

## IEC 61850 Certificate Level A<sup>1</sup>

**Issued to:**

Engineering Center Energoservice  
44, Aviamotornaya street, Bld 1  
Office 1A, Room 1  
Moscow, 111024  
Russian Federation

**For the server product:**

ENCS-3m.648-1-3 (ЭHKC-3M.648-1-3)  
Remote terminal unit  
With Smart meter ESM and IO Module ENMV-1 (ЭHMB-1)  
Firmware version: 1.4.7  
S/N: 5801

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 2.0.5 with product's protocol, model and technical issue implementation conformance statements and extra information for testing: "Remote terminal unit ENCS-3 IEC 61850 Conformance Statement Rev. 08.2021".


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 (20/26)	9a GOOSE Publish (12/13)
2 Data Sets (4/7)	9b GOOSE Subscribe (18/20)
2+ Data Set Definition (24/24)	12a Direct Control (7/18)
5 Unbuffered Reporting (19/23)	12b SBO Control (15/27)
6 Buffered Reporting (27/33)	12c Enhanced Direct Control (8/20)
	12d Enhanced SBO Control (16/28)
	13 Time Synchronization (3/7)

This certificate includes a summary of the test results as carried out at DNV in The Netherlands with UniGrid SA Simulator 1.8.1 with test suite Ed2\_Server\_TP\_2.0\_20210330.1 and UniCA 61850 Analyzer 6.41. This document has been issued for information purposes only, and the archived DNV verification report No. 10300969-INC 21-3226 rev 2 will prevail.

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

Arnhem, September 07, 2021



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

**Issued by:**




**R. Schimmel**  
Verification Manager

<sup>1</sup> Level A - Independent test lab with certified ISO 9001 Quality System

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Applicable Test Procedures from the UCA International Users Group Edition 2 Server Test Procedures version 2.0.5

Conformance Block	Mandatory	Conditional
1: Basic Exchange	sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrvN1abcd, sSrvN4	sAssN6, sSrv9, sSrv10, sSrv12
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, sRp15, sRp17, 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, sBr15, sBr17
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11, sGop12	sGop1, sGop5, sGop6, sGopN1, sGopN2
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGos8, sGos9, sGos10, sGos11, sGos12, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos13
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl7, sCtl15, sCtl16
12b: SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl27
12c: Enhanced Direct Control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl7, sCtl14, sCtl15, sCtl16
12d: Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl26
13: Time sync	sTm1, sTm2, sTmN1	