

# SIEMENS

## SICAM A8000 Series

### CP-8000

## PICS for IEC 61850 Ed. 2 Client (ET85)

Protocol Implementation Conformance  
Statement for the  
IEC 61850 Ed.2 Client Interface in  
SICAM A8000 CP-8000

---

Preface, Table of Contents

---

General

1

---

ASCI basic conformance statement

---

2

**Disclaimer of Liability**

Although we have carefully checked the contents of this publication for conformity with the hardware and software described, we cannot guarantee complete conformity since errors cannot be excluded. The information provided in this manual is checked at regular intervals and any corrections that might become necessary are included in the next releases. Any suggestions for improvement are welcome.

Subject to change without prior notice.

Document Label:  
SICRTUS-CP800061850ED2CLIENTPICSET85-ENG\_V2.00  
Release date: 2016-12-22

**Copyright**

Copyright © Siemens AG 2016  
The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

Siemens AG  
Energy Automation  
Humboldtstraße 59  
90459 Nürnberg  
Germany

Order n°.: DC8-028-2.00

# Preface

This document is applicable to the following product(s):

- SICAM A8000 CP-8000

## Purpose of this manual

This manual describes the Protocol Implementation Conformance Statement for the IEC 61850 Ed. 2 Client interface in:

- SICAM A8000 CP-8000 using firmware "ET85 Rev. 03.04"

Note:

PICS "Protocol Implementation Conformance Statement" contains additional information about supported IEC 61850 communication services.

## Target Group

The document you are reading right now is addressed to users, who are in charge of the following engineering tasks:

- Customers
- Sales engineering and technical clarification
- Conceptual activities, as for example design and configuration
- Technical system maintenance

## Notes

This document is based on:

- UCA International Users Group  
Testing Sub Committee  
Template version 1.2\*  
Date: December 18, 2014

# Table of Contents

- 1 General ..... 5**
  - 1.1 SICAM A8000 CP-8000 “Device Under Test” (DUT)..... 6
- 2 ASCI basic conformance statement..... 8**
- 3 ACSI models conformance statement ..... 9**
- 4 ACSI service conformance statement..... 11**

# 1 General

The following ACSI conformance statements are used to provide an overview and details about **SICAM A8000 CP-8000**, with firmware "**ET85 Rev. 03.04**":

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

The statements specify the communication features mapped to IEC 61850-8-1 First Edition and/or Edition 2.

## 1.1 SICAM A8000 CP-8000 “Device Under Test” (DUT)

Series	Device	MLFB	Description
SICAM A8000	CP-8000	6MF2101-0AB10-0AA0	SICAM A8000 CP-8000 24...60 VDC Temperature range -25 to +70°C

<sup>1)</sup> SICAM A8000 CP-8000 “on board Ethernet interface” with **ET85 Rev. 03.04** firmware.



### Notes:

- the red marked interface connector is assigned to IEC61850 Ed. 2 Client with ET85 firmware.
- the red marked interface connector is also used for WEB-Browser interface for IEC61850 Ed. 2 Client.
- the blue marked interface connector is used for engineering Software TOOLBOX II.

## Firmware Revisions

	System element	HW#	FW#	Rev	TBII-Update	SetRev	P	SSE#	Task	Supportof system elements
M	CP-8000/CPC80	8000	8080	11	11 [11]					Supported
M-PRE/1	SM-8098/ET85	8098	8505	03.04	03.04 [03.04]			129		Supported
M-Bus0/PBA-0	USIO81	8099	8098	04.01	04.01 [04.01]			0		Supported

Note: IEC61850 Ed.2 functionality is included in firmware ET85 Rev. 03.04

## Power Supply / CPU-Boards / Interface Cards



Designation	Item-Number/MLFB
SICAM A8000 CP-8000 24...60 VDC Temperature range -25 to +70°C	6MF2101-0AB10-0AA0

## 2 ASCI 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)	—		
B12	<b>Client</b> side of (TWO-PARTY-APPLICATION-ASSOCIATION)	Y		
<b>SCSMs supported</b>				
B21	<b>SCSM:</b> IEC 6185-8-1 used	Y		
B22	<b>SCSM:</b> IEC 6185-9-1 used			Ed2: Deprecated
B23	<b>SCSM:</b> IEC 6185-9-2 used			
B24	<b>SCSM:</b> other			
<b>Generic substation event model (GSE)</b>				
B31	<b>Publisher</b> side	—		
B32	<b>Subscriber</b> side	N		
<b>Transmission of sampled value model (SVC)</b>				
B41	<b>Publisher</b> side	—		
B42	<b>Subscriber</b> side	N		
– Y = supported N or empty = 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 or Client side (B11/12) supported				
M1	Logical device	Y		
M2	Logical node	Y		
M3	Data	Y		
M4	Data set	Y		
M5	Substitution	N		
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	BufTm	Y		
M7-9	IntgPd	Y		
M7-10	GI	Y		
M7-11	conf-revision	N		
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	BufTm	Y		
M8-7	IntgPd	Y		
M8-8	GI	Y		
M8-9	conf-revision	N		
	Logging	N		
M9	Log control	N		
M9-1	IntgPd	N		
M10	Log	N		
M11	Control	Y		
M17	File Transfer	Y		
M18	Application association	Y		

		Client/ Subscriber	Server/ Publisher	Value/ Comments
M19	GOOSE Control Block	N		
M20	Sampled Value Control Block	N		
If GSE (B31/32) is supported				
M12	GOOSE	N		
M13	GSSE	N		Deprecated
If SVC (B41/B42) is supported				
M14	Multicast SVC	N		
M15	Unicast SVC	N		
For all IEDs				
M16	Time	Y		
Y = service is supported N 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**

