

Tender Specification No BHE/PW/PUR/CSIT-VC/1313



Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Power Sector - Western Region
345-Kingsway, Nagpur-440001

Request for Proposal

FOR

Video Conferencing Solution

IMPORTANT INFORMATION

1. The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site (www.bhel.com ---> Tender Notification -> List of Banned Firms)
2. Statutory Requirements as applicable for this project shall be complied with.

3. Modality of Tendering and Ordering:

Subject tender is floated for finalizing the Rate Contract for Supply Installation and Maintenance of the Video Conferencing Solution on Lease basis for 5 Years at Various BHEL Offices/Units/Project sites.

BHEL PSWR shall carryout the tendering activity and finalise the Rate Contract. However respective Units/regions of BHEL shall release order directly to the Rate Contract Agency for Supply Installation and Maintenance of the Video Conferencing Solution on Lease basis for 5 Years.

4. Broad Terms & Conditions of Reverse Auction

Further to Clause 4.14.5 of this document following are the broad terms and conditions of Reverse Auction:

- 4.1. Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).
- 4.2. BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids. In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of „online sealed bid“ by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- 4.3. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.

- 4.4. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit 'online sealed bid' in the Reverse Auction. Non-submission of 'online sealed bid' by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- 4.5. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- 4.6. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
- 4.7. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
- 4.8. Bidders have to fax the Compliance form before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
- 4.9. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for noncompliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
- 4.10. Reverse auction will be conducted on scheduled date & time.
- 4.11. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
- 4.12. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, as provided on case-to-case basis to Service provider within two working days of Auction without fail.
- 4.13. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
- 4.14. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
- 4.15. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
- 4.16. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.

4.17. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

Contents

1. REQUEST FOR PROPOSAL:	7
1.1 Objective:	7
2. Eligibility Criteria:	7
3. General Instructions to Bidders:	9
4. Instructions and Guidelines to Bidders:	10
4.1 Introduction:	10
4.2 Tenderer to Inform Himself Fully	10
4.3 Cost of Bidding:	10
4.4 Procedure for Submission & Opening of Bids:	10
4.5 Marking On Envelope	11
4.6 Bid Submission:	11
4.7 Bid Opening	12
4.8 Validity of Offer	12
4.9 Deviations:	13
4.10 Language of the Bid & Corrections:	13
4.11 Rejection Of Bid and Other Conditions	13
4.12 Clarification on Bidding Documents:	14
4.13 Amendment of Bidding Documents:	14
4.14 Evaluation and Comparison of Bids:	14
5. Commercial Terms & Conditions for Bidder	15
5.1 Security Deposit	15
5.2 Return Of Security Deposit	17
5.3 Taxes:	17
5.4 Purchaser's Right to accept or Reject any or all Bids:	17
5.5 Exclusions:	17
5.6 Statutory Obligations:	17
5.7 Liabilities from the Contract	17
5.8 Delivery & Installation Schedule:	17
5.9 Penalty for Late Delivery:	17
5.10 Ethical Standard:	18
5.11 Integrity Pact:	18
5.12 Non-Disclosure Agreement:	18
5.13 Insurance :	18
5.14 Indemnity:	18

5.15	Risk Purchase:	19
5.16	Arbitration:	19
5.17	Additional Facility Required In Future On Supplied Equipment	19
5.18	Force Majeure:	19
5.19	Patent & Trademark:	19
5.20	Terminal payment:	19
5.21	Merger & Acquisition:	20
6.	Special Terms and Conditions.....	20
6.1	Scope of Work:.....	20
6.2	Installation:.....	20
6.3	Performance Guarantee Tests (PG Tests):.....	21
6.4	Commissioning Certificate	21
6.5	Project Implementation Schedule:.....	22
6.6	Shifting and Redeployment:	22
6.7	Service Level Agreement (SLA):.....	22
6.8	Penalty for SLA Non-Conformance:.....	23
6.9	Availability of Spares:.....	24
6.10	Terms of Payment:	24
6.11	Income Tax Depreciation:	24
6.12	Sub-Contracting:	24
6.13	Functional Scope for Hardware & Software:	24
6.14	Training:	25
6.15	Warranty & Support:	25
6.16	Warranty shall cover the following:	26
6.17	MCU Administration:.....	27
6.18	Performance Monitoring and Reporting:.....	27
6.19	Backup and Restore:.....	28
6.20	Supply during Warranty (Free of Cost):.....	28
6.21	Offline Support:.....	28
6.22	Special Clauses:.....	28
7.	Technical Requirements	31
7.1	Basic Design Requirements for Multipoint Conferencing Unit:	31
7.2	Basic Design Requirements for Recording & Media Streaming System:	35
7.3	Basic Design Requirements for VC Systems for Heads, Manufacturing Units & Power Sector Regional Head Quarters, Project sites:	36
7.4	Firewall Traversal.....	44
7.5	Auto Speaker Tracking Camera	44
8.	List of Annexures:	46

1. REQUEST FOR PROPOSAL:

1.1 Objective:

The objective of this tender is to invite bids from the prospective bidders for the supply, installation and maintenance of the Video Conferencing Solution on 5 year lease basis. The solution should be capable of integrating with the existing VC setup in the organization & it shall be responsibility of the Vendor to integrate the same. The detail of existing setup is as per **Annexure I**.

2. Eligibility Criteria:

The bidder shall be the OEMs of the VC Systems / Endpoints or authorized partner / system integrator of OEM. In case of bidder being an authorized partner / system integrator of the OEM, the bidder shall submit an authorization letter from the OEM authorizing it to bid specifically for this tender as per format enclosed as **Annexure-II**.

2.1 For the OEM of the Solution:

- 2.1.1** Must be a manufacturer of MCU, Endpoints&Recording & Streaming Server. Must submit a self-certificate to this effect from the company's authorized signatory.
- 2.1.2** The OEM shall have a registered office in India AS ON LAST DATE OF OFFER SUBMISSION. A documentary proof with complete address details and contact person details shall be submitted along with the offer.
- 2.1.3** The OEM should have been present in India for at least last 5 years AS ON LAST DATE OF OFFER SUBMISSION. A documentary proof shall be submitted along with the offer.
- 2.1.4** The OEM shall have at least 1 Support offices in India AS ON LAST DATE OF OFFER SUBMISSION for technical support and problem resolution. List of service centres in India to be provided.
- 2.1.5** The OEM must have supplied directly or through any of its partners or system integrators, the MCU/full HD or HD VC end Points in any enterprises in India during the last 02 years AS ON LAST DATE OF OFFER SUBMISSION. The OEM must submit documentary evidence of the orders received and successful installation of the equipment from the customer in this regard.
- 2.1.6** The OEM must undertake that they would carry out Installation / Configuration / Commissioning / Operation & Maintenance of all the items like MCU, Endpoints, Display Units, etc, and associated software including any third party items supplied as part of the solution. The bidder shall submit a self-certificate to this effect from the company's authorized signatory.
- 2.1.7** The OEM shall confirm that they shall provide support for all the MCUs, Endpoints, other allied equipments, software, etc, including any third party items for a period of 05 (Five) Years.
- 2.1.8** The OEM shall submit a self-certified document indicating details of customer (Name, Address, Phone and Email), supplied equipment details like the MCU, Endpoints, etc, supplied to the customer.
- 2.1.9** The OEM shall guarantee support for the entire solution for minimum 2 years after completion of 5 year lease period with regard to service and spares. A certificate to this effect shall be submitted by the OEM.
- 2.1.10** OEM must have achieved an average annual financial turnover (Audited) of Rs 900 Lakhs or more over last three Financial Years (FY) i.e. 2011-2012, 2012-2013, 2013-2014 OR for 2010-2011, 2011-2012, 2012-13 if Annual Accounts for FY 2013-2014 are not audited.

- 2.1.11** Net worth of the Bidder based on the latest Audited Accounts as furnished for 2.1.10 above should be positive
- 2.1.12** Bidder must have earned cash profit in any one of the three Financial Years as applicable in the last three Financial Years defined in 2.1.10 above based on latest Audited Accounts.

2.2 For Bidder (Authorized Partner or System Integrator):

- 2.2.1** The bidder shall have a registered office in India AS ON LAST DATE OF OFFER SUBMISSION. A documentary proof with complete address details and contact person details shall be submitted along with the offer.
- 2.2.2** Bidders currently providing any VC related services anywhere in BHEL shall necessarily submit certificate towards satisfactory services specifically mentioning the contract reference number and details of services being provided.
- 2.2.3** The bidder must have supplied directly or through any of its partners or system integrators, the MCU/full HDorHD VC end Points in any enterprises in India during the last 02 yearsAS ON LAST DATE OF OFFER SUBMISSION. The OEM must submit documentary evidence of the orders received and successful installation of the equipment from the customer in this regard.
- 2.2.4** The bidder must undertake that they would carry out Installation / Configuration / Commissioning /Operation & Maintenance of all the items like MCU, Endpoints, Display Units, etc, and associated software including any third party items supplied as part of the solution. The bidder shall submit a self-certificate to this effect from the company's authorized signatory.
- 2.2.5** The bidder shall provide support for all the MCUs, Endpoints, other allied equipments, software, etc, including any third party items for a period of 05 (Five) Years. There shall be back-to-back agreement with the OEM of the solution for warranty and support for the entire contract period. The bidder shall submit a certificate from the OEM for back-to-back support for the complete solution as per enclosed Format given in **Annexure-III**.
- 2.2.6** The bidder shall submit a self-certified document-indicating details of customer (Name, Address, Phone and Email), supplied equipmentdetails like the MCU, Endpoints, etc, supplied to the customer.
- 2.2.7** The bidder shall have at least 5 service centres in India covering North, East, Central, West and South regions of the country. List of service centres in India to be provided.
- 2.2.8** Bidders must have achieved an average annual financial turnover (Audited) of Rs 900 Lakhs or more over last three Financial Years (FY) i.e. 2011-2012, 2012-2013, 2013-2014 OR for 2010-2011, 2011-2012, 2012-13 if Annual Accounts for FY 2013-2014 are not audited.
- 2.2.9** Net worth of the Bidder based on the latest Audited Accounts as furnished for 2.2.8 above should be positive
- 2.2.10** Bidder must have earned cash profit in any one of the three Financial Years as applicable in the last three Financial Years defined in 2.2.8 above based on latest Audited Accounts.

