



CimWay - IEC 61850 PICS

Description: This document contains Protocol Implementation Conformance Statement of the CimWay built-in client driver for IEC 61850.

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Authorization

	Name	Date
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Checked by	BL	August 14 th , 2013
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SUMMARY

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1 General

The following ACSI conformance statements are used to provide an overview and details about the CimWay built-in driver for IEC 61850, further referred to as "the Client":

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

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

Together with the PIXIT, MICS and TICS, the PICS forms the basis for conformance testing according to IEC 61850-10.

The following documents are available separately:

- The Protocol Implementation Conformance Statement (PICS),
- The Protocol Implementation eXtra Information for Testing (PIXIT),
- The Model Implementation Conformance Statement (MICS),
- The Tissues Implementation Conformance Statement (TICS).

2 ACSI basic conformance statement

The basic conformance statement is defined in Table A.1.

Table A.1 – Basic conformance statement

		Client/ Subscriber	Server/ Publisher	Value/ Comments
Client-Server roles				
B11	Server side (of TWO-PARTY-APPLICATION-ASSOCIATION)	—	No	
B12	Client side of (TWO-PARTY-APPLICATION-ASSOCIATION)	Yes	—	
SCSMs supported				
B21	SCSM : IEC 6185-8-1 used	Yes		
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	—	No	
B32	Subscriber side	No	—	
Transmission of sampled value model (SVC)				
B41	Publisher side	—	No	
B42	Subscriber side	No	—	
– = not applicable Yes = service is supported No or empty = service is not supported				

3 ACSI models conformance statement

The ACSI models conformance statement is defined in Table A.2.

Table A.2 – ACSI models conformance statement

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If Server side (B11) and/or Client side (B12) supported				
M1	Logical device	Yes		
M2	Logical node	Yes		
M3	Data	Yes		
M4	Data set	Yes		
M5	Substitution	No		
M6	Setting group control	No		
	Reporting			
M7	Buffered report control	Yes		
M7-1	sequence-number	Yes		
M7-2	report-time-stamp	Yes		
M7-3	reason-for-inclusion	Yes		
M7-4	data-set-name	Yes		
M7-5	data-reference	Yes		
M7-6	buffer-overflow	Yes		
M7-7	entryID	Yes		
M7-8	BufTm	Yes		
M7-9	IntgPd	Yes		
M7-10	GI	Yes		
M7-11	conf-revision	Yes		
M8	Unbuffered report control	Yes		
M8-1	sequence-number	Yes		
M8-2	report-time-stamp	Yes		
M8-3	reason-for-inclusion	Yes		
M8-4	data-set-name	Yes		
M8-5	data-reference	Yes		
M8-6	BufTm	Yes		
M8-7	IntgPd	Yes		
M8-8	GI	Yes		
M8-9	conf-revision	Yes		
	Logging	No		
M9	Log control	No		
M9-1	IntgPd	No		
M10	Log	No		
M11	Control	Yes		
If GSE (B31/32) is supported				
M12	GOOSE			
M13	GSSE			

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If SVC (41/42) is supported				
M14	Multicast SVC			
M15	Unicast SVC			
If Server or Client side (B11/12) supported				
M16	Time	Yes		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
M17	File Transfer	Yes		
M18	Application association	Yes		
M19	GOOSE Control Block	No		
M20	Sampled Value Control Block	No		
Yes = service is supported No or empty = service is not supported				

