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IEC 61850 Certificate Level A[1]

Ref. No: 2018TS01647

Issued to:

LSIS Co., Ltd.
LS Tower, 127 LS-RO, DONGAN-GU, ANYANG-SI,
GYEONGGI-DO, Republic of Korea

For the server product:

GIPAM3000
Multifunctional Protection Relay
Firmware version 1.00

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 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 1.0 with TPCL[2] version 1.2.6 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in GIPAM3000, v1.00", "Model Implementation Conformance Statement for the IEC 61850 interface in GIPAM3000, v1.00", "TISSUES Implementation Conformance Statement for the IEC 61850 interface in GIPAM3000, v1.00" and product's extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in GIPAM3000, v1.00".
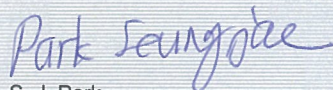
The following IEC 61850 conformance blocks are tested with a positive result (number of relevant and executed test cases / total number of test cases) :

1	Basic Exchange (23/26)		9a	GOOSE Publish (10/13)
2	Data Sets (4/7)		9b	GOOSE Subscribe (13/14)
2+	Data Set Definition (24/24)		12a	Direct Control (9/18)
4	Setting Group Selection (4/4)		12b	SBO Control (16/27)
5	Unbuffered Reports (21/21)		12c	Enhanced Direct Control (11/20)
6	Buffered Reports (28/30)		12d	Enhanced SBO Control (17/28)
			13	Time Synchronization (4/7)
			14	File Transfer (5/8)

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 Ed2 3.28.05(TPCL 1.2.6) 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: 2018TS01647 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to KERI by LSIS Co., Ltd. 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, August 10, 2018

Park Seungjae

S. J. Park
Executive Director
Power Apparatus Testing and Evaluation Division

[signature]

S. P. Ahn
Technical Manager

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[1] Level A – Independent Tester with certified ISO 17025 Quality System
[2] TPCL – Test procedures change list

Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 1.0 with TPCL version 1.2.6

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrvN1abcd, sSrvN4	sSrv6, sSrv8, sSrv9, sSrv10, sSrv12 sSrvN1e, sSrvN1f, sSrvN2, sSrvN3
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
2+: Data Sets Definition	sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs11, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10	sDs12, sDsN11, sDsN12
4: Setting Group Selection	sSg1, sSg3, sSgN1	sSg11
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp15, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp6, sRp7, sRp8, sRp10, sRp11, sRp12, sRp13, sRpN5
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr15, sBr20 sBr21, sBr22, sBr25. sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8	sBr6, sBr7, sBr8, sBr10, sBr11, sBr12, sBr13
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11	sGop1, sGop6, sGop7 sGopN1
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGop5, sGop6a, sGop7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl2, sCtl7, sCtl13, sCtl15, sCtl16
12b: SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl2, sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl27
12c: Enhanced Direct control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl2, sCtl7, sCtl13, sCtl14, sCtl15, sCtl16, sCtl26
12d: Enhanced SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl2, sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl26
13: Time sync	sTm1, sTm2, sTmN1	sTmN2
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	

All configuration file and data model tests have been successfully performed for the product variants using the same communication hardware and software version:

- GIPAM3000-F Feeder, Motor and Dispersed Generation Protection and Control Relay
- GIPAM3000-T Transformer Protection and Control Relay