

CENTRAL POWER RESEARCH INSTITUTE

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IEC 61850 Certificate ^{Level A}



No. UARC/PL/C0074/2012

Issued to:

M/s. Bharat Heavy Electricals Ltd.,
Corporate Research and Development,
Vikas Nagar,
Hyderabad-500093
India

For the product:

Transformer Protection Relay
Model : 2012- BHEL TPU-01
Hardware Version: 1.0
Software Version: 1.0
Serial No.: 01

Issued by: CENTRAL POWER RESEARCH INSTITUTE, India

**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, the UCA International Users Group Device Test Procedures version 2.3 with Test Procedures Change List (TPCL) version 1.5, the product's protocol, model and technical issue implementation conformance statements: "PICS version V1.00", "MICS version V1.00", "TICS version V1.00" and the extra information for testing: "PIXIT version V1.00".


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 (20/24)	6 Buffered Reporting (18/21)
2 Data Sets (5/6)	9a GOOSE Publish (9/13)
2+ Data Set Definition(23/23)	9b GOOSE Subscribe(9/11)
3 Substitution(4/4)	12a Direct Control (5/12)
4 Setting Group Selection(3/3)	12b SBO Control (7/15)
4+ Setting Group Definition(7/7)	13 Time Synchronization (3/5)
5 UnBuffered Reporting (17/19)	14 File Transfer(6/7)


This Certificate includes a summary of the test results as carried out at CPRI, Bangalore, India with UniCASim 61850 version 3.25.02 test system running test suit "61850 Conformance Test v3.24.00" and UniCASim 61850 analyzer version 4.25.00. This document has been issued for information purposes only and the original paper copy of the CPRI Report No.: UARC/PL/T0074/2012; Dated: 23-Nov-2012 will prevail.

The tests has been carried out on one single specimen of the products as referred above and submitted to CPRI by M/s. Bharat Heavy Electricals Ltd. The manufacturer's production process has not been assessed. This Certificate does not imply that CPRI has certified or approved any product other than the specimen tested.

Bangalore, 23-Nov-2012


(V. Arunachalam)
Additional Director





(Pradish M)
Test Engineer

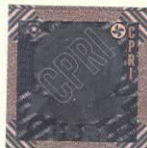
Report Reference No: UARC/PL/T0074/2012; Dated: 23-Nov-2012


Applicable Test Procedures from the UCA International Users Group Device Test Procedures version 2.3 with TPCL version 1.5

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	DsetN1b, DsetN16
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	--
3: Substitution	Sub1, Sub2, Sub3, SubN1	--
4: Setting Group Selection	Sg1, SgN1a	Sg3
4+: Setting Group Definition	Sg2, Sg4, SgN1b, SgN2, SgN3, SgN4, SgN5	--
5: Unbuffered Reporting	Rp1, Rp2, Rp3, Rp4, Rp7, Rp10, Rp12, RpN1, RpN2, RpN3, RpN4	Rp5, Rp6, Rp8, Rp9, RpN5, RpN7
6: Buffered Reporting	Br1, Br2, Br3, Br4, Br7, Br8, Br9, Br12, Br14, BrN1, BrN2, BrN3, BrN4, BrN5	Br5, Br10, Br11, BrN7
9a: GOOSE Publish	Gop2, Gop3, Gop4, Gop7, Gop10a	Gop1, Gop6, Gop10b, GopN1
9b: GOOSE Subscribe	Gos1a, Gos2, Gos3, GosN1, GosN2, GosN3, GosN4, GosN5, GosN6	--
12a: Direct Control	CtlN3, CtlN8, Dons1, Dons3	CtlN11
12b: SBO Control	Ctl3, CtlN1, CtlN2, CtlN3, CtlN4, SBOs2	CtlN11
13: Time Synchronization	Tm1, Tm2, TmN1	--
14: File Transfer	Ft1, Ft2ab, Ft4, FtN1ab	Ft2c, FtN1c

All configuration file and data model tests have been successfully performed for the product variants using the same hardware version "1.0" and software version "1.0".


(V. Arunachalam)
Additional Director




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