Protocol Implementation Conformance Statement (PICS)

for the IEC 61850 Client interface in EKRASCADA

UCA International Users Group

Testing Sub Committee

Date: September 7, 2020

Introduction

This document specifies the protocol implementation conformance statement (PICS) of the IEC 61850 interface in the client system: EKRASCADA with product version 2.7.1.11801 and IEC 61850 client interface version 1.3, further referred to as “client”.

General

The following ACSI conformance statements shall be used to provide an overview and details about a device claiming conformance with ACSI:

– ACSI basic conformance statement;

– ACSI models conformance statement; and

– ACSI service conformance statement

to specify the communication features mapped to an SCSM.

ACSI basic conformance statement

		Client/ subscriber	Server/ publisher	Value/ comments
Client-server roles				
B11	**Server** side (of TWO-PARTY-APPLICATION-ASSOCIATION)	–	c1	
B12	**Client** side of (TWO-PARTY-APPLICATION-ASSOCIATION)	Y	–	
SCSMs supported				
B21	**SCSM**: IEC 61850-8-1 used	Y		
B22	**SCSM**: IEC 61850-9-1 used	N		deprecated
B23	**SCSM**: IEC 61850-9-2 used	Y		
B24	**SCSM**: other	N		
Generic substation event model (GSE)				
B31	**Publisher** side	–	O	
B32	**Subscriber** side	Y	–	
Transmission of sampled value model (SVC)				
B41	**Publisher** side	–	O	
B42	**Subscriber** side	Y	–	
c1 – shall be ‘M’ if support for **logical-device** model has been declared. O – Optional M – Mandatory				

ACSI models conformance statement

		Client/ subscriber	Server/ publisher	Value/ comments
If **Server** side (B11) supported				
M1	**Logical device**	Y	c2	
M2	**Logical node**	Y	c3	
M3	**Data**	Y	c4	

M4	**Data set**	Y	c5	
M5	**Substitution**	Y	O	
M6	**Setting group control**	N	O	
	Reporting	Y		
M7	**Buffered report control**	Y	O	
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	BufTm	Y		
M7-9	IntgPd	Y		
M7-10	GI	Y		
M7-11	conf-revision	Y		
M8	**Unbuffered report control**	Y	O	
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	BufTm	Y		
M8-7	IntgPd	Y		
M8-8	GI	Y		
M8-9	conf-revision	Y		
	Logging	N	O	
M9	**Log control**	N	O	
M9-1	IntgPd	N		
M10	Log	N	O	
M11	**Control**	Y	M	
If **GSE** (B31/B32) is supported				
M12	**GOOSE**	Y	O	
M13	**GSSE**	N	O	
If **SVC** (B41/B42) is supported				
M14	Multicast SVC	Y	O	
M15	Unicast SVC	N	O	
For all IEDs				
M16	**Time**	Y	M	
M17	**File Transfer**	Y	O	

c2 – shall be 'M' if support for logical-node model has been declared.
c3 – shall be 'M' if support for data model has been declared.
c4 – shall be 'M' if support for data-set, Substitution, Report, Log Control, or Time model has been declared.
c5 – shall be 'M' if support for Report, GSE, or SV models has been declared.

