IEC 61850 Client

Datasheet – Rev. 3

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straton



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1. Requirements

The integration requires some tools from STRATON AUTOMATION.

Product:

- straton Runtime Development Kit: Necessary for the integration of the straton runtime on the required platforms.
- straton Driver Development Kit: Interface to integrate new protocols to the straton runtime.
- straton IEC61850 Client Tool Kit

Requirement:

- GCC 4.8.1 (2011 C++ standard)
- TLS library (option)
- NTP Server
- RAM > 2G
- Flash > 2G
- CPU at least 1GHz

Tested devices:

- X86 / Linux / Debian 3.16
- Arm / Linux / Raspbian

1. Table A.1 - Basic ACSI conformance statement

		Client / subscriber	Server / publisher	Value / comments
Client-server roles				
B11	Server side (of TWO-PARTY-APPLICATION-ASSOCIATION)	-		
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			
B23	SCSM: IEC 61850-9-2 used			
B24	SCSM: other			
Generic substation event model (GSE)				
B31	Publisher side	-		
B32	Subscriber side	N		
Transmission of sampled value model (SVC)				
B41	Publisher side	-		
B42	Subsriber side	N		
- Y – Supported N or empty – Not supported				

2. Table A.2 - ACSI models conformance statement

		Client / subscriber	Server / publisher	Value / comments
If Server side (B11) is supported				
M1	Logical device	Y		
M2	Logical node	Y		
M3	Data	Y		
M4	Data set	Y		
M5	Substitution	Y		
M6	Setting group control	Y		
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	BufIm	Y		
M7-9	IntgPd	Y		
M7-10	GI	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	BufIm	Y		
M8-7	IntgPd	Y		
M8-8	GI	Y		
Logging				
M9	Log control	N		
M9-1	IntgPd	N		
M10	Log	N		
M11	Control	Y		
If GSE (B31/B23) is supported				
M12	GOOSE	N		
M12-1	entry-ID	N		
M12-2	DataRefInc	N		
M13	GSSE	N		
		Client / subscriber	Server / publisher	Value / comments
If SVC (B41/B42) is supportedllll				
M14	Multicast SVC	N		

M15	Unicast SVC	N		
M16	Time	Y		
M17	File Transfer	Y		
- Y – Supported N or empty – Not supported				

3. Table A.3 - ACSI service conformance statement

ACSI Service Conformance		AA: TP/MC	Client / subscriber	Server / publisher	Comments
Server (Clause 6)					
S1	ServerDirectory	TP	Y		
Application association (Clause 7)					
S2	Associate	TP	Y		
S3	Abort	TP	Y		
S4	Release	TP	N		
Logical device (Clause 8)					
S5	LogicalDeviceDirectory	TP	Y		
Logical node (Clause 9)					
S6	LogicalNodeDirectory	TP	Y		
S7	GetAllDataValues	TP	N		
Data (Clause 10)					
S8	GetDataValues	TP	Y		
S9	SetDataValues	TP	Y		

S10	GetDataDirectory	TP	Y		
S11	GetDataDefinition	TP	Y		
Data set (Clause 11)					
S12	GetDataSetValues	TP	N		
S13	SetDataSetValues	TP	N		
S14	CreateDataSet	TP	N		
S15	DeleteDataSet	TP	N		
S16	GetDataSetDirectory	TP	Y		
Substitution (Clause 12)					
S17	SetDataValues	TP	Y		
Setting group control (Clause 13)					
S18	SelectActiveSG	TP	Y		
S19	SelectEditSG	TP	Y		
S20	SetSGValues	TP	Y		
S21	ConfirmEditSGValues	TP	Y		
S22	GetSGValues	TP	Y		
S23	GetSGCBValues	TP	Y		
Reporting (Clause 14)					
Buffered report control block (BRCB)					
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	Y		
Unbuffered report control block (URCB)					
S27	Report	TP	Y		
S27-1	data-change (dchg)		Y		
S27-2	qchg-change (qchg)		Y		
S27-3	data-update (dupd)		Y		
S28	GetURCBValues	TP	Y		
S29	SetURBCValues	TP	Y		
Logging (Clause 14)					
Log control block					
S30	GetLCBValues	TP	N		
S31	SetLCBValues	TP	N		
Log					
S32	QueryLogByTime	TP	N		
S33	QueryLogAfter	TP	N		
S34	GetLogStatusValues	TP	N		

ACSI Service Conformance		AA: TP/MC	Client/ subscriber	Server/ publisher	Comments
Generic substation event model (GSE) (Clause 14.3.5.3.4)					
GOOSE-CONTROL-BLOCK					
S35	SendGOOSEMessage	MC	N		
S36	GetGoReference	TP	N		
S37	GetGOOSEElementNumber	TP	N		
S38	GetGoCBValues	TP	N		
S39	SetGoCBValues	TP	N		
GSSE-CONTROL-BLOCK					
S40	SendGSSEMessage	MC	N		
S41	GetGsReference	TP	N		
S42	GetGSSEElementNumber	TP	N		
S43	GetGsCBValues	TP	N		
S44	SetGsCBValues	TP	N		
Transmission of sampled value model (SVC) (Clause 16)					
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		

Control (17.5.1)					
S51	Select	TP	Y		
S52	SelectWithValue	TP	Y		
S53	Cancel	TP	Y		
S54	Operate	TP	Y		
S55	Command-Termination	TP	Y		
S56	TimeActivated-Operate	TP	N		
File Transfer (Clause 20)					
S57	GetFile	TP	Y		
S58	SetFile	TP	N		
S59	DeleteFile	TP	N		
S60	GetFileAttributeValues	TP	Y		

ACSI Service Conformance		AA: TP/MC	Client / subscriber	Server / publisher	Comments
Time (5.5)					
T1	Time resolution of internal clock		1 ms		
T2	Time accuracy of internal clock		1 sec		
T3	Supported TimeStamp resolution		1 ms		

4. Protocol Implementation Conformance Statement (PICS) for A-profile support

A-Profile Shortcut	**Profile description**	Client	Server	Value/Comment
A1	**Client/Server A-Profile**	Y		
A2	**GOOSE/GSE Management A-Profile**	N		
A3	**GSSE A-Profile**	N		
A4	**TimeSync A-Profile**	N		

5. PICS for T-Profile support

T-Profile Description		Client	Server	Value/Comment
T1	TCP/IP T-Profile	Y		
T2	OSI T-Profile	N		
T3	GOOSE/GSE T-Profile	N		
T4	GSSE T-Profile	N		
T5	TimeSync T-Profile	N		