



IEC 61850 Certificate Level A¹

International Usersgroup

No. 74100666-MOC/INC 11-2158

Issued to:
Hyundai Heavy Industries Co., LTD.
1, Jeonha-Dong,
Dong-Gu, Ulsan,
369-792, Korea

For the product:
HiMAP-TCU
SW ver 1.00
HW ver 1.00



The product has not shown to be non-conforming to:
IEC 61850-6, 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 with product's protocol, model and technical issue implementation conformance statements: "IEC 61850 PICS HIMAP-TCU, Rev. 1.0", "IEC 61850 MICS HIMAP-TCU, Rev. 1.0", "IEC 61850 TICS HIMAP-TCU, Rev. 1.0" and product's extra information for testing: "IEC 61850 PIXIT HIMAP-TCU, 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 as defined in the UCA International Users Group Device Test procedures v2.2b):

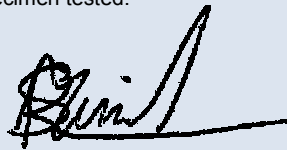
1 Basic Exchange (20/24)	9a GOOSE Publish (7/12)
2 Data Sets (3/6)	9b GOOSE Subscribe (10/10)
2+ Data Set Definition (23/23)	12a Direct Control (7/11)
4 Setting Group Selection (3/3)	12d Enhanced SBO Control (12/19)
5 Unbuffered Reporting (15/18)	13 Time Synchronization (4/5)
6 Buffered Reporting (17/20)	14 File Transfer (4/7)

This Certificate includes a summary of the test results as carried out at KEPRI in South Korea with UniCAsim 61850 version 3.23.02 with test suite 3.23.00 and UniCA 61850 analyzer 4.21.03. The test is based on the UCA International Users Group Device Test Procedures version 2.2b. This document has been issued for information purposes only, and the original paper copy of the KEMA report: No. 74100666-MOC/INC 11-2157 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to KEMA by Hyundai Heavy Industries. The manufacturer's production process has not been assessed. This Certificate does not imply that KEMA has certified or approved any product other than the specimen tested.

Arnhem, 7 September, 2011


M. Adriaansen
Regional Director Management & Operations Consulting


R.S. Massink
Test Engineer

1 Level A - Independent Test lab with certified ISO 9000 or ISO 17025 Quality System

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Applicable Test Procedures from the UCA International Users Group Device Test Procedures version 2.2b

Conformance Block	Mandatory	Conditional
1: Basic Exchange	Ass1, Ass2, Ass3, AssN2, AssN3, AssN4, AssN5 Srv1, Srv2, Srv3, Srv4, Srv5, SrvN1abcd, SrvN4	Srv6, Srv7, Srv8, SrvN1e, SrvN2, SrvN3
2: Data Sets	Dset1, Dset10a, DsetN1ae	
2+: Data Set Definition	Dset2, Dset3, Dset4, Dset5, Dset6, Dset7, Dset8, Dset9 DsetN1cd, DsetN2, DsetN3, DsetN4, DsetN5, DsetN6, DsetN7, DsetN8, DsetN9, DsetN10, DsetN11, DsetN12, DsetN13, DsetN14, DsetN15	
4: Setting Group Selection	Sg1, SgN1a	Sg3
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp10 RpN1, RpN2, RpN3, RpN4	Rp5, Rp6, Rp8, Rp9, RpN5
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12 BrN1, BrN2, BrN3, BrN4, BrN5	Br5, Br6, Br10, Br11
9a: GOOSE publish	Gop2, Gop3, Gop4, Gop7	Gop1, Gop5, Gop10
9b: GOOSE subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	Gos1b
12a: Direct control	CtlN3, CtlN8, DOns1, DOns3	Ctl2, Ctl7, CtlN11
12d: Enhanced SBO control	Ctl3, CtlN1, CtlN2, CtlN3, CtlN4, CtlN9 SBOes1, SBOes2, SBOes3	Ctl2, Ctl7, CtlN11
13: Time sync	Tm1, Tm2, TmN1	TmN2
14: File transfer	Ft1, Ft2ab, Ft4, FtN1ab	