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IEC 61850 Certificate Level A[1]

Issued to:

Hitachi Energy Sweden AB
Power Quality
Master Ahls Gata 16
Västerås 722 12
Sweden

For the server product:

PS700 v2 - FACTS Main Controller
System software version: 7.19.2.0
Model library version: FLIB4.2
S/N: 470588008

The server product has not been shown to be non-conforming to:

IEC 61850 Edition 2 Parts 6, 7-1, 7-2, 7-3, 7-4 and 8-1

Communication networks and systems for power utility automation

The conformance test has been performed according to IEC 61850-10 Edition 2, the UCA International Users Group Edition 2 Server Test Procedures version 2.0.6 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in PS700 v2 - FACTS Main Controller, dated 26 May 2023", "Model Implementation Conformance Statement for the IEC 61850 Ed2 interface in PS700 v2 - FACTS Main Controller, dated 26 May 2023, " and "TISSUES Implementation Conformance Statement for the IEC 61850 Ed2 interface in PS700 v2 - FACTS Main Controller, dated 26 May 2023" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 Edition2 server interface in PS700 v2 - FACTS Main Controller, dated 26 May 2023".

The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases):

1	Basic Exchange (21/26)	12a	Direct Control (10/18)
2	Data Sets (4/7)	12d	Enhanced SBO Control (18/28)
5	Unbuffered Reporting (19/23)	13	Time Synchronization (5/7)
6	Buffered Reporting (28/33)	14	File Transfer (7/8)
		15	Service Tracking (8/17)

This certificate includes a summary of the test results as carried out at Hitachi Energy Sweden AB in Sweden with UniGrid SA Simulator 2.1 with test suite 20230518.1 and UniCA 61850 Analyzer 6.40.01. This document has been issued for information purposes only, and the archived DNV verification report No. 10428418-DSO 23-2918 rev 2 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV by Hitachi Energy Sweden AB. The manufacturer's production process has not been assessed. This certificate does not imply that DNV has approved any product other than the specimen tested.

Arnhem, May 26, 2023

Issued by:

G. Akse
Business Development Manager
Interoperability of Smart Power Systems

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R. Schimmel
Verification Manager

[1] Level A - Independent test lab with certified ISO 9001 Quality System

UCA International Users Group P.O. Box 315, Shell Knob, MO 65747 USA

IEC 61850 Certificate Level A

Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 2.0.6

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrvN1abcdf, sSrvN4	sAssN6, sSrv9, sSrv10, sSrv12, sSrv13
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp8, sRp10, sRp11, sRp12, sRp13, sRp15
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr16, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBr29, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8	sBr8, sBr10, sBr11, sBr12, sBr13, sBr15
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl7, sCtl13, sCtl15, sCtl16, sCtl17, sCtl18
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl17, sCtl18, sCtl26
13: Time sync	sTm1, sTm2, sTmN1	sTm3, sTmN2
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	sFt2c, sFtN1c
15: Service tracking		sTrk1, sTrk2, sTrk8, sTrk9, sTrk10, sTrk11, sTrk14, sTrk17