

MiCOM P40 Agile

Px4x Sampled Values

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 for Px4x IEDs with 9-2 sampled values.

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			Deprecated Ed2
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/ 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	
M5	Substitution			
M6	Setting group control		Y	

		Client/ subscriber	Server/ publisher	Value/ comments
	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	Sampled Value Control Block			
If GSE (B31/32) is supported				
M12	GOOSE	Y	Y	
M13	GSSE			Deprecated Ed2
If SVC (B41/42) is supported				
M14	Multicast SVC	Y		
M15	Unicast SVC			
For all IEDs				

		Client/ subscriber	Server/ publisher	Value/ comments
M16	Time	Y	Y	Time source with required accuracy shall be available. Only Time Master are SNTP (Mode 4 response) time server. All other Client / Server devices require SNTP (Mode 3 request) clients
Y = service is supported N or empty = service is not supported				

Table 2: Models conformance statement

1.4 ACSI service conformance statement

The ACSI service conformance statement is defined in Table 3 (depending on the statements in Table 1).

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Server						
S1	2	ServerDirectory	TP		Y	
Application association						
S2	2	Associate			Y	
S3	2	Abort			Y	
S4	2	Release			Y	
Logical Device						
S5	2	LogicalDeviceDirectory	TP		Y	
Logical Node						
S6	2	LogicalNodeDirectory	TP		Y	
S7	2	GetAllDataValues	TP		Y	
Data						
S8	2	GetDataValues	TP		Y	
S9	2	SetDataValues	TP		Y	
S10	2	GetDataDirectory	TP		Y	
S11	2	GetDataDefinition	TP		Y	
Data set						
S12	2	GetDataSetValues	TP		Y	

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
S13	2	SetDataSetValues	TP			
S14	2	CreateDataSet	TP			
S15	2	DeleteDataSet	TP			
S16	2	GetDataSetDirectory	TP		Y	
Substitution						
S17	2	SetDataValues	TP			
Setting group control						
S18	2	SelectActiveSG	TP		Y	
S19	2	SelectEditSG	TP			
S20	2	SetSGValues	TP			
S21	2	ConfirmEditSGValues	TP			
S22	2	GetSGValues	TP			
S23	2	GetSGCBValues	TP		Y	
Reporting						
Buffered report control block (BRCB)						
S24	2	Report	TP		Y	
S24-1	2	data-change (dchg)			Y	
S24-2	2	qchg-change (qchg)			Y	
S24-3	2	data-update (dupd)				
S25	2	GetBRCBValues	TP		Y	
S26	2	SetBRCBValues	TP		Y	
Unbuffered report control block (URCB)						
S27	2	Report	TP		Y	
S27-1	2	data-change (dchg)			Y	
S27-2	2	qchg-change (qchg)			Y	
S27-3	2	data-update (dupd)				
S28	2	GetURCBValues	TP		Y	
S29	2	SetURCBValues	TP		Y	
Logging						
Log control block						
S30	2	GetLCBValues	TP			
S31	2	SetLCBValues	TP			
Log						
S32	2	QueryLogByTime	TP			
S33	2	QueryLogByEntry	TP			

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
S34	2	GetLogStatusValues	TP			
Generic substation event model (GSE)						
GOOSE-CONTROL-BLOCK						
S35	2	SendGOOSEMessage	MC		Y	IED supports GOOSE publish & subscription.
S36	2	GetReference	TP			
S37	2	GetGOOSEElementNumber	TP			
S38	2	GetGoCBValues	TP		Y	
S39	2	SetGoCBValues	TP		Y	
GSSE-CONTROL-BLOCK						
S40		SendGSSEMessage	MC			Deprecated in Edition 2
S41		GetReference	TP			Deprecated in Edition 2
S42		GetGSSEElementNumber	TP			Deprecated in Edition 2
S43		GetGsCBValues	TP			Deprecated in Edition 2
S44		SetGsCBValues	TP			Deprecated in Edition 2
Transmission of sampled value model (SVC)						
Multicast SVC						
S45	2	SendMSVMessage	MC			
S46	2	GetMSVCBValues	TP			
S47	2	SetMSVCBValues	TP			
Unicast SVC						
S48	2	SendUSVMessage	TP			
S49	2	GetUSVCBValues	TP			
S50	2	SetUSVCBValues	TP			
Control						
S51	2	Select			Y	
S52	2	SelectWithValue	TP		Y	
S53	2	Cancel	TP		Y	
S54	2	Operate	TP		Y	
S55	2	Command-Termination	TP		Y	
S56	2	TimeActivated-Operate	TP			

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
File transfer						
S57	2	GetFile	TP		Y	
S58	2	SetFile	TP			
S59	2	DeleteFile	TP		Y	Only from /dr_unextracted/ Operation may only be performed on .cfg files.
S60	2	GetFileAttributeValues	TP		Y	
S61	2	GetServerDirectory (FILE-SYSTEM)	TP		Y	
Time						
T1	2	Time resolution of internal clock			10	Nearest negative power of 2 in seconds.
T2	2	Time accuracy of internal clock			T1	TL (ms) (low accuracy), T0 (ms) (<= 10 ms), T1 (μs) (<= 1 ms), T2 (μs) (<= 100 μS), T3 (μs) (<= 25 μS), T4 (μs) (<= 4 μS), T5 (μs) (<= 1 μS), 20 <= T3 < 25
T3	2	Supported TimeStamp resolution	-		10	Nearest negative power of 2 in seconds.

Table 3: 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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