

GOVERNMENT OF UTTARAKHAND
UTTARAKHAND DISASTER PREPAREDNESS AND RESILIENCE
PROJECT (U-PREPARE)

USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand

Request for Bids

NATIONAL OPEN COMPETITIVE PROCUREMENT

FOR PROCUREMENT OF GOODS/EQUIPMENT

RFB No.	:	IN-PIU-USDMA-511168-GO-RFB
DATE OF COMMENCEMENT OF SALE OF BIDDING DOCUMENT	:	26.03.2026
LAST DATE FOR SALE OF BIDDING DOCUMENT	:	27.04.2026
LAST DATE AND TIME FOR SUBMISSION OF BIDS	:	DATE 27.04.2026 TIME 1200 HOURS
TIME AND DATE OF OPENING BIDS – Technical Part	:	DATE 27.04.2026 TIME 1230 HOURS OF
PLACE OF OPENING OF BIDS	:	Dehradun
OFFICER INVITING BIDS	:	Program Director, U-PREPARE

REQUEST FOR BIDS

(RFB)

**GOVERNMENT OF UTTARAKHAND
UTTARAKHAND DISASTER PREPAREDNESS AND RESILIENCE
PROJECT (U-PREPARE)**

**NATIONAL OPEN COMPETITIVE PROCUREMENT
FOR PROCUREMENT OF ICT EQUIPMENT ALONG WITH SUPPLY &
INSTALLATION FOR ESTABLISHMENT OF STATE EMERGENCY OPERATION
CENTRE (SEOC) AT USDMA BUILDING, IT PARK, DEHRADUN
(Two Envelope Bidding Process with e-Procurement)**

**Request for Bids (RFB)
E-Procurement Notice**

Name of Project: Uttarakhand Disaster Preparedness and Resilience Project (U-PREPARE)

Contract Title: Procurement of ICT Equipment along with Supply & Installation for Establishment of State Emergency Operation Centre (SEOC) at USDMA Building, IT Park, Dehradun

Date: 26.03.2026

Loan No./Credit No./ Grant No.: 9654-IN

RFB Reference No.: IN-PIU-USDMA-511168-GO-RFB

1. The Government of India has received/ financing from the World Bank toward the cost of the **Uttarakhand Disaster Preparedness and Resilience Project (U-PREPARE)**, and intends to apply part of the proceeds toward eligible payments under the contract for **Procurement of ICT Equipment along with Supply & Installation for Establishment of State Emergency Operation Centre (SEOC) at USDMA Building, IT Park, Dehradun.**
2. The **Program Director, U-PREPARE** now invites online Bids from eligible Bidders for **Procurement of ICT Equipment along with Supply & Installation for Establishment of State Emergency Operation Centre (SEOC) at USDMA Building, IT Park, Dehradun.** Bidders are advised to note the clauses on eligibility (Section I Clause 4) and minimum qualification criteria (Section III – Evaluation and Qualification Criteria), to qualify for the award of the contract.
3. Bidding will be conducted through national open competitive procurement using a Request for Bids (RFB) as specified in the World Bank’s “Procurement Regulations for IPF Borrowers, July 2016, Sixth Edition February 2025” and is open to all eligible Bidders as defined in the Procurement Regulations. In addition, please refer to paragraphs 3.14 and 3.15 of the Procurement Regulations setting forth the World Bank’s policy on conflict of interest.

4. Interested eligible Bidders may obtain further information from the office of Program Director, U-PREPARE, 5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand and inspect the bidding document during office hours (10:00 HRS to 17:00 HRS) or download the bidding document from e-procurement system www.uktenders.gov.in.
5. The bidding document in English is available online on e-procurement system from 26.03.2026 to 27.04.2026 for a non-refundable fee as indicated below in the form of a Demand Draft (DD) on any Scheduled/ Nationalized bank in favour of **Program Director, U-PREPARE**, payable at **Dehradun**. Bidders will be required to register on the website. The bidders would be responsible for ensuring that any addenda available on the website is also downloaded and incorporated.
- | | | |
|-----|--|--------------------------|
| (a) | Fee for bidding document (non-refundable) | :INR 5900/- |
| (b) | Date of commencement of sale of bidding document | : 26.03.2026 |
| (c) | Last date for sale of bidding document | : 27.04.2026 at 1200 Hrs |
| (d) | Last date and time for Submission of bids | : 26.03.2026 at 1200 Hrs |
| (e) | Time and date of opening of bids– technical part | :26.03.2026 at 1230 Hrs |
6. For submission of the bid, the bidder is required to have Digital Signature Certificate (DSC) in the name of the person duly authorized to sign on behalf of the Bidder from one of the Certifying Authorities authorised by Government of India for issuing DSC with their profile. It is mandatory for the bidder to register their firm with e-procurement system and obtain user ID and password for participating in e-procurement in this Project. A non-refundable fee of Rs 5900 (inclusive of tax) is required to be paid. The mode of payment shall be in the form of DD drawn in favor of **Program Director, U-PREPARE**, payable at **Dehradun**, from any Scheduled/ Nationalized Bank. Payment documents are to be submitted along with other documents listed in paragraph 9 below, if so, specified therein, before the bid submission deadline.
7. Bids comprise two Parts, namely the Technical Part and the Financial Part, and both parts must be submitted simultaneously online on the e-procurement system on or before the deadline for submission of bids, and the ‘Technical Part’ of bids will be publicly opened online on the same day at 1230 hours, in the presence of the Bidders’ designated

- representatives who choose to attend. The Financial Part shall remain unopened in the e-procurement system until the second public Bid opening for the financial part. Any bid or modifications to bid (including discount) received outside e-procurement system will not be considered. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time and venue. The electronic procurement system would not allow any late submission of bids.
8. All Bids must be accompanied by a Bid Security of INR 1,50,00,000, drawn in favour of **Program Director, U-PREPARE**. Bid security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 45 days beyond the validity of the bid". Procedure for submission of original bid security or Bid-Securing Declaration is described in Para 9, if so, specified therein.
 9. The bidders are required to submit (a) original payment documents towards the cost of bid document; (b) original bid security; and (c) original affidavit regarding correctness of information furnished with bid document & declaration of non blacklisting in last 5 years by any organization with PIU-USDMA, U-PREPARE, 5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand within 3 days from the Bid submission deadline in hard copy.
 10. Other details can be seen in the bidding document. The Purchaser shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Purchaser shall not be liable for any information not received by the bidder. It is the bidders' responsibility to verify the website for the latest information related to this bid.
 11. The address referred to above is : PIU-USDMA, U-PREPARE, 5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand

Program Director
U-PREPARE
5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand
Procurement.uprepare@gmail.com

Standard Procurement Document

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PART 1 – Bidding Procedures

Section I - Instructions to Bidders

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Section I - Instructions to Bidders

A. General

1. Scope of Bid

- 1.1 In connection with the Specific Procurement Notice, Request for Bids (RFB), specified **in the Bid Data Sheet (BDS)**, the Purchaser, as specified **in the BDS**, issues this bidding document for the supply of Goods and, if applicable, any Related Services incidental thereto, as specified in Section VII, Schedule of Requirements. The name, identification and number of lots (contracts) of this RFB are specified **in the BDS**.
- 1.2 Throughout this bidding document:
 - (a) the term “in writing” means communicated in written form (e.g. by mail, e-mail, fax, including, if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Purchaser), with proof of receipt;
 - (b) if the context so requires, “singular” means “plural” and vice versa; and
 - (c) “Day” means calendar day, unless otherwise specified as “Business Day”. A Business Day is any day that is an official working day of the Borrower. It excludes the Borrower’s official public holidays.

2. Source of Funds

- 2.1 The Borrower or Recipient (hereinafter called “Borrower”) specified **in the BDS** has applied for or received financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) in an amount specified **in the BDS**, toward the project named **in the BDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract for which this bidding document is issued.
- 2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the

Bank in accordance with the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

3. Fraud and Corruption

- 3.1 The Bank requires compliance with the Bank's Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework, as set forth in Section VI, Fraud and Corruption.
- 3.2 In further pursuance of this policy, bidders shall permit and shall cause their agents (where declared or not), subcontractors, subconsultants, service providers, suppliers, and personnel, to permit the Bank to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, bid submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

4. Eligible Bidders

- 4.1 A Bidder may be a firm that is a private entity, a state-owned enterprise or institution (subject to ITB 4.6), or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent, unless otherwise **specified in the BDS**. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. This authorization shall be evidenced by submitting a power of attorney

signed by legally authorized signatories of all members. Unless specified **in the BDS**, there is no limit on the number of members in a JV. In case of a successful bid, the joint venture agreement shall be registered in the place **specified in BDS** so as to be legally valid and binding on members.

- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:
- (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
 - (b) receives or has received any direct or indirect subsidy from another Bidder; or
 - (c) has the same legal representative as another Bidder; or
 - (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Purchaser regarding this Bidding process; or
 - (e) or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods that are the subject of the Bid; or
 - (f) or any of its affiliates has been hired (or is proposed to be hired) by the Purchaser or Borrower for the Contract implementation; or
 - (g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS reference ITB 2.1 (the name of the project), that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or

- (h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the Contract, and/or the Bid evaluation process of such Contract; or (ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the Bidding process and execution of the Contract.
- 4.3 A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a subcontractor. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member, may participate as a subcontractor in more than one Bid.
- 4.4 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or subconsultants for any part of the Contract including related Services.
- 4.5 A Bidder that has been sanctioned by the Bank, pursuant to the Bank’s Anti-Corruption Guidelines, and in accordance with its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework as described in Section VI paragraph 2.2 d. shall be ineligible to be prequalified for, initially selected for, bid for, propose for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract,

financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address specified in the BDS.

- 4.6 Bidders that are state-owned enterprises or institutions in the Purchaser's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Purchaser.
- 4.7 A Bidder shall not be under suspension from Bidding by the Purchaser as the result of the operation of a Bid-Securing Declaration or Proposal-Securing Declaration.
- 4.8 Firms and individuals may be ineligible if so indicated in Section V, Eligible Countries, and:
- (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or
 - (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.
- 4.9 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

5. Eligible Goods and Related Services

- 5.1 All the Goods and Related Services to be supplied under the Contract and financed by the Bank may have their origin in any country in accordance with Section V, Eligible Countries.
- 5.2 For purposes of this ITB, the term "goods" includes commodities, raw material, machinery, equipment, and industrial plants; and "related

services” includes services such as insurance, installation, training, and initial maintenance.

- 5.3 The term “origin” means the country where the goods have been mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

B. Contents of Request for Bids Document

6. Sections of Bidding Document

- 6.1 The bidding document consists of Parts 1, 2, and 3, which include all the sections indicated below, and should be read in conjunction with any addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

- Section I - Instructions to Bidders (ITB)
- Section II - Bidding Data Sheet (BDS)
- Section III - Evaluation and Qualification Criteria
- Section IV - Bidding Forms
- Section V - Eligible Countries
- Section VI - Fraud and Corruption

PART 2 Supply Requirements

- Section VII - Schedule of Requirements

PART 3 Contract

- Section VIII - General Conditions of Contract (GCC)
- Section IX - Special Conditions of Contract (SCC)
- Section X - Contract Forms

- 6.2 The Specific Procurement Notice - Request for Bids (RFB) issued by the Purchaser is not part of this bidding document.
- 6.3 Unless obtained directly from the Purchaser or downloaded from the official website specified in the ‘E-Procurement Notice’, the Purchaser is not

responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Bid meeting (if any), or addenda to the bidding document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser or downloaded from the official website specified in the ‘E-Procurement Notice’ shall prevail.

- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid all information or documentation as is required by the bidding document.

7. Clarification of the Bidding Document

- 7.1 The electronic procurement system **specified in the BDS** provides for online clarifications. A Bidder requiring any clarification of the bidding document may notify the Purchaser online on the e-procurement system. Clarifications requested through any other mode shall not be considered by the Purchaser. The Purchaser will respond to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period specified **in the BDS**. Description of clarification sought and the response of the Purchaser shall be uploaded on the e-procurement system for information of all Bidders without identifying the source of request for clarification. Should the clarification result in changes to the essential elements of the bidding document, the Purchaser shall amend the bidding document following the procedure under ITB 8 and ITB 22.2. It is the bidder’s responsibility to check on the e- procurement system, for any addendum/ amendment/ corrigendum to the bidding document.

8. Amendment of Bidding Document

- 8.1 At any time prior to the deadline for submission of Bids, the Purchaser may amend the bidding document by issuing addenda. The addendum will appear on the e-procurement system under “Latest Corrigendum” and email notification is also automatically sent to those bidders who have started working on the tender, or as **otherwise specified in BDS**.

- 8.2 Any addendum issued shall be part of the bidding document and shall be deemed to have been communicated to all bidders. The Purchaser shall not be liable for any information not received by the bidder. It is the bidders' responsibility to verify the website for the latest information related to this bid.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

C. Preparation of Bids

9. Cost of Bidding

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

10. Language of Bid

- 10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in English. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into English, in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. Documents comprising the Bid

- 11.1 The Bid shall comprise two Parts, namely the Technical Part and the Financial Part. These two Parts shall be submitted simultaneously.
- 11.2 The **Technical Part** shall contain the following:
- (a) **Letter of Bid - Technical Part:** prepared in accordance with ITB 12;
 - (b) **Bid Security** or **Bid-Securing Declaration:** in accordance with ITB 19.1;
 - (c) **Alternative Bid - Technical Part:** if permissible in accordance with ITB 13, the Technical Part of any Alternative Bid;

- (d) **Authorization:** written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.3, and in accordance with ITB 20.4 in case of a JV;
 - (e) **Bidder's Eligibility:** documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to Bid;
 - (f) **Qualifications:** documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the Contract if its Bid is accepted;
 - (g) **Eligibility of Goods and Related Services:** documentary evidence in accordance with ITB 16, establishing the eligibility of the Goods and Related Services to be supplied by the Bidder;
 - (h) **Conformity:** documentary evidence in accordance with ITB 16, that the Goods and Related Services conform to the bidding document;
 - (i) any other document **required in the BDS.**
- 11.3 The **Financial Part** shall contain the following:
- (a) **Letter of Bid – Financial Part:** prepared in accordance with ITB 12 and ITB 14;
 - (b) **Price Schedules:** completed prepared in accordance with ITB 12 and ITB 14;
 - (c) **Alternative Bid - Financial Part;** if permissible in accordance with ITB 13, the Financial Part of any Alternative Bid;
 - (d) any other document **required in the BDS.**
- 11.4 The Technical Part shall not include any financial information related to the Bid price. Where material financial information related to the Bid price is contained in the Technical Part, the Bid shall be declared non-responsive.
- 11.5 In addition to the requirements under ITB 11.2, Bids submitted by a JV (where permitted) shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in

the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement.

11.6 The Bidder shall furnish in the Letter of Bid – Financial Part information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

12. Process of Bid Submission

12.1. The Bidder shall prepare the Letter of Bid – Technical Part, Letter of Bid – Financial Part, and Price Schedules using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.3. All blank spaces shall be filled in with the information requested.

12.2. Entire Bid including the Letters of Bid and filled-up Price Schedules shall be submitted online on e-procurement system specified in ITB 7.1. Details and process of online submission of the tender and relevant documents are given in the website mentioned above. Scanned copies of documents listed in clauses 11 and 12.3 should also be uploaded on this website.

13. Alternative Bids

13.1. Unless otherwise **specified in the BDS**, Alternative Bids shall not be considered.

14. Bid prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Letter of Bid - Financial Part and in the Price Schedules shall conform to the requirements specified below.

14.2 All lots (contracts) and items must be listed and priced separately in the Price Schedules.

14.3 The price to be quoted in the Letter of Bid - Financial Part, in accordance with ITB 12.1 shall be the total price of the Bid, excluding any discounts offered.

14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid - Financial Part, in accordance with ITB 12.1.

14.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not

subject to variation on any account, unless otherwise specified **in the BDS**. A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 31. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

- 14.6 If so specified in ITB 1.1, Bids are being invited for individual lots (contracts) or for any combination of lots (packages). Unless otherwise specified **in the BDS**, prices quoted shall correspond to 100% of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4 provided the Bids for all lots (contracts) are submitted and opened at the same time.
- 14.7 The terms EXW and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce, as specified **in the BDS**.
- 14.8 Prices shall be quoted as specified in each Price Schedule included in Section IV, Bidding Forms. The disaggregation of price components is required solely for the purpose of facilitating the comparison of Bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms offered. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V, Eligible Countries. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Section V, Eligible Countries. Prices shall be entered in the following manner:

- (a) For Goods:
 - (i) the price of the Goods quoted EXW (ex-works, ex-factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all duties (customs, excise etc.) and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods;
 - (ii) any Purchaser's Country sales tax and other taxes which will be payable on the Goods if the Contract is awarded to the Bidder; and
 - (iii) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) specified **in the BDS.**
- (b) for Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements:
 - (i) the price of each item comprising the Related Services (inclusive of any applicable taxes).

14.9 Deemed Export Benefits

Bidders may like to ascertain availability of excise or other duty exemption benefits, available for contracts financed under World Bank Credits/Loans. They are solely responsible for obtaining such benefits, which they have considered in their bid and in case of failure to receive such benefits for reasons whatsoever, the Purchaser will not compensate the bidder.

