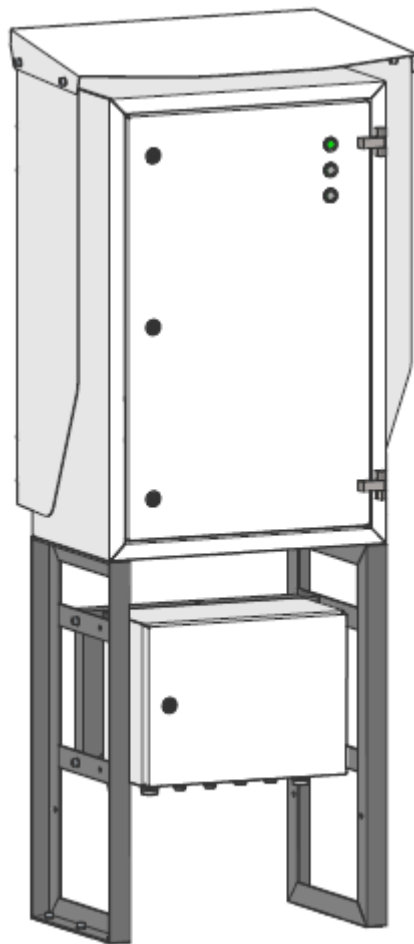


Protocol Implementation Conformance Statement  
for the IEC 61850 interface in

## **Vaisala Optimus™ OPT100 DGA Monitor for Transformers**

2019-10-29, configRev 1.3



UCA International Users Group  
Testing Sub Committee

PICS template extracted from Server Test Procedures for Edition 2 TPCL 1.2.4

## General

The following ACSI conformance statements are used to provide an overview and details about Vaisala Optimus OPT100, with configRev 1.3:

- 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.

## 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
<b>Client-Server roles</b>				
B11	<b>Server</b> side (of TWO-PARTY-APPLICATION-ASSOCIATION)		Y	
B12	<b>Client</b> side of (TWO-PARTY-APPLICATION-ASSOCIATION)		—	
<b>SCSMs supported</b>				
B21	<b>SCSM:</b> IEC 61850-8-1 used		Y	
B22	<b>SCSM:</b> IEC 61850-9-1 used		N	Deprecated Ed2
B23	<b>SCSM:</b> IEC 61850-9-2 used		N	
B24	<b>SCSM:</b> other		N	
<b>Generic substation event model (GSE)</b>				
B31	<b>Publisher</b> side		N	
B32	<b>Subscriber</b> side		—	
<b>Transmission of sampled value model (SVC)</b>				
B41	<b>Publisher</b> side		N	
B42	<b>Subscriber</b> side		—	
– = not applicable Y = supported N or empty = not supported				

# 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 <b>Server</b> side (B11) and/or <b>Client</b> side (B12) supported				
M1	Logical device		Y	
M2	Logical node		Y	
M3	Data		Y	
M4	Data set		Y	
M5	Substitution		N	
M6	Setting group control		N	
	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	BufTm		Y	
M7-9	IntgPd		Y	
M7-10	GI		Y	
M7-11	conf-revision		Y	
M8	Unbuffered report control		N	
M8-1	sequence-number		N	
M8-2	report-time-stamp		N	
M8-3	reason-for-inclusion		N	
M8-4	data-set-name		N	
M8-5	data-reference		N	
M8-6	BufTm		N	
M8-7	IntgPd		N	
M8-8	GI		N	
M8-9	conf-revision		N	
	Logging		N	
M9	Log control		N	
M9-1	IntgPd		N	
M10	Log		N	
M11	Control		N	
M17	File Transfer		N	
M18	Application association		Y	
M19	GOOSE Control Block		N	
M20	Sampled Value Control Block		N	

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If <b>GSE</b> (B31/32) is supported				
M12	<b>GOOSE</b>		N	
M13	<b>GSSE</b>			Deprecated Ed2
If <b>SVC</b> (B41/42) is supported				
M14	Multicast SVC		N	
M15	Unicast SVC		N	
For all IEDs				
M16	<b>Time</b>	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				

## ACSI service conformance statement

The ACSI service conformance statement is defined in Table A.4 (depending on the statements in Table A.1 and in Table A.3).

