NOTICE INVITING EXPRESSION OF INTEREST FOR Substation Automation System (SAS) HMI software

EOI REFERENCE NUMBER EDN/EOI/SAS-HMI

This document contains 18 pages

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BHEL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Applicant upon the statements contained in this EOI.

The issue of this EOI does not imply that BHEL is bound to select and shortlist Applicants for next stage or to enter into any technology tie-up agreements with shortlisted Applicants for the Project.

The Prospective Business Partner shall bear all costs associated with the preparation, technical discussion / presentation and submission of EOI and BHEL shall in no case be responsible or liable for these costs regardless of the conduct or outcome of the EOI process.

BHARAT HEAVY ELECTRICALS LIMITED

ELECTRONICS DIVISION

INVITES EXPRESSION OF INTEREST FROM OEMs FOR

BUSINESS SHARING AGREEMENT

FOR HMI Software for Substation Automation System (SAS)

CONTACT PERSON AND SCHEDULE OF EVENTS

Contact Person: Mr. Alok Mandal

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Schedule of Events

Last date for receipt of responses from prospective technology partners:	16:30 HRS Indian Standard Time, 29th February 2016.
All corrigenda, addenda, amendments, clarifications, time extensions etc. related to this EoI will be hosted on	www.bhel.com and www.bheledn.com
Mode of Submission of Documents	Duly signed by the authorized representative, In sealed cover to the above person / mail to the e-mail ID so as to reach on or before the date mentioned above. The cover shall be super scribed with Reference number and the words "Expression of Interest – SAS-HMI". In case of offer by e-mail, the words "Expression of Interest – SAS-HMI" shall be in the Subject field of e-mail. In case of submission of EOI through mail to the e-mail ID, hard copy shall be enclosed along with printout of e-mail and sent to the above person so as to reach on or before 7th March 2016.

EXPRESSION OF INTEREST FOR BUSINESS SHARING AGREEMENT FOR DESIGN, SUPPLY, TESTING, COMMISSIONING, MAINTAINING AND TRAINING FOR SAS HMI Software

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SECTION - 1

EXPRESSION OF INTEREST

1.1 ABOUT BHEL

Bharat Heavy Electricals Limited (BHEL) is India's largest engineering and manufacturing company of its kind engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of products, systems and services for the core sectors of the economy, viz. Power, Transmission, Industry, Transportation, Renewable Energy, Oil & Gas and Defence. Established in 1964, BHEL has a widespread network of 17 Manufacturing Units, two Repair Units, four Regional Offices, eight Service Centres, eight Overseas Offices, six Joint Ventures, fifteen Regional Marketing Centres and current project execution at more than 150 project sites across India and abroad.

The company has established capability to deliver 20,000 MW p.a. of power equipment to address the growing demand for power generation equipment. BHEL has 1,57,568 MW of Power Generating Equipment installations worldwide up to March 2015. In India, out of total Power Generating Equipment installations of 241 GW, 137 GW is the total installed capacity of BHEL supplied equipment. BHEL's 57% share in India's total installed capacity and 65% share in the country's total generation from thermal utility sets indicates BHEL's contribution in the power sector in India. . BHEL manufactured power plants have also been installed across 21 countries including Malaysia, Oman, Iraq, the UAE, Bhutan, Egypt and New Zealand.

Details about the entire range of BHEL's products and operation and other details can be accessed by visiting our website www.bhel.com.

1.2 ABOUT ELECTRONICS DIVISION

Electronics Division (EDN) (www.bheledn.com) along with its Electronics Systems Division (ESD) situated in Bangalore is a leading supplier of new generation power plant automation and control systems. EDN has also emerged as a leading player in the field of power transmission and distribution, industry, transportation and renewable energy sources. The state of the art equipment and systems manufactured in EDN/ESD meet the demanding requirement of both the national and international markets in terms of technical specifications and quality.

This Division has established references both in India and overseas by successful installation of power plant automation and photo voltaic systems. Besides providing unified solutions for various control systems application, EDN proudly holds the largest market share for power plant automation systems in India. Further, it has been accredited with Quality Management Systems (ISO 9001), Environmental Management Systems (ISO 14001), Occupational Health & Safety Management Systems (OHSAS 18001) and ISMS (ISO 27001) certifications.