Where the bidder has quoted taking into account such benefits, it must give all information required for issue of necessary Certificates in terms of the Central Excise Notification -108/95 along with its bid in form at Serial Number 7 of Section IV Bidding Forms. Where the Purchaser

issues such Certificates, Excise Duty will not be reimbursed separately.

If the Bidder has considered the Deemed Export Benefits in its bid, the Bidder shall confirm and certify that the Purchaser will not be required to undertake any responsibilities of the deemed export scheme or the benefits available during contract execution except issuing the required certificates. Bids which do not conform to this provision or any condition by the Bidder which makes the bid subject to availability of deemed export benefits or compensation on withdrawal of or any variations in the deemed export benefits scheme will make the bid nonresponsive and hence liable to rejection

15. Currencies of Bid and Payment

- 15.1 The Bidder shall quote the Price and shall be paid for in Indian Rupees only.
- 15.2 Not used.

16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services

- 16.1 Not used.
- 16.2 To establish the conformity of the Goods and Related Services to the bidding document, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of Requirements.
- 16.3 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.
- 16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period

specified **in the BDS** following commencement of the use of the goods by the Purchaser.

- 16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

17. Documents Establishing the Eligibility and Qualifications of the Bidder

- 17.1 To establish Bidder's eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid – Technical Part, included in Section IV, Bidding Forms.
- 17.2 The documentary evidence of the Bidder's qualifications to perform the Contract, if its Bid is accepted, shall establish to the Purchaser's satisfaction:
- (a) that, if required **in the BDS**, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's Country;
 - (b) that, if required **in the BDS**, the Bidder (if awarded the Contract) or its Agent in the country will be equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications;
 - (c) that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria; and

- (d) Supplies for any particular item in each schedule of the bid should be from one manufacturer only. Bids from agents offering supplies from different manufacturers for the same item of the schedule in the bid will be treated as non-responsive.

18. Period of Validity of Bids

- 18.1. Bids shall remain valid for the Bid Validity period **specified in the BDS** or any extended period if amended by the Purchaser in accordance with ITB 8. The Bid Validity period starts from the date fixed for the Bid submission deadline (as prescribed by the Purchaser in accordance with ITB 22.1). A Bid valid for a shorter period, shall be rejected by the Purchaser as nonresponsive.
- 18.2. In exceptional circumstances, prior to the expiry of the Bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested (in accordance with ITB 19), it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid, except as provided in ITB 18.3.
- 18.3. If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial Bid validity period, the Contract price shall be determined as follows:
 - (a) In the case of fixed price contracts, the Contract price shall be the Bid price adjusted by the factor **specified in the BDS**.
 - (b) In the case of adjustable price contracts, no adjustment shall be made.
 - (c) In any case, Bid evaluation shall be based on the Bid price without taking into consideration the applicable correction from those indicated above.

19. Bid Security

- 19.1. The Bidder shall furnish, as part of the Technical Part of its Bid, either a Bid-Securing Declaration or a Bid Security, as specified **in the BDS**, in

original form and, in the case of a Bid security, in the amount specified **in the BDS**.

- 19.2. A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.
- 19.3. If a Bid Security is specified pursuant to ITB 19.1, the Bid security shall be a demand guarantee in any of the following forms at the Bidder's option:
- (a) an unconditional bank guarantee issued by a Nationalized/ Scheduled bank located in India;
 - (b) an irrevocable letter of credit issued by a Nationalized or Scheduled bank located in India;
 - (c) a cashier's or certified check or demand draft issued by a Nationalized or Scheduled bank located in India; or
 - (d) another security **specified in the BDS**,

In the case of a bank guarantee, the Bid security shall be submitted using the Bid Security Form included in Section IV, Bidding Forms. The Bid security shall be valid for forty five (45) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 18.2.

- 19.4. If a Bid Security or Bid-Securing Declaration is specified pursuant to ITB 19.1, any Bid not accompanied by a substantially responsive Bid Security or Bid-Securing Declaration shall be rejected by the Purchaser as non-responsive.
- 19.5. If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB 49.
- 19.6. The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.

19.7. The Bid Security may be forfeited or Bid-Securing Declaration may be executed:

- (a) if a Bidder withdraws/modifies/substitutes its Bid during the period of Bid validity specified by the Bidder on the Letter of Bid (Technical Part and/or Financial Part), or any extension thereto provided by the Bidder; or
- (b) if the Bidder does not accept the correction of its Bid Price pursuant to ITB 35; or
- (c) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 48; or
 - (ii) furnish a performance security in accordance with ITB 49.

19.8. The Bid Security or Bid-Securing Declaration of a JV must be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of Bidding, the Bid security or Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.5.

19.9. If a Bid security is **not required in the BDS**, pursuant to ITB 19.1, and

- (a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Letter of Bid, or any extended date provided by the Bidder, or if the Bidder does not accept the correction of its Bid Price pursuant to ITB Sub-Clause 35; or
- (b) if the successful Bidder fails to: sign the Contract in accordance with ITB 48; or furnish a performance security in accordance with ITB 49;

the Borrower may, **if provided for in the BDS**, declare the Bidder ineligible to be awarded a contract by the Purchaser for a period of time **as stated in the BDS**.

20. Format and Signing of Bid

- 20.1 The Bidder shall prepare the Bid, in accordance with ITB 11 and ITB 21.
- 20.2 Bidders shall mark as “CONFIDENTIAL” information in their Bids which is confidential to their business.
- 20.3 The Bid shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation **as specified in the BDS** and shall be uploaded along with the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature.
- 20.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. Documents establishing authority to sign the bid on behalf of the JV shall be uploaded along with the bid.
- 20.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Online Submission of Bids**21. Preparation of Bids**

- 21.1 Bids, both Technical and Financial Parts, shall be submitted online on the e-procurement system specified in BDS 7.1. Detailed guidelines for viewing bids and submission of online bids are given on the website. The Request for Bids under this Project is published on this website. Any citizen or prospective bidder can logon to this website and view the Request for Bids and can view the details of goods for which bids are invited. A prospective bidder can submit its bid online; however, the bidder is required to have enrolment/registration in the website, and should have valid Digital Signature Certificate (DSC) in the form of smart card/e-token obtained from any authorised certifying agency of Government of India (for class of DSC **specified in BDS**).

As part of the enrolment process, bidders are required to choose unique username and assign a password for their accounts. Upon enrolment, the Bidders will be required to register their valid Digital Signature

Certificate (DSC) with their profile. The bidders should register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the e-procurement system. A bidder can then login the website through the secured login by entering the password of the e-token & the user id/ password chosen during registration. After getting the bid schedules, the Bidder should go through them carefully and submit the specified documents, along with the bid, otherwise the bid will be rejected.

- 21.2 The completed bid comprising of documents indicated in ITB 12, should be uploaded on the e-procurement system along with scanned copies of requisite certificates as are mentioned in different sections in the bidding document and scanned copy of the bid security.
- 21.3 All the documents are required to be signed digitally by the bidder. After electronic online bid submission, the system generates a bid summary and a unique bid identification number which is time stamped as per server time. This shall be treated as acknowledgement of bid submission, and a copy should be retained by the Bidder.
- 21.4 Physical, e-mail, Telex, Cable, or Facsimile bids will be rejected as non-responsive.

22. Deadline for Submission of Bids

- 22.1. Bids, both Technical and Financial Parts, must be uploaded online no later than the date and time **specified in the BDS**. The server time will be considered as the standard time for referencing the deadlines for submission of the bids, opening of bids etc.
- 22.2. The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

- 23.1. The electronic procurement system would not allow any late submission of bids after due date & time as per server time.

24. Withdrawal, Substitution, and Modification of Bids

- 24.1. Bidders may modify their bids by using the appropriate option for bid modification on e-procurement system, before the deadline for submission of bids. For this the bidder need not make any additional payment towards the cost of bid document. For bid modification and consequential re-submission, the bidder is not required to withdraw his bid submitted earlier. The last modified bid submitted by the bidder within the bid submission time shall be considered as the bid. For this purpose, modification/withdrawal by other means will not be accepted. In online system of bid submission, the modification and consequential re-submission of bids is allowed any number of times. A bidder may withdraw his bid by using the appropriate option for bid withdrawal, before the deadline for submission of bids, however, if the bid is withdrawn, re-submission of the bid is not allowed (or allowed **if specified in BDS**).
- 24.2. Bids requested to be withdrawn in accordance with ITB 24.1 shall not be opened.
- 24.3. No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Letter of Bid -Technical Part and repeated in the Letter of Bid - Financial Part, or any extension thereof. This will result in the forfeiture of the Bid Security or execution of the Bid-Securing Declaration pursuant to ITB 19.7.

E. Public Opening of Technical Parts of Bids

25. Public Opening of Technical Parts of Bids

- 25.1. The Purchaser shall publicly open Technical Parts of all Bids received by the deadline at the date, time and place specified **in the BDS**, in the presence of Bidders' designated representatives and anyone who chooses to attend, and this could also be viewed by the bidders online. The Financial Parts of the bids shall remain unopened in the e-procurement system, until the subsequent public opening, following the evaluation of the Technical Parts of the Bids. In all cases, original documents, if required to be submitted as specified in ITB 12.3 shall be first scrutinized, and Bids that do not

comply with the provisions of ITB 12.3 will be declared non-responsive and will not be opened. Thereafter, the bidders' names, the presence or absence of a Bid Security or Bid-Securing Declaration, if one was required, alternative bids – technical parts, if any, and such other details as the Purchaser may consider appropriate shall be notified online by the Purchaser at the time of bid opening.

In the event of the specified date of bid opening being declared a holiday for the Purchaser, the bids will be opened at the appointed time and location on the next working day.

- 25.2. The electronic summary of the bid opening will be generated and uploaded online. The Purchaser will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online. Only Technical Parts of Bids, and Technical Parts of Alternative Bids, if any, that are opened at Bid opening shall be considered further for evaluation.

F. Evaluation of Bids - General Provisions

26. Confidentiality

- 26.1 Information relating to the evaluation of the Technical Part shall not be disclosed to Bidders or any other persons not officially concerned with the Bidding process until the notification of evaluation of the Technical Part in accordance with ITB 33. Information relating to the evaluation of Financial Part, the evaluation of combined Technical Part and Financial Part, and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with the RFB process until the Notification of Intention to Award the Contract is transmitted to Bidders in accordance with ITB 43. In cases where ITB 43 is not applicable, such information shall not be disclosed until Notification of Award is transmitted in accordance with ITB 46.
- 26.2 Any effort by a Bidder to influence the Purchaser in the evaluation or contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract Award, if any

Bidder wishes to contact the Purchaser on any matter related to the Bidding process, it should do so in writing.

27. Clarification of Bids

- 27.1 To assist in the examination, evaluation, comparison of the Bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing and shall be delivered to concerned bidders through e-procurement system/ official email id mentioned in IFB. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the Bids, in accordance with ITB 35.
- 27.2 The bidder shall respond to the queries on e-procurement system. If a Bidder does not provide clarifications of its Bid by the date and time set in the Purchaser's request for clarification, its Bid may be rejected.

28. Deviations, Reservations, and Omissions

- 28.1 During the evaluation of Bids, the following definitions apply:
- (a) "Deviation" is a departure from the requirements specified in the bidding document;
 - (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and
- 28.2 "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.

29. Nonconformities, Errors and Omissions

- 29.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities in the Bid which do not constitute a material deviation, reservation or omission.

- 29.2 Provided that a Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price or substance of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

G. Evaluation of Technical Parts of Bids

30. Evaluation of Technical Parts

- 30.1 In evaluating the Technical Parts of each Bid, the Purchaser shall use the criteria and methodologies listed in ITB 31, ITB 32, the BDS, if applicable, and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted.

31. Determination of Responsiveness

- 31.1 The Purchaser's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11. A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:
- (a) if accepted, would:
 - (i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the bidding document, the Purchaser's rights or the Bidder's obligations under the Contract; or
 - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

- 31.1.1 Bids from Agents, without proper authorization from the manufacturer as per Section IV, shall be treated as non-responsive.
- 31.1.2 The Purchaser shall examine the bids to confirm that all documents and technical documentation requested in ITB 11 have been provided, and to determine the completeness of each document submitted.
- 31.2 The Purchaser shall examine the technical aspects of the Bid submitted in accordance with ITB 16 and ITB 17, in particular, to confirm that all requirements of Section VII, Schedule of Requirements have been met without any material deviation or reservation, or omission.
- 31.2.1 The Purchaser shall examine the bid to confirm that the Bidder has accepted all terms and conditions specified in GCC and the SCC without material deviations or reservations. Deviations from or objections or reservations to critical provisions such as those concerning Performance Security (GCC Clause 18), Warranty (GCC Clause 28), Force Majeure (GCC Clause 32), Limitation of liability (GCC Clause 30), Governing law (GCC Clause 9) and Taxes & Duties (GCC Clause 17) will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 31.3 If a Bid is not substantially responsive to the requirements of bidding document, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

32. Qualification of the Bidders and Detailed Evaluation of the Technical Part

- 32.1 The Purchaser shall determine, to its satisfaction, whether all eligible Bidders, whose Bids have been determined to be substantially responsive to the bidding document, meet the Qualification Criteria specified in Section III, Evaluation and Qualification Criteria.
- 32.2 The determination shall be based upon an examination of the documentary evidence of the

Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than specialized subcontractors if permitted in the bidding document), or any other firm different from the Bidder.

- 32.3 Prior to Contract award, the Purchaser will verify that the successful Bidder (including each member of a JV) is not disqualified by the Bank due to noncompliance with contractual SEA/SH prevention and response obligations. The Purchaser will conduct the same verification for each subcontractor proposed by the successful Bidder. If any proposed subcontractor does not meet the requirement, the Purchaser will require the Bidder to propose a replacement subcontractor.
- 32.4 Only substantially responsive bids submitted by eligible and qualified bidders shall proceed to the detailed technical evaluation to assess adequacy of the Technical Part.

H. Notification of Evaluation of Technical Parts and Public Opening of Financial Parts of Bids

33. Notification of Evaluation of Technical Parts and Public Opening of Financial Parts

- 33.1 Following the completion of the evaluation of the Technical Parts of the Bids, and the Bank has issued its no objection (if applicable), the Purchaser shall notify in writing those Bidders who have failed to meet the Qualification Criteria and/or whose Bids were considered non-responsive to the requirements in the bidding document, advising them of the following information:
- (a) the grounds on which their Technical Part of Bid failed to meet the requirements of the bidding document;
 - (b) their Financial Part of the Bid shall not be opened;
 - (c) notify them of the date, time and location of the public opening of the Financial Parts of the Bids.

33.2 The Purchaser shall, simultaneously, notify in writing those Bidders whose Technical Parts have been evaluated as substantially responsive to the bidding document and met the Qualification Criteria, advising them of the following information:

- (a) their Bid has been evaluated as substantially responsive to the bidding document and met the Qualification Criteria; and
- (b) their Financial Part of Bid will be opened at the public opening of Financial Parts;
- (c) notify them of the date, time and location of the public opening of the Financial Parts of the Bids, as **specified in the BDS** .

33.3 The opening date shall be not less than ten (10) Business Days from the date of notification of the results of the technical evaluation, specified in ITB 33.1 and 33.2. However, if the Purchaser receives a complaint on the results of the technical evaluation within the ten (10) Business Days, the opening date shall be subject to ITB 50.1. The Financial Part of the Bid shall be opened publicly in the presence of Bidders' designated representatives and anyone who chooses to attend, and this could also be viewed by the bidders online. The bidder's names, the total bid prices, per lot (contract) if applicable, including any discounts and Alternative Bid - Financial Part if any, and such other details as the Purchaser may consider appropriate, will be notified online by the Purchaser at the time of bid opening.

In the event of the specified date of bid opening being declared a holiday for the Purchaser, the bids will be opened at the appointed time and location on the next working day.

33.4 The electronic summary of the bid opening will be generated and uploaded online. The Purchaser will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online. Only Financial Parts of Bids, Financial Parts of Alternative Bids and discounts

that are opened and read out at Bid opening shall be considered further for evaluation.

I. Evaluation of Financial Parts of Bids

34. Evaluation of Financial Parts

- 34.1 Provided that a Bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component, by adding the average price of the item or component quoted by substantially responsive Bidders. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Purchaser shall use its best estimate.
- 34.2 To evaluate the Financial Part of each Bid, the Purchaser shall consider the following:
- (a) evaluation will be done for Items or Lots (contracts), as specified **in the BDS**; and the Bid Price as quoted in accordance with ITB 14;
 - (b) price adjustment for correction of arithmetic errors in accordance with ITB 35.1;
 - (c) price adjustment due to discounts offered in accordance with ITB 14.4;
 - (d) Not used;
 - (e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 34.1; and
 - (f) the additional evaluation factors specified in Section III, Evaluation and Qualification Criteria.
- 34.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.
- 34.4 If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated cost of the contract combinations, including any discounts offered in the Letter of Bid – Financial

Part, is specified in Section III, Evaluation and Qualification Criteria.