Explanatory Notes for the Eligibility Criteria Ref: 2.1.10-2.1.12 and 2.2.8-2.2.10):

1. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against clause 2.1.10 and 2.2.8 above along with all annexures
2. In case audited Financial statements have not been submitted for all the three years as indicated against 2.1.10 and 2.2.8 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e total divided by three.
3. **NETWORTH** : Shall be calculated based on the latest Audited Accounts as furnished for 2.1.10 & 2.2.8 above. Net worth = Paid up share capital + Reserves. (Net worth is required to be evaluated in case of companies)

4. PROFIT : shall be NET profit (PAT + Non cash expenditure viz depreciation) earned during any one of the three financial years as in 2.1.10 & 2.2.8 above

3. General Instructions to Bidders:

3.1 ERNEST MONEY DEPOSIT (EMD)

3.1.1 Earnest Money Deposit (EMD) for the tender is Rs.2,00,000/- (Rupees Two Lakhs only) and shall be submitted in the manner described herein.

- i) EMD is to be paid in cash (as permissible under Income Tax Act), Pay order or Demand Draft in favour of 'Bharat Heavy Electricals Limited' and payable at Nagpur.
- ii) No other form of EMD remittance shall be acceptable to BHEL
- iii) Bidder may opt to deposit "One Time EMD" of Rs. 2.0 lakhs (Rupees Two lakhs only) with BHEL:Power Sector Region Western Region, which will enable them to participate in all the future tender enquiries issued from the BHEL PSWR office. Interested bidders may clearly send their consent for converting the present EMD into a "One Time EMD" in their offer.
 - Note : The 'One Time EMD' cannot be withdrawn by the tenderers within 3 years from the date of deposit, under any circumstances. The Tenderer who wishes to withdraw after three years will not be allowed to submit 'One Time EMD' again.
- iv) Bidders who have already deposited such "One Time EMD" of Rs. 2.00 lakh are exempted from submission of EMD for this tender. However a copy of 'One Time EMD' certificate issued by BHEL Regional HQ issuing the tender shall be enclosed along with the offer.

3.1.2 EMD by the bidder will be forfeited as per Tender Documents if

- i) After opening the tender, the bidder revokes his tender within the validity period or increases his earlier quoted rates.
- ii) The bidder does not honour his offer after placement of order

3.1.3 EMD shall not carry any interest.

3.1.4 In the case of unsuccessful bidders, the Earnest Money will be refunded to them within a reasonable time after acceptance of award by successful tenderer.

3.2 Key Activities and Dates

S.No.	Key Activity	Date
1	Issuance of Request For Proposal (RFP)	23-08-2014
2	Last date of receiving queries from bidders	04-09-2014
3	Last date and time for submission of proposals	09-09-2014: 1500hrs
4	Technical Proposal opening	09-09-2010: 1600hrs
6	Commercial Proposal opening	Will be intimated later to the qualified bidder
Proposals received after due date,time of submission shall not be considered under any circumstances		

4. Instructions and Guidelines to Bidders:

4.1 Introduction:

M/s Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the Companies Act 1956 having registered office at BHEL House, Sirifort, New Delhi-110049 through its office at New Delhi (hereinafter referred to as “BHEL”, which expression shall include its successors and assigns), invites offers for the supply, installation and maintenance of Video Conferencing Solution on 5 year lease basis in BHEL, as per the terms and conditions detailed in the tender documents.

4.2 Tenderer to Inform Himself Fully

4.2.1 The bidder shall closely peruse all the clauses, specifications and requirements etc., indicated in the tender documents before quoting. Should the bidder have any doubt about the meaning of any portion of the tender specifications or find discrepancies or omissions in the specifications or if the tender documents are found to be incomplete or require clarifications on any of the technical aspects, scope of work etc., he shall at once contact the official inviting the tenders, for clarification before submission of the tender.

4.2.2 Bidders are advised to study all the tender documents carefully. Any submission of tender by the bidder shall be deemed to have been done after careful study and examination of the tender documents and with the full understanding of the implications thereof.

4.3 Cost of Bidding:

The Bidder shall bear all costs associated with the preparation and submission of its bid and the Purchaser will in no case be responsible or liable for those costs.

4.4 Procedure for Submission & Opening of Bids:

Bids shall be accepted by the official inviting the tenders, in two parts, as described below, on or before the due date & time indicated in the Tender Notice.

Part-I : EMD & Techno-Commercial Bid

This part shall consist of the following:

- 1) EMD in the form of Pay Order/ Bank Draft of **Rs.2,00,000/-** (Rupees Two Lakhs only) in favour of “Bharat Heavy Electricals Limited” payable at Nagpur. In the absence of submission of EMD, the offer will be summarily rejected.
- 2) Bounded volume of:
 - i. Technical offer/details including literature/leaflets. The bidder can offer only as per technical specifications of the equipments. All documents in support of satisfying Eligibility Criteria as in Clause No 2 of this document. The Lessee reserves the right to accept or reject the technical offer. Price bids of only techno-commercially short listed vendors will be opened.
 - ii. Authorization by OEM’s as per format enclosed as Annexure-II (if applicable).
 - iii. Back-to-Back as per format enclosed as Annexure-III (if applicable)
 - iv. No Deviation Certificate as per format enclosed as Annexure-IV.
 - v. Integrity Pact as per format enclosed as Annexure V

- vi. Non Disclosure Certificate as per format enclosed as Annexure VI
- vii. Checklist of Make and Models offered as per format enclosed as Annexure-VII.
- viii. Checklist of PRICE BID (Unpriced Copy) as per format enclosed as Annexure-VIII.
- ix. A copy of complete RFP where each page is signed & stamped by the bidder.

Part-II : Price Bid

Price bid containing PRICES only is to be submitted (in the Price Schedule format enclosed as Annexure-VIII only). Prices shall be quoted in Indian Rupees only. Bidder shall give details of Direct Applicable Taxes (between Bidder & BHEL as asked in the Price Bid Format) clearly. Any changes in these Direct Applicable Tax rates during the complete lease period will only be payable as per actuals, subject to submission of documentary evidence. Any other taxes, duties, levies and charges assessed on the bidder by local, national or any statutory authorities will not be payable by BHEL.

Price Bid should not contain any technical details and/or Commercial Terms & Conditions as the same are supposed to be contained in PART-I only, so that the same can be evaluated before opening of Price Bid(s).

4.5 Marking On Envelope

Part-I and Part-II offers shall be submitted in two separate sealed envelopes with bidder's distinctive SEAL and super-scribed as follows:

Part-I : 1. Tender Enquiry No. and Its Description

- 2. Due Date of Opening
- 3. "EMD & Techno-Commercial Bid".

Part-II : 1. Tender Enquiry No. and Its Description

- 2. Due Date of Opening
- 3. "Price Bid" as per enclosed Format.

Un-sealed envelopes or envelopes not super-scribed as above may not be accepted/considered.

Part I envelop and Part II envelop shall be enclosed and sealed in **third envelop** indicating the following:

- 1. Tender Enquiry No. and Its Description
- 2. Due Date of Opening
- 3. Part I & Part II Techno-commercial Bid

This third Envelop in sealed condition shall be submitted at the address indicated in the following clause.

4.6 Bid Submission

4.6.1 Bids shall be addressed to the official inviting Bids by name and designation and sent at the following address:

**AGM Purchase
BHEL PSWR,
5th& 6thFloor ,Srimohini Complex
345 Kingsway Nagpur 440001
Telephone no. : (0712) 3048600**

4.6.2 Tenders being submitted through representative shall be submitted at dispatch section of of PSWR HQ Office after making entry/registration at the reception. For any assistance on the matter kindly contact following officials:

Pratish Gee Varghese/SrEngineer(Purchase) Ph 0712 – 3048713 Email pgv@bhelpswr.co.in

ShivkeshMeena / Engineer (Purchase) Ph 0712 – 3048715 Email svm@bhelpswr.co.in

4.6.3 Any correspondances pertaining to this enquiry may be addressed to above contact details

4.6.4 Bids submitted by post shall be sent by "REGISTERED POST" only and shall be posted with due allowance for any postal delay.

4.7 Bid Opening

4.7.1 PART-I (EMD & Techno-commercial Bid) may be opened on the due date and time as specified in the Enquiry Letter (or the latest date of offer submission), in the presence of bidders who may like to attend. Part-II (Price Bid) shall be opened subsequently. However, Purchaser/Lessee reserves the right to open both the parts simultaneously i.e. Part-I and Part-II together.

4.7.2 In case of public opening, date and time of Price Bid (Part-II) opening shall be intimated to the technically and commercially acceptable bidders only.

4.7.3 Purchaser/Lessee also reserves the right to open the earlier i.e. superseded price bids, if any, submitted by the bidder(s), if required.

4.7.4 Not more than two representatives from each bidder will be permitted to be present during tender opening.

4.7.5 No correspondence shall be entertained from the bidders after the opening of Price Bid(s).

4.7.6 Standard pre-printed conditions of the bidders attached to the offer will not be accepted and only those mentioned in the body of his offer will be considered.

4.7.7 Unsolicited bids shall not be entertained. Unsolicited revised Price Bids also, shall not be entertained at any stage of the tendering process and will lead to automatic disqualification of the party's bid.

4.7.8 No Literature, Pamphlets other than what is specified is to be enclosed. All such enclosures shall be considered as unread and also will not be considered as part of the quotation.

4.7.9 Manufacturer's name, trade Mark or Patent No., if any, should be specified.

4.7.10 Purchaser/Lessee reserves the right to negotiate the tender, if required.

4.8 Validity of Offer

Offer shall be kept valid for FOUR months from the latest due date of tender opening (Part-I) for Purchaser/Lessee's acceptance.

4.9 Deviations

Bids shall be submitted strictly in accordance with the requirements and terms & conditions of the Tender Enquiry. Vendors have to submit a “No Deviation Certificate” in Part-I of the offer as per **Annexure-IV**.

Technical & Commercial - No deviation is acceptable.

4.10 Language of the Bid & Corrections

- 4.10.1** The bidder shall quote the rates in Hindi/English language and international numerals only. The metric system of units shall be used, for the purpose of tender.
- 4.10.2** Bidder shall fill the tender documents as per formats enclosed in this tender enquiry. All entries and signatures in the bid shall be in BLUE/BLACK INK only. Each page of the bid shall be signed and stamped using official seal of the company by the bidder.
- 4.10.3** All entries shall be filled in neat and legible handwriting. No over-writings, erasures and corrections are permitted and may render such bids liable for rejection.
- 4.10.4** However, if any cancellations, corrections and insertions are in the bid, the same shall be duly attested by the bidder.

