



The Synchronization Experts.

**Protocol Implementation Conformance Statement
for the IEC 61850 MMS server in Meinberg IMS lantime clock**

based upon UCAlug PICS Template version 2.3

UCA International Users Group
Testing Sub Committee

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1. General

The following ACSI conformance statements are used to provide an overview and details about Meinberg IMS lantime grandmaster, with firmware LTOS 7.08:

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

The statements specify the communication features mapped to IEC 61850-8-1 and IEC 61850-9-2.

2. ACSI basic conformance statement

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

Table A.1 – Basic conformance statement

		Server/Publisher	Value/ Comments
Client-Server roles			
B11	Server side (of TWO-PARTY-APPLICATION-ASSOCIATION)	Yes	
B12	Client side of (TWO-PARTY-APPLICATION-ASSOCIATION)	N/A	
SCSMs supported			
B21	SCSM: IEC 61850-8-1 used	Yes	MMS mappings
B22	SCSM: IEC 61850-9-1 used	N/A	Deprecated Ed2
B23	SCSM: IEC 61850-9-2 used	No	
B24	SCSM: other	No	MMS mapping only
Generic substation event model (GSE)			
B31	Publisher side	No	
B32	Subscriber side	N/A	
Transmission of sampled value model (SVC)			
B41	Publisher side	No	
B42	Subscriber side	N/A	
N/A = not applicable Yes = supported No or empty = not supported			

3. ACSI model conformance statement

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

Table A.2 – ACSI models conformance statement

		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	No	
M17	File Transfer	No	
M18	Application association	No	

		Server/Publisher	Value/Comments
M19	GOOSE Control Block	No	
M20	Sampled Value Control Block	No	
If GSE (B31/32) is supported			
M12	GOOSE	No	
M13	GSSE	No	Deprecated since Ed2
If SVC (B41/42) is supported			
M14	Multicast SVC	No	
M15	Unicast SVC	No	
For all IEDs			
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 are SNTP (Mode 3 request) clients
<p>Yes = service is supported</p> <p>No or empty = service is not supported</p>			

4. ACSI service conformance statement

The ACSI service conformance statement is defined in Table A.3 (depending on the statements in Table A.1 and in Table A.2).

Table A.3 – ACSI service conformance statement

	Ed.	Services	AA: TP/MC	Server (S)	Comments
Server					
S1	1,2	GetServerDirectory (LOGICAL-DEVICE)	TP	Yes	
Application association					
S2	1,2	Associate	TP	Yes	
S3	1,2	Abort	TP	Yes	
S4	1,2	Release	TP	Yes	
Logical device					
S5	1,2	GetLogicalDeviceDirectory	TP	Yes	
Logical node					
S6	1,2	GetLogicalNodeDirectory	TP	Yes	
S7	1,2	GetAllDataValues	TP	Yes	
Data					
S8	1,2	GetDataValues	TP	Yes	
S9	1,2	SetDataValues	TP	Yes	
S10	1,2	GetDataDirectory	TP	Yes	
S11	1,2	GetDataDefinition	TP	Yes	
Data set					
S12	1,2	GetDataSetValues	TP	Yes	
S13	1,2	SetDataSetValues	TP	Yes	
S14	1,2	CreateDataSet	TP	Yes	
S15	1,2	DeleteDataSet	TP	Yes	
S16	1,2	GetDataSetDirectory	TP	Yes	
Substitution					
S17	1	SetDataValues	TP	Yes	

	Ed.	Services	AA: TP/MC	Server (S)	Comments
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Setting group control					
S18	1,2	SelectActiveSG	TP	No	
S19	1,2	SelectEditSG	TP	No	
S20	1,2	SetEditSGValues	TP	No	
S21	1,2	ConfirmEditSGValues	TP	No	
S22	1,2	GetEditSGValues	TP	No	
S23	1,2	GetSGCBValues	TP	No	

Reporting					
Buffered report control block (BRCB)					
S24	1,2	Report	TP	Yes	
S24-1	1,2	data-change (dchg)		Yes	
S24-2	1,2	quality-change (qchg)		Yes	
S24-3	1,2	data-update (dupd)		Yes	
S25	1,2	GetBRCBValues	TP	Yes	
S26	1,2	SetBRCBValues	TP	Yes	
Unbuffered report control block (URCB)					
S27	1,2	Report	TP	Yes	
S27-1	1,2	data-change (dchg)		Yes	
S27-2	1,2	quality-change (qchg)		Yes	
S27-3	1,2	data-update (dupd)		Yes	
S28	1,2	GetURCBValues	TP	Yes	
S29	1,2	SetURCBValues	TP	Yes	

Logging					
Log control block					
S30		GetLCBValues	TP	No	
S31		SetLCBValues	TP	No	
Log					
S32		QueryLogByTime	TP	No	
S33		QueryLogAfter	TP	No	
S34		GetLogStatusValues	TP	No	