34.5 The Purchaser's evaluation of a Bid will exclude and not take into account:

- (a) in the case of Goods manufactured in India or goods of foreign origin already located in India, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;
- (b) not used;
- (c) any allowance for price adjustment during the period of execution of the contract, if provided in the Bid.

34.6 The Purchaser's evaluation of a Bid may require the consideration of other factors, in addition to the Bid price quoted in accordance with ITB 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of Bids, unless otherwise specified **in the BDS** from amongst those set out in Section III, Evaluation and Qualification Criteria. The criteria and methodologies to be used shall be as specified in ITB 34.2 (f).

35. Correction of Arithmetic Errors

35.1 In evaluating the Financial Part of each Bid, the Purchaser shall correct arithmetic errors on the following basis:

- (a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected;
- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is

related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

- 35.2 Bidders shall be requested to accept correction of arithmetic errors. Failure to accept the correction in accordance with ITB 35.1, shall result in the rejection of the Bid and the Bid Security may be forfeited or the Bid-Securing Declaration may be executed in accordance with ITB Sub-Clause 19.7.
- 36. Conversion to Single Currency** 36.1 Not used.
- 37. Margin of Preference** 37.1 Not applicable.
- 38. Comparison of Financial Parts** 38.1 The Purchaser shall compare the evaluated costs of the Bids to determine the Bid that has the lowest evaluated cost. The comparison shall be on the basis of EXW prices, plus cost of inland transportation and insurance to place of destination, for goods manufactured in India or goods of foreign origin already located in India, together with prices for any required installation, training, commissioning and other services. The evaluation of prices shall not take into account sales and similar taxes levied in connection with the sale or delivery of goods.
- 39. Abnormally Low Bids** 39.1 An Abnormally Low Bid is one where the Bid price, in combination with other elements of the Bid, appears so low that it raises material concerns with the Purchaser as to the capability of the Bidder to perform the Contract for the offered Bid Price.
- 39.2 In the event of identification of a potentially Abnormally Low Bid, the Purchaser, unless otherwise **specified in the BDS**, shall seek written clarification from the Bidder, including a detailed price analyses of its Bid price in relation to the subject matter of the contract, scope, delivery schedule, allocation of risks and responsibilities and any other requirements of the bidding document.
- 39.3 After evaluation of the price analyses, in the event that the Purchaser determines that the Bidder has failed to demonstrate its capability to perform the

contract for the offered Bid price, the Purchaser shall reject the Bid.

J. Evaluation of Combined Technical and Financial Parts, Most Advantageous Bid and Notification of Intention to Award

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|---|---|
| 40. Evaluation of combined Technical and Financial Parts | 40.1 Not used.
40.2 The Purchaser will determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be substantially responsive to the Bidding document, and the lowest evaluated cost. |
| 41. Purchaser’s Right to Accept Any Bid, and to Reject Any or All Bids | 41.1 The Purchaser reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all documents submitted and specifically, Bid securities, shall be promptly returned to the Bidders. |
| 42. Standstill Period | 42.1 Not used. |
| 43. Notification of Intention to Award | 43.1 Not used. |

K. Award of Contract

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|--|---|
| 44. Award Criteria | 44.1 Subject to ITB 41, the Purchaser shall award the Contract to the successful Bidder. This is the Bidder whose Bid has been determined to be the Most Advantageous Bid as specified in ITB 40. |
| 45. Purchaser’s Right to Vary Quantities at Time of Award | 45.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section VII, Schedule of Requirements, provided this does not exceed the percentages specified in the BDS , and without any change in the unit prices or other terms and conditions of the Bid and the bidding document. |
| 46. Notification of Award | 46.1 Prior to the expiration of the Bid Validity Period, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification of award (hereinafter and in the |

Contract Forms called the “Letter of Acceptance”) shall specify the sum that the Purchaser will pay the Supplier in consideration of the execution of the Contract (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”).

46.2 Within ten (10) Business Days after the date of transmission of the Letter of Acceptance, the Purchaser shall publish the Contract Award Notice which shall contain, at a minimum, the following information:

- (a) name and address of the Purchaser;
- (b) name and reference number of the contract being awarded, and the selection method used;
- (c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;
- (d) names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor; and
- (e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope.

46.3 The Contract Award Notice shall be published on the Purchaser’s website with free access if available, or on a National website (GoI website <http://tenders.gov.in>) or GoI Central Public Procurement Portal (<https://eprocure.gov.in/cppp/>), and on the e-procurement system.

46.4 Until a formal Contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

47. Debriefing by the Purchaser

47.1 Not used.

48. Signing of Contract

48.1 Promptly upon Notification of Award, the Purchaser shall send the successful Bidder the Contract Agreement.

48.2 Within twenty-one (21) days of receipt of the Contract Agreement, the successful Bidder shall

(a) furnish the performance security in accordance with ITB 49; (b) if the successful bidder is a JV (where JVs are permitted), it shall also furnish the JV agreement duly signed by all the members, if it had submitted only a letter of intent to execute the JV agreement along with the bid; and (c) shall sign, date and return the Contract Agreement to the Purchaser along with the documents listed at (a) and (b) above.

48.3 Not applicable.

49. Performance Security

49.1 Within twenty- one (21) days of the receipt of the Letter of Acceptance from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC 18 using for that purpose the Performance Security Form included in Section X, Contract Forms. The performance security of a Joint Venture shall be in the name of the Joint Venture specifying the names of all members.

49.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the Bidder offering the next Most Advantageous Bid.

50. Procurement Related Complaint

50.1 The procedures for making a Procurement-related Complaint are as specified in the BDS.

Section II - Bid Data Sheet (BDS)

The following specific data for the Goods to be procured shall complement, supplement, and/or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

ITB Reference	A. General
ITB 1.1	<p>The reference number of the Request for Bids (RFB) is: IN-PIU-USDMA-511168-GO-RFB</p> <p>The Purchaser is: Program Director, U-PREPARE</p> <p>The name of the RFB is: Procurement of ICT Equipment along-with Supply & Installation for Establishment of State Emergency Operation Center (SEOC) at USDMA Building, IT Park, Dehradun</p> <p>The number and identification of lots (contracts) comprising this RFB is: IN-PIU-USDMA-511168-GO-RFB</p>
ITB 1.2(a)	<p>The Purchaser shall use the electronic-procurement system specified in BDS 7.1 to manage this Bidding process.</p>
ITB 2.1	<p>The Borrower is: Government of India. The sub-Borrower is Department of Disaster Management, Government of Uttarakhand</p> <p>Loan or Financing Agreement amount: INR 1480 Cr.</p> <p>The name of the Project is: Uttarakhand Disaster Preparedness and Resilience Project (U-PREPARE)</p>
ITB 4.1	<p>Bids from Joint Ventures are permitted</p> <p>Where Joint Ventures are permitted:</p> <p>(a) Maximum number of members in the Joint Venture (JV) shall be: 3, and</p> <p>(b) Place where the agreement to form JV to be registered is <i>India</i></p> <p><i>Joint Venture may be in the form of an existing agreement or with the intent to enter into such an agreement supported by a letter of intent.</i></p>
ITB 4.5	<p>A list of debarred firms and individuals is available on the Bank's external website: http://www.worldbank.org/debarr.</p>
	<p>B. Contents of Bidding Document</p>
ITB 7.1	<p>Electronic – Procurement System</p>

	<p>The Purchaser shall use the following electronic-procurement system to manage this Bidding process:</p> <p>www.uktender.gov.in</p> <p>Requests for clarification should be received by the Purchaser no later than 05.04.2026 by 1500 Hrs.</p> <p>For <u>Clarification of Bid purposes</u> only, the Purchaser’s address is:</p> <p>Attention: Program Director, U-PREPARE</p> <p>Address: 5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand</p> <p>Electronic mail address: procurement.uprepare@gmail.com</p> <p>Web page: www.u-prepare.com</p> <p>Pre-bid meetings:</p> <p>The Bidder or his authorized representative (only one person from each firm) is invited to attend a pre-bid meeting which will take place at:</p> <p>The office of the Program Director, Project Management Unit, U-PREPARE, 5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand</p> <p>Prebid – 06.04.2026 (11:00 AM)</p> <p>[Note: e-procurement system of NIC also provides a 24x7 e-procurement portal (CPP) Helpdesk for any queries relating to the process of online bid submission or relating to e-procurement portal in general. For any Technical queries related to Operation of the Central Public Procurement Portal Contact at: Tel: The 24 x 7 Telephonic Help Desk Number 0120-4200462, 0120-4001002, 0120-4001005, 0120-6277787.</p> <p>E-Mail: cPPP-nic@nic.in, support-eproc@nic.in</p>
ITB 8.1	<p>A bidder has multiple options built in the e-procurement system for searching active bids by several parameters. These parameters could be Bid ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search, wherein a bidder may combine a number of search parameters to search for a bid.</p> <p>Once a bid has been selected, the bidder may download the required documents/ bid schedules and move them to the respective ‘My Bids’ folder. This would enable the e-procurement system to intimate the bidder through SMS/ e-mail regarding any corrigendum issued to the bid document.</p> <p>The bidder should make a note of the unique Bid ID assigned to each bid to obtain any clarification/ help, if required from the Helpdesk (BDS 7.1 also refers)]</p>

	C. Preparation of Bids
ITB 11.2 (i)	<p>The Bidder shall submit the following additional documents in the Technical Part of its Bid</p> <ul style="list-style-type: none"> a) Manufacturer’s authorization for major items as per BDS 17.2 (a) of supply under the contract that the bidder does not manufacture or otherwise produce. b) Copy of Firm/Company Registration c) The written confirmation of authorization to sign on behalf of the Bidder which shall consist of Legally valid Power of Attorney along with a Board Resolution, to demonstrate the authority of the signatory to sign the Bid. d) Brochures/Catalogue with model no. & other details of goods to be provided. e) Turnover Certificate duly verified by Chartered Accountant f) The PAN No. and GST g) Technical Specifications compliance sheet – Bidder must prepare a document having complied/not-complied mentioned against each specification h) In case of bids from Joint Venture: JV/Consortium Agreement or Affidavit of Intent to form a JV to be submitted and authorization of lead bidder to be submitted
ITB 11.3 (d)	<p>The Bidder shall submit the following additional documents in the Financial Part of its Bid:</p> <p>Only BoQ and Letter of Bid – Financial Part to be submitted.</p>
ITB 12	<p>Note for Bidders: Bidders have to submit the bids on the e-procurement system along with the relevant required documents. For this purpose, the bidders shall fill up online, the forms that are available for online filling on the e-procurement system. The rest of the forms shall be download by the bidders and filled up. The filled-up pages shall then be scanned and uploaded on the e-procurement system along with the scanned copies of the supporting documents. Documents which are to be submitted as scanned documents shall be printed or written in indelible ink (or legible photocopies in the case of copies) and all the pages shall be signed by person or persons duly authorized to sign on behalf of the Bidder before scanning and uploading.</p> <p>To avoid time and effort required in uploading the same set of standard documents which are required to be uploaded as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders in the NIC e-procurement system. Bidders can use “My Space” or “Other Important Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid and need not be uploaded again and again.</p>

	My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of e-Technical Bid.]
ITB 12.3	<p>Add the following as sub-clause 12.3:</p> <p>“12.3 Submission of Original Documents: The Bidders are required to separately submit:</p> <ul style="list-style-type: none"> (i) Original Bid security in the form of Bank Guarantee/ FDR in favour of Program Director, U-PREPARE. The value of bid security is INR 1.50 Cr. (ii) Original affidavit vouching for the correctness of the information furnished and documents uploaded along with declaration of non blacklisting by any organization in last 05 years in the format provided in Annexure – 1 of these bid documents (On Rs.100/- Stamp Paper); (iii) Original Notarized copy of Power of Attorney (on Rs. 100/- Stamp Paper) of the person signing the bid. (iv) Non-refundable Tender Fee in the name of Program Director, U-PREPARE in form of DD only (INR 5,900/-). Tender Fee in any other form apart from DD shall not be accepted <p>The above documents must be submitted in hard copy with the office of Program Director, U-PREPARE within the Bid submission deadline, failing which the bids will be declared non-responsive. These original documents shall be sealed in an envelope(s) that (a) shall bear the name and address of the Bidder; (b) shall be addressed to the Purchaser; and (c) shall bear the specific identification of this bidding process as indicated in BDS 1.1.</p> <p>Hard copy of rest of the bid or any other documents is not to be submitted.</p>
ITB 12.3	<p>Original Documents are required to be submitted within the Bid submission deadline:</p> <p>For submission of original documents, the Purchaser’s address is:</p> <p>Attention: Program Director, U-PREPARE</p> <p>Address: 5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand</p> <p>Electronic mail address: procurement.uprepare@gmail.com</p> <p>Country: INDIA</p>
ITB 13.1	Alternative Bids (Technical and Financial Parts) shall not be considered.

ITB 14.5	The prices quoted by the Bidder shall not be subject to adjustment during the performance of the Contract.
ITB 14.6	Prices shall be quoted for all items and evaluation will be done for all items together as one package.
ITB 14.7	The Incoterms edition is Incoterms 2020.
ITB 14.8 (a)(iii)	Final Destination (Project Site): Uttarakhand State Disaster Management Authority (USDMA) Building, 36 IT Park, Sahastradhara Road, Dehradun, Uttarakhand
ITB 16.4	Period of time the Goods are expected to be functioning (for the purpose of spare parts): 7 Years
ITB 17.2 (a)	<p>Manufacturer's authorization is: required for following major items:</p> <ul style="list-style-type: none"> a. Networking Component <ul style="list-style-type: none"> a.1 Firewall a.2 Switches a.3 Routers a.4 NAC (Network access control) a.5 EMS (Element Management System) b. Printer & Plotter c. Workstations & Desktops d. Laptops e. Web Conferencing system f. Video Walls (Active video wall and display panels) g. HCI Servers h. Server backup appliances and software i. IP Telephony equipment j. UPS
ITB 17.2 (b)	<p>After sales service which shall be provided by the Supplier.</p> <p>The evaluation will take into account the cost of minimum 3 Years CMC (Including OEM warranty Period, as applicable) which shall be included in quoted price (inclusive of all expenses). The CMC Period shall start immediately after the commissioning of the equipment i.e., issuance of GO-LIVE Certificate from the purchaser.</p> <p>The cost of CMC shall be included in quoted price (inclusive of all expenses)</p> <p>The contract may be extended, if required by the user department, on the same terms and conditions, including cost and scope of services, or as may be agreed upon.</p>
ITB 18.1	The Bid validity period shall be 120 days.

ITB 18.3 (a)	NA
ITB 19.1	<p>The Bid Security amount shall be- INR 1,50,00,000/- Only</p> <p>The bid security shall be in the form of Bank guarantee or Fixed Deposit Receipt (FDR) from a scheduled national commercial bank, issued in favour of Program Director, U-PREPARE, Dehradun. The validity of the Bid Security shall be 45 days more than the validity of the bid i.e. 165 (120+45) days from the last date of bid submission.</p> <p><i>Note: Bid securities having validity less than 165 (120+45) days shall be considered as non-responsive.</i></p>
ITB 19.3 (d)	Other types of acceptable securities are None
ITB 19.9	NA
ITB 20.3	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: Legally valid Power of Attorney to demonstrate the authority of the signatory to sign the Bid
	D. Online Submission of Bids
ITB 21.1	Class of DSC required is: III
ITB 22.1	<p>The deadline for uploading the Bids is:</p> <p>Date: 27.04.2026</p> <p>Time: 1200 Hrs</p>
ITB 24.1	The e-procurement system does not allow re-submission of the bid if withdrawn. However; the bid may be revised as many times as required before bid submission deadline.
	E. Public Opening of Technical Parts of Bids
ITB 25.1	<p>The online Bid opening of Technical Parts of Bids shall take place at:</p> <p>Office of Program Director, U-PREPARE</p> <p>5th Floor, USDMA, 36, IT Park, Dehradun – 248195, Uttarakhand</p> <p>Country: India</p> <p>Date: 27.04.2026, 1230 Hrs</p>

G. Evaluation of Technical Parts of Bids	
H. Notification of Evaluation of Technical Parts and Public Opening of Financial Parts of Bids	
ITB 33.2 (c)	<p>Technical evaluation will consist of</p> <ol style="list-style-type: none"> 1. Eligibility & qualification criteria including all the mandatory documents 2. Technical specifications for the goods <p>Following the completion of the evaluation of the Technical Parts of the Bids, the Purchaser will notify all Bidders of the date, time and location of the public opening of Financial Parts.</p> <p>In addition to the above the Purchaser shall publish a notice of the public opening of the Financial Parts of the Bid on its website www.u-prepare.com</p>
I. Evaluation of Financial Part of Bids	
ITB 34.2(a)	<p>Evaluation will be done for all items together as one package The quoted rates in the BoQ must include CMC cost, GST and all other taxes, duties, levies and all related services (eg. transport, insurance etc). In case of discrepancy in rates quoted in BoQ and letter of bid -financial part, rates quoted in BoQ will prevail Bidder must quote for the complete requirement for goods and services specified in BOQ failing which bids shall be treated as non-responsive.</p>
ITB 34.6	NA
ITB 35	<p>Note: If the e-procurement (i) system automatically calculates the line-item total from unit price and quantity, and total amount from the subtotals, and (ii) the system also automatically populates the amount in words from the amount in figures, then there is no scope of discrepancy and need for arithmetic correction.</p>
ITB 39.2	Provisions related to Abnormally Low Bids do not apply.
J. Evaluation of Combined Technical and Financial Parts and Most Advantageous Bid	
K. Award of Contract	
ITB 45.1	<p>The maximum percentage by which quantities may be increased is: 20%</p> <p>The maximum percentage by which quantities may be decreased is: 20%</p>

ITB 50.1

The procedures for making a Procurement-related Complaint are detailed in the “[Procurement Regulations for IPF Borrowers](#) (Annex III).” If a Bidder wishes to make a Procurement-related Complaint, the Bidder should submit its complaint following these procedures, in writing (by the quickest means available, that is either by email or fax), to:

Program Director, U-PREPARE

E-mail: procurement.uprepare@gmail.com

In summary, a Procurement-related Complaint may challenge any of the following:

1. the terms of the Bidding Documents;
2. the Purchaser’s decision to exclude a Bidder from the procurement process prior to the award of contract; and
3. the Purchaser’s decision to award the contract.