1.3 BHEL's EXPERIENCE IN Substation Automation

Since 2000, the BHEL EDN has supplied Switchyard / Substation SCADA for Power Plants in Generation Segment. SCADA systems are designed on in-house maxDNA, Valmet DNA platforms and supplied to more than 50 installations in India & Abroad. The main functions of SCADA supplied are acquiring status, alarms, events and analog parameters from switchyard equipment, issuing control commands to switchyard equipment, interfacing to Load Dispatch Center (LDC), Numerical Relays, Multi-Function Meters on various communication protocols and generation of various reports viz shift reports etc. In addition to supplying SCADA systems for switchyards and substations, the group has actively involved in design, supply and commissioning of Energy Management Systems, Electrical Control Systems, Photo Voltaic SCADA systems. BHEL EDN also manufactures IEC 61850 compliant Bay control Units (BCU) for Substation Automation.

1.4 EXPRESSION OF INTEREST (EOI)

BHEL proposes to address the present and future IEC 61850 based HMI software interface for Substation Automation System (SAS) requirements from its Electronics Division (EDN) located on Mysore Road, Bangalore. This EOI is published for seeking responses from Original Equipment Manufacturers (OEMs) who are willing to be associated with EDN to enable it to offer HMI/SCADA software solution in SAS segment, through a Business Sharing Agreement (BSA) and training of BHEL engineers for long term service support.

1.5 A COLLABORATIVE APPROACH

BHEL intends to have a long term association with the prospective technology partner to enable it to promote and bid for SAS tenders. In the initial phase, the collaborative partnership will be for a period of five years, after which the same will be reviewed. However, support for systems already supplied during the collaboration period shall continue to be provided for meeting the contractual requirements of the projects.

1.6 BUSINESS MODEL

BHEL proposes to have an association with the Prospective Business partner to enable BHEL to promote and bid for SAS tenders. The selected business partner, shall supply required HMI software and associated licenses including customization of HMI software to meet the customer requirements. The selected business partner shall also provide necessary training to BHEL personnel & also extend support including factory & site visits etc, to enable BHEL in successful system integration, testing (Functional / Type tests), commissioning, successful conduct of customer acceptance tests including FAT (Factory acceptance tests) and SAT (Site acceptance tests). The selected business partner shall also take on guarantee and warranty obligations including long term support in line with project requirements. To meet Client (Customer) requirements, the Prospective business Partner shall offer to develop / customize HMI software

1.6.1 QUALIFYING REQUIREMENTS

Only OEMs meeting the Qualifying Requirements (QR) as described in Section–3 may respond to this Expression of Interest and will be considered for further evaluation.

1.7 TYPICAL REQUIREMENTS

- Technical requirements of SAS HMI software are covered in Section – 2. Prospective applicants shall submit detailed technical offer of the system being offered along with compliance to BHEL's technical specification.
- The applicant shall also submit details of the business model proposed by them as part of this EOI.

1.8 METHODOLOGY OF BUSINESS ARRANGEMENT BETWEEN BHEL AND PROSPECTIVE BUSINESS PARTNER

A. As part of technical evaluation, the applicants, if called upon by BHEL, shall make technical presentation in BHEL-EDN including demonstration of the features of HMI software modules being offered

B. Prospective applicants shall be shortlisted on the basis of technical suitability and qualifying criteria as mentioned in this EOI.

C. Further to the above, the shortlisted applicants shall be invited for the second stage of evaluation. Detailed discussions on Business Model including nature & details of proposed co-operation, will be held & finalized.

D. Based on finalized business model, commercial proposals of the applicants will be sought from the shortlisted applicants and same shall be evaluated for finalizing the business partner.

E. BHEL reserves the right to choose the business model to be adopted.

1.8.1 Typical Arrangement

The prospective business partner shall be the Technology leader and shall indicate in their response to this EOI the proposed arrangement for information sharing to BHEL-EDN along with the milestones and time frame.
This shall however be mutually discussed considering the long term support implications at the time of entering into a final agreement.

