP			Deprecated

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
S42	1	GetGSSEElementNumber	TP			Deprecated
S43	1	GetGsCBValues	TP			Deprecated
S44	1	SetGsCBValues	TP			Deprecated
Transmission of Sampled Value Model (SVC)						
Multicast SVC						
S45	1, 2	SendMSVMessage	MC			
Multicast Sample Value Control Block						
S46	1, 2	GetMSVCBValues	TP			
S47	1, 2	SetMSVCBValues	TP			
Unicast SVC						
S48	1, 2	SendUSVMessage	TP			
Unicast Sample Value Control Block						
S49	1, 2	GetUSVCBValues	TP			
S50	1, 2	SetUSVCBValues	TP			
Control						
S51	1, 2	Select			Y	SBO Normal Security
S52	1, 2	SelectWithValue	TP		Y	SBO Enhanced Security
S53	1, 2	Cancel	TP		Y	
S54	1, 2	Operate	TP		Y	
S55	1, 2	Command-Termination	TP		Y	
S56	1, 2	TimeActivated-Operate	TP			
File Transfer						
S57	1, 2	GetFile	TP		Y	
S58	1, 2	SetFile	TP			
S59	1, 2	DeleteFile	TP			
S60	1, 2	GetFileAttributeValues	TP		Y	
S61	1, 2	GetSeverDirectory(FILE-SYSTEM)	TP		Y	
Time						
T1	1, 2	Time resolution of internal clock			2ms	Nearest negative power of 2 in seconds
T2	1, 2	Time accuracy of internal clock				T0
						T1
						T2
						T3
						T4
					Y	T5 (μ s) ($\leq 1 \mu$ s), T3 ≥ 20)
T3	1, 2	Supported TimeStamp resolution	-		1 μ s	Nearest negative power of 2 in seconds

Table 2: Service conformance statement

AA: Application association type

TP: Two part (for MMS)

MC: Multicast (for GOOSE and SMV)



Imagination at work

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