Section III - Evaluation and Qualification Criteria

This Section contains the criteria that the Purchaser shall use to evaluate Bids and qualify the Bidders. No other factors, methods or criteria shall be used other than specified in this bidding document.

TECHNICAL PART

1. Qualification

Qualification Criteria (ITB 32.1)

The Purchaser shall assess each Bid against the following Qualification Criteria. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

- (a) **Financial Capability:** The Bidder shall have an average annual turnover of minimum INR 65.00 Crore. in any 3 years in the last 5 years. *The Bidder shall submit audited Balance Sheets and turnover certificate (both duly verified by Chartered Account) for the last 5 years.*

For a joint venture with two members, the requirement shall be met as following:

- The combined turnover of all members of the JV shall not be less than **INR 65.00 Crore**; and
- At least one member (Lead member) of the JV shall have a minimum turnover of **INR 45.00 Crore**; and
- Each member of the JV shall individually have a minimum turnover of **INR 20.00 Crore**

For a joint venture with three members, the requirement shall be met as following:

- The combined turnover of all members of the JV shall not be less than **INR 65.00 Crore**; and
- At least one member (Lead member) of the JV shall have a minimum turnover of **INR 35.00 Crore**; and
- Each member of the JV shall individually have a minimum turnover of **INR 15.00 Crore**

- (b) **Specific Experience:** The Bidder shall demonstrate that it has successfully commissioned up to go-live stage, along with UAT provided by the client for at least one *similar** contract within the last five years or prior to bid submission deadline, with a value of at least INR 50.00 Cr. or two similar contracts of at least INR 35.00 Cr. combined for a Government/Semi Government/Private sector organizations that have been successfully /substantially completed (go-live completed) and that are similar in nature and complexity to the Goods and Related Services under the Contract. For a joint venture, this requirement shall be met by all members combined.

**Note: "Similar Contracts" shall mean contracts involving Design/Supply and installation/testing/commissioning of ICT-based monitoring/operation centers/ command-and-control facilities/ data centers/ disaster management centers or equivalent projects of similar nature and complexity having the following all items or a mixture of the four line items with the prerequisite of having the first two line items i and ii ;*

- i. Minimum Server capacity of 4 nodes (HCI)/4 rack server capacity*
- ii. Campus and/or Server Networking (Structural cabling and switching for at least 100 clients.)*
- iii. Audio Visual Equipment:*
 - iii.a Video Walls, Interactive and Non-Interactive Display Panels, Video wall Controls, Video Switchers, VC Codec with multiple cameras*
 - iii.b Wireless & Wired Presentation System, Integrated Controllers, Network Based Controllers*
 - iii.c 4K AVoIP Encoders and Decoders, Room Schedulers,*
- iv. IT Hardware:*
 - IV.a Workstations with multiple displays, Laptops, printers/plotters*

(c) **Documentary Evidence:** The Bidder shall submit copy of Supply/work Order along with Completion Certificate/Experience Certificate issued by the user agency or CARC issued by GeM. The Bidder must also submit contact details (valid Phone No., Email & physical Address) of the agency issuing the supply order/completion certificate.

(d) **Manufacturer's authorization:** Manufacturer authorization is required in accordance with BDS ITB 17.2 (a), the Bidder shall provide evidence of being duly authorized by a manufacturer (Manufacturer's Authorization Form, Section IV, Bidding Forms).

At the time of Contract Award, the Bidder (including each subcontractor proposed by the Bidder) shall not be subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.

- Notwithstanding anything stated above, the Purchaser reserves the right to assess the Bidder's capabilities and capacity to execute the contract satisfactorily before deciding on award. Even though the Bidders meet the above qualifying criteria, they are subject to be disqualified if they have made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or record of poor performance such as, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures, etc.*
- The information and documents in support of meeting the qualification criteria as specified above should be uploaded in Technical Bid.*

FINANCIAL PART

1. Margin of Preference (ITB 37) – Not Applicable

2. Evaluation Criteria (ITB 34.6)

The Purchaser shall use the criteria and methodologies listed in this Section to evaluate the Bids. The Purchaser shall determine the Most Advantageous Bid that meets the Qualification Criteria and has been determined to be:

- (a) Substantially responsive to the bidding document, and
- (b) The lowest evaluated cost.

Combined Evaluation – Not applicable

Multiple Contracts (ITB 34.4) – Not applicable

Alternative Bids (ITB 13.1) – Not applicable

Section IV - Bidding Forms

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Letter of Bid – Technical Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid – Technical Part on stationery with its letterhead clearly showing the Bidder’s complete name and business address.

Note: All italicized text is to help Bidders in preparing this form and Bidders shall delete it from the final document.

Date of this Bid submission: *[insert date (as day, month and year) of Bid submission]*

RFB No.: *[insert number of RFB process]*

Request for Bid No.: *[insert identification]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

We, the undersigned Bidder, hereby submit our Bid, in two parts, namely:

- (a) the Technical Part, and
- (b) the Financial Part.

In submitting our Bid, we make the following declarations:

- (a) **No reservations:** We have examined and have no reservations to the bidding document, including addenda issued in accordance with Instructions to Bidders (ITB 8);
- (b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) **Bid/Proposal-Securing Declaration:** We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid Securing Declaration or Proposal Securing Declaration in the Purchaser’s country in accordance with ITB 4.7;
- (d) **Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment (SH):** *[select the appropriate option from (i) to (iii) below and delete the others. In case of JV members and/or subcontractors, indicate the status of disqualification by the Bank of each JV member and/or subcontractor].*

We, including any of our subcontractors:

- (i) *[have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.]*
- (ii) *[are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations.]*

- (iii) [had been subject to disqualification by the Bank for non-compliance with SEA/SH obligations, and were removed from the disqualification list. An arbitral award on the disqualification case has been made in our favor.]
- (e) **Conformity:** We offer to supply in conformity with the bidding document and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: *[insert a brief description of the Goods and Related Services]*;
- (f) **Bid Validity:** Our Bid shall be valid for the period specified in BDS 18.1 (as amended, if applicable) from the date fixed for the Bid submission deadline specified in BDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (g) **Performance Security:** If our Bid is accepted, we commit to obtain a performance security in accordance with the bidding document;
- (h) **One Bid per Bidder:** We are not submitting any other Bid(s) as an individual Bidder, and we are not participating in any other bid(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITB 4.3, other than Alternative Bids submitted in accordance with ITB 13;
- (i) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Purchaser's country laws or official regulations or pursuant to a decision of the United Nations Security Council;
- (j) **State-owned enterprise or institution:** *[select the appropriate option and delete the other] [We are not a state-owned enterprise or institution] / [We are a state-owned enterprise or institution but meet the requirements of ITB 4.6];*
- (k) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (l) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated cost Bid, the Most Advantageous Bid or any other Bid that you may receive; and
- (m) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us, or on our behalf, engages in any type of Fraud and Corruption.

Name of the Bidder: **[insert complete name of Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder: *** [insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

** : Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Technical Part

The technical bid shall include all relevant information required to evaluate the technical Part in accordance with the requirements.

To establish the conformity of the Goods and Related Services to the RFB document, the Bidder shall furnish the documentary evidence that the Goods conform to the technical specifications and standards, including any essential technical and performance characteristics specified in Section VII, Schedule of Requirements. Any required functional guarantees shall also be provided. The attached forms/format may support the Bidder to organize information required to present its technical bid.

The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.

In the interest of timely bid evaluation and contract award, Bidders are encouraged not to overload the supporting materials with documents that do not directly address the Purchaser's requirements.

The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period specified in the BDS following commencement of the use of the goods by the Purchaser.

Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

If the contract has been assessed to present potential or actual cyber security risks, the technical bid must include proposed cyber security risks management plan.

If there are assessed supply chain risks, the technical bid must include proposed supply chain risk management plan.

The Manufacture's Authorizations shall be included in accordance with ITB BDS 17.2 (a) and the attached Manufacturer's Authorization form.

Technical Bid Checklist

Technical Requirement No. _	Technical Requirement: <i>[insert: description of requirement]</i>
Bidder's technical bid/ compliance:	
Bidder's cross references to supporting information in the Technical Bid:	

Functional Guarantees

NA

Manufacturer's Authorization

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its Bid, if so indicated in the **BDS**.]*

Date: *[insert date (as day, month and year) of Bid submission]*

RFB No.: *[insert number of RFB process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a Bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of: *[insert complete name of Bidder]*

Dated on _____ day of _____, _____ *[insert date of signing]*

Bidder Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: *[insert date (as day, month and year) of Bid submission]*

RFB No.: *[insert number of Bidding process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

Page _____ of _____ pages

1. Bidder's Name: <i>[insert Bidder's legal name]</i>
2. In case of JV, legal name of each member: <i>[insert legal name of each member in JV]</i>
3. Bidder's actual or intended country of registration: <i>[insert actual or intended country of registration]</i>
4. Bidder's year of registration: <i>[insert Bidder's year of registration]</i>
5. Bidder's Address in country of registration: <i>[insert Bidder's legal address in country of registration]</i>
6. Bidder's Authorized Representative Information Name: <i>[insert Authorized Representative's name]</i> Address: <i>[insert Authorized Representative's Address]</i> Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i> Email Address: <i>[insert Authorized Representative's email address]</i>
7. Attached are copies of original documents of <i>[check the box(es) of the attached original documents]</i> <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.4. <input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1. <input type="checkbox"/> In case of state-owned enterprise or institution, in accordance with ITB 4.6 documents establishing: <ul style="list-style-type: none"> • Legal and financial autonomy • Operation under commercial law • Establishing that the Bidder is not under the supervision of the Purchaser
8. Included are the organizational chart, and a list of Board of Directors.

Bidder's JV Members Information Form

(Where permitted as per BDS ITB 4.1)

[The Bidder shall fill in this Form in accordance with the instructions indicated below. The following table shall be filled in for the Bidder and for each member of a Joint Venture].

Date: *[insert date (as day, month and year) of Bid submission]*

RFB No.: *[insert number of Bidding process]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

Page _____ of _____ pages

1. Bidder's Name: <i>[insert Bidder's legal name]</i>
2. Bidder's JV Member's name: <i>[insert JV's Member legal name]</i>
3. Bidder's JV Member's country of registration: <i>[insert JV's Member country of registration]</i>
4. Bidder's JV Member's year of registration: <i>[insert JV's Member year of registration]</i>
5. Bidder's JV Member's legal address in country of registration: <i>[insert JV's Member legal address in country of registration]</i>
6. Bidder's JV Member's authorized representative information Name: <i>[insert name of JV's Member authorized representative]</i> Address: <i>[insert address of JV's Member authorized representative]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers of JV's Member authorized representative]</i> Email Address: <i>[insert email address of JV's Member authorized representative]</i>
7. Attached are copies of original documents of <i>[check the box(es) of the attached original documents]</i> <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4. <input type="checkbox"/> In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Purchaser, in accordance with ITB 4.6.
8. Included are the organizational chart, and a list of Board of Directors.

Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment Performance Declaration

[The following table shall be filled in by the Bidder, each member of a Joint Venture and each subcontractor proposed by the Bidder]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member's or Subcontractor's Name: *[insert full name]*

RFB No. and title: *[insert RFB number and title]*

Page *[insert page number]* of *[insert total number]* pages

SEA and/or SH Declaration in accordance with Section III, Qualification Criteria, and Requirements
<p>We:</p> <p><input type="checkbox"/> (a) have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations</p> <p><input type="checkbox"/> (b) are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations</p> <p><input type="checkbox"/> (c) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations, and were removed from the disqualification list. An arbitral award on the disqualification case has been made in our favor.</p>
<p><i>[If (c) above is applicable, attach evidence of an arbitral award reversing the findings on the issues underlying the disqualification.]</i></p>

Forms of Bid Security

Form of Bid Security - Bank Guarantee

[Guarantor letterhead or SWIFT identifier code]

Bank Guarantee No..... *[insert guarantee reference number]*

Date..... *[insert date of issue of the guarantee]*

WHEREAS, _____ *[name of Bidder]*¹ (hereinafter called "the Applicant") has submitted his Bid dated _____ *[date]* or will submit his Bid for the supply of _____ *[name of Contract]* (hereinafter called "the Bid") under Request for Bids No..... *[insert number]* (hereinafter called "the RFB")

KNOW ALL PEOPLE by these presents that We _____ *[name of bank]* of _____ *[name of country]* having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ *[name of Purchaser]* (hereinafter called "the Purchaser ") in the sum of _____² for which payment well and truly to be made to the said Purchaser the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

- (1) If after Bid opening the Applicant (a) withdraws his bid during the period of Bid validity specified in the Letter of Bid; or (b) does not accept the correction of the Bid Price pursuant to ITB 35;

or

- (2) If the Applicant having been notified of the acceptance of his bid by the Purchaser during the period of Bid validity:
 - (a) fails or refuses to execute the Contract Agreement in accordance with the Instructions to Bidders, if required; or

¹ In the case of a JV, the bidder should be stated as "a Joint Venture consisting of, and".

² The Applicant should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 19.1 of the Instructions to Bidders.

- (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders.

we undertake to pay to the Purchaser up to the above amount upon receipt of his first written demand, without the Purchaser having to substantiate his demand, provided that in his demand the Purchaser will note that the amount claimed by him is due to him owing to the occurrence of one or any of the four conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____³ days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Purchaser, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

[signature, name, and address]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

³ 45 days after the end of the validity period of the Bid.

Form of Bid-Securing Declaration - NA

[The Bidder shall fill in this Form in accordance with the instructions indicated.]

Date: *[insert date (as day, month and year)]*
 RFB No.: *[insert number of Bidding process]*
 Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for Bidding or submitting proposals in any contract with the Purchaser for the period of time specified in Section II – Bid Data Sheet if we are in breach of our obligation(s) under the Bid conditions, because we:

- (a) have not accepted the correction of the Bid Price pursuant to ITB 35; or
- (b) have withdrawn our Bid during the period of Bid validity specified in the Letter of Bid or any extended date provided by us; or
- (c) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity specified in the Letter of Bid or any extended date provided by us, (i) fail or refuse to sign the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, if required, in accordance with the ITB.

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) forty-five days after the expiry of the Bid validity.

Name of the Bidder* _____ *[insert complete name of person signing the Bid]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder** *[insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid *[insert complete title of the person signing the Bid]*

Signature of the person named above _____ *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* day of *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

** : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid *[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the Bid.]*

DECLARATION for Claiming Excise Duty Exemption

NA

(Name of the Project)

RFB No.

Description of item to be supplied

.....

(Information for issue of certificate for claiming exemption of Excise Duty (ED) in terms of Central excise notification No. 108/95)

(Bidder's Name and Address):

To

**(Name of
Purchaser)**

.....

Dear Sir:

1. We confirm that we are solely responsible for obtaining deemed export benefits which we have considered in our bid and in case of failure to receive such benefits for reasons whatsoever, Purchaser will not compensate us.
2. We are furnishing below the information required by the Purchaser for issue of necessary certificate in terms of Central Excise notification no 108/95 read along with all subsequent amendments including the amendment dated 01-03-2008.

(i) Ex-factory price per unit on which ED is payable: *Rs.

(ii) No of Units to be supplied:

(iii) Total cost on which ED is payable

(Rs.) _____

*(The requirements listed above are as per
Current notifications. These may be modified,
as necessary, in terms of the rules in force)*

(Signature) _____

(Printed Name) _____

(Designation) _____
(Common Seal) _____

** Please attach details item-wise with cost, if there are more than one items. The figures indicated should tally with what is given in the price schedule.*

Proforma FOR PERFORMANCE Statement

[Please see ITB 32.2 and Section III-
Evaluation and Qualification Criteria]

Proforma for Performance Statement (for a period of last three/five years)

RFB No. _____ Date of opening _____ Time _____ Hours

Name of the Firm _____

<u>Order placed by (full address of Purchaser)</u>	<u>Order No. and date</u>	<u>Description and quantity of ordered equipment</u>	<u>Value of order</u>	<u>Date of completion of delivery</u>		<u>Remarks indicating reasons for late delivery, if any</u>	<u>Has the equipment been satisfactorily functioning? (Attach a certificate from the Purchaser/Consignee)</u>
				As per contract	Actual		
1	2	3	4	5	6	7	8

Signature and seal of the Bidder _____

Letter of Bid - Financial Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid - Financial Part on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text is to help Bidders in preparing this form and Bidders shall delete it from the final document.