1.8.2 Information Sharing

In response to the EOI, the prospective technology partner shall clearly state his willingness to share the following with BHEL.

a. Provide technical / marketing support on need basis, to enable BHEL receive maximum business.

b. Complete Technical documentation for implementation of various SAS HMI software modules, interface modules, testing methods, flow chart etc., shall be provided to BHEL as required by the Customer. The software must have provision for fine-tuning and customization to suit the end user's requirements.

c. Training to BHEL engineers, deputation of OEM's experts and assistance in system design and testing of the SAS solution, know-how and know-why to enable BHEL to provide long term product support.

d. Support to BHEL for commissioning including deputation of OEM's experts on need basis, to enable troubleshooting of the HMI software at site.

e. Technology upgrades including addressing of obsolescence issues/software updates covering all the above.

f. Demo license with full HMI software package, for a period of 6 months shall be provided to evaluate the SAS HMI software

g. If any Type tests compliances are required to be met by the SAS HMI software to meet SAS requirements, copy of Type test certificates or type test procedures to be provided by the prospective business partner.

h. The prospective technology partner shall provide details of all the standards followed. Up to date Compliance certificates for the standards followed shall be provided for the entire period of BSA.

i. Repair, trouble-shooting procedures, database of failures, User/Operator manual, maintenance and engineering Manuals to be provided so as to enable BHEL to provide product support to Customer.

1.9 RESPONSE TO THE "EXPRESSION OF INTEREST" – (EOI)

BHEL-EDN will analyze the responses received towards this EOI to shortlist prospective Business partners.

1.9.1 Checklist of Documents

The information required to be submitted along with the EOI by the interested OEMs are given in Section–5.

1.10 MISCELLANEOUS:

A. Notwithstanding anything contained in this EoI, BHEL reserves the right to accept or reject any Application and to annul the EOI Process and reject all Applications, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefore. In the event that BHEL rejects or annuls all the Applications, it may, at its discretion, invite all eligible OEMs/Suppliers to submit fresh Applications.

B. BHEL reserves the right to disqualify any Applicant during or after completion of EoI process, if it is found there was a material misrepresentation by any such Applicant or the Applicant fails to provide, within the specified time, supplemental information sought by BHEL.

C. BHEL reserves the right to verify all statements, information and documents submitted by the Applicant in response to the EoI. Any such verification or lack of such verification by BHEL shall not relieve the Applicant of his obligations or liabilities hereunder nor will it affect any rights of BHEL.

1.11 GOVERNING LAWS & JURISDICTION:

The EoI process shall be governed by, and construed in accordance with, the laws of India and the Courts at Bangalore, Karnataka (India) shall have exclusive jurisdiction over all disputes arising under, pursuant to and/ or in connection with the EoI process.

SECTION - 2

TYPICAL REQUIREMENTS FOR IEC61850 SAS HMI SOFTWARE

2.1 GENERAL REQUIREMENTS:

The Substation Automation system (SAS) HMI software shall be used for control and monitoring of switchgear ranging from 415V to 765KV at various Power Generating, Transmission and Distribution Substations/Switchgear.

The SAS HMI software shall have the following modules

1. Main server – To perform data processing functionalities.
2. Communication front end: Data acquisition functionalities on various protocols as listed out elsewhere in the document.
3. Man Machine Interface (MMI) & Runtime module: Graphical user interface to present the process data in MMI screens, historical and online trend, alarms & events.
4. Historical data server: To store the processed data.
5. Engineering Editor module: To create MMI graphic pictures, Alarm & Event configuration, Report configuration, Communication front end configuration, User friendly IEC 61850 variable mapping, User friendly variable mapping to MMI graphic display, Configuration of multiple user access levels. Configuration of IEC 61850 variables shall be either through online scanning or by importing SCL files. Standard symbols and functions related to Substation Automation system shall be embedded in the SAS HMI software. It shall also be possible to create/import new function or new symbol in the libraries. It shall be possible to calculate values using various mathematical/logical functions.
6. Gateway – To send data to upper level SCADA, Remote control center and other third party systems. The protocols to be supported is given elsewhere in the document

The system redundancy shall be possible at following level

1. Main server redundancy
2. Communication front end redundancy
3. MMI redundancy
4. Historical data server redundancy
5. Gateway redundancy
6. Network redundancy

No single failure in HMI software module shall affect the System availability..

The SAS-HMI software along with all of its module shall be able to install and run on windows 7 OS, windows 2003R or 2008R, server OS. Support for latest windows OS shall also to be ensured. Dongle based or soft license shall be possible for HMI software modules.

Detailed specifications of HMI components (HW/SW) to ensure compatibility with SAS-HMI software so as to enable BHEL to supply the same for the project shall also be provided.

