



IEC 61850 Certificate Level A¹

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No. 24-045123-01-5

Issued to:
DONGWOO ELECTRIC CORP
34, Oseongseo-ro, Anjung-eup,
Pyeongtaek-si, Gyeonggi-do,
Republic of Korea, 17928

For the server product:
SA-ICD (Substation Automation Information
Connecting Device)
DWSA-GW
Software Version 1.0
HW : SIMATIC IPC647E
OS : Windows Server 2019
S/N : DWSA-GW-2024-001

Issued by: **Korea Testing Laboratory**

**The server product has not been shown to be non-conforming to:
IEC 61850 Edition 2 with Amendment 1 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, the UCA International Users Group Edition 2 with Amendment 1 Server Test Procedures version 1.2 with product's protocol, model and tissues implementation conformance statements: "DongWoo-DWSAGW_Server_Pics_Ed2.1", "DongWoo-DWSAGW_Server_Mics_Ed2.1", "DongWoo-DWSAGW_Server_Tics_Ed2.1" and the extra information for testing: "DongWoo-DWSAGW_Server_Pixit_Ed2.1".

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

| | | | |
|----|------------------------------|-----|--------------------------------------|
| 1a | Basic Exchange (24/29) | 12a | Direct Control (8/18) |
| 2 | Data Sets (4/7) | 12d | Enhanced SBO Control (15/28) |
| 2+ | Data Set Definition (24/24) | 13a | Time Synchronization with SNTP (4/8) |
| 5 | Unbuffered Reporting (26/26) | 14 | File Transfer (5/8) |
| 6 | Buffered Reporting (36/36) | 15 | Service Tracking (4/17) |

This Certificate includes a summary of the test results as carried out at Seoul in Republic of Korea with IEC 61850 Ed2.1 KTL Testing Tool 1.0 with test suite IEC 61850 Ed2.1 Server Conformance Test V.1.0 and IEC 61850 Ed2.1 KTL Trace Manager V.1.0. This document has been issued for information purposes only, and the original paper copy of the KTL report: No. TR-24-045123-01-5 will prevail.

The test has been carried out on the specimen of the product as referred above and submitted to KTL by DONGWOO ELECTRIC CORP. The manufacturer's production process has not been assessed. This certificate does not imply that KTL has certified or approved any product other than the specimen tested.

Seoul, Nov. 01, 2024

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1 Level A - Independent Test lab with accredited ISO/IEC 17025 Quality System

Applicable Server Test Procedures from the UCA International Users Group Edition 2 Amendment 1
Server Test Procedures version 1.2.

| Conformance Block | Mandatory | Conditional |
|--|---|--|
| 1a: Basic Exchange | sAss1, sAss2, sAss3, sAss4, sAssN2, sAssN3, sAssN4, sAssN5, sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrvN1abcd, sSrvN4 | sAssN6, sSrv6, sSrv9, sSrv10, sSrv12, sSrvN1e, sSrvN2, sSrvN3 |
| 2: Data Sets | sDs1, sDs10a, sDsN1ae | sDs15 |
| 2+: Data Set Definition | sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10 | sDs11, sDs12, sDsN11, sDsN12 |
| 5: Unbuffered Reporting | sRp1, sRp2, sRp3, sRp4, sRp5, sRp9, sRp14, sRp16, sRp23, sRpN1, sRpN2, sRpN3, sRpN4, sRpN5, sRpN7, sRpN8, sRpN9 | sRp6, sRp7, sRp8, sRp10, sRp11, sRp12, sRp13, sRp15, sRp17 |
| 6: Buffered Reporting | sBr1, sBr2, sBr3, sBr4, sBr5, sBr9, sBr14, sBr16, sBr20, sBr21, sBr22, sBr23, sBr24, sBr25, sBr26, sBr27, sBr28, sBr29, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN7, sBrN8, sBrN9, sBrN10 | sBr6, sBr7, sBr8, sBr10, sBr11, sBr12, sBr13, sBr15, sBr17 |
| 12a: Direct Control | sCtl5a, sCtl10a, sDOns1, sDOns2 | sCtl2a, sCtl13a, sCtl15a, sCtl16a |
| 12d: Enhanced SBO control | sCtl5d, sCtl8d, sCtl9d, sCtl10d, sCtl11d, sCtl25d, sSBOes1, sSBOes2, sSBOes6, sSBOes8 | sCtl2d, sCtl4d, sCtl6d, sCtl15d, sCtl16d |
| 13a: Time Synchronization with SNTP | sTm1, sTm2, sTm7, sTmN1 | |
| 14: File Transfer | sFt1, sFt2ab, sFt4, sFt5, sFtN1ab | |
| 15: Service tracking | | sTrk1, sTrk2, sTrk8, sTrk9 |