Date of this Bid submission: *[insert date (as day, month and year) of Bid submission]*

RFB No.: *[insert number of bidding process]*

Request for Bid No.: *[insert identification]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

We, the undersigned Bidder, hereby submit the second part of our Bid, the Financial Part

In submitting our Financial Part we make the following additional declarations:

- (a) **Bid Validity:** Our Bid shall be valid for the period specified in BDS 18.1 (as amended, if applicable) from the date fixed for the Bid submission deadline specified in BDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (b) **Total Price:** The total price of our Bid, is as below:

Total Price (Excl. GST)	
Total GST	
Total Price (Incl. GST)	

- (c) **Discounts:** The discounts offered and the methodology for their application are:

(i) The discounts offered are: *[Specify in detail each discount offered]*

(ii) The exact method of calculations to determine the net price after application of discounts is shown below: *[Specify in detail the method that shall be used to apply the discounts];*

- (d) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: *[insert*

complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity].

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate “none.”)

- (e) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

Name of the Bidder:* *[insert complete name of the Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder: ** *[insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

** : Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Price Schedule Forms

*[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]*

Important: The Financial Bid Submission Form must be completed and submitted /uploaded on the e-portal (www.uktenders.gov.in) in PDF form in the Financial Envelope along with the BOQ. The Financial Bid Submission Form shall be the part of Commercial Bid. The bid shall be deemed non-responsive if the Financial Bid Submission Form is not submitted, is incomplete, or fails to adhere to the prescribed format.

Price Schedule: For Supply as per Schedule of Requirements

Purchaser's Country <u>INDIA</u>		Currency Indian Rupees				Date: _____ RFB No: _____ Alternative No: _____ Page N° _____ of _____		
1	2	3	4	5	6	7	8	9
Line Item N°	Description of Goods	Delivery Date	Quantity and physical unit	Unit price EXW [including excise duty if any]	Total EXW price per line item [including excise duty if any] (Col. 4×5)	Price per line item for inland transportation and other services required to convey the Goods to their final destination (ITB 14.8 (a)(iii))	Sales and other taxes payable per line item if Contract is awarded (in accordance with ITB 14.8(a)(ii))	Total Price per line item (Col. 6+7)
<i>[insert number of the item]</i>	<i>[insert name of Good]</i>	<i>[insert quoted Delivery Date]</i>	<i>[insert number of units to be supplied and name of the physical unit]</i>	<i>[insert EXW unit price]</i>	<i>[insert total EXW price per line item]</i>	<i>[insert the corresponding price per line item]</i>	<i>[insert sales and other taxes payable per line item if Contract is awarded]</i>	<i>[insert total price per item]</i>
Total Price								

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Note: The Bidder shall give list of major replacement components, mandatory spare parts for 2 years operation (or as required for the period specified in the evaluation criteria) separately indicating description, quantity, unit price and total price in the above format, - (for those items whose scope of supply includes major replacement components, mandatory spare parts as per technical specification)

Price and Completion Schedule - Related Services

Currency Indian Rupees					Date: _____
					RFB No: _____
					Alternative No: _____
					Page N° _____ of _____
1	2	3	4	5	6
Service N°	Description of Services (excludes inland transportation and other services required in India to convey the goods to their final destination)	Delivery Date at place of Final destination	Quantity and physical unit	Unit price	Total Price per Service (Col. 4*5)
<i>[insert number of the Service]</i>	<i>[insert name of Services, after modifying as appropriate deleting inapplicable items from the following:]</i>	<i>[insert delivery date at place of final destination per Service]</i>	<i>[insert number of units to be supplied and name of the physical unit]</i>	<i>[insert unit price per item]</i>	<i>[insert total price per item]</i>
	<i>Performance or supervision of the on-site assembly and/or start-up of the supplied Goods</i>				
	<i>Furnishing of tools required for assembly and/or maintenance of the supplied Goods</i>				
	<i>Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods</i>				
	<i>Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract</i>				
	<i>Training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance and/or repair of the supplied Goods</i>				
Total Bid Price					

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Section V - Eligible Countries

Eligibility for the Provision of Goods, Works and Non-Consulting Services in Bank-Financed Procurement

In reference to ITB 4.8 and ITB 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:

Under ITB 4.8 (a) and ITB 5.1: None

Under ITB 4.8(b) and ITB 5.1: None

Section VI - Fraud and Corruption

(Section VI shall not be modified)

1. Purpose

1.1 The Bank’s Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

- i. “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii. “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. “obstructive practice” is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 2.2 e. below.

- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank’s Anti-Corruption Guidelines, and in accordance with the Bank’s prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;¹ (ii) to be a nominated² sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents, personnel, permit the Bank to inspect³ all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

¹ For the avoidance of doubt, a sanctioned party’s ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

² A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

³ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

PART 2 – Supply Requirements

Section VII - Schedule of Requirements

Contents

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Notes for Preparing the Schedule of Requirements

The Schedule of Requirements shall be included in the bidding document by the Purchaser, and shall cover, at a minimum, a description of the goods and services to be supplied and the delivery schedule.

The objective of the Schedule of Requirements is to provide sufficient information to enable Bidders to prepare their Bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section IV. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of quantity variation at the time of award of contract pursuant to ITB 45.1.

The date or period for delivery should be carefully specified, taking into account (a) the implications of delivery terms stipulated in the Instructions to Bidders pursuant to the *Incoterms* rules (e.g., EXW — that “delivery” takes place when goods are delivered **to the carriers**), and (b) the date prescribed herein from which the Bidder’s delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit).

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date	
					Delivery Period	Bid Security in Indian Rupees
1	Procurement of ICT Equipment along with Supply & Installation for Establishment of State Emergency Operation Centre (SEOC) at USDMA Building, IT Park, Dehradun	<i>As per BoQ</i>	<i>As per BoQ</i>	<i>USDMA Building, Dehradun</i>	<i>3 Months for installation from the date of contract signing, 3 Months for Go live</i>	<i>1,50,00,000.00</i>

2. List of Related Services and Completion Schedule

Service	Description of Service	Quantity	Physical Unit	Place where Services shall be performed	Final Completion Date(s) of Services
SITC	Procurement of ICT Equipment along with Supply & Installation for Establishment of State Emergency Operation Centre (SEOC) at USDMA Building, IT Park, Dehradun	As per BoQ	As per BoQ	USDMA Building, IT Park, Dehradun	<i>3 Months for installation from the date of contract signing, 3 Months for Go live</i>
CMC	Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract	As per BoQ	As per BoQ	USDMA Building, IT Park, Dehradun	3 years from Go Live (The contract may be extended, if required by the user department, on the same terms and conditions, including cost and scope of services, or as may be agreed upon)

3. Technical Specifications

1. NETWORKING

Core Switches

Solution Requirement	It shall support non-blocking Layer 2 switching and Layer 3 routing.
	It shall not have any single point of failure like power supplies and fans etc. and shall have (N+1) in-built level of redundancy.
Hardware and Interface Requirement	It shall have the 48 x 1/10G/25G ports fibre ports and shall have 4 x 40/100G QSFP28 ports.
	It shall be configured with 16 GB or more DRAM and 16 GB or more Flash/Storage.
	It shall support configuration roll-back feature.
	It shall support for different logical interface types like loopback, VLAN, SVI/RVI, Port Channel, multi chassis port channel/LAG, etc.
	It shall support 100,000 IPv4 routes and 32,000 IPv6 routes entries in the routing table.
	It shall support hardware-based load sharing at wire speed using LACP and multi chassis ether channel/LAG.
	It shall have 32MB buffer.
	It shall support minimum 3.2 Tbps of switching capacity.
	It shall support Spanning Tree Protocol (STP) (IEEE 8021.D, 802.1W, 802.1S).
	It shall support minimum 80,000 no. of MAC addresses and shall also support 802.1ae encryption on all the hardware ports.
	It shall support 8 Nos. of links or more per port channel (using LACP) and support 32 number of ports per Link Aggregation Group.
Layer2 Features	It shall support for broadcast, multicast and unknown unicast storm control to prevent degradation of switch performance from storm due to network attacks and vulnerabilities.
	It shall support Strict Priority (SP) queuing, WRR/DWRR or equivalent for congestion avoidance and Access Control Lists (ACLs) for both IPv4 and IPv6 traffic.
	It shall support VXLAN to connect two or more VXLAN tunnel endpoints (VTEP).
Layer3 Features	It shall support all physical ports to use either in Layer 2 or Layer 3 mode and also shall support Layer 3 VLAN Interface and loopback port interface.
	It shall support static and dynamic routing like Static, OSPF and BGP.
	It shall provide multicast traffic reachable using PIM-SM/ SSM.
	It shall support Equal-Cost Multipath (ECMP).
Availability	It shall support Policy Based Routing (PBR).
	It shall provide gateway level of redundancy in IPv4 and IPv6 using HSRP/ VRRP.
	It shall support for BFD For Fast Failure Detection
	It shall support 802.1P classification and marking of packet CoS and DSCP.
Quality of Service	It shall support for different type of QoS features for real time traffic differential treatment using WRED/DWRR and SP Queuing.

	It shall support flow control of Ethernet ports to control traffic rates during congestion by allowing congested nodes to pause link operation at the other end for receiving traffic as per IEEE 802.3x.
Security	It shall support for deploying different security for each logical and physical interface using port based access control lists of Layer-2 to Layer-4 in IP V4 and IP V6 and logging for fault finding and audit trail.
	It shall support control plane (i.e. processor and memory protection) from unnecessary or DoS traffic by control plane protection policy.
	It shall support for external database for AAA using TACACS+ / Radius.
	It shall support to restrict end hosts in the network. It shall secure the access to an access or trunk port based on MAC address. It shall limit the number of learned MAC addresses to deny MAC address flooding.
	It shall support for Role Based Access Control (RBAC) for restricting host level network access as per policy defined.
	It shall support to prevent edge devices in the network not administrator's controlled from becoming Spanning Tree Protocol root nodes.
Manageability	It shall support unicast and/or multicast blocking on a switch port to suppress the flooding of frames destined for an unknown unicast or multicast MAC address out of that port.
	It shall support for embedded RMON/RMON-II for central NMS / EMS management and monitoring.
	It shall provide advanced telemetry and automation features for monitoring, troubleshooting and improving network operations.
	It shall support for management and monitoring status using different type of Industry standard NMS / EMS using SNMP V2 and V3.
	It shall support for basic administrative tools like ping and traceroute.
	It shall support central time server synchronization using Network Time Protocol (NTP) V4.
IPv6 features	It shall support for IPv6 connectivity and routing required for network reachability using different routing protocols such as OSPFv3, BGP+ or similar.
	It shall support route redistribution between these protocols.
Power Supply	To be supplied with hot swappable fans and replaceable Redundant Power Supply units.
Safety and Compliances	It shall be Common Criteria NDPP or NDcPP certified.

Non-POE Access Switch

S.NO	Technical Specifications
1	It shall be 1U and rack mountable in standard 19" rack.
2	It shall support internal field replaceable unit redundant power supply from Day 1.
3	It shall have minimum 2 GB RAM and 2 GB Flash.
4	It shall have dedicated slot for modular stacking, in addition to asked uplink ports. It shall support for minimum 40 Gbps of stacking throughput with 8 switch in single stack.

	Additionally, it's important to note that all stacking accessories shall be included right from Day 1.
5	It shall have minimum 176 Gbps of switching fabric and 130 Mpps of forwarding rate.
6	It shall have minimum 16.000 MAC Addresses and 250 active VLAN.
7	It shall support minimum 11.000 IPv4 routes.
8	It shall have 1000 or more multicast routes.
9	It shall support at least 16.000 flow entries
10	It shall support 128 or more STP instances.
11	It shall have 6 MB or more packet buffer.
12	It shall support all of the following IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.
13	It shall have functionality like static routing, RIP, PIM, OSPF, VRRP, PBR and QoS features from Day1.
14	It shall support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.
15	It shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.
16	It shall support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+.
17	It shall support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbour Discovery Inspection and IPv6 Source Guard.
18	It shall support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and 802.1ae on hardware for all ports.
19	It shall have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
20	During system boots, the system's software signatures shall be checked for integrity. System shall be capable to understand that system OS are authentic and unmodified, it shall have cryptographically signed images to provide assurance that the firmware & BIOS are authentic.
21	It shall have 48 nos. 10/100/1000 Base-T ports and 4 nos. SFP+ uplinks ports.
22	It shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.
23	Switch / Switch's Operating System shall be tested for EAL 2/NDPP or above under Common Criteria Certification.
24	Switches and transceivers shall be from the same OEM.
25	Switch / Switch's Operating System shall be tested for EAL 2/NDPP or above under Common Criteria Certification.

POE Access Switch:

S. No.		Technical Specifications
1	General Requirements	It shall have minimum 36 x 10/100/1000 Base-T, 12 x 2.5G BaseT, each supporting 30W with total power budget of 1440W, and 4 x 1/10G SFP+ ports including required transceiver modules.
2		The requirement for a 1U rack-mountable switch is that it shall support stacking of a minimum of 8 switches with dedicated stacking port which shall be over and above of asked uplink ports offering a total of 40 Gbps. Additionally, all stacking accessories shall be included from Day 1.
3		It shall have 2 GB DRAM and 2 GB internal Flash.
4		It shall have 270 Gbps or higher backplane capacity and minimum 130 Mpps of forwarding rate.
5		It shall have non-blocking hardware architecture.
6		All interfaces shall provide wire speed forwarding for both fibre and copper modules.
7		It shall support for at least 2000 VLANs ID & 16,000 MAC addresses.
8		It shall support IGMP snooping v1,v2 & v3.
9		It shall support static IP routing and shall support OSPF and PIM.
10		It shall support 8 hardware queues per port.
11		It shall support Dynamic Host Configuration Protocol (DHCP) snooping.
12		It shall support LLDP capabilities.
13		It shall support IP Source Guard, DAI and IPv6 security feature like IPv6 RA Guard and IPv6 Neighbour Discovery Inspection.
14		It shall support Secure Shell (SSH) Protocol and Simple Network Management Protocol V3 (SNMP V3).
15		It needs to have console port for administration & management.
16		It shall support integrated trusted platform module (TPM) for platform integrity or equivalent. This ensures the boot process started from a trusted combination of switches or shall support secure boot.
17		It shall support VXLAN encapsulation (tunnelling) protocol for overlay network that enables a more scalable virtual network deployment.
18		It shall support On-premises and cloud- based management.
19		Management using CLI, GUI using Web interface shall be supported.
20		It shall support FTP/TFTP for upgrading the operating system.
21		It shall support Energy Efficient Ethernet feature.
22		It shall have IEEE 802.1x support.
23		It shall support IEEE 802.1D Spanning-Tree Protocol.

24		It shall support IEEE 802.1p class-of-service (CoS) prioritization.
25		It shall support IEEE 802.1Q VLAN.
26		It shall support IEEE 802.3 10BASE-T specification.
27		It shall support IEEE 802.3u 100BASE-TX specification.
28		It shall have internal redundant power supply and shall also support 802.1ae encryption on all hardware ports.
29		It shall have PoE power budget of 1440W.
30		It shall be able to support management via CLI, Web interface, SNMP V1, V2, V3.
31		It shall be manageable through both IPv4 & IPv6.
32		It shall comply with UL-UL60950-1/IEC 60950-1, FCC Part 15, VCCI Class A, EN 55022/EN 55024/ EN 55032, CAN/CSA, 60950-1, Reduction of Hazardous Substances (ROHS).
33		It shall be IPv6 Certified or IPv6 Ready.
34		It shall be Common Criteria NDPP or NDcPP certified.
35		It shall be supplied with replaceable Redundant Power Supply units.

