

No. 10073585-INC 18-2376

Issued to:

Larsen & Toubro
Electrical & Automation
A-600, TTC Industrial Area
Shil - Mahape Road
Navi Mumbai - 400710
India

For the client system:

iVisionmax
Industrial Software Platform
Software version: 10.1
Hardware version: HP ProBook 440 G4 with
Windows 10 Pro
S/N: 5CD7347M35

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 1.0 with TPCL² 1.0_rev3 with product's protocol, model and technical issue implementation conformance statements: "iVisionmax IEC 61850 Client Protocol Implementation Conformance Statement, Rev. 1.0", "iVisionmax IEC 61850 Client Model Implementation Conformance Statement, Rev. 1.0" and "iVisionmax IEC 61850 Client TISSUE Implementation Conformance Statement, Rev. 1.0" and the extra information for testing: "iVisionmax IEC 61850 Client Protocol Implementation eXtra Information for Testing, Rev. 1.0".

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 (21/24)	12a Direct Control (7/9)
2 Data Sets (5/10)	12b SBO Control (9/11)
3 Substitution (3/3)	12c Enhanced Direct Control (7/9)
5 Unbuffered Reporting (21/23)	12d Enhanced SBO Control (9/11)
6 Buffered Reporting (26/28)	14 File Transfer (6/8)
	15 Service Tracking (9/17)

This certificate includes a summary of the test results as carried out at DNV GL The Netherlands with UniCA 61850 IED simulator 6.1.31.19 and UniCA 61850 Analyzer 5.34.01. This document has been issued for information purposes only, and the original paper copy of the DNV GL verification report No. 10073585-INC 18-2378 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to DNV GL by Larsen & Toubro. 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, April 13, 2018



E. Henriquez
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

² TPCL - Test procedures change list

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Applicable Test Procedures from the UCA International Users Group Edition 2 Client Conformance Test Procedures version 1.0 with TPCL 1.0_rev3

Conformance Block	Mandatory	Conditional
1: Basic Exchange	cAss1, cAss2, cAss3, cAssN1, cAssN4, cAssN5, cAssN6	cSrv1, cSrv2, cSrv3, cSrv4, cSrv5, cSrv6, cSrv7, cSrv9, cSrv10, cSrvN1, cSrvN3, cSrvN4, cSrvN5, cSrvN6
2: Data Sets		cDs1, cDs2, cDs5, cDs6, cDsN1a
3: Substitution	cSub1, cSub3	cSub2
5: Unbuffered Reporting	cRp3, cRp4, cRp5, cRp8, cRp9, cRp10, cRp11, cRp13a, cRp14, cRp15, cRpN2, cRpN5, cRpN6	cRp1, cRp2, cRp6, cRp7, cRp16, cRp17, cRp18, cRpN1
6: Buffered Reporting	cBr3, cBr4, cBr5, cBr8, cBr9, cBr10, cBr11, cBr13a, cBr14, cBr15, cBr30, cBr31, cBrN2, cBrN5, cBrN6, cBrN20	cBr1, cBr2, cBr6, cBr7, cBr16, cBr17, cBr18, cBr32, cBr33, cBrN1
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
14: File Transfer	cFt1, cFt3, cFtN1	cFt4, cFt5, cFtN3
15: Service Tracking		cTrk1, cTrk2, cTrk8, cTrk9, cTrk10, cTrk11, cTrk14, cTrk15, cTrk16