

No. 10117333-INC 18-2139

Issued to:

Ingeteam Power Technology, S.A.
Power Grid Automation - PGA
Parque Tecnológico de Bizkaia, Edificio 110
48170 Zamudio, Bizkaia
Spain

For the client system:

INGESAS IC3
Communication Unit
Software version: IC6380Y - OT0850IJD01AH
Hardware version: INGESAS IC3 - 0B0B000000AA
S/N: A7375000008

The client system 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 Client Conformance Test Procedures version 1.1.1 with product's protocol, model and technical issue implementation conformance statements: "ZY8591IFM01B INGESAS IC3 - IEC61850 CLIENT PICS, Rev:B Date:2019/01/17", "ZY8592IFM01A INGESAS IC3 - IEC61850 CLIENT MICS, Rev:A Date:2019/01/17" and "ZY8593IFM01A INGESAS IC3 - IEC61850 CLIENT TICS, Rev:A Date:2019/01/17" and the extra information for testing: "ZY8594IFM01D INGESAS IC3 - IEC61850 CLIENT PIXIT, Rev:D Date:2019/01/29".

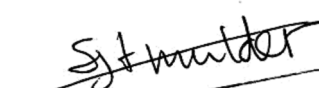
The following IEC 61850 conformance blocks have been tested with a positive result (number of relevant and executed test cases / total number of test cases):

1 Basic Exchange (15/24)	12a Direct Control (7/9)
2+ Data Set Definition (5/8)	12b SBO Control (9/11)
3 Substitution (3/3)	12c Enhanced Direct Control (7/9)
5 Unbuffered Reporting (20/24)	12d Enhanced SBO Control (9/11)
6 Buffered Reporting (24/28)	13 Time Synchronization (4/4)
	15 Service Tracking (17/17)

This certificate includes a summary of the test results as carried out at Ingeteam in Spain with UniCA 61850 IED simulator 6.1.31 and UniCA 61850 Analyzer 5.34.01. This document has been issued for information purposes only, and the archived of the DNV GL verification report No. 10117333-INC 18-2138 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by Ingeteam. 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, February 1, 2019



S.J.T. Mulder
Business Leader
Interoperability of Smart Power Systems

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

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Applicable Test Procedures from the UCA International Users Group Edition 2 Client Conformance Test Procedures version 1.1.1

Conformance Block	Mandatory	Conditional
1: Basic Exchange	cAss1, cAss2, cAss3, cAssN1, cAssN4, cAssN5, cAssN6	cAssN7, cSrv5, cSrv6, cSrv7, cSrvN3, cSrvN4, cSrvN5, cSrvN6
2+: Data Set Definition		cDs10, cDs12, cDs13, cDsN10a, cDsN11
3: Substitution	cSub1, cSub3	cSub2
5: Unbuffered Reporting	cRp3, cRp4, cRp5, cRp8, cRp9, cRp10, cRp11, cRp13a, cRp14, cRp15, cRp19, cRpN2, cRpN5, cRpN6	cRp2, cRp6, cRp7, cRp12, cRp13b, cRp16
6: Buffered Reporting	cBr3, cBr4, cBr5, cBr8, cBr9, cBr10, cBr11, cBr13a, cBr14, cBr15, cBr19, cBr30, cBr31, cBrN2, cBrN5, cBrN6	cBr2, cBr6, cBr7, cBr12, cBr13b, cBr16, cBr32, cBr33
12a: Direct Control	cCtl4, cCtl5, cDOns1, cDOns2	cCtl1, cCtl2, cCtl3
12b: SBO Control	cCtl4, cCtl5, cSBOns1, cSBOns2, cSBOns3	cCtl1, cCtl2, cCtl3, cSBOns4
12c: Enhanced Direct Control	cCtl4, cCtl5, cDOes1, cDOes2	cCtl1, cCtl2, cCtl3
12d: Enhanced SBO Control	cCtl4, cCtl5, cSBOes1, cSBOes2, cSBOes3	cCtl1, cCtl2, cCtl3, cSBOes4
13: Time Synchronization	cTm1, cTmN1	cTm2, cTmN2
15: Service Tracking		cTrk1, cTrk2, cTrk3, cTrk4, cTrk5, cTrk6, cTrk7, cTrk8, cTrk9, cTrk10, cTrk11, cTrk12, cTrk13, cTrk14, cTrk15, cTrk16, cTrk17