4 ACSI service conformance statement

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

Table A.3 – ACSI service conformance statement

	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Server: if B11=Y or B12=Y					
S1	GetServerDirectory	TP	Yes		
Application association: if B11=Y or B12=Y					
S2	Associate		Yes		
S3	Abort		No		
S4	Release		Yes		
Logical device: if M1=Y					
S5	GetLogicalDeviceDirectory	TP	Yes		
Logical node: if M2=Y					
S6	GetLogicalNodeDirectory	TP	Yes		
S7	GetAllDataValues	TP	No		
Data: if M3=Y					
S8	GetDataValues	TP	Yes		
S9	SetDataValues	TP	Yes		
S10	GetDataDirectory	TP	No		
S11	GetDataDefinition	TP	Yes		
Data set: if M4=Y					
S12	GetDataSetValues	TP	Yes		
S13	SetDataSetValues	TP	No		
S14	CreateDataSet	TP	No		
S15	DeleteDataSet	TP	No		
S16	GetDataSetDirectory	TP	Yes		
Substitution: if M5=Y					
S17	SetDataValues	TP	No		
Setting group control: if M6=Y					
S18	SelectActiveSG	TP	No		
S19	SelectEditSG	TP	No		
S20	SetSGValues	TP	No		
S21	ConfirmEditSGValues	TP	No		
S22	GetSGValues	TP	No		
S23	GetSGCBValues	TP	No		

	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Reporting: If M7=Y or M8=Y					
Buffered report control block (BRCB): If M7=Y					
S24	Report	TP	Yes		
S24-1	data-change (dchg)		Yes		
S24-2	quality-change (qchg)		Yes		
S24-3	data-update (dupd)		Yes		
S25	GetBRCBValues	TP	Yes		
S26	SetBRCBValues	TP	Yes		
Unbuffered report control block (URCB): If M8=Y					
S27	Report	TP	Yes		
S27-1	data-change (dchg)		Yes		
S27-2	quality-change (qchg)		Yes		
S27-3	data-update (dupd)		Yes		
S28	GetURCBValues	TP	Yes		
S29	SetURCBValues	TP	Yes		

Logging: If M9=Y or M10=Y					
Log control block: If M9=Y					
S30	GetLCBValues	TP	No		
S31	SetLCBValues	TP	No		
Log; If M10=Y					
S32	QueryLogByTime	TP	No		
S33	QueryLogAfter	TP	No		
S34	GetLogStatusValues	TP	No		

Generic substation event model (GSE): If M19=Y					
GOOSE					
S35	SendGOOSEMessage	MC	No		
GOOSE-CONTROL-BLOCK					
S36	GetGoReference	TP	No		
S37	GetGOOSEElementNumber	TP	No		
S38	GetGoCBValues	TP	No		
S39	SetGoCBValues	TP	No		
GSSE					
S40	SendGSSEMessage	MC	No		
GSSE-CONTROL-BLOCK					
S41	GetGsReference	TP	No		
S42	GetGSSEDataOffset	TP	No		
S43	GetGsCBValues	TP	No		
S44	SetGsCBValues	TP	No		

Transmission of sampled value model (SVC): If M20=Y					
Multicast SV					
S45	SendMSVMessage	MC	No		
Multicast Sampled Value Control Block					
S46	GetMSVCBValues	TP	No		
S47	SetMSVCBValues	TP	No		
Unicast SV					

	Services	AA: TP/MC	Client (C)	Server (S)	Comments
S48	SendUSVMessage	TP	No		
Unicast Sampled Value Control Block					
S49	GetUSVCBValues	TP	No		
S50	SetUSVCBValues	TP	No		

Control: If M11=Y					
S51	Select		Yes		
S52	SelectWithValue	TP	Yes		
S53	Cancel	TP	Yes		
S54	Operate	TP	Yes		
S55	CommandTermination	TP	Yes		
S56	TimeActivatedOperate	TP	No		

File transfer: If M17=Y					
S57	GetFile	TP	Yes		
S58	SetFile	TP	No		
S59	DeleteFile	TP	Yes		
S60	GetFileAttributeValues	TP	Yes		
S61	GetServerDirectory	TP	Yes		

Time					
T1	Time resolution of internal clock		1 μ s		nearest negative power of 2 in seconds
T2	Time accuracy of internal clock		T5 (1 μ s)		1 μ s time accuracy requires suitable hardware and software. T0 (10ms) T1 (1ms) T2 (100 μ s) T3 (25 μ s) T4 (4 μ s) T5 (1 μ s)
T3	Supported Timestamp resolution		100 ns		nearest negative power of 2 in seconds