# IEC 61850 Certificate Level A[1]

Issued to:

**DAEWOONG ELECTRIC Co., Ltd.**
**Hwanggeumro 127beon-gil 10, Yangchon-eup,**
**Gimpo-si, Gyeonggi-do, 10048**
**Republic of Korea**

For the CLIENT:

**SA-OPD (Substation Automation**
**Operation Processing Device)**
**Model: SPiN-CMAS**
**Software version: 1.0.0**
**HW: HP Z8**
**OS: Windows Server 2019 Standard**
**S/N: 4CE9050MXH**

Issued by:
**Korea Electrotechnology Research Institute**
**111, Hanggaul-ro, Sangrok-gu, Ansan-si, Gyeonggi-do, 15588, Republic of Korea**

## The CLIENT 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 Test Procedures version 1.2 with product's protocol, model and technical issue implementation conformance statements: "<<SPiN-CMAS_PICS_v1.1>>", "<<SPiN-CMAS_MICS_v1.1>>", "<<SPiN-CMAS_TICS_v1.1>>" and product's extra information for testing: "<<SPiN-CMAS_PIXIT_v1.1>>".

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

| | | | | |
|---|---|---|---|---|
| 1 | Basic Exchange (24/24) | 9 | GOOSE Control Block (2/2) | |
| 2 | Data Sets (8/10) | 12a | Direct Control (7/9) | |
| 2+ | Data Set Definition (8/8) | 12b | SBO Control (9/11) | |
| 4 | Setting Group Selection (3/3) | 12c | Enhanced Direct Control (7/9) | |
| 4+ | Setting Group Definition (5/5) | 12d | Enhanced SBO Control (9/11) | |
| 5 | Unbuffered Reporting (24/24) | 13 | Time Synchronization (4/4) | |
| 6 | Buffered Reporting (28/28) | 14 | File Transfer (8/8) | |
| | | 15 | Service Tracking (12/17) | |

This Certificate includes a summary of the test results as carried out at KERI in Republic of Korea with UniGrid SA version 1.0.0.0 with test suite Ed2_Client_Rev102_v1.0.0 and UniCA Analyzer v.6.41.00.0. This document has been issued for information purposes only, and the original paper copy of the KERI report: No. 24TC200131 will prevail.

The test has been carried out on one single specimen of the product as referred above and submitted to KERI by Daewoong Co., Ltd. The manufacturer's production process has not been assessed. This certificate does not imply that KERI has certified or approved any product other than the specimen tested.

Republic of Korea, February 19, 2024

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1 Level A - Independent Test lab with certified [ISO 9001] [ISO/IEC 17025] Quality System
  Level B - Test lab at least following ISO 9001

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Page 1/2
DF-HV-6015-01

Applicable Test Procedures from the UCA International Users Group Edition 2 Client Test Procedures version 1.2

| | Conformance Block | Mandatory | Conditional |
|---|---|---|---|
| 1: | Basic Exchange | cAss1, cAss2, cAss3, cAssN1, cAssN4, cAssN5 cAssN6 | cAssN7<br>cSrv1, cSrv2, cSrv3, cSrv4, cSrv5, cSrv6, cSrv7, cSrv8, cSrv9, cSrv10, cSrvN1, cSrvN2, cSrvN3, cSrvN4, cSrvN5, cSrvN6 |
| 2: | Data Sets | | cDs1, cDs2, cDs3, cDs5, cDs6, cDsN1a, cDsN1b, cDsN1c |
| 2+: | Data Set Definition | | cDs10, cDs11, cDs12, cDs13, cDs14, cDsN10a, cDsN10b, cDsN11 |
| 4: | Setting Group Selection | cSg2, cSgN1 | cSg1 |
| 4+: | Setting Group Definition | cSg11, cSg14 | cSg10, cSg12, cSg13 |
| 5: | Unbuffered Reporting | cRp3, cRp4, cRp5, cRp8, cRp9, cRp10, cRp11, cRp13a, cRp14, cRp15, cRp19, cRpN2, cRpN5, cRpN6 | cRp1, cRp2, cRp6, cRp7, Rp12, cRp13b, cRp16, cRp17, cRp18, cRpN1 |
| 6: | Buffered Reporting | cBr3, cBr4, cBr5, cBr8, cBr9, cBr10, cBr11, cBr13a, cBr14, cBr15, cBr19, cBr30, cBr31, cBrN2, cBrN5, cBrN6 | cBr1, cBr2, cBr6, cBr7, cBr12, cBr13b, cBr16, cBr17, cBr18, cBr32, cBr33, cBrN1 |
| 9: | GOOSE control block | | cGcb1, cGcb2 |
| 12a: | Direct control | cCtl4, cCtl5<br>cDOns1, cDOns2 | cCtl1, cCtl2, cCtl3 |
| 12b: | SBO control | cCtl4, cCtl5<br>cSBOns1, cSBOns2, cSBOns3 | cCtl1, cCtl2, cCtl3,<br>cSBOns4 |
| 12c: | Enhanced Direct Control | cCtl4, cCtl5<br>cDOes1, cDOes2 | cCtl1, cCtl2, cCtl3, |
| 12d: | Enhanced SBO control | cCtl4, cCtl5<br>cSBOes1, cSBOes2, cSBOes3 | cCtl1, cCtl2, cCtl3,<br>cSBOes4 |
| 13: | Time sync | cTm1, cTmN1 | cTm2, cTmN2 |
| 14: | File transfer | cFt1, cFt3, cFtN1 | cFt2, cFt4, cFt5, cFtN2, cFtN3 |
| 15: | Service Tracking | | cTrk1, cTrk2, cTrk4, cTrk7, cTrk8, cTrk9, cTrk10, cTrk11, cTrk12, cTrk13, cTrk14, cTrk15 |

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Page 2/2
DF-HV-6015-01