PROTOCOLS SUPPORT

The Substation Automation System HMI software shall support the following protocols:

1. IEC 61850 client
2. MODBUS RTU serial Slave
3. MODBUS RTU serial Master
4. MODBUS TCP Server
5. MODBUS TCP Client
6. IEC 60870-5-101 Slave
7. IEC 60870-5-101 Master
8. IEC 60870-5-103 Master
9. IEC 60870-5-104 Server
10. IEC 60870-5-104 Client
11. OPC DA,AE Client & Server
12. SNMP for network management

The Substation Automation System HMI software shall be capable of the following minimum functions:

1. Status supervision
2. Measurements
3. Events Handling
4. Alarm Handling
5. Control operation
6. Switchgear interlocking
7. Synchro-check operation
8. Trending
9. Automatic switching sequences
10. Transformer tap-changer control
11. Data archiving of historical data
12. Report generation and printing
13. Control center communication

1. Status Supervision
    a. Monitoring of position (Open/Close/Intermediate/Faulty) of Circuit Breaker, Isolators and Earth Switches shall be possible.
    b. Monitoring of Transformer tap changer position shall be possible
    c. Every detected change of position shall be immediately displayed in the single line diagram on the MMI screen and shall be possible to be record in the event list
    d. Alarm shall be initiated if the position of equipment is inconsistent or if the time required for operating mechanism to change positions exceeds a predefined limit.
2. Measurements
    a. Analog values acquired shall be displayed on the MMI screen
    b. Analog values refresh/update rate shall be less than one second
    c. Threshold limit values shall be selectable for alarm indications
    d. Monitoring of graphical trends of various parameters

3. Events Handling
    a. The events shall be stored with 1 ms time stamp resolution.
    b. It shall be possible to call up chronological event list on the MMI screen at any time.
    c. Event list shall be grouped or filtered as per Date and time, Bay, Device, Functions and Event severity
4. Alarm Handling
    a. Faults and errors occurring in substation shall be listed in an alarm list
    b. The alarm list shall substitute a conventional alarm tableau, and shall constitute an evaluation of all station alarms. It shall contain unacknowledged alarms and persisting faults. The date and time of occurrence shall be indicated.
    c. Each alarm shall be reported on one line that contains Date and time of alarm, Naming of the alarm object, descriptive text, acknowledgement state
    d. Whenever alarm condition occurs, the alarm condition must be shown on the alarm list and must be displayed in the flashing state along with an audible alarm.
    e. After acknowledgement of alarm, it should appear in a steady state and audible alarm shall stop.
    f. The alarm should disappear only if the alarm condition has physically cleared and the operator has reset the alarm with the alarm command.
    g. Alarm list shall be grouped or filtered as per Date and time, Bay, Device, Functions, Alarm group, Alarm severity and acknowledgement state

5. Control operation

    The control operation must handle

    a. Select Before operate with two step command (select and confirm) shall be possible for control operation.
    b. Selection of equipment and type of command for control operation (opening or closing)
    c. It shall be possible to restrict the control operation with user access level.
    d. Execution or cancellation of command
    e. Execution of the command when the conditions of interlocks, synchro-check or other conditions are met
    f. Capability of overriding of interlocks and execution of the automatic switching sequences
    g. In case of failure of command execution, the reason for failure shall be displayed
6. Switchgear Interlocking:
    a. The interlocking functions shall grant permission to operate apparatuses such as disconnectors and earthing switches.
    b. The interlocking functions shall also ensure fail-safe switching.
    c. It shall be possible to create interlocks for any control operation through user friendly GUI.
    d. It shall be possible to view the interlock conditions along with the satisfying

criteria in a user friendly graphic page or pop-up for any control operation.

7. Synchro-check operation
    a. The phasing function is to be carried out when two asynchronous systems are going to be connected, so that stress is avoided on the network and its components. The phasing function shall compensate for measured slip frequency as well as circuit breaker closing times.
    b. For the control of the synchro-check function, on the following information to be displayed in HMI:
        - The six measured magnitudes voltage, phase and frequency at both sides (V1, φ1, f1, V2, φ2, f2) and the corresponding differences (ΔV, Δφ, Δf), related to the permissible synchro-check limits.
        - The voltage comparison figure (from the above mentioned four) applied
        - In case of synchro-check operation failure, the reasons of failure (out of range voltage or/and angle or/and frequency).
        - Notification message "closing command of the circuit breaker" in case of successful synchro-check function.
8. Trending
    a. Dynamic configuration of Trend Viewer look and feel in design and run modes, with optional locking
    b. Simultaneous display of real time and historical data
    c. Zoom in and zoom out in time axis or both time and value axes
    d. Cursor for reading selected values
    e. Multiple dynamic and scrolling scales
    f. Dynamic addition, deletion and substitution of variables by operator at run time
    g. Printing of displayed trends on graphical printers