	Ed	ACSI Service	AA: TP/MC	Client Sub(C)	Server Pub(S)	Comments
<b>Server</b>						
S1	1,2	GetServerDirectory(LOGICAL-DEVICE)	TP	Y		
<b>Application association</b>						
S2	1,2	Associate		Y		
S3	1,2	Abort		N		
S4	1,2	Release		Y		
<b>Logical device</b>						
S5	1,2	GetLogicalDeviceDirectory	TP	Y		
<b>Logical node</b>						
S6	1,2	GetLogicalNodeDirectory	TP	Y		
S7	1,2	GetAllDataValues	TP	N		
<b>Data</b>						
S8	1,2	GetDataValues	TP	Y		
S9	1,2	SetDataValues	TP	Y		
S10	1,2	GetDataDirectory	TP	Y		
S11	1,2	GetDataDefinition	TP	Y		
<b>Data set</b>						
S12	1,2	GetDataSetValues	TP	N		
S13	1,2	SetDataSetValues	TP	N		
S14	1,2	CreateDataSet	TP	Y		
S15	1,2	DeleteDataSet	TP	Y		
S16	1,2	GetDataSetDirectory	TP	Y		
<b>Substitution</b>						
S17	1	SetDataValues	TP	N		Ed1 only
<b>Setting group control</b>						
S18	1,2	SelectActiveSG	TP	Y		
S19	1,2	SelectEditSG	TP	N		
S20	1,2	SetEditSGValues	TP	N		
S21	1,2	ConfirmEditSGValues	TP	N		
S22	1,2	GetEditSGValues	TP	N		

	Ed	ACSI Service	AA: TP/MC	Client Sub(C)	Server Pub(S)	Comments
S23	1,2	GetSGCBValues	TP	Y		

<b>Reporting</b>						
<b>Buffered report control block (BRCB)</b>						
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		
<b>Unbuffered report control block (URCB)</b>						
S27	1,2	Report	TP	Y		
S27-1	1,2	data-change (dchg)		Y		
S27-2	1,2	quality-change (qchg)		Y		
S27-3	1,2	data-update (dup		Y		
S28	1,2	GetURCBValues	TP	Y		
S29	1,2	SetURCBValues	TP	Y		

<b>Logging</b>						
<b>Log control</b>						
S30	1,2	GetLCBValues	TP	N		
S31	1,2	SetLCBValues	TP	N		
<b>Log</b>						
S32	1,2	QueryLogByTime	TP	N		
S33	1,2	QueryLogAfter	TP	N		
S34	1,2	GetLogStatusValues	TP	N		

<b>Generic substation event model (GSE)</b>						
<b>GOOSE</b>						
S35	1,2	SendGOOSEMessage	MC	N		
<b>GOOSE Control Block</b>						
S36	1,2	GetGoReference	TP	N		
S37	1,2	GetGOOSEElementNumber	TP	N		
S38	1,2	GetGoCBValues	TP	N		
S39	1,2	SetGoCBValues	TP	N		
<b>GSSE (Ed2:61850-7-2 Annex C)</b>						
S40	1,2	SendGSSEMessage	MC	N		Deprecated
<b>GSSE Control Block (Ed2:61850-7-2 Annex C)</b>						
S41	1,2	GetGsReference	TP	N		Deprecated
S42	1,2	GetGSSEDataOffset	TP	N		Deprecated
S43	1,2	GetGsCBValues	TP	N		Deprecated

	Ed	ACSI Service	AA: TP/MC	Client Sub(C)	Server Pub(S)	Comments
S44	1,2	SetGsCBValues	TP	N		Deprecated

Transmission of sampled value model (SVC)						
Multicast SV						
S45	1,2	SendMSVMessage	MC	N		Use for 9-2LE or IEC 61869-9
Multicast Sampled Value Control Block						
S46	1,2	GetMSVCBValues	TP	N		
S47	1,2	SetMSVCBValues	TP	N		
Unicast SV						
S48	1,2	SendUSVMessage	TP	N		
Unicast Sampled Value Control Block						
S49	1,2	GetUSVCBValues	TP	N		
S50	1,2	SetUSVCBValues	TP	N		

Control						
S51	1,2	Select	TP	N		SBO Normal Security
S52	1,2	SelectWithValue	TP	Y		SBO Enhanced Security
S53	1,2	Cancel	TP	Y		
S54	1,2	Operate	TP	Y		
S55	1,2	Command-Termination	TP	Y		
S56	1,2	TimeActivated-Operate	TP	N		

File transfer						
S57	1,2	GetFile	TP	Y		
S58	1,2	SetFile	TP	N		
S59	1,2	DeleteFile	TP	N		
S60	1,2	GetFileAttributeValues	TP	N		
S61	1,2	GetServerDirectory (FILE)	TP	Y		

Time						
T1	1,2	Time resolution of internal clock	-	10		nearest negative power of 2 in seconds
T2	2	Time accuracy of internal clock	-			TL (ms) (low accuracy), T3 < 7) (only Ed2)
	1,2		-			T0 (ms) (<= 10 ms), 7 <= T3 < 9)
	1,2		-	T1		T1 (μs) (<= 1 ms), 10 <= T3 < 13
	1,2		-			T2 (μs) (<= 100 μs), 13 <= T3 < 15
	1,2		-			T3 (μs) (<= 25 μs), 15 <= T3 < 18
	1,2		-			T4 (μs) (<= 4 μs), 18 <= T3 < 20
	1,2		-			T5 (μs) (<= 1 μs), T3 >= 20)
T3	1,2	Supported TimeStamp resolution	-	10		nearest negative power of 2 in seconds

