IEC 61850 Certificate Level A[1]

Ref. No: 2016TS03572

Issued to:

HYOSUNG Corporation
119, Mapo-daero, Mapo-gu, Seoul
Republic of Korea, 04144

For the server product:

HCCP-10
HVDC Converter Control &
Protection Device
Firmware version 1.000

Issued by:

Korea Electrotechnology Research Institute
111, Hanggaul-ro, Sangnok-gu, Ansan-si, Gyeonggi-do, 15588, Republic of Korea

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

IEC 61850 First Edition Parts 6, 7-1, 7-2, 7-3, 7-4 and 8-1
Communication networks and systems in substations.

The conformance test has been performed according to IEC 61850-10, UCA International Users Group Device Test Procedures version 3.03, the product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in <HCCP-10>, v1.0", "Model Implementation Conformance Statement for the IEC 61850 interface in <HCCP-10>, v1.0", "TISSUES Implementation Conformance Statement for the IEC 61850 interface in <HCCP-10>, v1.0" and product's extra information for testing "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in <HCCP-10>, v1.0".

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

1	Basic Exchange (23/24)	9a	GOOSE Publish (10/12)
2	Data Sets (3/6)	9b	GOOSE Subscribe (11/11)
2+	Data Set Definition (24/24)	12a	Direct Control (6/11)
4	Setting Group Selection (3/3)	12b	SBO Control (9/14)
4+	Setting Group Definition (7/7)	12c	Enhanced Direct Control (7/13)
5	Unbuffered Reporting (18/18)	12d	Enhanced SBO Control (12/19)
6	Buffered Reporting (25/27)	13	Time Synchronization (4/5)
		14	File Transfer (4/7)

This Certificate includes a summary of the test results as carried out at KERI in Republic of Korea with UniCA 61850 Client simulator version 4.29.03 with test suite version 3.29.03(TP 3.0) and UniCA 61850 analyzer version 5.31.00. This document has been issued for information purposes only, and the original paper copy of the KERI report: 2016TS03572 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to KERI by HYOSUNG Corporation. The manufacturer's production process has not been assessed. This Certificate does not imply that KERI has approved any product other than the specimen tested.

Republic of Korea, December 20, 2016

Y. J. Lee
Executive Director
Power Apparatus Testing and Evaluation Division

J. I. Jeong
Technical Manager

[1] Level A – Independent Tester with certified ISO 17025 Quality System

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	AssN3 Srv6, Srv7, Srv8, Srv9, Srv10, SrvN1e, SrvN1f, SrvN2, SrvN3
2: Data Sets	Dset1, Dset10a, DsetN1ae	
2+: Data Sets Definition	Dset2, Dset3, Dset4, Dset5, Dset6, Dset7, Dset8, Dset9 DsetN1cd, DsetN2, DsetN3, DsetN4, DsetN5, DsetN6, DsetN7, DsetN8, DsetN9, DsetN10, DsetN11, DsetN12, DsetN13, DsetN14	DsetN15a, DsetN15b
4: Setting Group Selection	Sg1, SgN1a, Sg3	
4+: Setting Group Definition	Sg2, Sg4, SgN1b, SgN2, SgN3, SgN4, SgN5	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp9, RpN1, RpN2, RpN3, RpN4, RpN8	Rp5, Rp6, Rp7, Rp8, Rp10, Rp11, Rp12, RpN5
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br9, Br20, Br21, Br22, Br25, Br26, Br27, Br28 BrN1, BrN2, BrN3, BrN4, BrN5, BrN8	Br5, Br6, Br7, Br8, Br10, Br11, Br12
9a: GOOSE publish	Gop2, Gop3, Gop4, Gop9, Gop10a	Gop1, Gop6, Gop7, Gop10b, GopN1
9b: GOOSE subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b, Gos4
12a: Direct control	CtlN3 DOns1	Ctl2, Ctl7, CtlN11 DOns3
12b: SBO control	CtlN1, CtlN2, CtlN3, CtlN4, SBOns2	Ctl2, Ctl3, Ctl7, CtlN11
12c: Enhanced Direct control	CtlN3 DOes2, DOes5	Ctl2, Ctl7, CtlN8, CtlN11
12d: Enhanced SBO control	CtlN1, CtlN2, CtlN3, CtlN4, CtlN9 SBOes1, SBOes2, SBOes3	Ctl2, Ctl3, Ctl7, CtlN11
13: Time sync	Tm1, Tm2	TmN1, TmN2
14: File transfer	Ft1, Ft2ab, Ft4, FtN1ab	