IEC 61850 Certificate Level A[1]

No. 84000213-INC 18-2332

Issued to:

Núcleo de Comunicaciones
y Control S.L.U.
C/ Vía de los Poblados, 7
28033 Madrid
Spain

For the server product:

Sherpa R 5000 Modular RTU and IED
with MPB 600 communication module
Application software version: 6.1.0
RTU S/N: 214080349
MPB 600 IEC61850 software version: Ed.2 1.3.0
MPB 600 Hardware version: 1200.B421.0
MPB 600 S/N: 217201236

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 1.0 with TPCL[2] 1.2.4 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 Ed. 2 Server Interface in Sherpa R5000, Sherpa R5000 Compact, Sherpa R5000 Compact+; DT-M3-000-GRALPD-DCPR-001-03-E-0; v1.0", "Model Implementation Conformance Statement for the IEC 61850 Ed. 2 Server Interface in Sherpa R 5000, Sherpa R 5000 Compact, Sherpa R 5000 Compact+; DT-M3-000-GRALPD-DCPR-001-02-E-0; v1.0" and "TISSUES Implementation Conformance Statement (TICS) for the IEC 61850 interface in Sherpa R5000, Sherpa R5000 Compact, Sherpa R5000 Compact+; DT-M3-000-GRALPD-DCPR-001-04-E-0; v1.0" and product's extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) Statement for the IEC 61850 Server Interface in Sherpa R5000, Sherpa R5000 Compact, Sherpa R5000 Compact+; DT-M3-000-GRALPD-DCPR-001-01-E-0; v1.0".

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 (22/26)	12a	Direct Control (8/18)
2	Data Sets (4/7)	12b	SBO Control (14/27)
3	Substitution (3/3)	12c	Enhanced Direct Control (10/20)
5	Unbuffered Reporting (18/21)	12d	Enhanced SBO Control (15/28)
6	Buffered Reporting (25/30)	13	Time Synchronization (5/7)
9a	GOOSE Publish (12/13)	14	File Transfer (8/8)
9b	GOOSE Subscribe (14/14)		

This certificate includes a summary of the test results as carried out at Núcleo in Spain with UniGrid SA v1.4.361 with test suite Ed2 v1.0.55 land UniCA 61850 Analyzer 5.34.01. This document has been issued for information purposes only, and the original paper copy of the DNV GL verification report No. 84000213-INC 18-2333 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by Núcleo. 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, April 5, 2018

E. Henriquez
Business leader
Interoperability of Smart Power Systems

Issued by:

DNV·GL
DNV KEMA is now DNV GL

R. Schimmel
Verification Manager

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[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 Edition 2 Server Test Procedures version 1.0 with TPCL 1.2.4

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrvN1abcd, sSrvN4	sAssN6, sSrv6, sSrv8, sSrv12, sSrvN1e, sSrvN1f, sSrvN2, sSrvN3
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
3: Substitution	sSub1, sSub2, sSub3	
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp15, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp8, sRp10, sRp11, sRp12, sRpN5
6: Buffered Reporting	sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr15, sBr20, sBr21, sBr22, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8	sBr8, sBr10, sBr11, sBr12
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11	sGop1, sGop5, sGop6, sGop7, sGopN1, sGopN2
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4, sGos6b
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl7, sCtl13, sCtl15, sCtl16
12b: SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl6, sCtl7, sCtl15, sCtl16, sCtl27
12c: Enhanced Direct Control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl7, sCtl13, sCtl14, sCtl15, sCtl16, sCtl26
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl6, sCtl7, sCtl15, sCtl16, sCtl26
13: Time sync	sTm1, sTm2, sTmN1	sTm4, sTm5
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	sFt2c, sFt3, sFtN1c

All configuration file and data model tests have been successfully performed for the product variants using the same communication hardware and software version:

- Sherpa R 5000 Compact, Compact RTU and IED
- Sherpa R 5000 Compact+, Compact RTU and IED