Wireless Access Point Controller (WAPC):

	Technical Specifications
General Requirements	The WAPC shall have min 5 Gbps (upgradable to 10 Gbps without changing the hardware) of throughput dedicated hardware appliance, purpose built for Wi-Fi Control and management, shall support min 200 AP (Upgradable to 500 without changing the hardware).
	The offered solution shall be a dedicated physical appliance (Automatic HA failover) with 1:1 redundancy.
	The bid shall include all required licenses for the associated frontend, backend, OS, database etc for the smooth operations of the dedicated appliance that is offered by the Bidder.
	Hardware based offers shall support minimum 200 Access Points and over 3000 end-user devices, in High Availability (HA), from Day-1.
	Each WAPC shall have minimum 4*1/10G SFP+ ports or 2 x 1 / 10 SFP+ ports. The offered WAPC solution shall have High Availability (HA), from Day-1

	The WAPC shall be deployed in high availability - or Active/Standby (1+1). The wireless APs shall establish simultaneous communication channel with both active and standby controller to provide instantaneous failover.
	The WAPC appliance shall have integrated trusted platform module (TPM) or equivalent for platform integrity to ensure the boot process is from trusted source.
	The WAPC shall support 802.11ac primarily and shall be backward compatible to 802.11n/a/b/g. The solution shall also support 802.11ax as per requirement.
	The WAPC shall support Guest Portal.
	The WAPC shall support WIPS, Rouge AP detection. and Honeypot AP detection.
	The WAPC shall be able to integrate with various authentication mechanism including RADIUS servers, etc.
	It shall support Dynamic Packet capture to enhance troubleshooting.
	It shall support up to 16 SSIDs per AP.
	It shall support authentication framework including IEEE 802.1X {EAP, PEAP, EAP-TLS, EAP-TTLS, EAP-SIM, EAP-AKA), MAC address authentication and Web-based captive portal authentication.
	It shall support Quality of Service features like 802.11e based QoS enhancements, WMM or equivalent and U-APSD or equivalent to provide best performance on Video applications.
	It shall support DoS attack detection including management frame floods, de-authentication attacks, probe request floods, fake AP floods, EAP handshake floods etc. Impersonation detection and prevention including hot spotter attack detection, MAC address spoofing, AP impersonations and man-in-the-middle attacks.
	It shall support client intrusion prevention features like honeypot AP protection and classification of interference in multiple categories including Bluetooth devices, cordless phone, Microwaves, fixed-frequency video and audio devices.
	It shall support configuration and enforcement of role- based policies that define proper access privileges for different user groups like employees, guests, contractors etc. across wired and WLANs.
	It shall provide extensive visibility and control into applications to configure security policies and bandwidth controls based on applications and application categories.
	It shall support auto discovery of AP's.
	It shall support bulk configuration based on templates.
	It shall be able to handle interference and shift the communication on another channel automatically.
	It shall be able to create access policies based on various groups/labels/subnets.

	It shall be able to extend API to integrate with other systems as well.
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Non-POE Access Point (N-POE AP)

	Technical Specifications
General Requirements	Access Points shall support 2.4 GHz. and 5 GHz. radios with integrated antenna for user end point connectivity.
	It shall support dedicated WIDS/WIPS scan for both 2.4 GHz. and 5 GHz. radio for 24/7 RF threat protection. The Access Point shall also be future ready for WiFi-6E standard with 6 GHz. band via dedicated radios. If there is no inbuilt scanning radio, The Bidder shall bid access point separately in ratio of 4:1.
	It shall support minimum 802.11ax 4x4 with two spatial stream MIMO on all three radios.
	It shall come with standard mounting brackets.
	It shall have either 1 x 5G with PoE (802.3af/802.3at) port or better.
	It shall have 1x management console port (RJ-45) and USB 2.0 at 4.5W.
	It shall support tri-band coverage across 2.4 GHz., 5 GHz, and 6 GHz. to deliver 3.9 Gbps maximum aggregate data rate.
	It shall support WiFi-6 (802.11ax) technology with backward compatible.
	It shall be capable of band steering.
	AP shall support encrypted data transmission between access point and WAPC.
	The WLAN solution shall have QoS feature.
	It shall support serial/usb console, telnet and/or SSH login to APs directly for troubleshooting flexibility.
	It shall have WIPS/WIDS support from day one. The access point shall provide wireless IPS capabilities, IP filtering, WPA2, WPA2-MPSK, WPA3.
	It shall be able to support rate limit, per SSID or per user based, uplink or downlink bandwidth.
	It shall have SDN or WAPC based solution, that decouples the control and data planes of networked devices, allowing centralized and programmable management of network resources and policies.
	It shall have following compliances: UL 60950-1 CAN/CSAC22.2 No. 60950-1
	It shall be Wi-Fi certified and WPC approved.
SDN Driven Solution shall support Switching and wireless devices.	

IP Telephony:

	Technical Compliance
Appliance based IP PBX	The Switching system of the IP PBX shall be designed with Open SIP (as per the RFC standards) at the core allowing fully distributed SIP solutions across data networks. It shall support following 100% Open SIP Standards and solution.
	It shall be an Appliance (Automatic HA failover) with 1:1. The OEM shall provide the necessary hardware and software resources that is essential to operate from on-prim ecosystem for the Day-1 need of 300 users and minimum 300 end-user devices including IP Phones, Video Phones and SIP H.323 based Video Conferencing Devices. Hardware, Software and Voice Gateways shall be from Same OEM for better interoperability.
	It shall include all required licenses for the associated frontend, backend, OS, Database etc. for the smooth operations of the appliance.
	It shall be installed on an appliance, scalable, and distributable. The operating system shall be LINUX based. The architecture shall be capable of seamless migration to its maximum capacity without compromising on any functions/features of this system or any degradation of service.
	The system shall be comprised of, but may not be limited to, SIP Communication Devices (wired and wireless) e.g. SIP Phones (hard and soft phones), application for Smart Phones, multimedia PCs, SIP phones, Video Conferencing Devices.
	It shall be scalable and geographically distributable as Head Office, district offices and other lined departments in the state, from Day-1.
	It shall support, standards-based third-party clients/phones like IP, SIP.
	It shall manage CAC (Call Admission Control) mechanisms to optimize the usage of the bandwidth in the WAN for multi-site configurations.
Session Border Control (SBC) Licenses	All SIP/SBC licenses shall strictly adhere to the Open SIP as per RFC standard. Any OEM proprietary SIP or IP implementation <u>SHALL NOT BE ACCEPTED.</u> This requirement applies to the entire PBX system and all associated project components.
SIP Resources	All necessary SIP resources and capabilities like Session Boarder Control (SBC) licenses and resources for activating minimum 100 Channel SIP Gateway and minimum 300 SIP end-user devices are to be provided on Day-1.
System Architecture	The voice and signaling frames shall be marked [tagged] in order to be recognized. The supported standards of marking shall be: Level 2: IEEE 802.1p/Q and Level 3: TOS / DiffServ.
	The system shall support for voice encoding the following standards: -
	(i) G.711
	(ii) G.729A

	(iii) G. 722, G.722.1 WIDE BAND AUDIO
	Call Switching: Typically, internal calls (i.e., limited to a single location) shall be based on the G.711 uncompressed PCM standard, but WAN calls outside the location shall use the G.723.1 or G.729/A compression algorithm.
	The system shall support Network Time Protocol (RFC 1305) to synchronize the system data/time of network devices.
	The system shall be suitable to accommodate DTMF telephones. The system shall support outgoing DTMF transmission even from SIP phones.
	The system shall have a non-blocking architecture at all levels like system processing, switching fabric, power supplies, other resources like DTMF receivers, R2 receivers.
	VoIP Support: <u>The</u> system shall support VOIP solutions as an integral part of the system.
	(i) The system shall be fully compliant to VOIP standards like IP/SIP (Session Initiation Protocol). The Bidder shall give clear compliance for the requested standards.
	(ii) The system shall be able to operate with any IP/SIP compliant device and it shall be able to support internal gatekeeper for the same. If required, it shall be able to inter-operate with any standard based external IP gatekeepers.
	(iii) The SIP proxy, SIP registrar shall be inbuilt in the system and shall support any 3rd party SIP compliant hard phones or soft phones.
	(iv) The system shall support the QoS features for the VoIP implementation. It shall be compliant with both QOS standards (Layer 2 – 802.1 p/q) and Layer 3- Diffserv / TOS).
	Centralized Licensing Structure: The offered platform shall have centralized, Perpetual/ Subscription licensing structure where a user license (Analog, digital, IP, SIP) can be used anywhere in the telephone network like main site or the various RLU Media gateway site.
	The system shall support Syslog services for both internal and external command and configuration control accounting with a minimum of 5 day history.
	The Operating System used by the call server shall not use or natively support network resource sharing services.
	The call server shall be provided adequate protection from possible virus, worm and trojan infestation points such as internal e-mail servers.
	The password and access control shall include at least:
	(ii) Password Aging with configurable time periods.
	(iv) Internal OS controls for remote point of access restriction and service availability. (i.e. TCP Wrappers & Trusted Hosts)

	<p>IP Phones shall not support direct, external initiated, connections via HTTP, telnet, FTP, TFTP or any other protocol as means to prevent distributed Denial of Service attack exploitation.</p>
	<p>IP / SIP PBX shall support 802.1x (EAP-MD5 or better) for authentication and access control to the network, this mechanism shall allow the user to be connected to the call server once he has passed the authentication process; not before.</p>
	<p>The system shall have the capability to, based on standard mechanisms (such as 802.1Q and DHCP), assign automatically the corresponding voice VLAN number to the IP station clients during IP station initialization, allowing for the separation of voice and data traffic at IP station.</p>
	<p>The IP PBX shall support all the VOIP call Encryption from day one. All IP communication shall be encrypted at signaling as well as the voice with SHA2 certificate key length above 2048. It shall have Native Encryption of Min 128 Bit AES or 256 Bit AES. It shall use randomly generated keys derived from base keys for every voice and signaling, session established by the system. And it shall from same make OEM of IP PBX system.</p>
ROIP Interface	<p>The Radio over IP (RoIP) to connect the PBX over Ethernet ports, shall be possible in future in same solution.</p>
PRI Support	<p>The solution shall support PRI card.</p>
Voice Compression	<p>It shall support voice compression algorithms such as G.711 (PCM), G.729, or other codecs for efficient transmission of audio over IP networks.</p>
Protocol Support	<p>It shall support TCP/IP, UDP/IP, RTP (Real-time Transport Protocol), and SIP (Session Initiation Protocol) for signaling.</p>
Software Integration	<p>It shall offer mappings between radio channels and IP extensions, set up call routing rules, and manage other aspects of the RoIP integration.</p>
Network Connectivity	<p>It shall support Ethernet / IP.</p>
Other General Requirements	<p>The management platform shall also run on a VM client (Graphical User Interface GUI) as well as a web based interface.</p>
Configuration and programming	<p>Configuration and programming of services, users, categories and all system parameters and features. This module shall provide centralized management in local or remote environments of a single system or a network. The network manager shall be able to quickly and easily edit, create or delete any network object by the use of import/export functions and multiple operations.</p>
Fault diagnosis	<p>Generate reports and graphics about the statistics of the alarms and its correspondent resolution time.</p>

Directory module	It shall directory module to manage the telephone directory. This shall be AD/LDAP compatible to be synchronized with other directory applications, shall also allow web access and provide information on all desktops allowing click to call features to the users.
	Web Interface to Directory: The exchange directory shall be available on web. The LDAP server and web server application shall be integral to the exchange. This feature shall available for all type of users extensions.
Integrated Directory	The system shall provide to display equipped voice terminals with access to system directory on SIP and IP phones. The system shall also provide internal and external directory. Any internal user can use by browsing the URL link from his laptop/PC to see the directory and dial the required no. by selecting under LDAP directory. The LDAP communication shall be secured by communicating in an SSL tunnel.
	An integration with LDAP/AAA/AD shall be provided.
System Backup and Restore facility	The management system shall have the provisioning for taking manual as well as scheduling of automatic periodic backup of complete system & data in Flash RAM / Flash Disk / Hard disks or in another networked node, available in the same LAN network. It shall also be able to restore in any IP PBX. It shall maintain the backup at least for one year.
	Administration users connecting directly to the Call Server (console) shall be authenticated via a RADIUS server before gaining access to the call server.
Security	All management traffic between a remote console/session and the call server shall be encrypted. (SSH for direct command line sessions, HTTPS(SSL) for web sessions, SFTP for file transfers, etc.)
	The management platform shall provide Role Based Account Management to define different levels of administrator access depending on specific function responsibility.
Performance of trunk operators	The system shall report clearance of calls by trunk operators and evaluate the performance index of each operator.
Data Base Back up	The system shall have to take system data backup automatically without human intervention and keep maintain data base back up of system for at least one year, as and when required to restore the same in the IPPBX.

	<p>The system Call Server (CS) shall be (1+1) in Active-Active mode and shall offer maximum availability, with the switchover of call control processing functions to an alternate or redundant processor (or soft-switch control point) in the event of significant fault. The redundancy scheme shall conform to the model used in most computer systems: the complete "mirroring" of the information (both static and dynamic data.) The switch over between 2 redundant call control processors shall not interrupt existing and established communications. The complete set of programs and software modules shall be duplicated in real time. In case of failure of the main Server (hardware or software), the standby Server shall take over the control of communications instantaneously without any manual intervention.</p>
System Survivability	<p>Both call servers shall work in hot-standby Active-Active mode in two different subnet in LAN/ WAN network and two different VLANs.</p>
	<p>All critical resource elements (call server, hard disks, data bases, IP interfaces, DSP resources, clocking sources, Processor, RAM, Hard disk, Tone generators, all IO ports - Serial and Ethernet TCP/IP port, Power supplies, Ring generators, Resources like DTMF receivers, Tone detectors, etc.) shall be able to be configured.</p>
	<p>The management platform shall provide a backup mechanism for all critical system information in both a manual and an automatic/scheduled archival and a Disaster Recovery mechanism.</p>
	<p>The whole telephony system shall be installed in virtualization environment, preferably in VMware EXSi 5.5 or higher.</p>
	<p>The call server shall have dual Ethernet port 10/100/1000 and work in mirror, i.e. both Ethernet ports work in redundancy.</p>
System Features	<p>Numbering scheme: The IP PBX shall be suitable for up- to 8 digit extension numbering scheme. This numbering scheme shall be flexible. The system shall also allow mixed numbering scheme.</p>
	<p>The system shall provide distinctive ringing for internal calls and external calls.</p>
	<p>The system shall support the attribution of an external number DDI or individual line or a bundle head to a trunk, a bundle, an attendant, a group of attendants, a subscriber, a group of subscribers or virtual equipment. The unanswered DDI communication can overflow, to Attendant or attendant group, Local subscriber, Network subscriber, Voice mailbox, automated attendant, abbreviated number, External number.</p>
	<p>The proposed system shall support automatic route selection (ARS) and least cost routing (LCR) features to route the calls based on priorities related to user profile, tariff, and network availability, along the most cost- effective path. This service shall be transparent for users and irrespective of the physical carrier connection.</p>

Voice Mail Features	
General Requirements	The system shall be equipped with a voice mail of the same OEM of IPPBX, in skin card based/ software based or server based, offering the best interactivity with user. The voice mail shall work as a centralized resource in case remotes are connected to the main exchange (Server based voice mail is acceptable).
Service Support	<u>It shall support Voice messaging features</u> allowing the owner of a mailbox to send messages to other mailbox users, whether they are part of the same system or remote users.
	<u>It shall support automated attendant</u> (automatic switchboard) features allowing the voice mail system to act like an attendant: answer incoming calls, transfer them to a requested or predefined number or mailbox, using addressing by name or by number.
	<u>It shall support e-Messaging service in future by adding HW and SW,</u> allowing mailbox owners to access their voice mail from a remote PC (e-mail client) via the IP network.
	<u>It shall support E-Mail Messenger – in future by</u> adding software and hardware, a client-server application dedicated to Microsoft Outlook for voice message manipulation right from the e- mail client.
Mailboxes and Access Control	It shall have minimum 300 nos. Mailboxes from Day 1.
Voice Messaging System	It shall have customization of an announcement feature.
	It shall have Call forwarding to the voice mail feature.
	It shall have message notification via message indicator LED and voice prompts.
CO Trunks	It shall accept/extend CLIP features (FSK or DTMF).
	It shall allow line impedance to be modified to identify the caller and to detect the metering pulses.
SIP & IP Based Trunks	It shall have trunk switching link over IP >2 Mbps.
	It shall have access to IP & SIP phones.
	It shall have voice over IP logical links and trunk groups.
	It shall perform voice compression/decompression and IP packets.
	It shall have inbuilt E.164.
Unified Communication (UC) System	
General Requirements	Unified Communication (UC) shall be implemented as part of the Soft PBX.
	Presence
	Instant Messaging
	Peer to peer video Call
	Audio call

	File transfer
	Support to Voice over WiFi Network
	Mobile App with link to PBX directory
	Seamless call transfer between smartphone to desk phone and vice-versa, over both WiFi and Cellular medium
	Every UC client shall have Softphone on their Windows Desktop, Smart phone (iOS/Android) or web browser.
SIP Telephones	
General Feature sets for all Phones	
Preferred Feature Support for all Phone Extensions	Answer Call Waiting by Transfer
	Auto-Answer
	Automatic Disconnect
	Automatic Number Identification (ANI) Display
	Browse Personal Directory
	Busy Lamp Field
	Call Forward All
	Call Hold
	Call Log
	Call Parking and Call Pickup
	Call Waiting
	Calling Number and Name
	Configurable DSS Buttons
	Direct Dial without Off Hook (Hands Free)
	Directed Call Pickup
	Display Dialed Number and Name
	Display Dynamic Call Divert Information
	Display Select Hold Display
	Display Time/Date Function
	Do Not Disturb (DND)
Elapsed Time Display	
Group Call Pickup	
Hands Free	
Hands-Free Announce and Reply (Idle State)	
Last Number Redial	

	Login and Logout
	Message Waiting Indication
	Multi Appearance (Call Waiting)
	Multiple Line Appearance
	On-Hook Dialing
	Placing Multiple Calls on Hold
	Privacy – ANI Restriction
	Reminder/Wake-up Call
	Restrictions – Station
	System Non-Exclusive Hold
	Transfer with Consultation
	Transfer without Consultation (Blind)
Other General Criteria's	Proposed SIP phones shall have built-in security features like SIP-TLS or higher encryption standards.
	It shall have hands free operations. Each of the offered phone type shall support hands-free operations of both Microphone and Speaker.
	- Volume up/down (separate volume levels for the handset, speaker, and ringer); Buttons for Mute, Speaker, Headset.
	- Menu button for accessing (options and settings)
	- Dedicated button for Hold, Conference, Transfer, Drop.
Feature Support	Speakerphone: High quality two-way hands-free speaker and microphone.
	Hearing Aid Compatible Set: The set shall be compatible to all types of hearing with support to TTD acoustic coupler.
	Message Waiting Indicator: Shall have message wait and visual ringer alerts.
	Personalized Ring Patterns: Shall have at least five Ring tones/patterns
Other Requirements	Headset Socket: Yes.
	Phone Applications:
	o Centralized Call Log and Contact application.
	o Up to 100 Contacts in phone storage with additional memory for Call Log (Missed, Incoming, Outgoing calls).
	o Access to centralized directory, UC and Voice applications
	Upgradeable Firmware: Firmware shall be upgradable.
	Mounting: Phone shall have optional Desk or wall mountable adapter.
PoE Support	Shall have built-in IEEE 802.3af Power over Ethernet (PoE) support.

