

No. 84000022-OPE/INC 15-1680

**Issued to:**

Controles S.A.  
Av. Rivera 3314  
11300 Montevideo  
Uruguay

**For the server product:**

RTU194 Bay controller  
Software version: RTUQM V4.32  
Hardware version: F02-CP02-IA21-IB21-PA03-  
PB03-D02

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 TPCL<sup>2</sup> version 1.7, the product's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in RTU194, Version: 1.7, Date: June 19, 2015", "Model Implementation Conformance Statement for the IEC 61850 interface in RTU194, Version: 1.7, Date: June 19, 2015" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface in RTU194, Version: 1.7, Date: June 19, 2015" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in RTU194, Version: 1.7, Date: June 19, 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):

1 Basic Exchange (17/24)	12a Direct Control (5/12)
2 Data Sets (3/6)	12b SBO Control (7/14)
5 Unbuffered Reporting (15/19)	12c Enhanced Direct Control (6/13)
6 Buffered Reporting (17/21)	12d Enhanced SBO Control (11/19)
6+ Enhanced buffered reporting (9/12)	13 Time Synchronization (4/5)
9a GOOSE Publish (11/13)	

This certificate includes a summary of the test results as carried out at Controles in Uruguay with UniCA 61850 Client Simulator 4.29.03 with test suite 3.29.00 and UniCA 61850 Analyzer 5.28.03. This document has been issued for information purposes only, and the original paper copy of the DNV GL report No. 84000022-OPE/INC 15-1690 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by Controles. 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, June 24, 2015



**M. Adriaensen**  
Head of Department  
Operational Excellence

Issued by:



DNV KEMA is now DNV GL



**R. Schimmel**  
Verification Manager

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

<sup>2</sup> TPCL - Test procedures change list



Applicable Test Procedures from the UCAlug Server Device Test Procedures version 2.3 with TPCL 1.7

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN3, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	Srv6, Srv8, SrvN1f
2: Data Sets	Dset1, Dset10a, DsetN1ae	
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp10, Rp12, RpN1, RpN2, RpN3, RpN4	Rp8, Rp9, RpN5, RpN6
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12, Br14, BrN1, BrN2, BrN3, BrN4, BrN5	Br10, Br11, BrN6
6+: Enhanced Buffered Reporting	BrE1, BrE2, BrE3, BrE6, BrE7, BrE8, BrE9, BrE10, BrE11	
9a: GOOSE Publish	Gop2, Gop3, Gop4, Gop7, Gop9, Gop10a	Gop1, Gop6, Gop10b, GopN1, GopN2
12a: Direct Control	CtIN3, CtIN8, DOns1	CtIN11, DOns3
12b: SBO Control	CtI3, CtIN1, CtIN2, CtIN3, CtIN4, SBOs2	CtIN11
12c: Enhanced Direct Control	CtIN3, CtIN8, DOes2, DOes5	CtIN6, CtIN11
12d: Enhanced SBO Control	CtI3, CtIN1, CtIN2, CtIN3, CtIN4, CtIN9, SBOes1, SBOes2, SBOes3	CtIN6, CtIN11
13: Time Sync	Tm1, Tm2, TmN1	Tm3