

# IEC 61850 Certificate Level A<sup>1</sup>

Ref. No: 2017TS03185

Issued to:  
**JVG Co., Ltd.**  
**11, Neungwon-ro 10beon-gil, Mohyeon-myeon**  
**Cheoin-gu, Yongin-si, Gyeonggi,**  
**Republic of Korea**

For the client system:  
**JVG Smart G/W**  
**IEC 61850 Protocol Gateway**  
**Software version 1.3**  
**HP Z420 Workstation with**  
**Window7 Pro 64 bit**

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

**The client system has not shown to be non-conforming to:**  
**IEC 61850 First Edition Parts 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 and UCA IUG Conformance Test Procedures for Client System with IEC 61850-8-1 interface, revision 1.1 with TPCL version 1.2 with client system's protocol, model and technical issue implementation conformance statements: "Protocol Implementation Conformance Statement for the IEC 61850 interface in <JVG Smart GW>, v1.0", "Model Implementation Conformance Statement for the IEC 61850 interface in <JVG Smart GW>, v1.0", "TISSUES Implementation Conformance Statement for the IEC 61850 interface in <JVG Smart GW>, v1.0" and product's extra information for testing "Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in <JVG Smart GW>, v1.0".


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

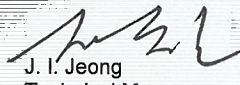
1	Basic Exchange (20/22)	12a	Direct Control (7/7)
2	Data Sets (7/9)	12b	SBO Control (9/9)
2+	Data Set Definition (4/4)	12c	Enhanced Direct Control (7/7)
4	Setting Group Selection (4/4)	12d	Enhanced SBO Control (9/9)
4+	Setting Group Definition (2/2)	13	Time Synchronization (4/4)
5	Unbuffered Reports (16/18)	14	File Transfer (6/8)
6	Buffered Reports (20/22)		

This Certificate includes a summary of the test results as carried out at KERI in Republic of Korea with UniCA IED simulator version 5.29.06, Anvil 3.8.0.0 and UniCA 61850 analyzer version 5.31.00. This document has been issued for information purposes only, and the original paper copy of the KERI report: 2017TS03185 will prevail.

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

Republic of Korea, December 11, 2017

  
Y. J. Lee  
Executive Director  
Power Apparatus Testing and Evaluation Division

  
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Technical Manager

<sup>1</sup> Level A – Independent Tester with certified ISO 17025 Quality System

<sup>2</sup> TPCL - Test procedures change list

Applicable Test Procedures from the UCA International Users Group Device Test Procedures for Client System with IEC 61850-8-1 interface, version 1.1 with TPCL version 1.2

Conformance Block	Mandatory	Conditional
1: Basic Exchange	cAss1, cAss2, cAss3, cAss4, cAssN1, cAssN4, cAssN5, cAssN6	cAssN7 cSrv1, cSrv2, cSrv3, cSrv4, cSrv5, cSrv6, cSrvN1, cSrvN3, cSrvN4, cSrvN5, cSrvN6
2: Data Sets		cDs1, cDs2, cDs3, cDs5, cDsN1a, cDsN1b, cDsN2
2+: Data Sets Definition	cDs6, cDsN4	cDs7, cDsN5
4: Setting Group	cSg2, cSgN1	cSg1, cSg3
4+: Setting Group Definition	cSg3, cSg4	
5: Unbuffered Reporting	cRp3, cRp4, cRp5, cRp8, cRp9, cRp10, cRpN2, cRpN3, cRpN7, cRpN8	cRp1, cRp2, cRp6, cRp7, cRpN1, cRpN4
6: Buffered Reporting	cBr3, cBr4, cBr5, cBr8, cBr9, cBr10, cBr11, cBr12, cBrN2, cBrN3, cBrN7, cBrN8, cBrN9	cBr1, cBr2, cBr6, cBr7, cBr13, cBrN1, cBrN4
12a: Direct control	cCtl4, cCtlN1 cDOs1, cDOs2	cCtl1, cCtl2, cCtl3
12b: SBO control	cCtl4, cCtlN1 cSBOs1, cSBOs2, cSBOs3	cCtl1, cCtl2, cCtl3, cSBOs4
12c: Enhanced Direct Control	cCtl4, cCtlN1 cDOes1, cDOes2	cCtl1, cCtl2, cCtl3
12d: Enhanced SBO control	cCtl4, cCtlN1, cSBOes1, cSBOes2, cSBOes3	cCtl1, cCtl2, cCtl3 cSBOes4
13: Time sync	cTm1	cTm2, cTmN1, cTmN2
14: File transfer	cFt1, cFt2, cFt3, cFtN1, cFtN2	cFt5