	Connectivity: RJ45 – Dual 10/100/1000 Base T Ethernet ports
Audio CODECs	Codecs: G.711, G.722, G.722.1, G.729a/b Dynamic Jitter buffer, Echo cancellation, Comfort Noise, Automatic Gain control.
Network Features	QoS Options: UDP Port Selection, DiffServ and 802.1p/Q (VLAN)
	It shall have SNMP support.
	It shall support to Static or dynamic IP address assignment.
Ethernet for PC	Ethernet Port of PC/Laptop: Shall have one LAN port to connect Laptop or PC with VLAN separation, with support
	to 801.1x authentication support.
Basic Telephone	4-line SIP desk phone with Color Display
	3 Context-sensitive soft keys
	Fixed Feature Buttons & navigation buttons.
	Local phonebook up to 100 entries
	Auto provision via FTP/TFTP/HTTP/HTTPS for mass deployment
	SRTP/ HTTPS/ TLS, 802.1x
	Headset, Desk and Wall-Mountable
	Hotline, emergency call waiting, call transfer, call forward
VIP (Premium) SIP Telephone	7 inch or more Color touch Screen with 2MP or more 1080p HD camera with one of more SIP accounts ,3-way conferencing.
	Integrated secondary Gigabit Ethernet port is preferred for connecting to a nearby desktop/Laptop.
	Hard function keys for redial, hold, mute, conference, drop, transfer, speaker, volume up, volume down, menu, contacts, call log, phone screen, headset, and messages.
	Wideband HD audio with full duplex speaker.
	Compatibility with wired and wireless headsets.
	Availability of Bluetooth cordless handset is preferred.
Operator PC based Console	
General	The offered application shall support Role based, logins
	administered over AD/AAA system.
	The application shall support online Directory, BLF (Busy
	Lamp Field) indications, etc.
Telephone application keys	<u>Audio keys and speaker</u> allow activation/deactivation of the speaker or the hands free mode, as well as volume control.

	<p><u>Call handling keys</u> dedicated to managing call flow and provide the following functions (one key, one function) :-</p> <p>Store and redial, Redial, Cancel consultation (inquiry), Release call, Broker call, Call selected party, Answer internal call, Transfer/hold call, End of dialing, Next call.</p> <p>User speed dialing, Privileged call, User supervision, Abbreviated (speed dialing) number, Telephone function, Individual hold, General hold, Trunk group supervision, Transfer with/without privilege, Individual routing, Transfer in private network.</p>
Soft Information LEDs	<p>Night forwarding, Auto-answer, Auto-transfer, Trunk reservation, Mail, System message</p>
	<p><u>Application shall display</u> following information in screen :-</p>
	<p><u>Menu bar shall display</u></p> <p><u>Attendant</u> - allows configuration of the operating mode</p> <p>Application activated</p> <p>Activate/deactivate the microphone</p> <p>Activate/deactivate the speaker and switch to hands free</p> <p>Open a dialog box with the last ten users dialed</p> <p>Open a dialog box with a list of users</p> <p><u>Directory</u> - allows searches in various directories</p> <p>Directory(s) previously selected in the Option menu</p> <p>Attendant's personal directory</p> <p>Enterprise system directory</p> <p><u>Extension</u> - allows access to a range of management Services</p> <p>Centralized directory</p> <p>System management</p>
Busy Lamp Field Application	<p>It shall have icons for phones, fax, hunt groups etc. to indicate :-</p> <ul style="list-style-type: none"> · Idle state · Busy (including ringing for multi-line phones) · Busy: in conversation with internal party · Busy: in conversation with external party · DND (do not disturb)

Wired Headsets:

Technical Specification	
General Requirements	Operator Headsets. The minimum technical specifications for the operator headsets for both Desk phone and Soft Phone working are as follows:
	a) Hands-free, Boundary Headsets
	b) Twin-ear sets with ear mufflers and soft leathered ear cushions on both sides.
	c) Adjustable, boom-arm positions for the microphone.
	d) Superior wide-band audio with Noise Cancellation system
	e) Frequency Response 150- 6000 Hz or wider.
	f) Impedance – Better than 30 Ω
	g) Noise cancelation/Noise Isolation
	h) In-line call control unit to manage call functions such as, answer and end a call, turn the volume up or down, mute microphone and redial last outgoing call etc.
	i) Tangle-free wired headset
j) Connection with PC – USB A and USB C or later	

Wireless headset:

General Requirements	Qualifying Minimum Requirements
	Operator Headsets. The minimum technical specifications for the operator headsets for both Desk phone and Soft Phone working are as follows: -
	a) Hands-free, Boundary Headsets. Operator flexibility to move freely up to 60 meters
	b) Twin-ear sets with ear mufflers and soft leathered ear cushions.
	c) Integrated Unidirectional microphone.
	d) Superior wide-band audio with Noise Cancellation system
e) Frequency Response 80- 6400 Hz or wider.	

	f) Impedance – Better than 30 Ω
	g) Noise cancelation/Noise Isolation
	h) In-line call control unit to manage call functions such as, answer and end a call, turn the volume up or down, mute microphone etc.
	i) At least 15 Hour of talk-time. To be supplied with charging base station
	j) Connection with PC – USB Wireless Dongle and Bluetooth 5.0

Router:

Technical Compliance	
General requirements	Router shall have a modular architecture and shall have 3 slots available for future expansion.
	It shall have minimal performance degradation when running advanced services such as stateful firewall, NAT, and IPsec.
Hardware and interface requirements	Router shall have at least 4 x 1G RJ-45 and 2 x 1/10G SFP ports supporting both LAN and WAN protocols.
	Router shall have 16GB RAM and 16GB internal Flash/SSD.
	Router shall support Redundant Power supply and redundant fans.
	Router shall also support T1/E1 to be installed for inbound and outbound PSTN calls.
Performance requirements	The Router shall have a minimum routing performance of 4 Gbps on IMIX packet and 8 Gbps on large packet.
	The router shall have a minimum IPsec performance of 3 Gbps (large Packet).
Quality of Service (QoS) requirements	It shall be possible to configure maximum bandwidth and guaranteed bandwidth.
	Routers shall support 802.1p, DSCP.
	Routers shall support marking, policing, and shaping.
	Routers shall support congestion management features like WRED or equivalent.
	The router shall have the capability to upgrade to SDN (Software Defined Networking), as and when the need is felt by the Buyer.
Routing protocol support	The Router shall support IPv4 and IPv6 routing.
	The Router shall support VRRP.

	The Router shall support Static Routes.
	The Router shall support RIPv1 & RIPv2.
	The Router shall have OSPF, IS-IS and BGP.
	The Router shall support Policy Based Routing.
Multicast Features	IGMP v1/v2/v3 and PIM-SM, Source Specific Multicast.
MPLS Features	Layer 2 and Layer 3 VPN, LDP, RSVP and mVPN/ NGMVPN.
Security features (From Day 1)	Routers shall support AAA using RADIUS or TACACS.
	Routers shall support Packet Filters/ACL.
	Routers shall have Stateful Firewalling.
	Routers shall support 1500 IPsec Tunnels.
	Routers shall have DES (56-bit), 3DES (168-bit), AES (256- bit) encryption.
	Offered Routers shall support MD5/SHA-1 or later authentication.
	Routers shall have role-based access mechanisms.
	Routers shall support Network address translation (NAT).
Management and Troubleshooting	Router shall have Console, Telnet/SSH and Web for management.
	Routers shall support Software upgrades through Web.
	Routers shall support SNMPv2 and SNMPv3.
	Extensive debugs on all protocols.
	Real-time traffic-interface/sub interface statistics.
	IPSLA/ Real-Time Performance Monitor.
Certifications	Safety certifications UL 60950-1.
Power Supply	To be supplied with hot swappable fans and replaceable. Redundant Power Supply units.

Firewall:

Technical Specifications	
General Requirements	The appliance-based security platform shall be capable of providing Application-ID/AVC, User-ID/Agent-ID, NGIPS, Anti-Virus, Anti-Spyware, Anti Malware, Anti-APT, Explicit and transparent web proxy, in-line DNS functionality simultaneously.
	The Firewall shall have Application Security / AVC / AppSec from Day 1.
	It shall provide Stateful failover.

HA configuration that uses dedicated HA-control interfaces apart from the mentioned traffic interfaces.
It shall provide active/active and active/standby failover.
It shall support up to 1.5 Million Concurrent sessions and at least 75,000 sessions per second with NGFW, Application Security/AVC enabled from Day 1.
It shall provide 5 Gbps Firewall throughput.
It shall provide 3 Gbps IPsec throughput.
It shall provide 5 Gbps IPS throughput or more.
It shall provide 5 Gbps NextGen firewall throughput including Firewall, Application security/ AVC and URL Filtering and logging enabled.
It shall have at least 32 GB or higher and 800 GB NVMe SSD storage.
It shall support IKEv1 and v2, IPsec VPN standards, 56-bit DES, 168-bit 3DES, 256-bit AES encryption
It shall support RADIUS or TACACS+ .
Network and application level attacks ranging from malformed packet attacks to DoS attacks, Support RSA and Diffie-Hellman, MD-5, SHA-1, SHA-128, SHA-256.
Rich dynamic NAT and PAT services.
Static NAT and PAT services.
Stateful and stateless and Zone-based firewall.
Denial of service (DoS) protection, DNS Security, IPS Protection.
Traffic anomaly protection.
Web based management to support for remote monitoring.
Accessible through variety of methods including: Telnet, Console Port, SSH.
Dedicated Out-of-Management interface.
Support SNMPv1, v2, v3 & Support for syslog.
It shall have the ability to create customizable administrative roles/profiles (monitoring only, read-only access to configuration).
It shall support for IPv4, RIPv2, OSPF, BGP, VLAN, DHCP,
It shall support IPv6 RIPng, OSPFv3.
It shall include at least 50 SSL remote access licenses for Work from Home (WFH) or for on the move. VPN connections with Client Agent based VPN option shall also be accepted.

	It shall be supplied with hot swappable fans and replaceable Redundant Power Supply units.
	It shall have 4 x 1/10Gig, 4 x 1G RJ-45, 4X1G SFP Ports loaded with required optics. Appliance shall support additional expansion slot to accommodate 8*1/10G ports for future expansion.
	Firewall shall be EAL4/ NDPP or NDcPP certified.
	The proposed Management solution shall allow policy rule creation for application control, host profile, threat prevention, Anti-virus, file filtering, content filtering, QoS and scheduling at single place.
	It shall support role-based access control (RBAC) and centralized management with complete feature including Log Management.

Network Access Control (NAC):

Sno	Technical Specifications
1	It shall be available on Hardware / Virtual with 1000 device license including all features (authentication, guest, profiling, posturing, integration, device admin) from Day 1.
2	It shall provide a highly powerful and flexible attribute-based access control solution that combines authentication, authorization, and accounting (AAA); posture; Guest; profiling; and BYOD services on a single platform.
3	It shall control access to the network with policies, including pre-admission endpoint security policy checks and post-admission controls over where users and devices.
4	It shall provide complete guest lifecycle management by empowering sponsors to on-board guests.
5	It shall provide sponsors to extend, terminate & manage password for the registered guest.
6	Advanced Guest Networking Capabilities Solution shall provide below mentioned mechanism for notification of user credentials to Guest Users: a. SMS integration b. Email (Microsoft Office 365)
7	It shall have provision for Sponsor admin to approve the request coming from external guest and after approval the credentials will be shared.
8	It shall have provision to provide grace period to guest till the time Sponsor admin approves the request.
9	It shall provide granular compliance checks for Windows, MAC and Linux in terms of: - Check operating system , service packs , hotfixes - Check process, registry, file & application - Check for Antivirus installation , Version , Antivirus Definition Date - Check for Antispyware installation , Version , Antispyware Definition Date - Check for windows update running & configuration - Ability to run custom scripts and policies
10	It shall permit admin to define thresholds for Anti-Virus Definition checks, if definition is not updated then Endpoint shall be blocked.

11	It shall be able to integrate with Endpoint Patch management such as WSUS for Auto or Manual Remediation.
12	It shall have predefined device templates for a wide range of endpoints, such as IP phones, printers, IP cameras, smartphones, and tablets.
13	It shall allow Administrators to create their own device templates. These templates can be used to automatically detect, classify, and associate administrative-defined identities when endpoints connect to the network. Administrators can also associate endpoint-specific authorization policies based on device type.
14	It shall have capability to see endpoints attribute data via passive network telemetry or alternatively from the infrastructure via device sensors on switches at Core, Distribution and Access Layer.
15	It shall have profiling capabilities integrated into the solution in order to detect headless host. The profiling features leverage the existing infrastructure for device discovery. It shall support the use of attributes from the following sources or sensors: <ul style="list-style-type: none"> - Profiling using MAC OUIs - Profiling using DHCP information - Profiling using RADIUS information - Profiling using HTTP information - Profiling using DNS information - Profiling using NetFlow information - Profiling using SPAN/Mirrored traffic
16	It shall have capability which allows users to add a device on a portal, where the device goes through a registration process for network access. It shall allow users to mark as lost any device that you have registered in the network, and blacklist the device on the network, which prevents others from unauthorized network access when using the blacklisted device. It shall have capability to reinstate a blacklisted device to its previous status in Device Portal, and regain network access without having to register the device again in the Devices Portal. It shall also support removing any device in the enterprise network temporarily, then register the device for network access again later.
17	It shall have internal CA server functionality with flexibility to create certificate template to be used by other network services.
18	It shall have capability to revoke the issued certificate.
19	The CA server shall be able to provision certificate for multiple use cases like BYOD, EAP authentication and Third Party Client and Server side authentication.
20	It shall have capability to integrate with External CA for issuing the certificates.
21	It shall support Group based policies with Scalable Group Tags (SGT) to prevent malware propagation for East-West traffic segmentation.
22	It shall have capability to grant authenticated users with access to specific segments of the network, or specific applications and services, or both, based on authentication results.

23	<p>It shall support configuring multiple Identity sources to validate for user credentials. It shall support the following databases:</p> <ul style="list-style-type: none"> •Internal Users •Internal Endpoints •Active Directory •Azure Active Directory •LDAP •RSA •RADIUS Token Servers •ODBC •Certificate Authentication Profiles
24	<p>It shall have workflow for Device Administration Policy to guide the admins through different phases - like</p> <ol style="list-style-type: none"> 1. Prepare (authorization roles; Authorization permissions/privileges, command sets that administrator may perform, Activation of TACACS+ feature) 2. Define (Add network devices - router/firewalls/switches/proxy/WAF/WAPCs etc. with TACACS+ secret keys, Group/Users who will perform device administration - internal/external, MFA/2FA, Different Policy where profile and command sets are applied). 3. Go Live and Monitor (Monitor events/Live Logs and Examine Reports to check access and authorization is as intended)
25	<p>It shall support different conditions for TACACS+ or Device Administration Policy -</p> <ol style="list-style-type: none"> 1. Device Network Condition (IP Address/ Device type/ Device Group) 2. Device Port condition (IP Address, Device, Network Device Group/Port used) 3. Simple/Compound Condition – End user/ End user Group/Time of the day/ office hours etc.)
26	<p>It shall log below field for the Commands:</p> <ol style="list-style-type: none"> 1. User who has given Command on Element 2. Date of Command given 3. Time of Command given 4. Actual Command given from IP Address.
27	<p>Basis of different conditions for TACACS+ or Device Administration, solution shall support results as TACACS+ Profiles and command sets.</p>
28	<p>TACACS+ command set shall support following actions or permissions - PERMIT/ALLOW, DENY/BLOCK, DENY ALWAYS/BLOCK ALWAYS or equivalent actions</p>
29	<p>TACACS+ command set shall support action with command along with the arguments of the command that administrator is allowed to execute.</p>
96	<p>TACACS+ service shall allow authentication via. External TACACS+ / RADIUS Proxy or RADIUS Token server but authorization and accounting shall be done locally.</p>
30	<p>TACACS+ service shall support custom settings for - Protocol session timeout, connection timeout, packet size, authorization cache timeout, customer username and password prompt, password change, Password Violation policy prompt etc.</p>

31	TACACS+ External authentication settings shall support provision for stripping username prefix such as backslash (\) or stripping of the suffix at the rate (@) with provision to handle the accounting request for TACACS+ session locally or remotely.
32	It shall have provision to keep passwords entered accidentally in username fields hidden for audit and security purpose. Wrong values in username field shall reflect generic keyword USERNAME.

