

No. 74108408-OPE/INC 15-1898

Issued to:

EKRA
Research-and Production Enterprise, Ltd
Yakovlev prospect, 3
428003 Cheboksary
Russia

For the server product:

BE2704 differential bus protection
Software version: 562
S/N: 18228

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, the UCA International Users Group Server Device Test Procedures version 2.3 with TPCL² version 1.7.8, the product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in BE2704, version 1.0", "Model Implementation Conformance Statement for the IEC 61850 interface in BE2704, version 1.0" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface in BE2704, version 1.0" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in BE2704, version 1.0".

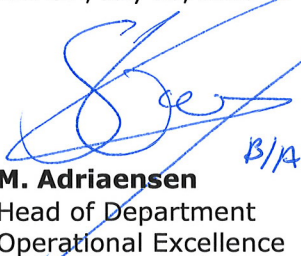
The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases):

1 Basic Exchange (16/24)	9a GOOSE Publish (8/13)
2 Data Sets (3/6)	9b GOOSE Subscribe (10/11)
4 Setting Group Selection (3/3)	12a Direct Control (4/11)
5 Unbuffered Reporting (12/18)	13 Time Synchronization (3/5)
6 Buffered Reporting (14/19)	14 File Transfer (4/7)

This certificate includes a summary of the test results as carried out at NTC FSK UES in Russia with UniCA 61850 Client Simulator 4.29.03 with test suite 3.29.00 and UniCA 61850 Analyzer 5.29.02. This document has been issued for information purposes only, and the original paper copy of the DNV GL report No. 74108408-OPE/INC 15-1897 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by EKRA. 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, July 10, 2015



M. Adriaensen
Head of Department
Operational Excellence

Issued by:



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 Server Device Test Procedures version 2.3 with TPCL 1.7.8

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	AssN3 Srv8, SrvN1f
2: Data Sets	Dset1, Dset10a, DsetN1ae	
4: Setting Group Selection	Sg1, Sg3, SgN1a	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, RpN1, RpN2, RpN3, RpN4	Rp8, Rp9, RpN5, RpN6
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br8, Br9, BrN1, BrN2, BrN3, BrN4, BrN5	Br10, Br11, BrN6
9a: GOOSE Publish	Gop2, Gop3, Gop4, Gop7, Gop9, Gop10a	Gop1, Gop5
9b: GOOSE Subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b
12a: Direct Control	CtIN3 DOns1	Ctl2, CtIN11
13: Time Sync	Tm1, Tm2	TmN1
14: File Transfer	Ft1, Ft2ab, Ft4, FtN1ab	