IEC 61850 Certificate Level A[1]

No. 10247003-INC 20-2901

Issued to:
Unitel Engineering LLC
2nd Kabelnaya str.,2, build 1
111024, Moscow
Russian Federation

For the server product:
PKUS SKO
Digital Teleprotection Equipment
Firmware version: MCSKOv3.10
S/N: U205351900100035

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_rev4 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in PKUS SKO teleprotection system Version: 1.0", "Model Implementation Conformance Statement for the IEC 61850 Edition 2 Server interface in PKUS SKO teleprotection system Version: 1.0" and "TISSUEs Implementation Conformance Statement (TICS) For the IEC 61850 Edition 2 Server interface in PKUS SKO teleprotection system Version: 1.0" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC Edition 2 server interface in PKUS SKO teleprotection system Version: 1.0".

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 (23/28)		9a	GOOSE Publish (11/13)
2	Data Sets (4/7)		9b	GOOSE Subscribe (17/18)
2+	Data Set Definition (24/24)		13	Time Synchronization (5/7)
5	Unbuffered Reporting (21/22)			
6	Buffered Reporting (29/32)			

This certificate includes a summary of the test results as carried out at DNV GL in The Netherlands with UniGrid SA Simulator 1.7.1 with test suite 20200922.1 and UniCA 61850 Analyzer 6.40.01. This document has been issued for information purposes only, and the archived DNV GL verification report No. 10247003-INC 20-2900 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by Unitel Engineering. 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, 2020

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

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

Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 2.0_rev4

Conformance Block		Mandatory	Conditional
1:	Basic Exchange	sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrvN1abcd, sSrvN4	sAssN6, sSrv6, sSrv8, sSrv10, sSrv12, sSrvN1e, sSrvN1f, sSrvN3
2:	Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
2+:	Data Set Definition	sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10	sDs11, sDs12, sDsN11, sDsN12
5:	Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp6, sRp7, sRp10, sRp11, sRp12, sRp13, sRp15, sRpN5
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	sBr6, sBr7, sBr10, sBr11, sBr12, sBr13, sBr15
9a:	GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11, sGop12	sGop1, sGop6, sGopN1, sGopN2
9b:	GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGos8, sGos9, sGos10, sGos11, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos6b
13:	Time sync	sTm1, sTm2, sTmN1	sTm5, sTmN2