4.11 Rejection Of Bid and Other Conditions

Any format not properly filled, partially filled or not filled will make the bid liable for rejection. Bidders are requested to note that all columns, rows and spaces provided to fill up the data must be filled with relevant data without fail. In case any bidder fails to do so or fills up irrelevant data, BHEL is not bound to seek clarifications on such items and will be free to reject the tender summarily.

- 4.11.1** If required, BHEL is entitled to ask for any equipment for evaluation and all bidders are requested to note that they shall provide equipment exactly as per specification without any charge and precondition(s) to BHEL within 72 hours of receiving such notice. Upon completion of such evaluation, BHEL shall return the equipment to the unsuccessful bidder. However, successful bidder's equipment will be returned only after complete delivery of the ordered equipment.
- 4.11.2** Equipment offered must have current certifications as detailed in relevant sections. Future expectations of certification, conditional certifications, variation in certification and certification for equipment different from the make and model offered in the bid is not acceptable.
- 4.11.3** No change in specifications, clauses of contract, Terms and Conditions, etc. shall be entertained by BHEL under any circumstances.
- 4.11.4** Canvassing in any way concerning this tender, wrong declaration, incorrect information, misleading or incorrect certifications, etc. shall make the Bidder debarred to participate in this tender and also for a further period of 3 years in any tender of any of the BHEL units.
- 4.11.5** The acceptance of bid will rest with the Purchaser/Lessee and does not bind him to accept the lowest or any bid. The Purchaser/Lessee reserves to itself, full rights for the following without assigning any reasons, whatsoever:
- a) to reject any or all the bids.
 - b) to increase or decrease the quantities.

- 4.11.6** Late Bids: Any proposal received by BHEL after the deadline for submission of proposal shall be summarily rejected and returned unopened to the bidder.
- 4.11.7** The offer is liable to be rejected, if it is found after the Price Bid Opening that the Checklist of Price Bid submitted by the bidder, as a part of Part-I offer, is different from the actual Price Bid.
- 4.11.8** If the bidder deliberately gives wrong information in his bid, Purchaser/Lessee reserves the right to reject such a bid at any stage or to cancel the Order/Contract, if awarded and forfeit the EMD/ security deposit/ Performance Bank Guarantee, if any.
- 4.11.9** If the Prices/Rates of one or more of the enquired equipments have not been quoted, the offer is liable to be rejected.
- 4.11.10** Non-compliance with any of the requirements and instructions of the Tender Enquiry may result in the rejection of the bid.

4.12 Clarification on Bidding Documents:

The Bidder is expected to carefully go through this Tender Document and understand the functional requirements thoroughly before submitting their offer. All legitimate queries and clarifications regarding this tender must be submitted in writing to the undersigned before the due latest due date for seeking clarifications... BHEL will not entertain or respond to bidders' queries received after **the referred date**.

4.13 Amendment of Bidding Documents:

The Purchaser may at its sole discretion amend the Bidding Documents at any time prior to the deadline for submission of bids. However in case of such amendment, the bid submission date may be extended at the discretion of the purchaser.

Amendments made prior to submission of bid will be provided in the form of Addenda / Corrigendum to the Bidding Documents and will be posted on the BHEL website (<http://www.bhel.com>) in Tender Notification section under the original tender enquiry number.

4.14 Evaluation and Comparison of Bids:

- 4.14.1** Totals/ Gross Total of Prices should be indicated both in words as well as in figures. If there is a difference between price quoted in words and figures or if there is any other price discrepancy, higher value(s) will be considered for evaluation and lower values will be considered for ordering.
- 4.14.2** Though offer of higher warranty/configuration/rating, than what is required as per tender specifications, may be accepted, no extra weightage or preference will be given for the same.
- 4.14.3** Prices of optional items, if any, shall also be considered for Price evaluation and comparison, unless stated otherwise.
- ~~**4.14.4** Purchase preference would be extended to Central Public Sector Enterprises (CPSE's). Accordingly, where all things being equal, purchase preference will be granted to the CPSE's at the lowest valid price bid (L1). This preference would be available to CPSE's provided there is valid Office memorandum to this effect from the concerned Ministry.~~

4.14.5 After finalizing the techno-commercial offers, BHEL reserves the right to decide the successful bidder on the basis of Reverse Auction process or conventional sealed bid opening method. In such of reverse auction all qualified bidders will be intimated regarding procedure/ modality for Reverse Auction process prior to Reverse Auction and price will be decided as per the rules for Reverse Auction. .

However, if reverse auction process is unsuccessful as defined in the RA rules/procedures, or for whatsoever reason, then the sealed 'PRICE BIDS' will be opened for deciding the successful bidder. BHEL's decision in this regard will be final and binding on bidder.

4.14.6 The Purchaser will evaluate and compare the bids that have been determined to be substantially responsive. The bidding evaluation is based on L1 criteria. Further the tender is NOT divisible. The evaluation of responsive bids shall be done in 3 stages:

Stage-I: Evaluation Of Response To Eligibility Criteria:

These are mandatory requirements to be met by the Bidder. Only those Bidders who meet all the requirements as per eligibility criteria shall be considered for stage II evaluation.

Stage-II: Evaluation Of Technical & Commercial Bids:

This shall be the second stage of the evaluation by the Purchaser. Only those Bidders who adhere to the purchaser's technical and commercial requirements shall be considered for next stage of evaluation.

Commercial and Technical offer shall be evaluated for acceptability of commercial terms, deviations and technical suitability. The Bidders should meet the commercial conditions as defined in the bidding documents.

BHEL's Technical Committee will then evaluate the Technical bid submitted by the Bidders. During the Technical Evaluation of the bid, the purchaser may ask for additional information / resources to validate the bid. These may include technical documents / white papers from OEM or third party, references, demonstration of a proof of concept or solution, visit to supplier's lab or their clients reference site, etc.

Stage –III: Evaluation of the Price Bid:

Bidders clearing the Techno-Commercial evaluation will have their Price Bids opened. The total cost of the bid will be calculated as under:

- i. Total cash outflow for 5 years on lease basis for Hardware, Software, Facility Management, Redeployment, etc, including duties, taxes, warranty & support for the entire lease period.
- ii. The bid having the least total cash outflow for 5 years will be considered L1 bidder. Evaluation of L1 ranking will be based on net of CENVAT/VAT basis, if any. The L1 Bidder shall be eligible for award of contract.

5. Commercial Terms & Conditions for Bidder

5.1 Security Deposit

5.1.1 Upon acceptance of Tender, the successful Tenderer should deposit the required amount of Security Deposit for satisfactory completion of work, as per the rates given below:

S. No.	Contract Value	Security Deposit Amount

1	Up to Rs. 10 lakhs	10% of Contract Value
2	Above Rs. 10 lakhs upto Rs.50 lakhs	1 lakh + 7.5% of the Contract Value
3	Above Rs. 50 lakhs	Rs 4 lakhs + 5% of the Contract Value exceeding Rs. 50 lakhs.

- 5.1.2** The security Deposit should be furnished before start of the work by the contractor
- 5.1.3** Security Deposit may be furnished in any one of the following forms
- 5.1.4** Cash (as permissible under the Income Tax Act)
- 5.1.5** Pay Order / Demand Draft in favour of BHEL.
- 5.1.6** Local cheques of scheduled banks, subject to realization.
- 5.1.7** Securities available from Post Offices such as National Savings Certificates, KisanVikasPatras etc. (Certificates should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back).
- 5.1.8** Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format for Security Deposit shall be in the prescribed formats.
- 5.1.9** Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/c BHEL, duly discharged on the back.
- 5.1.10** Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit should be deposited in any form as prescribed before start of the work and the balance 50% may be recovered from the running bills.
- 5.1.11** EMD of the successful bidder can be converted and adjusted against the cash portion of Security Deposit excepting for such bidders who have remitted One Time EMD.
- 5.1.12** The Security Deposit shall not carry any interest.

NOTE: Acceptance of Security Deposit against **Sl. No. (5.1.7) and (5.1.9) above** will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

- 5.1.13** The validity of Bank Guarantees towards Security Deposit shall be initially up to the completion period as stipulated in the Letter of Intent/Award + 3 months, and the same shall be kept valid by proper renewal till the acceptance of Final Bills of the Contractor, by BHEL.

5.1.14 BHEL reserves the right of forfeiture of Security Deposit in addition to other claims and penalties in the event of the Contractor's failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of other contracts with BHEL.

5.2 Return Of Security Deposit

Security Deposit shall be refunded/Bank Guarantee(s) released to the Contractor along with the „Final Bill“ after deducting all expenses / other amounts due to BHEL under the contract / other contracts entered into with them by BHEL.

5.3 Taxes:

The bidder shall clearly specify the current applicable taxes and their current rates. Any taxes currently applicable but not specified in the bid/offers shall not be to BHEL's account.

5.4 Purchaser's Right to accept or Reject any or all Bids:

The Purchaser reserves the full right to accept or reject any bid or to annul the bidding process and reject all bids at any time prior to Contract award, without thereby incurring any liability to the Bidders.

5.5 Exclusions:

The Bidder shall not be permitted to take any exclusion from the tendered scope.

5.6 Statutory Obligations:

All statutory obligations arising out of this contract (like Insurance, PF, etc. of man power deployed by the bidder) shall rest with the successful bidder.

5.7 Liabilities from the Contract

Any liabilities arising out of this contract (like injury, fatal/non-fatal, to the personnel of the successful bidder or any third party/contractor employed by the bidder) shall be to the successful bidder's account only. BHEL shall not be liable in any such eventuality.

5.8 Delivery & Installation Schedule:

5.8.1 The Bidder shall be responsible for timely delivery, installation & commissioning of all the hardware & software given in the scope of supply/work at all BHEL locations. All the hardware & software shall be delivered and successfully installed and commissioned within 4 months (120 days) from the date of placement of order.

5.8.2 Failure in delivery or installation within 120 days will entail Late Delivery Charges as per the LD clause of the contract.

5.8.3 BHEL may take deliveries in a staggered manner at some of the locations. Bidder will be informed well in advance about delivery schedule for those locations.

5.9 Penalty for Late Delivery:

If deliveries or installation & commissioning are not completed within the delivery schedule, a penalty of 0.5% per week (or part thereof) subject to a maximum of 10% of the total lease charges of the equipment or service which has

been delayed will be charged. The LD charges will be deducted from the first quarter lease rentals. If LD charges are more than the first quarter lease rentals, then the balance amount will be deducted from the subsequent quarter(s).