**Table A.4 – ACSI service Conformance statement**

	Ed.	Services	AA: TP/MC	Client ©	Server (S)	Comments
<b>Server</b>						
S1	1,2	GetServerDirectory (LOGICAL-DEVICE)	TP		Y	
S2	1,2	Associate			Y	
S3	1,2	Abort			Y	
S4	1,2	Release			Y	
S5	1,2	GetLogicalDeviceDirectory	TP		Y	
S6	1,2	GetLogicalNodeDirectory	TP		Y	
S7	1,2	GetAllDataValues	TP		Y	
S8	1,2	GetDataValues	TP		Y	
S9	1,2	SetDataValues	TP		N	
S10	1,2	GetDataDirectory	TP		Y	
S11	1,2	GetDataDefinition	TP		Y	
S12	1,2	GetDataSetValues	TP		Y	
S13	1,2	DataSetValues	TP		N	
S14	1,2	CreateDataSet	TP		Y	
S15	1,2	DeleteDataSet	TP		Y	
S16	1,2	GetDataSetDirectory	TP		Y	
S17	1	SetDataValues	TP		N	
S18	1,2	SelectActiveSG	TP		N	
S19	1,2	SelectEditSG	TP		N	
S20	1,2	SetEditSGValues	TP		N	
S21	1,2	ConfirmEditSGValues	TP		N	
S22	1,2	GetEditSGValues	TP		N	
S23	1,2	GetSGCBValues	TP		N	

	Ed.	Services	AA: TP/MC	Client ©	Server (S)	Comments
S24	1,2	Report	TP		Y	
S24-1	1,2	data-change (dchg)			Y	
S24-2	1,2	quality-change (qchg)			Y	
S24-3	1,2	data-update (dupd)			Y	
S25	1,2	GetBRCBValues	TP		Y	
S26	1,2	SetBRCBValues	TP		Y	
S27	1,2	Report	TP		N	
S27-1	1,2	data-change (dchg)			N	
S27-2	1,2	quality-change (qchg)			N	
S27-3	1,2	data-update (dupd)			N	
S28	1,2	GetURCBValues	TP		N	
S29	1,2	SetURCBValues	TP		N	

S30	1,2	GetLCBValues	TP		N	
S31	1,2	SetLCBValues	TP		N	
S32	1,2	QueryLogByTime	TP		N	
S33	1,2	QueryLogAfter	TP		N	
S34	1,2	GetLogStatusValues	TP		N	

S35	1,2	SendGOOSEMessage	MC		N	
S36	1,2	GetGoReference	TP		N	
S37	1,2	GetGOOSEElementNumber	TP		N	
S38	1,2	GetGoCBValues	TP		N	
S39	1,2	SetGoCBValues	TP		N	
GSSE						
S40	1	SendGSSEMessage	MC		N	Deprecated in Edition 2
GSSE-CONTROL-BLOCK						
S41	1	GetReference	TP		N	Deprecated in Edition 2
S42	1	GetGSSEElementNumber	TP		N	Deprecated in Edition 2
S43	1	GetGsCBValues	TP		N	Deprecated in Edition 2
S44	1	SetGsCBValues	TP		N	Deprecated in Edition 2

	Ed.	Services	AA: TP/MC	Client ©	Server (S)	Comments
<b>Transmission of sampled value model (SVC)</b>						
Multicast SV						
S45	1,2	SendMSVMessage	MC		N	
S46	1,2	GetMSVCBValues	TP		N	
S47	1,2	SetMSVCBValues	TP		N	
S48	1,2	SendUSVMessage	TP		N	
S49	1,2	GetUSVCBValues	TP		N	
S50	1,2	SetUSVCBValues	TP		N	

<b>Control</b>						
S51	1,2	Select			N	
S52	1,2	SelectWithValue	TP		N	
S53	1,2	Cancel	TP		N	
S54	1,2	Operate	TP		N	
S55	1,2	CommandTermination	TP		N	
S56	1,2	TimeActivatedOperate	TP		N	

<b>File transfer</b>						
S57	1,2	GetFile	TP		N	
S58	1,2	SetFile	TP		N	
S59	1,2	DeleteFile	TP		N	
S60	1,2	GetFileAttributeValues	TP		N	
S61	1,2	GetServerDirectory (FILE-SYSTEM)	TP		N	

<b>Time</b>						
T1	1,2	Time resolution of internal clock		n=10		Nearest negative power of 2 <sup>-n</sup> in seconds (number 0 .. 24)
T2	1,2	Time accuracy of internal clock		n=31 (unspecified)		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), 15 <= T3 < 18 T5 (μs) (<= 1 μs), T3 >= 20
T3	1,2	Supported TimeStamp resolution		n=10		Nearest value of 2 <sup>-n</sup> in seconds (number 0 .. 24)

## Revision history

Revision	Date	Remarks
1.0	2019-03-04	First version
1.1	2019-04-24	Incremented configRev to 1.1 and fixed Time services values to be located on the client column.
1.3	2020-10-29	Incerement configRev to 1.3.