IEC 61850 Certificate Level A[1]

Issued to:

KINKEI SYSTEM CORPORATION
8-2-61 Nanko-Higashi, Suminoe-Ku
Osaka 559-0031
Japan

For the server product:

SFL-3000
Travelling Wave Fault Locator
Software Version RS03047-000
IEC61850 Module Version: RS03156-000
S/N: 21800310001

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

IEC 61850-5 Edition 2 Performance Class: P3 (20ms)

The performance test has been performed according to the UCA International Users Group GOOSE performance Test Procedures version 2.5 with product's protocol, implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in SFL-3000, Version RS03156-000 dated Apr 15 2021", and product's extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in SFL-3000, version RR02360-000 dated Apr 15 2021".

This certificate includes a summary of the test results as carried out at DNV in The Netherlands with the Omicron Test Universe version 4.00 and Profishark 1G+, UniCA 61850 Analyzer version 5.34.01. This document has been issued for information purposes only, and the original paper copy of the DNV report: No. 10282420-INC 21-3009 rev 2 will prevail.

The GOOSE performance has been measured with boolean values.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV by KINKEI SYSTEM CORPORATION. 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, June 4, 2021

N.A. Heijker
Business Leader
Interoperability of Smart Power Systems

Issued by:

DNV

R. Schimmel
Verification Manager

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

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GOOSE Performance Measured Results

Results of the GOOSE performance benchmark tests as specified in the UCA International Users Group GOOSE performance Test Procedures version 2.5.

Performance class = P3 (20ms)

Goose Performance Benchmark summary results, compensated for scan cycle delay.

Test ID	Large dataset	Correlated subscribed	Back-ground	Minimum Transfer time [ms]	Maximum Transfer time [ms]	Average Transfer time [ms]
Gpf1	-	-	-	2,99	4,28	2,29
Gpf2	X	-	-	4,07	6,90	3,75
Gpf3	-	X	-	3,73	6,70	4,55
Gpf4	X	X	-	6,08	8,45	6,15
Gpf5	-	-	X	2,93	5,42	2,74
Gpf6	X	-	X	4,11	7,49	4,51
Gpf7	-	X	X	4,08	7,63	5,37
Gpf8	X	X	X	6,20	9,95	7,08