5.10 Ethical Standard:

Bidders are expected to observe the highest standard of ethics during the procurement and execution of this Contract. In pursuit of this policy, the Purchaser will reject a proposal for award if it finds out that the Bidder being considered for award has engaged in corrupt or fraudulent practices in competing for the Contract. For the purposes of this provision, the terms set forth below are defined as follows:

- a) **“Corrupt practice”** means the offering, giving, receiving, or soliciting of anything of value to influence the action in the procurement process or in Contract execution; and
- b) **“Fraudulent practice”** means a misrepresentation of facts in order to influence a procurement process including collusive practices designed to establish bid prices at artificial, non-competitive levels to deprive the Purchaser of the benefits of competition;

By signing the Bid Forwarding Letter, the Bidder represents that for the software it supplies, it is the owner of the Intellectual Property Rights in the software. Willful misrepresentation of these facts shall be considered a fraudulent practice without prejudice to other remedies that the Purchaser may take.

5.11 Integrity Pact:

The bidder shall sign an Integrity Pact, to comply with the requirements of the Transparency International Limited (TIL) and the Central Vigilance Commission (CVC) guidelines to ensure an ethical and corruption-free business environment. The proforma for the Integrity Pact is attached as Annexure-V. The Independent External Monitor (IEM) for this case will be Shri D .R.S Chaudhary IAS (Retd), Flat No. L-202 & L-203 (1st Floor), Ansal Lake View Enclave, Ansal Lake View Enclave, Shamlu Hills, Bhopal – 462013, Ph 91 755 -4050495, Email: dilip.chaudhary@icloud.com

5.12 Non-Disclosure Agreement:

The bidder shall sign a Non-Disclosure Agreement (NDA) with BHEL. By signing the NDA, the bidder agrees not to disclose any confidential information, business or proprietary, as covered by the agreement. The proforma for the Non-Disclosure Agreement is attached as **Annexure-VI**.

5.13 Insurance :

Insurance for the complete Systems/ Goods shall be arranged by the Vendor/ Lessor at his own risk and cost during transit, movement, storage and throughout the period of lease. Purchaser/ Lessee, under any circumstances, will not be responsible for any loss/ damage/ theft of any Systems/ goods, due to any reasons, whatsoever. Claim(s) etc., if any, will be dealt with the underwriters directly by the Vendor/ Lessor. Evidence of insurance policy shall be submitted to BHEL. If the lessor fails to renew the policy before the expiry, BHEL may affect the insurance from the lease rental.

For any theft of or damage to any of the supplied items, where the vendor is filing a claim with the insurance agency; the vendor shall replace the item on its own within 7 working days of the reporting of the incident, after which SLA and Risk Purchase clauses of the contract will become applicable.

5.14 Indemnity:

Vendor/Lessor shall fully indemnify and keep indemnified the Purchaser/Lessee against all claims which may be made in respect of the use of System / Software / Item(s) / services supplied / rendered by the Vendor / Lessor, for infringement of any rights protected by patent, registration of designs or trademarks and legality of the Software. However the Vendor/ Lessor will have no obligation for any claim of infringement arising from third party products not supplied in the order, modifications and technical information/ instructions advised by purchaser and use of products prohibited by product manuals.

All such claims in this regard will be settled as per Indian Laws.

In the event of any such claims being made against the Purchaser/ Lessee, Purchaser/Lessee will inform in writing to the Vendor/Lessor who shall at his own risk and cost either settle any such dispute or conduct any litigation that may arise there from.

5.15 Risk Purchase:

5.15.1 Purchaser/Lessee shall reserve the right to terminate the order/contract and purchase from elsewhere at the risk and cost of the Vendor/Lessor, either the whole or part of the Systems/goods, which the Vendor/Lessor has failed to deliver within the stipulated delivery period or if the same were not available, the best and the nearest available substitute(s) thereof. The Vendor/Lessor would be liable to compensate the Purchaser/Lessee for any loss, which the Purchaser/Lessee may sustain by reason of such purchase. This clause will be operated only after completion of delivery period including extended period with penalty.

5.15.2 In case of continuous non-performance of a system or a component or non-availability of support or service for more than 15 days, Purchaser / Lessee reserves the right to invoke the Risk Purchase clause and replace/rectify/repair the faulty system or component or buy the support / service from market at the risk and cost of the Vendor/Lessor.

5.16 Arbitration:

In all cases of disputes emanating from and in reference to this contract, the matter shall be referred to the arbitration. All disputes or differences between the parties will be resolved through arbitration governed by “The Arbitration and Conciliation Act, 1996” as amended from time to time. The venue of arbitration shall be in New Delhi. However, till the time the decision of the arbitrator is not announced, the Bidder/Vendor shall continue to provide its services to BHEL as per the contract.

5.17 Additional Facility Required In Future On Supplied Equipment

In case any additional facility is required in future on any of the supplied equipment, the Vendor/Lessor shall provide the same at mutually agreed terms & conditions.

5.18 Force Majeure:

Vendor/Lessor shall not be responsible for delay in delivery resulting from acts/events beyond his control, provided notice of the happening of any such act/event is given by the Vendor/Lessor to the Purchaser/Lessee within 15 days from the date of its occurrence. Such acts/events shall include but not be limited to acts of God, war, floods, earthquakes, strikes, lockouts, epidemics, riots, fire or Governmental regulations superimposed after the date of order/contract.

5.19 Patent & Trademark:

Vendor/Lessor shall at all times indemnify the Purchaser/Lessee against all claims which may be made in respect of the Systems/goods/Software supplied by the Vendor/Lessor, for infringement of any right protected by patent, registration of designs or trademarks and legality of usage of Software. In the event of any such claims being made against the Purchaser/Lessee, Purchaser/Lessee will inform the Vendor/Lessor who shall at his own cost either settle any such dispute or conduct any litigation that may arise there from.

5.20 Terminal payment:

BHEL shall have the right to acquire or surrender all the equipments at the end of the lease period. In case BHEL decides to acquire the equipments, a nominal charge of Re.1.00 per equipment will be paid as terminal payment.

In case of termination or surrender of equipments by BHEL at the end of the lease period, Vendor/ Lessor will remove the equipment from Purchaser/Lessee's premises at his own risk and cost after due permission from BHEL.

5.21 Merger & Acquisition:

In case of merger / acquisition of the bidder / OEM during the contract period, all commitments and liabilities with respect to this contract will pass on to the acquiring entity.

6. Special Terms and Conditions

6.1 Scope of Work:

- 6.1.1** The bidder shall Supply, Install, Integrate, Carry out Testing of Systems, Commissioning of MCU, Endpoints, Display Units, and other software and other related items at all the locations listed in **Annexure-I**.
- 6.1.2 Integration with the existing VC setup:** The bidder shall also integrate the offered solution with the existing VC setup at BHEL. The existing VC setup is explained in **Annexure-I**.
- 6.1.3** The bidder shall carry out installation of systems, fixing, termination and inter-cabling, etc, as per the best international standards and practices.
- 6.1.4** For installation & commissioning work, it shall be the responsibility of the bidder to arrange and provide requisite tools, etc, for carrying out the installation and commissioning job.
- 6.1.5** All softwares to be provided as part of the solution should be licensed to "Bharat Heavy Electricals Limited". All documents, manuals, administration manuals and software CDs should be submitted to BHEL before commissioning the systems. All softwares should come with at least two sets of CDs/DVDs, etc.
- 6.1.6** The Bidder shall ensure that no other equipment/structure/setup gets damaged due to their activities. Any damages if caused to BHEL's property due to Bidder's negligence shall be rectified, repaired and borne by the Bidder at its own account.

6.2 Installation:

The supply, transportation and installation of the equipment and interconnections LAN / network, etc, required to be completed for commissioning shall be in the scope of the supplier. The vendor shall demonstrate the following scenarios as part of the installation:

- 6.2.1** Successful installation, commissioning and running of MCU, Endpoints, etc, with excellent acceptable performance and quality.
- 6.2.2** Registering of existing endpoints in the new offered MCUs, and registration of offered endpoints in existing MCU, Management server.
- 6.2.3** Setting of point-to-point & multipoint IP VC calls with excellent acceptable performance and quality.
- 6.2.4** Setting of point-to-point & multipoint IP VC calls between existing and offered solution with excellent acceptable performance and quality.

- 6.2.5 Setting of multipoint IP VC calls through existing MCU & offered MCU between existing and offered solution with excellent acceptable performance and quality.
- 6.2.6 Setting of point-to-point & multipoint ISDN VC calls with excellent acceptable performance and quality.
- 6.2.7 Setting of point-to-point & multipoint IP & ISDN VC calls with external agencies / customers with excellent acceptable performance and quality.
- 6.2.8 Fine-tuning of configuration and settings for best VC quality
- 6.2.9 Integration with BHEL's existing VC Systems & Solution.

6.3 Performance Guarantee Tests (PG Tests):

The Performance Guarantee Test shall start after installation and commissioning of all the Hardware & Software at Corporate Office, Units, Regional Head Quarters and Project Sites. The Performance Guarantee Tests (and repeats of such tests limited to a maximum of two) shall be the primary responsibility of the Supplier, but shall be conducted with the full cooperation of the BHEL to ascertain whether the supplied System meets the standard of performance and complete functionality as desired by the purchaser.

The performance test will be done individually and collectively for all MCUs (existing & Offered), Endpoints (existing & offered), Display Units as individual systems and as a total system. After successful completion of installation and commissioning, PG test shall be conducted for ascertaining the performance of systems for business-class best quality VC performance for a minimum 07 days continuously. The Performance Acceptance Tests shall be conducted by conducting point-to-point and multipoint VC sessions on IP & ISDN within and outside BHEL continuously for 7 days to ascertain that all components of the solution are working in the desired fashion individually and together to give the best VC performance. If the system is found to be lacking in meeting Performance Guarantee Test, the vendor shall rectify or fine tune parameters for obtaining the best VC quality. Once the vendor offers the system for testing again, the systems will be tested again continuously for 7 days. If after the 2nd testing, the performance of the VC or its quality is not found up to the mark, the supplied equipment is liable to be rejected.

6.4 Commissioning Certificate

On successful installation, configuration and PG test of individual components and the solution as a whole, the supplier shall submit the following as part of the commissioning:

- 6.4.1 Configuration details of MCU, Display Units, VC Endpoints.
- 6.4.2 Multipoint keys w.r.t. the offered endpoints.
- 6.4.3 IP address, name, etc, details of all items.
- 6.4.4 Network diagrams / cabling scheme.
- 6.4.5 Security scheme for entire solution.
- 6.4.6 Details of Backup policy and configuration

On submission of the above and after successful PG test, BHEL will issue a **Commissioning Certificate** for the individual locations.