9. Automatic Switching Sequences
    a. Sequence control is an automatic function that reduces the interaction between the operator and the system. With one command, the operator shall be able, for example, to start a sequence that will end with the processed device connected to one of the busbars.
    b. The sequence shall perform the same checks and operations every time it starts, which shall ensure safe operation.
    c. The following minimum sequence functions shall be possible:
        - Connect a transmission line (feeder) to a specific busbar
        - Disconnect a transmission line.
        - Connect an autotransformer to a specific busbar
        - Disconnect an autotransformer
        - Connect a power plant unit feeder to a specific busbar
        - Disconnect a power plant unit feeder
        - Connect a transformer to a specific bus (if required)
        - Disconnect a transformer (if required)
        - Busbar transfer.

10. Transformer Tap changer control
    a. Tap changer control (YLTC) shall be possible from the HMI software

11. Data archiving of Historical data
    a. The historical data shall be possible to archive in open database format like SQL/RDBMS etc.,
    b. It shall be possible to take back up of historical data to a mass storage for future use.

12. Reports
    a. It shall be possible to create flexible and customized reports with advanced data visualization including tables and charts.
    b. The reports shall be fully user-designed and include parameterization capabilities enabling operator to specify report output according to simple input parameters such as values, dates or identifiers.
    c. Several output formats like Excel or PDF shall be possible.
    d. The reports shall provide time-related follow-ups of measured and calculated values. The data displayed shall comprise:

    Trend Reports:
    - Day (Mean, Peak)
    - Week (Mean, Peak)
    - Month (Mean, Peak)
    - Semi-annual (Mean, Peak)
    - Year (Mean, Peak)

    Historical Reports of selected Analogue Values:
    - Day (at 15 minutes interval)
    - Week
    - Month
    - Year

    e. It shall be possible to select displayed values from the database in the process display, on-line. Scrolling between e.g. days shall be possible. Unsure values shall be indicated. It shall be possible to select the time period for which the specified data are kept in the memory.

    f. Following shall be printed on demand:
    - Daily voltage and frequency curves depicting time on X-axis and the appropriate parameters on the Y-axis. The time duration of the curve is 24 hours
    - Weekly trend curves for real and derived values
    - Printouts of the maximum and minimum values and frequency of occurrence and duration of maximum and minimum values for each analogue parameter for each circuit in 24 hr period
    - Provision shall be made for logging information about breaker status like number of operation with date and time indications
    - Equipment operation details shift wise and during 24 hours

- Printout on adjustable time period as well as on demand for MW, MVAR, Current, Voltage on each feeder and transformer as well as Tap Positions, temperature and status of pumps and fans for transformers
- Printout on adjustable time period as well as on demand system frequency, average frequency and MWH & VARH for each 15 minute time block.

13. Control center communication
    a. The SCADA software shall be able to communicate with control center through gateway on IEC 60870-5-101 and IEC 60870-5-104 protocols.
    b. The SCADA software shall simultaneously respond to independent scans and commands from different control centers.
    c. It shall possible to transmit the SOE/Alarms of SAS to control center with source (IED) time stamp.
    d. It shall be possible to control the entire substation from remote control center.

14. Other Software modules:
    a. The prospective applicants can also indicate in his offer, additional proven software modules developed by them for SAS / SAS related applications and not covered in this EOI.

SECTION - 3

QUALIFYING REQUIREMENTS

3.1 Technical Capability

The applicant shall be an OEM who has designed and supplied HMI software for a minimum of two Substation Automation System projects and which have been in operation in field for atleast 2 years in India or abroad. The Prospective applicants to indicate the Type & Quantity of such systems supplied in the last 5 years against commercial orders. This data may be furnished as per the format below:

The offered HMI shall have IEC61850 Client compliant certificate issued by any authorized National laboratory or any reputed international laboratory (KEMA or equivalent)

PROFORMA FOR PROSPECTIVE TECHNOLOGY PARTNER'S QUALIFYING EXPERIENCE

SL. NO.	CUSTOMER NAME, ORDER REFERENCE & DATE	ITEM DESCRIPTION	CUSTOMER'S CONTACT DETAILS • NAME • DESIGNATION • PHONE NO. • EMAIL ID	DATE OF SUPPLY / COMMISSIONING	PERFORMANCE CERTIFICATE FROM CUSTOMER REGARDING SATISFACTORY PERFORMANCE

3.2 Information Transfer

Prospective Business Partner should be willing to transfer the information/software related to sourcing, inspection, testing, commissioning, trouble shooting, servicing, maintenance, and quality assurance methods etc., for the systems. Specific confirmation on the points listed in Section–1, Cl. 1.8 are to be furnished.