Generic substation event model (GSE)					
GOOSE					
S35	1,2	SendGOOSEMessage	MC	No	
GOOSE-CONTROL-BLOCK					
S36	1,2	GetGoReference	TP	No	
S37	1,2	GetGOOSEElementNumber	TP	No	
S38	1,2	GetGoCBValues	TP	No	
S39	1,2	SetGoCBValues	TP	No	

	Ed.	Services	AA: TP/MC	Server (S)	Comments
GSSE					
S40	1	SendGSSEMessage	MC	N/A	Deprecated in Edition 2
GSSE-CONTROL-BLOCK					
S41	1	GetReference	TP	N/A	Deprecated in Edition 2
S42	1	GetGSSEElementNumber	TP	N/A	Deprecated in Edition 2
S43	1	GetGsCBValues	TP	N/A	Deprecated in Edition 2
S44	1	SetGsCBValues	TP	N/A	Deprecated in Edition 2

Transmission of sampled value model (SVC)					
Multicast SV					
S45	1,2	SendMSVMessage	MC	No	
Multicast Sampled Value Control Block					
S46	1,2	GetMSVCBValues	TP	No	
S47	1,2	SetMSVCBValues	TP	No	
Unicast SV					
S48	1,2	SendUSVMessage	TP	No	
Unicast Sampled Value Control Block					
S49	1,2	GetUSVCBValues	TP	No	
S50	1,2	SetUSVCBValues	TP	No	
Control					
S51	1,2	Select		No	
S52	1,2	SelectWithValue	TP	No	
S53	1,2	Cancel	TP	No	
S54	1,2	Operate	TP	No	
S55	1,2	CommandTermination	TP	No	
S56	1,2	TimeActivatedOperate	TP	No	
File Transfer					
S57	1,2	GetFile	TP	No	
S58	1,2	SetFile	TP	No	
S59	1,2	DeleteFile	TP	No	
S60	1,2	GetFileAttributeValues	TP	No	
S61	1,2	GetServerDirectory (FILE-SYSTEM)	TP	No	

	Ed.	Services	AA: TP/MC	Server (S)	Comments
Time					
T1	1,2	Time resolution of internal clock		24	Nearest negative power of 2-n in seconds (number 0 .. 24)
T2	1,2	Time accuracy of internal clock		T5	TL (ms) (low accuracy), T3 < 7) (only Ed2) T0 (ms) (<= 10 ms), 7 <= T3 < 10 T1 (μs) (<= 1 ms), 10 <= T3 < 13 T2 (μs) (<= 100 μs), 13 <= T3 < 15 T3 (μs) (<= 25 μs), 15 <= T3 < 18 T4 (μs) (<= 25 μs), 18 <= T3 < 19 T5 (μs) (<= 1 μs), T3 >= 20
T3	1,2	Supported TimeStamp resolution	-	24	Nearest value n of 2-n in seconds (number 0 .. 24)
N/A = not applicable Yes = supported No or empty = not supported					

5. Revision History

A chronological history of revisions to the UCAlug PICS Template is defined in Table A.4.

Table A.4 – Revision History

Revision	Date	Remarks
0.1		First version
1.1		Fixed ASCII bug and some minor typos
1.2		Changed for Edition 2.
1.3	2/24/2015	Changed according TISSUE #820
1.4	3/10/2015	Change GSSE comment to "Deprecated in Edition 2"
1.5	7/21/2015	Clarify M16: SNTP (Mode 3 request) client is mandatory for C/S
1.6	11/19/2015	Word Reformatting, no visible changes
1.7	6/26/2016	T2 entry for performance class T0 had wrong range ($7 \leq T3 < 10$)
1.8	7/5/2016	Correct service names in S20 and S22. Update HelpDesk info
1.9	11/26/2017	Fixed references to B11, B12; Typos in T2; Added Table A.2 M4 c2
2.0	4/18/2018	Reformatted, based in Excel.
2.0.1	4/23/2018	Add column with M/O/C information from 61850-7-2 (TISSUE 820 attachment _final_20120308)
2.0.2	4/24/2018	Comment M11-server: Is "M" correct? Should it be "O"? (BM1)
2.0.3	4/27/2018	Add input validators for all cells in 3 sheets (BM2)
2.0.4	7/10/2018	Note URL in UCAlug.org
2.1	9/04/2018	Add revisions 1.7 and 1.8 and 1.9
2.2	4/23/2019	Update per TISSUE 820 attachment _final_20120308: Change S5 and S6 client from M to c12= Mandatory if B11=Yes" Clarify entries for BRCB and URCB: Change S24-x and S27-x from client/server blank/blank to -/M Add client S24-x and S25-x comment Add comment to S26 and S29 Add comments to S20 and S22: "Was named {Set/Get}SGValues in Ed1"
2.3	10/8/19	Insert Comment to S20 that Ed1 name was SetSGValues Insert Comment to S22 that Ed1 name was GetSGValues Change S53.Server (Control.Cancel) from optional to conditional (on SBO/SBOW)