6.5 Project Implementation Schedule:

Bidder must assign a competent Project Manager for the installation and commissioning work. Also, a Time Bar Chart indicating starting and completion of dates of each activity, i.e. Supply, Installation, and acceptance, etc. shall be submitted along with the offer. The Tender shall be considered incomplete without this information.

6.6 Shifting and Redeployment:

- 6.6.1** VC equipment will be placed at a Project site typically for a duration of about three years. It may be required to be shifted to new location at any place within India as desired.
- 6.6.2** The dismantling, packing, transportation including transit insurance, unpacking at new site, successful reinstallation and commissioning at the new location shall be in the scope of the bidder. BHEL will pay a uniform lumpsum amount, as quoted in the price bid, for the above activities excepting Transportation & Transit Insurance Charges which will be paid at actual on submission of Original Bills.
- 6.6.3** 30 days notice period will be provided to the vendor for shifting and redeployment. If shifting and redeployment is not completed within 30 days of notice, no lease charges will be paid for the period above 30 days till the date equipment is shifted and successfully reinstalled.

6.7 Service Level Agreement (SLA):

As the facility will be used extensively by the Top Management of BHEL, the supplier shall provide support for all the hardware & software items as follows:

S.No.	Item	Support Level Required
1	MCU, Firewall Traversal, Recording & Streaming Server	24 x 7
2	Endpoint, Display Unit, Others	8 x 6

The supplier shall ensure that the following SLA parameters are met:

Definitions:

Non Availability:

- 6.7.1** Is defined as the service is not available.
- 6.7.2** Any equipment / service working with degraded performance & if not fully resolved within stipulated time shall be considered non-available including the time period during which it was working with degraded performance.
- 6.7.3** If the quality of audio or video is poor for more than 15 minutes at a stretch even when sufficient Bandwidth is available for VC & the packet loss between the endpoints is not more than 1%.

SLA Requirements:

- 6.7.4** An uptime of **98.0%** on all hardware & software products per month at Class A Locations
- 6.7.5** An uptime of **95.0%** on all hardware & software products per month at Class B Locations

6.7.6 Same business day support on all hardware & software products

6.7.7 Any faulty hardware component shall be repaired or replaced with Standby Equipment of similar configuration at all the locations after logging the call. Subsequently it will be replaced by a New One / repaired one within one week.

6.7.8 On-site support for all hardware & software products

6.7.9 If the availability and Performance of systems is below 95% continuously over a period of 3 months at more than 25 % of the Installed Location, BHEL reserves the right to terminate the contract in full, without any cost implication to BHEL.

6.8 Penalty for SLA Non-Conformance:

At the end of each quarter downtime will be calculated for all the systems and softwares. Downtime will be calculated on per month basis. The deductions will be made as per the following formula:

Deduction (D) = downtime in minutes (d) X rental per minute (r) X multiplication factor (f)

Multiplication Factor Table for Class A Locations

S.No.	Downtime%	Multiplication Factor (f)
1	0 to 2	0.0
2	>2 to 3	1.0
3	>3 - 4	1.25
4	>4 – 5	1.50
5	Above 5	2.0

Multiplication Factor Table for Class B Locations

S.No.	Downtime %	Multiplication Factor (f)
1	0 - 5	0.0
2	>5 - 6	1.0
3	> 6 - 7	1.25
4	>7 - 8	1.50

5	Above 8	2.0
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The maximum penalty per quarter will be limited to the total quarterly rental of the project.

6.9 Availability of Spares:

The successful bidder shall maintain spares of common accessories like connecting cables, remote control, etc. at all the locations.

6.10 Terms of Payment:

Lease period will start only after successful installation and commissioning of all hardware and software products as per scope of work & successful completion of PG Test. Quarterly lease rental charges (after deducting pro-rata rent cut, for any SLA non-conformance) become payable at the end of each quarter.

Payments will be made from the ordering agency within 45 days on submission of following documents:

- 6.10.1** Consolidated Invoice in duplicate to the the respective Units/Regions of BHEL to whom service/solution is rendered.
- 6.10.2** Location wise invoices to the consignees (For CENVAT credit)
- 6.10.3** Delivery/Installation Report & SRV(Stores Receipt Voucher) (Duly signed by BHEL coordinator), required only at the time of first payment.
- 6.10.4** SLA reports for the quarter (to be verified by the System Administrator).
- 6.10.5** Insurance documents for all the items and its annual renewal, whenever due.

6.11 Income Tax Depreciation:

Income tax depreciation will be claimed by BHEL.

6.12 Sub-Contracting:

Order/contract or any part thereof shall not be sub-contracted, assigned or otherwise transferred to any third party without prior written consent of the Purchaser/ Lessee.

6.13 Functional Scope for Hardware & Software:

The functional scope for hardware, software and related services as detailed in Technical Specification of Hardware, includes all activities but not limited to the following:

- 6.13.1** Delivery of equipment at all locations of BHEL and all arrangements including labor for loading/unloading, movement, etc.
- 6.13.2** Handling, installation, configuration, testing, commissioning and integration at site of the ordered materials.
- 6.13.3** Fine tuning of configuration parameters, settings, etc for smooth installation and functioning of all the systems.
- 6.13.4** Testing based on diagnostic software to be carried out to ascertain healthiness of the equipments/hardware, backup system, etc.

- 6.13.5** A complete project report giving all installation and configuration reports, documents, diagrams, etc, to be submitted before commissioning.
- 6.13.6** The Bidder shall work closely in co-ordination with BHEL network team and system integrators for installation, fine tuning and configuration of the hardware and software for smooth and best quality performance of the VC systems.
- 6.13.7** Any additional item, component, cable, software, etc. required for the successful and complete installation and functioning of the total solution shall be provided and installed by the bidder without any additional cost implication to BHEL.

6.14 Training:

The supplier should organize and provide training and related training material for:

- 6.14.1** User Level Training for 2 to 3 batches consisting of about 20 persons each at 2 – 3 locations across the country to ensure familiarity and enable them to use the system efficiently.
- 6.14.2** System Administration of MCUs, RSS, Firewall Traversal, etc for 6 to 8 persons at Corporate Office.
- 6.14.3** The training course shall be structured and supported by programmed illustrations, video, charts, etc. The training shall be imparted by experienced personnel only. The Bidder shall provide extensive lecture notes, handouts and other training documentations.
- 6.14.4** All the Trainings should be conducted at BHEL premises on the procured VC systems. The boarding and lodging of trainer faculty will be the responsibility of the suppliers only.
- 6.14.5** The User Level training shall be of 1 to 2 days. The Admin level training shall cover all the admin features and requirements and shall be minimum of 4 days.
- 6.14.6** The faculty for all the trainings shall be from OEM of the solution only and should be highly trained and certified on the offered solution, technology and products.

6.15 Warranty & Support:

- 6.15.1** All the supplied equipment/systems (hardware/software) shall be covered under a Comprehensive On-Site Warranty for 05 (Five) years. Warranty period shall start from the date of successful commissioning of the Equipment / System. Warranty & Support shall be delivered directly by the OEM for MCU, Endpoint, Display units, associated cables, etc at the central level. In case of authorized partner being the Bidder, certificate from OEM should be attached stating that the OEM will provide support directly during the warranty period, the posting of the OEM's Engineer, replacement of spares, etc.
- 6.15.2** If any document/manual/CD supplied by the supplier is found to be inadequate / incomplete within the period of the contract, the supplier shall replace/complete such document/manual/CD at their cost within 15 days' time.
- 6.15.3 On-Site Engineers at Corporate Office:** The OEM shall post 2 (two) qualified, trained and certified engineers with proven experience of at least 2 years on VC system and solution at our Corporate Office, New Delhi. The

engineers shall be available at the Corporate Office normally from 8.00 AM to 8.00 PM. However they may be required to stay for extended Hours & Holidays also, if required by BHEL.

On-Site Engineer at Hyderabad: The bidder shall post (1) one qualified, trained and certified engineer with proven experience of at least 2 years on VC system and solution at Hyderabad.

The scope of responsibility of the engineers shall include but is not limited to the following:

- 6.15.4** Health monitoring, performance monitoring, capacity monitoring & critical parameter monitoring of the MCU, RSS, Firewall Traversal, VC Endpoints, Display Units, etc, at the Corporate Office.
- 6.15.5** Scheduling of conferences in the conference room and cabins of CMD, Directors and Executive Directors, etc.
- 6.15.6** Co-ordination with other Units, Regions and Project Sites for setting up conferences.
- 6.15.7** Troubleshooting, diagnostics, fault checking, call logging, spare replacement and also carry out regular backup of system configuration, settings and critical system files.
- 6.15.8** Updation and upgradation of patches, software, operating system of all VC systems.
- 6.15.9** BHEL reserves the right to ask for a change of maintenance personnel citing reasons. The supplier shall arrange a replacement within 03 (Three) working days having the same or higher competence level.
- 6.15.10** The scope under warranty shall cover to provide services as described below for all the equipment (including Hardware and Software) in this tender to ensure maximum uptime and performance levels of all the VC Systems.
- 6.15.11** The Bidder/OEM shall be required to provide all the services based on standards and the best practices to meet or exceed the SLAs as per **Clause 6.7**. If the performance and uptime does not meet the SLA, deductions as per SLA will be done from the quarterly rental charges.

6.16 Warranty shall cover the following:

- 6.16.1** Repair / Replacement of faulty / defective Hardware and other supplied items inclusive of all types of spare parts etc.
- 6.16.2** Installation / Re-Installation / Configuration of System software and other supplied software.
- 6.16.3** All System Patches, Upgrades, Service Packs, etc. of the OS and all other Software supplied by the OEM must be made available free of cost during the entire warranty period (5 years).
- 6.16.4** Installation of System Patches, Upgrades, Service Packs etc.
- 6.16.5** Any change in the IP Scheme, if required, limited to VC equipments, in consultation with BHEL's Network Manager.
- 6.16.6** System Management:

- 6.16.7 Monitoring, logging and reporting of the equipment operation on daily basis.
- 6.16.8 Periodic health checks of the systems and implementing proactive rectification measures.
- 6.16.9 Troubleshooting Endpoints, Display Units, MCU,etc .
- 6.16.10 Analyzing and reporting all system related issues.
- 6.16.11 Liaison with various vendors, OEMs, agencies and service providers for equipment maintenance & related work.
- 6.16.12 All incidents must be documented and logged as per the format mutually agreed upon.

