

No. 10035125-INC 17-2222Rev1

Issued to:

ROCON PLC
56A, 21-th Century Str.
1700 Sofia
Bulgaria

For the server product:

DRAGON RFI-D
Overcurrent Protection
Software version: 4.050/24.05.17
Hardware version: 4 and S/N: 03003

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 TPCL² 1.2.4 with product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in DRAGON, v1.2", "MICS for RFI-D Model Implementation Conformance Statement, v1.2" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface in DRAGON, v1.2" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in DRAGON, v1.2".

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 (25/26)	9a GOOSE Publish (12/13)
2 Data Sets (4/7)	9b GOOSE Subscribe (13/14)
2+ Data Set Definition (24/24)	12a Direct Control (6/18)
3 Substitution (3/3)	12d Enhanced SBO Control (16/28)
4 Setting Group Selection (4/4)	13 Time Synchronization (6/7)
4+ Setting Group Definition (12/13)	14 File Transfer (8/8)
5 Unbuffered Reporting (21/21)	15 Service Tracking (1/17)
6 Buffered Reporting (30/30)	

This certificate includes a summary of the test results as carried out at ROCON PLC in Bulgaria with UniGrid 1.1.15.57 with test suite 1.0.0 and UniCA 61850 Analyzer 5.31.00. This document has been issued for information purposes only, and the original paper copy of the DNV GL verification report No. 10035125-INC 17-2221 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by ROCON. 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, May 26, 2017



P. Ciochi
Business Director
Intelligent Networks and Communication

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

² TPCL - Test procedures change list

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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, sSrv9, sSrv10, sSrv11, sSrv12, sSrvN1e, sSrvN1f, sSrvN2, sSrvN3
2: Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
2+: Data Set Definition	sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs11, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10	sDs12, sDsN11, sDsN12
3: Substitution	sSub1, sSub2, sSub3	
4: Setting Group Selection	sSg1, sSg3, sSgN1	sSg11
4+: Setting Group Definition	sSg2, sSg4, sSg7, sSg8, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5	sSg6, sSg9
5: Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp15, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp6, sRp7, sRp8, sRp10, sRp11, sRp12, sRp13, 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	sBr6, sBr7, sBr8, sBr10, sBr11, sBr12, sBr13, sBr23, sBr24
9a: GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11	sGop1, sGop2b, sGop5, sGop6, sGop7, sGopN1
9b: GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4
12a: Direct control	sCtl5, sCtl10, sDOns1, sDOns2	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	sTm3, sTm4, sTm5
14: File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	sFt2c, sFt3, sFtN1c
15: Service tracking		sTrk7

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

- DRAGON RAU-D Annunciator
- DRAGON RBP-D Busbar Protection
- DRAGON RLI-D Distance Protection
- DRAGON RTB-D Remote Terminal Block
- DRAGON RTI-D Transformer Protection
- DRAGON RTU-D Bay Control Unit