IEC 61850 Certificate Level A[1]

No. 10033472-INC 17-2639

Issued to:
Schweitzer Engineering Laboratories
2350 NE Hopkins Court
Pullman WA 99163
USA

For the client system:
SEL-3530-4 Real-Time Automation Controller
Software version: SEL-3530-4-R139-V1-Z001001-D20170628
S/N: 1111670342

The client system 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 Client Conformance Test Procedures version 1.0 with TPCL[2] 1.0_rev3 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement (PICS) for IEC 61850 for the SEL Real-Time Automation Controllers, Revision 2.0", "Model Implementation Conformance Statement (MICS) for IEC 61850 for the SEL Real-Time Automation Controllers, Revision 2.0" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface SEL RTAC, Revision 2.0" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in SEL-RTAC, Revision 2.0".

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 (12/24)	12a Direct Control (6/9)
2 Data Sets (2/10)	12b SBO Control (7/11)
5 Unbuffered Reporting (17/23)	12c Enhanced Direct Control (6/9)
6 Buffered Reporting (20/28)	12d Enhanced SBO Control (7/11)
	13 Time Synchronization (3/4)
	14 File Transfer (5/8)

This certificate includes a summary of the test results as carried out at DNV GL in The Netherlands with UniCA 61850 IED simulator 6.1.36 and UniCA 61850 Analyzer 5.31.00. This document has been issued for information purposes only, and the original paper copy of the DNV GL verification report No. 10033472-INC 17-2638 will prevail.

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

Arnhem, September 29, 2017

P. Cioci
Business Director
Intelligent Networks and Communication

Issued by:

DNV·GL
DNV KEMA is now DNV GL

R. Schimmel
Verification Manager

[1] Level A - Independent test lab with certified ISO 9001 Quality System
[2] TPCL - Test procedures change list

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Applicable Test Procedures from the UCA International Users Group Edition 2 Client Conformance Test Procedures version 1.0 with TPCL 1.0_rev3

Conformance Block	**Mandatory**	**Conditional**
1: Basic Exchange	cAss1, cAss2, cAss3, cAssN1, cAssN4, cAssN5, cAssN6	cAssN7, cSrv5, cSrv7, cSrvN3, cSrvN5
2: Data Sets		cDs3, cDsN1c
5: Unbuffered Reporting	cRp3, cRp4, cRp5, cRp8, cRp9, cRp10, cRp11, cRp13a, cRp14, cRp15, cRpN2, cRpN5, cRpN6	cRp2, cRp6, cRp7, cRp16
6: Buffered Reporting	cBr3, cBr4, cBr5, cBr8, cBr9, cBr10, cBr11, cBr13a, cBr14, cBr15, cBr30, cBr31, cBrN2, cBrN5, cBrN6, cBrN20	cBr2, cBr6, cBr7, cBr16
12a: Direct Control	cCtl4, cCtl5, cDOns1, cDOns2	cCtl1, cCtl2
12b: SBO Control	cCtl4, cCtl5, cSBOns1, cSBOns2, cSBOns3	cCtl1, cCtl2
12c: Enhanced Direct Control	cCtl4, cCtl5, cDOes1, cDOes2	cCtl1, cCtl2
12d: Enhanced SBO Control	cCtl4, cCtl5, cSBOes1, cSBOes2, cSBOes3	cCtl1, cCtl2
13: Time Synchronization	cTm1, cTmN1	cTm2
14: File Transfer	cFt1, cFt3, cFtN1	cFt2, cFtN2