6.17 MCU Administration:

MCU Administration Functions include following activities in consultation with BHEL Personnel:

- 6.17.1 System administration and tuning.
- 6.17.2 Re-installation in the event of crash/failures
- 6.17.3 Configuring settings and various parameters.
- 6.17.4 Taking regular Back-up of System Configuration & other settings.
- 6.17.5 Ensure proper configuration and settings.
- 6.17.6 Periodic System performance tuning and configuration check.
- 6.17.7 Addition, deletion, re-configuration of Endpoints, devices, users and sites.
- 6.17.8 Security management – Configuring account policy, access rights, password control as per BHEL's security policy.
- 6.17.9 Resolving all hardware and software related problems.
- 6.17.10 Escalating unresolved problems to ensure resolution as per the agreed SLA.

6.18 Performance Monitoring and Reporting:

- 6.18.1 Carry out regular monitoring and maintaining a log of the performance monitoring of MCU, Endpoints, Bandwidth Utilization, etc.
- 6.18.2 Carry out regular analysis of events and logs generated in the entire VC systems.
- 6.18.3 Undertake appropriate actions in accordance with the results of the log analysis to ensure optimal performance

6.19 Backup and Restore:

6.19.1 Shall regularly backup the configuration and settings of MCU, Recording & Streaming server, Firewall Traversal and all VC Endpoints as per the agreed backup policy.

6.19.2 Must conduct periodic restore operations of backed up data.

6.20 Supply during Warranty (Free of Cost):

6.20.1 Supply of all system software upgrades and patches.

6.20.2 Supply of future release of all OS and related system software.

6.20.3 Supply and install Security patches and bug fixes.

6.20.4 Supply of all spare parts

6.21 Offline Support:

The offline support should have:

6.21.1 12x7x365 national telephonic support

6.21.2 Access to raise technical assistance request at hardware vendors / supplier website

6.22 Special Clauses:

6.22.1 The MCU, Recording & Streaming Server, Endpoints should be from a single OEM only.

6.22.2 Any other hardware, software, etc. required for the functioning of the equipments to be supplied as per clause 7 (Technical requirements) of this RFP has to be provided by the bidder.

6.22.3 There shall be only 1 bid from each Bidder.

6.22.4 Bidder shall have to quote for all the Items of the BOQ as specified in this document.

6.22.5 Relevant portions, in the documents submitted in pursuance of eligibility criterion shall be highlighted. If the offer is not accompanied by all the above documents mentioned, the same would be rejected. Undertaking for subsequent submission of any of the above documents will not be entertained under any circumstances.

6.22.6 Purchaser reserves the right to verify / confirm all original documentary evidence submitted by vendors in support of above mentioned clauses of eligibility criteria. Upon verification, evaluation / assessment, if in case any information furnished by the vendor is found to be false / incorrect, their total bid shall be summarily rejected and no correspondence on the same shall be entertained.

6.22.7 The Bidder must give his compliance point by point.

6.22.8 Bidder must submit detailed Technical Specifications of MCU, RSS, Firewall traversal, Endpoints, Display Units, etc. along with the offer. Any item(s) not conforming to the Technical Specification shall not be accepted and their total bid shall be summarily rejected and no correspondence on the same shall be entertained.

- 6.22.9** A Responsibility Matrix for each item must be submitted detailing the responsibilities of OEM and Bidder, duly signed by the authorized signatory of OEM and Bidder along with the Technical Acceptance.
- 6.22.10** All the items to be supplied must be NEW.
- 6.22.11** BHEL shall not be responsible for any misinterpretation or wrong assumption by the bidder.
- 6.22.12** All the Items must be supplied in full and complete.
- 6.22.13** Bidders must offer all the software, licenses and support for complete solution. All Licenses must be in the name of BHEL. Licenses must clearly mention their validity period and renewal policies. All updates to software, patches and upgrades must be provided from time to time free of cost during the entire contract period.
- 6.22.14** Availability of spares and support for MCU, RSS, Firewall Traversal, Endpoints, Display Units, etc, for a minimum period of 5 (Five) Years after the completion of warranty must be ensured.
- 6.22.15** The bidder shall provide all other H/W or S/W items that are not explicitly mentioned herein but are required to full-fill the intended specifications by the bidder in the bid. The specifications parameters are indicative and any item of higher rating will be acceptable.
- 6.22.16** No item shall be offered whose end-of-sale&end-of-support has been declared by the OEM or has been declared to be under phase out.
- 6.22.17** Proper documentation, labeling and tagging shall be done for all the equipments used in the entire solution for easy management and maintenance.
- 6.22.18** The following documents shall be provided in hard copy or CD format:
- 6.22.19** Technical Data Sheets of all the elements
- 6.22.20** User manual
- 6.22.21** Administrator Manual
- 6.22.22** Error Handling and troubleshooting manual
- 6.22.23** Safety and Standard Operating Practices manuals.
- 6.22.24** Rates Validity:
- **For equipments and services (S.No. 1 to 9 as per price bid format (Annexure VIII):** 9 months after placement of LOI / first order. BHEL, at its discretion may place additional orders within this validity period of nine months.

- **For shifting & redeployment (S.No. 10 as per price bid format (Annexure VIII)) :**For the complete lease period of 5 years.

7. Technical Requirements

7.1 Basic Design Requirements for Multipoint Conferencing Unit:

The primary MCU shall be 40 port MCU highly scalable chassis based system with redundant power supplies and fans. The secondary (standby) MCU shall be 20 port MCU. It should be possible to span conferences across the two MCU boxes and they should also act as hot standby to each other.

The common minimum specifications of Multipoint Conferencing Unit shall be as under:

S.No.	Basic Requirement	Bidder's Response
1	The MCU should be chassis based purpose-built platform for video conferencing and should offer reliability, availability and scalability. Should be rack mountable on a standard 19" rack.	
2	The MCU should be able <ul style="list-style-type: none"> a) to connect min. 40 sites concurrently, each at 4Mbps with Full HD 1080p resolution @30 frames per second on IP in Continuous Presence and Voice Activated mode using same chassis. b) to connect min. 80 sites concurrently, each at 4Mbps with HD 720p resolution @30 frames per second on IP in Continuous Presence and Voice Activated mode using same chassis. 	
4	The MCU should be able to display at least 16 sites in continuous presence.	
5	It should be possible to add minimum 200 end points in the MCU Address Book	
6	The MCU should have minimum 4 PRI ports for conducting VC sessions on ISDN lines with external parties / vendors / customers.	
7	The MCU must be capable of transcoding on every port without loss of port count with: <ul style="list-style-type: none"> a. Bitrates up to 4Mbps with H.264 per connection. b. Resolutions of QCIF, CIF, 4CIF, VGA, SVGA, XGA, and HD (720p and 1080p). c. All resolutions supported at 30fps with H.264. d. Video Codecs: H.263, H.263+/H.263++, H.264. e. Audio codecs: G.711, G.722, G.722.1, G.729, MPEG-4 AAC or equivalent audio standard 	
8	The MCU should support video codecs: H.261, H.263, H.263+, and H.264	
9	The MCU should support min. 5 audio only ports.	

10	The MCU shall support H.239 dual video without losing ports on the MCU	
11	The MCU shall support a mix of resolutions in both Voice Activated mode and Continuous Presence. Each endpoint shall receive at the maximum of its capacity without reducing the capacity of another.	
12	The MCU shall have at least 2 nos. of 100/1000Mbps fully functional Ethernet ports for Network connectivity.	
13	The MCU must support H.320/ISDN sites through an internal / external ISDN/H.320 PRI gateway/s for terminating up to 4 PRI lines.	
14	The MCU shall be capable of supporting H.323, H.320, SIP, and H.235 v3 in the same conference at any bandwidth and resolution.	
15	The solution shall support Standard Definition, Enhanced Definition, High Definition and Full high definition in both Voice Activated and Continuous Presence mode without loss of functionality or capacity	
16	MCU must support a configurable 'Text Overlay' features, optionally displaying the party H.323 ID, or custom text, within the video frame during continuous presence or voice activated switching	
17	The MCU shall allow users to create conferences on the fly from their endpoints without the need of an operator.	
18	The MCU shall transcode video and audio on all ports, without loss of port count, regardless of bitrates, resolutions or codecs that endpoints connect with.	
19	The MCU shall provide Full HD quality in Continuous Presence to all Full HD endpoints connected and deliver this even if SD or ED endpoints are part of the conference. MCU should have the ability to enhance the resolution even from the SD and ED endpoints and send to Full HD participant. It should not reduce the overall number of ports of the MCU.	
20	The MCU shall support down-speeding and packet error / loss concealment methods to ensure optimum video and audio quality. The MCU must provide standards based method of compensating and correcting for packet loss (of media streams, both 'to' and 'from' the MCU and terminals) of up to a minimum of 2%.	
21	The MCU shall support an external recording and video-on-demand solution device.	
22	The MCU shall provide a built-in Web server for configuration and administration.	
23	The MCU shall support various user privileges from administrator to simple guest	

24	The MCU shall have an address book and scheduling features using built-in or external server. The system admin must have the ability to provision the following attributes per user / groups of users:	
	a. Time zone, Level of Video/Audio Services (Full HD, HD, SD, Audio Only),	
	b. Recording Policy	
	c. Max Allowed Bandwidth for Point to Point call, multipoint call , and per conference as per service created	
	d. The network management application must support centralized Gateway, MCU and Gatekeeper system logs.	
25	It should be possible to configure conferences across the ports on two MCU systems.	
26	The MCU should be interoperable with the gatekeeper offered, if any, with the solution.	
27	The MCU should support G .711, G.722, G.722.1, G.723.1, G.729, MPEG-4 AAC or equivalent audio standard.	
28	The MCU should support following protocols:	
	➤ H .323, SIP, H.235 (AES), TLS, H.239 (dual video)	
	➤ H.243 (chair control), RTP, HTTP, HTTPS, DHCP, SNMP, NTP	
29	The MCU should support QoS based on DSCP and TOS/IP precedence.	

Standby MCU (20 port appliance based MCU)

S.No.	Basic Requirement	Bidder's Response
1	The MCU should be chassis based purpose-built platform for video conferencing and should offer reliability, availability and scalability. Should be rack mountable on a standard 19" rack.	
2	The MCU should be able to : a) connect min. 20 sites concurrently, each at 4Mbps with Full HD 1080p resolution @30 frames per second on IP in Continuous Presence and Voice Activated mode using same chassis. b) connect min. 40 sites concurrently, each at 4Mbps with HD 720p resolution @30 frames per second on IP in Continuous Presence and Voice Activated mode using same chassis.	-
3	The MCU should be able to display at least 16 sites in continuous presence.	

