

No. 74107091-OPE/INC 15-1467

Issued to:

Nanjing SAC Power Grid Automation
Co.,Ltd. No. 39 Shuige Road
Jiangning Development Zone
Nanjing 211153
China

For the server product:

PSL 6602U
HMI Version: 3.37g6_b6
61850 Software Version: 5.02.02.08g
Firmware: Version 2.51E
S/N: 207304000010-Z008900000310

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, the product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in PS6600U series dated: March 18, 2015", "Model Implementation Conformance Statement for the IEC 61850 interface in PS6600U series dated: March 18, 2015" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface in PS6600U series dated: March 18, 2015" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in PS6600U series dated: March 18, 2015".

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) on the station bus network interface:

1 Basic Exchange (20/24)	6 Buffered Reporting (18/21)
2 Data Sets (3/6)	12a Direct Control (4/12)
4 Setting Group Selection (3/3)	12d Enhanced SBO Control (9/19)
4+ Setting Group Definition (7/7)	13 Time Synchronization (4/5)
5 Unbuffered Reporting (16/19)	14 File Transfer (4/7)

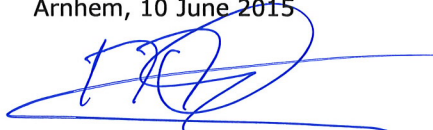
The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases) on the process bus network interface:

9a GOOSE Publish (7/13)	9b GOOSE Subscribe (10/11)
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This certificate includes a summary of the test results as carried out at Nanjing SAC Power Grid Automation Co.,Ltd. in China with UniCA 61850 Client Simulator 4.29.03 with test suite v3.28.00 and UniCA 61850 Analyzer 5.28.06. This document has been issued for information purposes only, and the original paper copy of the DNV GL report No. 74107091-OPE/INC 15-1465 will prevail.

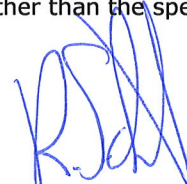
The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by Nanjing SAC Power Grid Automation Co.,Ltd. The manufacturer's production process has not been assessed. This certificate does not imply that DNV GL has approved any product other than the specimen tested.

Arnhem, 10 June 2015



M. Adriaensen
Head of Department
Operational Excellence

Issued by:

R. Schimmel
Verification Manager

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

² TPCL - Test procedures change list



Applicable Test Procedures from the UCA International Users Group Server Device Test Procedures version 2.3 with TPCL 1.7

Station bus interface

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN3, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	Srv6, Srv7, Srv8, SrvN1e, SrvN1f, SrvN3
2: Data Sets	Dset1, Dset10a, DsetN1ae	
4: Setting Group Selection	Sg1, Sg3, SgN1a	
4+: Setting Group Definition	Sg2, Sg4, SgN1b, SgN2, SgN3, SgN4, SgN5	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp10, Rp12 RpN1, RpN2, RpN3, RpN4	Rp5, Rp8, Rp9, RpN5, RpN6
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12, Br14 BrN1, BrN2, BrN3, BrN4, BrN5	Br5, Br10, Br11, BrN6
12a: Direct Control	CtlN3, CtlN8 DOs1	DOs3
12d: Enhanced SBO Control	Ctl3, CtlN1, CtlN2, CtlN3, CtlN4, CtlN9 SBOes1, SBOes2, SBOes3	
13: Time Sync	Tm1, Tm2, TmN1	Tm3
14: File Transfer	Ft1, Ft2ab, Ft4, FtN1ab	

Process bus interface

Conformance Block	Mandatory	Conditional
9a: GOOSE Publish	Gop2, Gop3, Gop4, Gop7, Gop9, Gop10a	Gop5
9b: GOOSE Subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b