M – Mandatory
O – Optional

ACSI service conformance statement

	Services	AA: TP/MC	Client/ subscriber	Server/ publisher	Comments
Server (Clause 7)					
S1	ServerDirectory	TP	Y	M	
Application association (Clause 8)					
S2	Associate	TP	Y	M	
S3	Abort	TP	Y	M	
S4	Release	TP	Y	M	
Logical device (Clause 9)					
S5	LogicalDeviceDirectory	TP	Y	M	
Logical node (Clause 10)					
S6	GetLogicalNodeDirectory	TP	Y	M	
S7	GetAllDataValues	TP	Y	M	
Data (Clause 11)					
S8	GetDataValues	TP	Y	M	
S9	SetDataValues	TP	Y	O	
S10	GetDataDirectory	TP	Y	M	
S11	GetDataDefinition	TP	Y	M	
Data set (Clause 12)					
S12	GetDataSetValues	TP	N	M	
S13	SetDataSetValues	TP	N	O	
S14	CreateDataSet	TP	Y	O	
S15	DeleteDataSet	TP	Y	O	
S16	GetDataSetDirectory	TP	Y	O	
Setting group control (Clause 16)					
S18	SelectActiveSG	TP	Y	O	
S19	SelectEditSG	TP	N	O	
S20	SetEditSGValue	TP	N	O	
S21	ConfirmEditSGValues	TP	N	O	
S22	GetEditSGValue	TP	N	O	
S23	GetSGCBValues	TP	N	O	
Reporting (Clause 17)					
Buffered report control block (BRCB)					
S24	Report	TP	Y	c6	
S24-1	data-change (dchg)		Y		
S24-2	qchg-change (qchg)		Y		
S24-3	data-update (dupd)		Y		
S25	GetBRCBValues	TP	Y	c6	
S26	SetBRCBValues	TP	Y	c6	
Unbuffered report control block (URCB)					
S27	Report	TP	Y	c6	
S27-1	data-change (dchg)		Y		
S27-2	qchg-change (qchg)		Y		
S27-3	data-update (dupd)		Y		

S28	GetURCBValues	TP	Y	c6	
S29	SetURCBValues	TP	Y	c6	
c6 – shall declare support for at least one (BRCB or URCB).					

Logging (Clause 17)					
Log control block					
S30	GetLCBValues	TP	N	M	
S31	SetLCBValues	TP	N	M	
Log					
S32	QueryLogByTime	TP	N	M	
S33	QueryLogAfter	TP	N	M	
S34	GetLogStatusValues	TP	N	M	
c7 – shall declare support for at least one (QueryLogByTime or QueryLogAfter).					

Generic substation event model (GSE)					
GOOSE (Clause 18)					
S35	SendGOOSEMessage	MC	N	c8	
S36	GetGoReference	TP	N	c9	
S37	GetGOOSEElementNumber	TP	N	c9	
S38	GetGoCBValues	TP	Y	O	
S39	SetGoCBValues	TP	N	O	
GSSE (Annex C)					
S40	SendGSSEMessage	MC	N	c8	
S41	GetGsReference	TP	N	c9	
S42	GetGSSEDataOffset	TP	N	c9	
S43	GetGsCBValues	TP	N	O	
S44	SetGsCBValues	TP	N	O	
c8 – shall declare support for at least one (SendGOOSEMessage or SendGSSEMessage). c9 – shall declare support if TP association is available.					

Transmission of sampled value model (SVC) (Clause 19)					
Multicast SVC					
S45	SendMSVMessage	MC	N	c10	
S46	GetMSVCBValues	TP	Y	O	
S47	SetMSVCBValues	TP	N	O	
Unicast SVC					
S48	SendUSVMessage	TP	N	c10	
S49	GetUSVCBValues	TP	N	O	
S50	SetUSVCBValues	TP	N	O	
c10 – shall declare support for at least one (SendMSVMessage or SendUSVMessage).					

Control (Clause 20)					
S51	Select	TP	Y	O	
S52	SelectWithValue	TP	Y	O	
S53	Cancel	TP	Y	O	
S54	Operate	TP	Y	M	
S55	Command-Termination	TP	Y	O	
S56	TimeActivated-Operate	TP	Y	O	

File transfer (Clause 23)					
S57	GetFile	TP	Y	M	
S58	SetFile	TP	N	O	
S59	DeleteFile	TP	Y	O	
S60	GetFileAttributeValues	TP	Y	M	

Time (5.5)					
T1	Time resolution of internal clock		Depends on software and hardware platform	Unspecified	
T2	Time accuracy of internal clock		Depends on software and hardware platform	Unspecified	
T3	Supported TimeStamp resolution		Nearest value of 2**-n in seconds according to 6.1.2.9.3.2		