4	It should be possible to add minimum 200 end points in the MCU Address Book	
5	The MCU should have minimum 4 PRI ports for conducting VC sessions on ISDN lines with external parties / vendors / customers.	
6	The MCU must be capable of transcoding on every port without loss of port count with:	
	a. Bitrates up to 4Mbps with H.264 per connection.	
	b. Resolutions of QCIF, CIF, 4CIF, VGA, SVGA, XGA, and HD (720p and 1080p).	
	c. All resolutions supported at 30fps with H.264.	
	d. Video Codecs: H.263, H.263+/H.263++, H.264.	
	e. Audio codecs: G.711, G.722, G.722.1, G.729, MPEG-4 AAC or equivalent audio standard	
7	The MCU should support video codecs: H.261, H.263, H.263+, and H.264	
8	The MCU should support min. 5 audio only ports.	
9	The MCU shall support H.239 dual video without losing ports on the MCU	
10	The MCU shall support a mix of resolutions in both Voice Activated mode and Continuous Presence. Each endpoint shall receive at the maximum of its capacity without reducing the capacity of another.	
11	The MCU shall have at least 2 nos. of 100/1000Mbps fully functional Ethernet ports for Network connectivity.	
12	The MCU must support H.320/ISDN sites through an internal / external ISDN/H.320 PRI gateway/s for terminating up to 4 PRI lines.	
13	The MCU shall be capable of supporting H.323, H.320, SIP, and H.235 v3 in the same conference at any bandwidth and resolution.	
14	The solution shall support Standard Definition, Enhanced Definition, High Definition and Full high definition in both Voice Activated and Continuous Presence mode without loss of functionality or capacity	
15	MCU must support a configurable 'Text Overlay' features, optionally displaying the party H.323 ID, or custom text, within the video frame during continuous presence or voice activated switching	
16	The MCU shall allow users to create conferences on the fly from their endpoints without the need of an operator.	
17	The MCU shall transcode video and audio on all ports, without loss of port count, regardless of bitrates, resolutions or codecs that endpoints connect with.	

18	The MCU shall provide Full HD quality in Continuous Presence to all Full HD endpoints connected and deliver this even if SD or ED endpoints are part of the conference. MCU should have the ability to enhance the resolution even from the SD and ED endpoints and send to Full HD participant. It should not reduce the overall number of ports of the MCU.	
19	The MCU shall support down-speeding and packet error / loss concealment methods to ensure optimum video and audio quality. The MCU must provide standards based method of compensating and correcting for packet loss (of media streams, both 'to' and 'from' the MCU and terminals) of up to a minimum of 2%.	
20	The MCU shall support an external recording and video-on-demand solution device.	
21	The MCU shall provide a built-in Web server for configuration and administration.	
22	The MCU shall support various user privileges from administrator to simple guest	
23	The MCU shall have an address book and scheduling features using built-in or external server. The system admin must have the ability to provision the following attributes per user / groups of users:	
	a. Time zone, Level of Video/Audio Services (Full HD, HD, SD, Audio Only),	
	b. Recording Policy	
	c. Max Allowed Bandwidth for Point to Point call, multipoint call , and per conference as per service created	
	d. The network management application must support centralized Gateway, MCU and Gatekeeper system logs.	
24	It should be possible to configure conferences across the ports on two MCU systems.	
25	The MCU should be interoperable with the gatekeeper offered, if any, with the solution.	
26	The MCU should support G .711, G.722, G.722.1, G.723.1, G.729, MPEG-4 AAC or equivalent audio standard.	
27	The MCU should support following protocols:	
	➤ H .323, SIP, H.235 (AES), TLS, H.239 (dual video)	
	➤ H.243 (chair control), RTP, HTTP, HTTPS, DHCP, SNMP, NTP	
28	The MCU should support QoS based on DSCP and TOS/IP precedence.	

7.2 Basic Design Requirements for Recording & Media Streaming System:

The solution shall be from the OEM of the MCU only.

The common minimum specifications of Recording & Media Streaming System shall be as under:

S.No.	Basic Requirement	Bidder's Response
1	The recording and media streaming system should be an appliance based purpose-built system mountable on a standard 19" rack.	
2	The system should be compatible, integrable and inter-operable with the offered MCU and the total VC solution. All inter-connecting cables, hardware and software required shall be supplied along with the system.	
3	The system shall have the feature to record and stream video and H.239 dual-stream presentations from any H.323 or SIP videoconferencing unit.	
4	The system shall support synchronized streaming of video and presentation in live and on-demand modes.	
5	The system should support Unicast and Multicast streaming of content.	
6	Should be compatible with all major streaming formats like Windows Media®, Flash® etc.	
7	Should have editing and library features for simple content creation and retrieval.	
8	It must be possible to easily trim the start and end time of the recording to help in cutting out any idle time in the beginning or end of the meeting.	
9	It must be possible to fast-forward , rewind and skip to a specific location in the recording	
10	Shall have the capability to record minimum 5@1080p@30fps simultaneous H.323 or SIP video calls.	
11	Should support download of content to PC and portable media devices.	
12	The system should have a recording capacity of at least 500hours / 600GB. Should have the capability to connect to the external storage also.	

7.3 Basic Design Requirements for VC Systems for Heads, Manufacturing Units & Power Sector Regional Head Quarters, Project sites:

7.3.1 VC Endpoint with Dual (min. 55") Display Unit:

S. No.	Parameter / Feature	Basic Requirement	Bidder's Response
1	General Design	Should be Full High Definition end point compatible with the offered MCU. The offered system should be an OEM / SI integrated system consisting of Full HD codec, Full HD camera and Full HD dual display unit.	
2	Display Unit Size	Should be min 55" dual display unit	
3	IP Support	Should support minimum 6 Mbps point-to-point & 6 Mbps multipoint on IP	
4	SIP Support	Should support min. 6 Mbps on SIP	
5	Multisite Feature	Should be able to connect to 3 other sites concurrently on IP	
6	Point-to-Point Conference	Should be able to connect to other site on Full High Definition min. 1080p @ 30 frames per second on IP	
7	Firewall Traversal	Should support firewall/NAT traversal based on H.460.18, H.460.19 standards	
8	Video Standards	Should support H.263, H.263+/H.263++, H.264 video standards	
9	Audio Standards	Should support G.711, G.722, G.722.1, G.728 64 bit & 128 bit MPEG4 AAC audio standards or equivalent	
10	Aspect Ratio	Should support 4:3 and 16:9 aspect ratio	
11	Video Inputs	Should have following input ports : a) minimum 1 HD Camera Input, b) 1 DVI-I / HDMI INPUTS for PC Presentation. Bidder to provide converter for the remaining input. Bidder also to provide HDMI to HDMI and HDMI to VGA cable	
12	Video Outputs	Should have min 2 HDMI output ports	
13	Audio Inputs	Should have min 2 HDMI/RCA/Phono/Line-in inputs for stereo left and right	
14	Audio Outputs	Should have min 2 HDMI/RCA/Phono/Line-out outputs for stereo left and right	
15	Live Video Resolutions	Should support CIF, QCIF, 4CIF, VGA, SVGA, XGA, WXGA, HD 720p@30fps, Full HD 1080p@300fps or higher.	
16	Microphone Ports	Should have min 2 ports for connecting microphones	
17	Audio Features	➤ Should have high quality stereo audio	
		➤ Should have the feature of Automatic Gain Control (AGC)	
		➤ Should have the feature of Automatic Noise Reduction	
		➤ Should have the feature of Active lip synchronization	

18	Dual Video Support	Should support H.239 dual video	
19	Packet Loss Mitigation	Should have mechanism to withstand network Packet Loss of at least 2% to ensure good Video and Audio quality	
20	Jitter	Should provide Dynamic jitter buffering to minimize the effect of jitter on Video & audio quality	
21	Security Features	➤ Should provide SNMP security alerts	
		➤ Should provide Network Settings protection	
22	Network Interfaces	Should have minimum 1 numbers of 100Mbps Ethernet full duplex ports for LAN Connectivity	
23	QoS Feature	Should support QoS features based on DSCP and TOS/IP Precedence	
		Should support IP adaptive bandwidth management (including flow control)	
24	Camera	Should come with Full HD min.1080p@30fps or higher resolution camera	
		Should have Automatic focus, brightness, white balance	
		Should provide minimum 12x optical zoom	
		Should support Far-end camera control	
25	System Management	Should be fully manageable through the Central Management Application provided with the solution	
		Should be manageable via embedded web server, SNMP, Telnet, etc.	
		Should support remote software upload/upgrade via web server, ftp server	
26	Other Features	Should support Auto gatekeeper discovery	
		Should support Dynamic playout and lip-sync buffering	
		H.245 DTMF tones in H.323	
		Should have Date and Time support via NTP	
27	Accessories	Should come with 2 sets of necessary cables to connect to Display Unit, PC, and microphones	
		Should come with necessary remote control to operate the system	

7.3.2 VC Endpoint with Single (min. 55") Display Unit:

S. No.	Parameter / Feature	Basic Requirement	Bidder's Response
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1	General Design	Should be Full High Definition end point compatible with the offered MCU. The offered system should be an OEM / SI integrated system consisting of Full HD codec, Full HD camera and Full HD single display unit.	
2	Display Unit Size	Should be min 55" single display unit	
3	IP Support	Should support minimum 6 Mbps point-to-point & 6 Mbps multipoint on IP	
4	SIP Support	Should support min. 6 Mbps on SIP	
5	Multisite Feature	Should be able to connect to 3 other sites concurrently on IP	
6	Point-to-Point Conference	Should be able to connect to other site on Full High Definition min.1080p @ 30 frames per second on IP	
7	Firewall Traversal	Should support firewall/NAT traversal based on H.460.18, H.460.19 standards	
8	Video Standards	Should support H.263, H.263+/H.263++, H.264 video standards	
9	Audio Standards	Should support G.711, G.722, G.722.1, G.728 64 bit & 128 bit MPEG4 AAC audio standards or equivalent	
10	Aspect Ratio	Should support 4:3 and 16:9 aspect ratio	
11	Video Inputs	Should have following input ports : a) minimum 1 HD Camera Input, b) 1 DVI-I / HDMI INPUTS for PC Presentation. Bidder to provide converter for the remaining input. Bidder also to provide HDMI to HDMI and HDMI to VGA cable	
12	Video Outputs	Should have min 2 HDMI output ports	
13	Audio Inputs	Should have min 2 HDMI/RCA/Phono/Line-in inputs for stereo left and right	
14	Audio Outputs	Should have min 2 HDMI/RCA/Phono/Line-out outputs for stereo left and right	
15	Live Video Resolutions	Should support CIF, QCIF, 4CIF, VGA, SVGA, XGA, WXGA, HD 720p@30fps, Full HD 1080p@30fps or higher.	
16	Microphone Ports	Should have min 2 ports for connecting microphones	
17	Audio Features	<ul style="list-style-type: none"> ➤ Should have high quality stereo audio ➤ Should have the feature of Automatic Gain Control (AGC) ➤ Should have the feature of Automatic Noise Reduction ➤ Should have the feature of Active lip synchronization 	
18	Dual Video Support	Should support H.239 dual video	