SECTION – 4

COMPANY PROFILE

4.1	**GENERAL INFORMATION:**
4.1.1	NAME OF COMPANY (ownership details for the last 5 years):
4.1.2	DETAILS OF HEAD OFFICE: ADDRESS: TELEPHONE: FAX: E-MAIL: WEB SITE: NO. OF COUNTRIES OPERATING FROM:
4.1.3	DETAILS OF FACTORY / WORKS: ADDRESS: TELEPHONE: FAX: E-MAIL:
4.1.4	DETAILS OF MARKETING AGENT (OUTSIDE INDIA, IF ANY): ADDRESS: TELEPHONE: FAX: E-MAIL:
4.1.5	DETAILS OF INDIAN AGENT, IF ANY: ADDRESS: TELEPHONE: FAX: E-MAIL:
4.1.6	CHIEF EXECUTIVE:
4.1.7	CONTACT PERSON(S) FOR PRODUCT OFFERED: NAME(S): DESIGNATION: ADDRESS: TELEPHONE: FAX: E-MAIL:
4.1.8	YEAR OF ESTABLISHMENT:
4.1.9	Manpower in design, R&D, testing, QC and after sales support
4.1.10	PARTICULARS OF PRODUCT INCLUDING SPECIFICATION AND RANGE: (ATTACH BROCHURES AND CATALOGUES) Compliance to international standards such as ISO, IEEE,

4.2	**COUNTRY OF ORIGIN FOR OFFERED PRODUCTS AND TECHNOLOGY**
4.3	**FINANCIAL INFORMATION:**
4.3.1	ANNUAL TURNOVER AND PROFIT-AFTER-TAX FOR PREVIOUS YEARS AS INDICATED: (attach copies of audited Balance Sheet and Profit& Loss Account) YEAR – 2012: YEAR – 2013: YEAR – 2014: YEAR – 2015: (Break-up of overall revenue and revenue from HMI Software)
4.3.2	DUNN AND BRADSTREET REPORT FOR THE COMPANY
4.4	**QUALITY AND ENVIRONMENTAL MANAGEMENT SYSTEM:**
4.4.1	IS THE COMPANY ISO: 9001 OR EQUIVALENT CERTIFIED: YES / NO. IF YES, ENCLOSE COPY OF CERTIFICATE
4.4.2	IS THE COMPANY ISO: 14001 OR EQUIVALENT CERTIFIED: YES / NO. IF YES, ENCLOSE COPY OF CERTIFICATE
4.4.3	IS THE COMPANY OHSAS 18001 OR EQUIVALENT CERTIFIED: YES / NO. IF YES, ENCLOSE COPY OF CERTIFICATE
4.4.4	IS THE COMPANY ISO 27001 OR EQUIVALENT CERTIFIED: YES / NO. IF YES, ENCLOSE COPY OF CERTIFICATE
4.5	**EXPERIENCE LIST FOR OFFERED/SIMILAR ITEMS**
4.6	**LIST OF SOFTWARE COMPLIANCE STANDARDS FOR DEVELOPMENT, DESIGN, TESTING AND LIFE CYCLE MANAGEMENT**
4.7	**ANY OTHER INFORMATION**

SECTION – 5

CHECKLIST OF DOCUMENTS TO BE SUBMITTED AS RESPONSE TO EOI

Information/documents to be provided along with response to Expression of Interest:

Sl. No.	Information / Document	Compliance
1	Covering Letter signed by an Authorized Signatory on Company letterhead, listing clearly the Enclosures.	Yes / No
2	Technical Write-up describing features for SAS HMI software	Yes / No
3	IEC61850 Client Compliance Test Certificate	Yes / No
4	Reference list of systems supplied/commissioned	Yes / No
5	Willingness for Business Sharing Agreement (BSA)	Yes / No
6	Proposed Business Model by the applicant	Yes / No
7	Organization Chart	Yes / No
8	Details required in Section–1 – Clause 1.8.2 – a to i	Yes / No
9	Filled-up Qualifying Criteria Format – Section–3	Yes / No
10	Filled-up Company Profile – Section–4	Yes / No