IEC 61850 Certificate Level A[1]

Issued to:

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

For the server product:

Ingepac EFx BD
Distributed busbar differential protection
IEC 61850 version: 1.0.0.10
Hardware version: BD0BA-GOXXPXXXXXA-A-AZD-A-A-A-A-
S/N: A20065000001

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: "Protocol Implementation Conformance Statement for the IEC 61850 interface in INGEPAC EFx BD, Rev: A, dated on 2022/04/19", "Model Implementation Conformance Statement for the IEC 61850 interface in INGEPAC EFx BD, Rev: A, dated on 2022/04/19" and "TISSUES Implementation Conformance Statement for the IEC 61850 interface in INGEPAC EFx BD, Rev: A, dated on 2022/04/19" and the extra information for testing: "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in INGEPAC EFx BD, Rev: B, dated on 2022/03/30".

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)		9b	GOOSE Subscribe (20/20)
2	Data Sets (4/7)		12a	Direct Control (11/19)
3	Substitution (3/3)		12b	SBO Control (18/28)
4	Setting Group Selection (4/4)		12c	Enhanced Direct Control (13/21)
4+	Setting Group Definition (13/13)		12d	Enhanced SBO Control (19/29)
5	Unbuffered Reporting (21/23)		13	Time Synchronization (6/7)
6	Buffered Reporting (31/33)		14	File Transfer (8/8)
9a	GOOSE Publish (13/13)		15	Service Tracking (7/17)

This certificate includes a summary of the test results as carried out at DNV in Spain with UniGrid SA Simulator 2.0.1 with test suite 20211209 and UniCA 61850 Analyzer 6.40.01. This document has been issued for information purposes only, and the archived DNV verification report No. 10337064-DSO 22-2780 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 Ingeteam Power Technology, S.A. 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, March 30, 2022

G. Akse
Business Development Manager
Interoperability of Smart Power Systems

Issued by:

R. Schimmel
Verification Manager

[1] Level A - Independent test lab with certified ISO 9001 Quality System

UCA International Users Group P.O. Box 315, Shell Knob, MO 65747 USA

IEC 61850 Certificate Level A

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, sSrvN1abcdf, sSrvN4	sAssN6, sSrv6, sSrv9, sSrv10, sSrv12, sSrv13, sSrvN1e, sSrvN2, sSrvN3
2:	Data Sets	sDs1, sDs10a, sDsN1ae	sDs15
3:	Substitution	sSub1, sSub2, sSub3	
4:	Setting Group Selection	sSg1, sSg3, sSgN1	sSg11
4+:	Setting Group Definition	sSg2, sSg4, sSg6, sSg7, sSg8, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5	sSg5, sSg9
5:	Unbuffered Reporting	sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRpN1, sRpN2, sRpN3, sRpN4, sRpN8	sRp8, sRp10, sRp11, sRp12, sRp13, 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	sBr8, sBr10, sBr11, sBr12, sBr13, sBr15, sBr17, sBr23, sBr24
9a:	GOOSE publish	sGop2a, sGop3, sGop4, sGop9, sGop10, sGop11, sGop12	sGop1, sGop2b, sGop5, sGop6, sGopN1, sGopN2
9b:	GOOSE subscribe	sGos1, sGos2, sGos3, sGos5, sGos6a, sGos7, sGos8, sGos9, sGos10, sGos11, sGos12, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6	sGos4, sGos6b, sGos13
12a:	Direct control	sCtl5, sCtl10, sDOns1, sDOns2	sCtl2, sCtl7, sCtl13, sCtl15, sCtl16, sCtl17, sCtl28
12b:	SBO control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOns1, sSBOns2, sSBOns6	sCtl2, sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl17, sCtl27, sCtl28
12c:	Enhanced Direct Control	sCtl5, sCtl10, sDOes1, sDOes2	sCtl2, sCtl7, sCtl13, sCtl14, sCtl15, sCtl16, sCtl17, sCtl26, sCtl28
12d:	Enhanced SBO Control	sCtl5, sCtl8, sCtl9, sCtl10, sCtl11, sCtl25, sSBOes1, sSBOes2, sSBOes6, sSBOes8	sCtl2, sCtl4, sCtl6, sCtl7, sCtl15, sCtl16, sCtl17, sCtl26, sCtl28
13:	Time sync	sTm1, sTm2, sTmN1	sTm3, sTm4, sTm5
14:	File transfer	sFt1, sFt2ab, sFt4, sFt5, sFtN1ab	sFt2c, sFt3, sFtN1c
15:	Service tracking		sTrk1, sTrk2, sTrk4, sTrk7, sTrk8, sTrk9, sTrk11