19	Packet Loss Mitigation	Should have mechanism to withstand network Packet Loss of at least 2% to ensure good Video and Audio quality	
20	Jitter	Should provide Dynamic jitter buffering to minimize the effect of jitter on Video & audio quality	
21	Security Features	➤ Should provide SNMP security alerts	
		➤ Should provide Network Settings protection	
22	Network Interfaces	Should have minimum 1 numbers of 100Mbps Ethernet full duplex ports for LAN Connectivity	
23	QoS Feature	Should support QoS features based on DSCP and TOS/IP Precedence	
		Should support IP adaptive bandwidth management (including flow control)	
24	Camera	Should come with Full HD min.1080p@30fps or higher resolution camera	
		Should have Automatic focus, brightness, white balance	
		Should provide minimum 12x optical zoom	
		Should support Far-end camera control	
25	System Management	Should be fully manageable through the Central Management Application provided with the solution	
		Should be manageable via embedded web server, SNMP, Telnet, etc.	
		Should support remote software upload/upgrade via web server, ftp server	
26	Other Features	Should support Auto gatekeeper discovery	
		Should support Dynamic playout and lip-sync buffering	
		H.245 DTMF tones in H.323	
		Should have Date and Time support via NTP	
27	Accessories	Should come with 2 sets of necessary cables to connect to Display Unit, PC, and microphones	
		Should come with necessary remote control to operate the system	

7.3.3 VC Endpoint with Dual (min. 55") Display Unit with ISDN facility:

S. No.	Parameter / Feature	Basic Requirement	Bidder's Response
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1	General Design	Should be Full High Definition end point compatible with the offered MCU. The offered system should be an OEM / SI integrated system consisting of Full HD codec, Full HD camera and Full HD dual display unit.	
2	Display Unit Size	Should be min 55" dual display unit	
3	IP Support	Should support minimum 4 Mbps point-to-point & 4 Mbps multipoint on IP	
4	ISDN Support	Should have minimum 1 ISDN PRI ports	
5	SIP Support	Should support minimum 4 Mbps on SIP	
6	Multisite Feature	Should be able to connect to 3 other sites concurrently on IP	
7	Point-to-Point Conference	Should be able to connect to other site on Full High Definition min.1080p @ 30 frames per second on IP and ISDN	
8	Firewall Traversal	Should support firewall/NAT traversal based on H.460.18, H.460.19 standards	
9	Video Standards	Should support H.263, H.263+/H.263++, H.264 video standards	
10	Audio Standards	Should support G.711, G.722, G.722.1, 64 bit & 128 bit MPEG4 AAC audio standards or equivalent	
11	Aspect Ratio	Should support 4:3 and 16:9 aspect ratio	
12	Video Inputs	Should have following input ports : a) minimum 1 HD Camera Input, b) 1 DVI-I / HDMI INPUTS for PC Presentation. Bidder to provide converter for the remaining input. Bidder also to provide HDMI to HDMI and HDMI to VGA cable	
13	Video Outputs	Should have min 2 DVI / HDMI outputs: Bidder to provide converter for the remaining output.	
14	Audio Inputs	Should have min 1 HDMI/RCA/Phono/Line In inputs for stereo left and right	
15	Audio Outputs	Should have min 1 HDMI/RCA/Phono/ Line out outputs for stereo left and right	
16	Live Video Resolutions	Should support CIF, QCIF, 4CIF, VGA, SVGA, XGA, WXGA, HD 720p@30fps, HD 720p@60fps, Full HD 1080p@30fps or higher.	
17	Microphone Ports	Should have min 2 ports for connecting microphones	
18	Audio Features	<ul style="list-style-type: none"> ➤ Should have high quality stereo audio ➤ Should have the feature of Automatic Gain Control (AGC) 	

		➤ Should have the feature of Automatic Noise Reduction	
		➤ Should have the feature of Active lip synchronization	
19	Dual Video Support	Should support H.239 dual video	
20	Packet Loss Mitigation	Should have mechanism to withstand network Packet Loss of at least 2% to ensure good Video and Audio quality	
21	Jitter	Should provide Dynamic jitter buffering to minimize the effect of jitter on Video & audio quality	
22	Security Features	➤ Should provide SNMP security alerts	
		➤ Should provide Network Settings protection	
23	Network Interfaces	Should have minimum 1 numbers of 100Mbps Ethernet full duplex ports for LAN Connectivity	
24	QoS Feature	Should support QoS features based on DSCP and TOS/IP Precedence	
		Should support IP adaptive bandwidth management (including flow control)	
25	Camera	Should come with Full HD 1080p@30fps or higher resolution camera	
		Should have Automatic focus, brightness, white balance	
		Should provide minimum 12x optical zoom	
		Should support Far-end camera control	
26	System Management	Should be fully manageable through the Central Management Application provided with the solution	
		Should be manageable via embedded web server, SNMP, Telnet, etc.	
		Should support remote software upload/upgrade via web server, ftp server or ISDN	
27	Other Features	Should support Auto gatekeeper discovery	
		Should support Dynamic playout and lip-sync buffering	
		H.245 DTMF tones in H.323	
		Should have Date and Time support via NTP	
28	Accessories	Should come with 2 sets of necessary cables to connect to Display Unit, PC, and microphones	
		Should come with necessary remote control to operate the system	

7.3.4 Display Unit (For 7.3.1, 7.3.2, 7.3.3):

S. No.	Parameter / Feature	Basic Requirement	Bidder's Response
1	Technology	Should be LED based minimum 55" Display Unit	
2	Resolution	Should support Full HD 1080p @ 30ps	
3	Contrast Ratio	4000:1 or above	
4	Aspect Ratio	Should support aspect ratio 16:9 & 4:3	
5	Brightness	700cd/sq.m or above	
6	Viewing Angle	Minimum 178 degree (horizontal)	
		Minimum 178 degree (vertical)	
7	Display Colors	Should support 1.07 billion or above	
8	Supported Display Resolution	Should support computer formats: 640*480, 60Hz, 800*600, 60Hz, 1024*768,60Hz	
9	Sound	➤ Should come with auto volume leveler, sound enhancer	
		➤ Digital Signal Processing,	
		➤ Dynamic Bass Enhancement,	
		➤ Graphic Equaliser,Smart Sound	
		➤ Dolby Digital	
10	Speakers	2x10W or higher	
11	Connectivity / Interfaces	The display unit should have following min. interfaces :	
		1 HDMI interface	
		1 DVI interface	
		1 RGB	
		Component (Y,Pb,Pr) & Audio	
		Composite Video	
		1 AV In	
12	Power	Should work on AC 220-240 V +/- 10%	
13	Compatibility	Should be compatible with the offered video conferencing equipment	
14	Accessories	➤ Should come with wall mounting bracket, connectors,	
		➤ Should also come with 2 sets of all necessary cables to connect to the Video Endpoint, PC, Projector, power cables, etc.	

		➤ Should come with the remote control to operate the system	
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7.4 Firewall Traversal

S.No.	Feature	Specification	Bidder's Response
1	General	The system should enable conducting of Video Conferences over Public Network for both endpoints and desktop based clients. The Firewall/ NAT traversal system should provide minimum 50 simultaneous concurrent calls. The bidder shall explain and submit a solution document on how this requirement will be met.	
2	Standards	Should support firewall traversal solution using the H.460.18 and H.460.19 protocol.	
3	Interoperability with Firewalls	The solution should be standards based and work with all firewalls and not bypass the customers firewalls.	
4	Dial plan and call connectivity	The solution should support ability to call to public IP addresses.	
		Should support the ability for devices on the internet to be reached using a H323 ID or E.164 alias.	
		Should support the ability for devices on the internet to be reached on H323 using a H323 ID and URL.E.g. h323 id (ahmedabad@xxx.co.in) or SIP URI (ahmedabad@xxxx.co.in)	
5	Integration with DNS	The Firewall Traversal Solution must have integration with DNS using SRV records or AAA records so as to have domain name based calling.	
6	Capacity	Should support at least 50 calls in 1080p@30fps with H.264 video compression and 20 Khz audio compression protocol from day one	
7	Protocols	Should support all the H323 and SIP functionalities such as: H.239, BFCP, AES encryption, FECC, H.235	
8	Security	Must support H.460 multiplexed media for H323 calls so as to reduce ports used by the calls to traverse the firewall	
9	Authentication and Registration	The solution must support the ability to create authentication credentials for a VC device to be registered and make calls.	
10	Accessories	Any other hardware required for making the firewall traversal operational has to be provided by the bidder	

7.5 Auto Speaker Tracking Camera with Full HD codec

S.No.	Parameter	Basic requirement	Bidder's Response
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1	General Feature	Should come with Full HD (1080p) codec and microphone compatible with Full HD dual-camera system; one for tracking the person who is speaking and the other for capturing the room view	
		The full HD camera system should provide smooth transitions between the close-up view of the person who is speaking and the room view	
		It should be possible to Start and Stop Camera Tracking	
2	Resolution	Should support min. Full HD 1080@ 60 frames per second (fps)	
3	Zoom	Should support min. 10x optical zoom	
4	Pan and tilt	Should support min. Pan range: +/-90 degrees	
		Should support min. Tilt range: +/-20 degrees	
5	Field of view (FoV)	Should support	
		min. Horizontal FoV: 70 degrees	
		min. Vertical FoV: 40 degrees	
		min. Tracking horizontal FoV: 70 degrees	
6	Settings	Should support manual or automatic settings for Focus, white balance, and brightness	
7	Video interfaces	Should have min. 1 HDMI / DVI video output	
8	Accessories	Should come along with mount option	
		Should come with 2 sets of necessary cables to connect to the existing display unit, offered codec and microphone	

8. List of Annexures:

Annexure-I: Existing VC setup

Annexure-II: Format for OEM Authorization.

Annexure-III: Format for Back-to-Back Support.

Annexure-IV: Format for No-Deviation Certificate.

Annexure-V: Proforma for Integrity Pact.

Annexure-VI: Proforma for Non-Disclosure Agreement.

Annexure-VII: Checklist of Make& Models Offered

Annexure-VIII: Price Bid Format.

Annexure-IX: Delivery locations.