Element Management System

S. No.	EMS (130 Infrastructure Devices License) - Technical Specifications
1	For effective operations and management of IT Operations, there is a need for an industry-standard Element Management System (EMS). Given the expanse and scope of the project, EMS becomes very critical for IT Operations and SLA Measurement. Some of the critical aspects that need to be considered for operations of IT setup of are: Network Fault Management, Network Performance Management, Server Performance Monitoring and unified Dashboard & Reporting
2	The Management Solution shall provide Unified Architectural design offering seamless common functions including but not limited to: Event and Alarm management, Auto-discovery of the Network environment, Correlation, and root cause analysis, Reporting and analytics.
3	The solution shall provide discovery & inventory of heterogeneous physical network devices like Layer-2 & Layer-3 switches, Routers and other IP devices and do mapping of LAN connectivity with granular visibility up to individual ports level.
4	The operator shall be able to build correlation rules in a simple GUI based environment where the Operator shall be able to correlate cross domain events.
5	The solution shall provide future scalability of the whole system without major architectural changes.
6	The proposed solution shall not use any third-party database (including RDBMS and open source) to store data to provide full flexibility and control on collected data.
7	All the required modules shall be from same OEM and shall be tightly integrated for single pane of glass view of enterprise management.
8	The platform shall provide complete cross-domain visibility of IT infrastructure issues & able to manage 130 nodes from day one.
9	The platform shall consolidate monitoring events from across layers such as Network, Server, Application, Database, etc.
10	The solution shall support custom dashboards for different role users such as Management, admin, and report users.
11	The solution shall support custom query-based widget with multiple visualization methods including Chart, Gauge, Grid, Top N list etc. to visualize and represent collected data with ease.

12	The solution shall provide superior view of infrastructure health across system, networks, application and other IT Infrastructure components into a consolidated, central console.
13	The solution shall provide agentless or agent-based method for managing the nodes and have the capability of storing events / data locally if communication to the management server is not possible due to some problem. This capability shall help to avoid losing critical events.
14	The proposed solution shall provide agentless or agent-based monitoring for server infrastructure. The agents shall be to set polling interval as low as 1 second with low overhead on target server infrastructure.
15	The proposed solution platform shall provide a single integrated solution for comprehensive monitoring of the wired, wireless access, security access control devices, CCTV cameras, UPS (SNMP Supported) or any pingable devices and rich visibility into connectivity and performance assurance issues.
16	The proposed solution shall provide comprehensive and integrated management of IT infrastructure components to maximize the availability of IT services and SLA performance.
17	The design functionality shall facilitate creation of templates used for monitoring key network resources, devices, and attributes. Default templates and best practice designs are provided for quick implementation automating the work required to use OEM validated designs and best practices.
18	The proposed solution shall provide Health Monitoring reports of the network with settable periodicity -@24 Hrs, 1 week, 1 month.
19	The proposed solution shall provide the graphical layout of the network element with modules drawn using different colours to indicate their status.
20	The proposed solution shall provide root cause analysis with multiple root cause algorithms inbuilt for root cause analysis. It shall also have a strong event correlation engine which can correlate the events based on event pairing, event sequencing, etc.
21	The proposed solution shall have multiple alerting feature to get the notification via email, SMS and third-party systems.
22	The Platform shall include an event correlation automatically fed with events originating from managed elements, monitoring tools or data sources external to the platform. This correlation shall perform event filtering, event suppression, event aggregation and event annotation.
23	The proposed solution shall provide alert console with alert summary such as no. of correlated alert, network alert, server alert, virtualization alert, cloud alert, application alert, etc.
24	The system shall have provision to overlay alert on reported metric to understand alert triggering behaviour across multiple drill down pages.
25	The OEM of the proposed Element Management System (EMS) shall be deployed in minimum 5 project in Gov/PSU/Smart Cities. The documentary proof shall be submitted at time of the bid submission.

26	The OEM shall have a support center with Dedicated Support mail id and toll free number in INDIA. OEM Shall provide escalation matrix along with bid submission.
27	The solution shall be capable of running in Linux platform with open-source database as backend and shall be 64-bit application to fully utilize the server resources on which it is installed.
28	Proposed Element Management System (EMS) solution shall be ISO 27001:2013 / ISO 27034, CIS and ITIL v4 certified to ensure security compliances.
29	OEM shall provide support for 5 Years with all upgrades and updates during the contract warranty Period.
30	OEM shall provide on Site Configuration and Training for minimum 3 Days (On Site),3 Days offshore Training, the Supplier is required to provide Training Material (in Hardcopy and Softcopy).

2. SERVERS

HCI Solution:

Features	Detailed Technical Specifications
HCI Servers	
HCI Deployment Architecture	One Cluster of minimum 4 HCI nodes shall be deployed at USDMA. Based on the individual OEM offers, any additional hardware, software, and licenses, beyond the resources specified in the technical specifications, shall be mandatorily included by the Bidders for the proposed deployment and management.
	There shall not be any separate disaggregated components in the proposed HCI solution i.e. The three (3) major components of the HCI node, i.e. Compute, RAM and Storage shall be physically inside the node , no resource shall be provisioned from outside the HCI Node. .
	The solution shall provide hyper-converged capability that allows delivery of enterprise-class server-storage services using latest server infrastructures without dependence on a separate Storage Area Network & associated component such as SAN Switches & HBAs. HCI server shall support on premises Back-up solution. (both hardware and back-up solution software) specified in the RFP.
HCI Sub-components	All the proposed HCI Components including Servers, Switches shall be HCI OEM certified for optimal support, performance and compatibility, it is also essential that the proposed HCI software solution be also either from the same OEM or from any of the approved OEMs like VMware/Nutanix/Microsoft, as stated in the clause above.
Day-1 Configuration	Each HCI node shall include Dual Series Processor, 32 Cores or more, Base Frequency of 2 GHz or higher 50 MB Cache or larger and with following configuration. Total RAM: 8 TB / Cluster Total Usable Space: 275 TB Flash All Flash/Cluster (Each Node of HCI shall be populated with all SSD / all NVMe disks) GPU Cards: 1*NVIDIA H100 PCIE non-CEC Accelerator or equivalent above/Node with applicable NVIDIA vGPU subscription for 10 concurrent users across HCI.
Data Protection, Availability & Downtime	The 275 TB usable storage capacity shall be provided without taking into account any data efficiency and saving techniques. Bidders shall factor in all basic HCI overheads related to storage, memory and cores. The capacity shall be configured with a minimum data protection level of replication factor 2 (2 copies of data in the cluster) or FTT1 (meaning, the capability to withstand the failure of one complete node or one drive in each node).
	The HCI shall support IO striping across all disk in hyper converged cluster for individual virtual machines. The HCI shall support technology that VMs shall be available even after 1 Node failure in cluster.
Dedup & Compression	The HCI solution shall provide inline deduplication & compression, from Day-1, across offered All Flash disks. Any license, or additional hardware or software required to achieve the same shall be provided from day 1.
Integrated Appliance or x86 System	The proposed HCI solution shall be a factory-shipped, engineered, and integrated appliance or x86 node system. All components of the HCI, including compute nodes,

	network switches, hypervisor OS, storage disks, and management software, shall be factory-installed and shipped, ready for fast deployment.
Scalability	The proposed HCI solution shall support scalability up to 32 or more nodes in a single cluster. Each server node shall have dedicated redundant hot swap power supplies & cooling fans. Each node shall also have adequate caching disks or caching capacity internally provisioned from Day-1.
Licenses	All the infrastructure software provided shall be licensed to provide all the features asked via this RFP. This includes, Hypervisor, Load Balancer (if required by solution), other allied HCI software, Management of HCI etc. The offered HCI solution, including its hardware, software resources, and functional features, shall be fully licensed on a perpetual/subscription basis from Day-1. Solution shall have license for at least 50 VMs for replication and DR automaton using same HCI console. Any additional, recurring, or third-party licenses required for any of the offered components or accessories shall be factored into the solution from Day-1.
Enterprise-rated Hypervisor	<p>Proposed solution shall support at least one hypervisors amongst the Enterprise grade, fully licensed hypervisors like Acropolis / VMware / Hyper-V. The proposed solution shall provide Enterprise class features like Network and Storage I/O Control, synchronous replication , automatic failover, SR-IOV, secure boot for protection for both the hypervisor and guest operating system. Supplied hypervisor shall have all the enterprise functionalities like HA, DRS and vMotion etc.</p> <p>Other Enterprise grade hypervisor features required are including capability to allocate various resources like CPU, memory, and storage etc.; ability to move running VMs from one host to another without service interruption, support to clustering and failover capabilities to ensure high availability of VMs. Hypervisor software shall provide Data at Rest encryption with Native KMS which protects unauthorized data access.</p> <p>The proposed virtualization software shall provide a virtualization layer that sits directly on the bare metal server hardware with no dependence on a general purpose OS for greater reliability and security. In any case, the total usable requirements for the User, as indicated above shall be made available from Day-1.</p> <p>The solution shall provide the ability to add Memory, storage disks and NICs (provided on the condition that the same is supported by the guest operating system) <u>without the need to reboot the workload.</u></p>
OS	License for Windows Server 2022, Datacenter Edition for all the required cores shall be included in the solution.
Other Hypervisor Features	<p>HCI Virtualization software shall be supported with leading Guest Operating systems - like Windows client, Windows Server, Red Hat, SUSE, Ubuntu and CentOS. Publicly referenceable links shall be provided.</p> <p>Virtualization software shall support live Virtual Machine migration with enhanced CPU compatibility and without the need for shared storage option.</p> <p>The Solution shall support instant space optimized point-in-time Snapshots. It shall allow for taking snapshots of individual Virtual Machines to be able to revert back to an older state, if required. Any additional software and license shall be provided on Day 1.</p> <p>The solution shall support Single click non-disruptive rolling upgrades of HCI software, virtualization software, hardware system firmware.</p>

	<p>The Solution shall allow for taking clones of individual Virtual Machines for faster provisioning. Any additional software or license required shall be provided on Day 1.</p> <p>It shall allow installation of configuration, policies and QoS for compute, network and storage configuration in HCI.</p> <p>The solution shall automatically rebalance data to maintain balanced utilization of storage across the HCI data disks. When storage capacity is scaled up or scaled out, the HCI nodes shall automatically redistribute data equally across all data disks equally without migrating VMs.</p> <p>The solution shall have capability to host container-based applications on opensource components like Kubernetes platform.</p>
Live VM Migration & HA	<p>The proposed HCI solution shall offer “Live VM Migration” on HCI nodes best suited to their execution, from Day-1. Further, the solution shall also offer optimized host access to both sites, Synchronous replication; Replication of specific LUNs for app level granularity, and shall ensure operational flexibility with zero downtime.</p>
Other Functional Needs of HCI	<p>The HCI solution shall support scaling hyperconverged infrastructure (compute + storage), compute-only / storage-only using all flash independent of each other under a single cluster.</p> <p>HCI solution shall support Block, File and Object (S3) natively or using third party solution from Day1. Solution shall support 100 TB file storage supporting NFS v3/v4 and SMB 2.0/3.0 for Linux and Windows Guest with integrated with LDAP (Active Directory, etc.).</p> <p>If the solution requires any additional integrated network component for its functioning requiring switches, then they need to be included essentially as part of the solution by the Bidder.</p> <p>HCI solution shall provide on the fly change of ESE (Enterprise Storage Efficiency)-Deduplication/Compression for workload without any visible impact on storage and their operations.</p> <p>Proposed solution shall be able to track and manage firmware versions, display & report inventory across all proposed nodes and clusters.</p> <p>The solution shall support Role Based Access Control so that the resources can be managed by respective resource administrator.</p> <p>The HCI solution shall have Automated OEM call log capability in the event of critical server failure or thresholds that are crossed which could impact server performance or customer SLA.</p> <p>It shall have the ability to take recoverable snapshot and clones of individual virtual machines from the entire solution.</p> <p>It shall have the ease of use wizard for snapshot scheduling and instant batch cloning of Virtual machines.</p> <p>The HCI storage shall be a scale-out storage.</p> <p>The HCI Solution shall support HW root of trust for system authenticity.</p> <p>The HCI Solution shall support security features like HW policy-based security, system lockdown, anti counterfeit and secure BIOS recovery.</p>

	<p>The management tool shall be able to provide global resource pooling.</p>
	<p>It shall have Zero-touch auto configuration to auto deploy a baseline server configuration profile And hardware configuration and Operating System deployment to multiple servers</p>
	<p>The solution shall support Single click non-disruptive rolling upgrades of HCI software and system firmware's. The solution shall have pre-built task workflows for Day 1 automation of infrastructure, to configure Servers and Storage. The solution shall provide an orchestration engine with ready workflows and ability to create custom workflows based on SOAP, REST operations and PowerShell scripts.</p>
	<p>The proposed management solution shall provide open, REST API's that can be consumed for automated provisioning, reporting, tracking and management & allow integration with DevOps tools and SDK automation.</p>
	<p>The proposed solution shall have Custom made/Customizable operations dashboards & reports as per client requirement to provide real time insight into infrastructure behaviour, upcoming problems & opportunities for efficiency improvements, show overall faults / health / inventory and have flexibility to select names for dashboards and widgets (ex:- health, utilization, etc.)</p>
	<p>Management tool to allow administrators to centrally manage and monitor virtualized environments for tasks like provisioning, monitoring, troubleshooting etc, and interoperability with all popular OS and their individual flavours (in heterogeneous environments).</p>
	<p>The proposed management solution shall provide open, REST API's that can be consumed for automated provisioning, reporting, tracking and management & allow integration with DevOps tools and SDK automation.</p>
	<p>The solution shall provide capacity analytics which can identify over-provisioned and under-provisioned resources so they can be right- sized for most efficient use of virtualized resources along with capability of showing all under and over utilized VM's with their right sizing information after current VM's usages.</p>
	<p>The proposed management solution shall provide proactive security & software advisory alerts and shall outline the fixes required to address the issues.</p>
	<p>The management software shall participate in server provisioning, device discovery, inventory, diagnostics, monitoring, fault detection, auditing, and statistics collection.</p>
	<p>The proposed management solution shall analyse current configurations & identify potential issues due to driver & firmware incompatibility. Server management system shall provide an alert in case the system is not part of OEM Hardware Compatibility list. The management tool shall be able to provide global resource pooling and policy management to enable policy based automation. The proposed management solution shall provide proactive security & software advisory alerts and shall outline the fixes required to address the issues.</p>
	<p>The proposed solution shall have dashboard to show overall faults / health / inventory for all managed infrastructure.</p>

	It shall provide Network visibility with application-centric protection from network threats and automation of common networking operations & shall integrate with 3rd party physical network & security solutions (or their managers) from leading OEMs using programmable REST APIs/ OpenFlow/ Netconf/ Device packages to provide integration with existing Perimeter devices (network & security). In addition to this Solution shall provide micro-segmentation for Bare Metal & Virtual end points by using VM attributes like VM name, OS , MAC address , IP etc. Solution shall also support for L4-L7 integration with policy-based redirect along with any OEM firewall. Capability of network visibility with application-centric protection and micro-segmentation for Bare Metal & Virtual end points shall also be maintained at DR site with same functionality.
BOSS Disks	Dedicated Boot drive to separate OS operations and IO operations, to save on the performance overhead caused by OS operations. Each node shall have redundant boot/OS drive in mirror (RAID 1) configuration for high availability. Boot disks shall be dedicated for operating system in addition to data capacity. If boot disks are not available, the Bidder Contractor is required to add additional 2 x 480 GB NVMe drives per node to match the performance.

Spine Switch:

Sno	Feature Set
1	It shall support non-blocking architecture supporting complete STACK of IPV4 and IPV6 services, all proposed ports shall provide wire speed line rate performance providing minimum of 10 Tbps switching Bandwidth.
2	It shall be supporting minimum of 32 non-blocking interfaces, populated with required 100G Transceivers for Spine-Leaf Fabric connectivity from Day 1, proposed switch shall also support natively 400G without any additional software/module and proposed networking solution / switches shall be in Gartner Leader Quadrant for DC Networking for the last 3 years.
3	It shall support minimum 1000 VRF instances with route leaking functionality, minimum 400K IPv4 LPM routes, minimum 400K no. of MAC addresses, minimum 60 MB Packet Buffer with intelligent shared-memory buffered architecture.
4	It shall support VXLAN to achieve Network Virtualisation, along with VXLAN and EVPN symmetric IRB for supporting Spine - Leaf architecture to optimise the east - west traffic flow inside the Data center. Switch shall support layer 2 extension over VXLAN across all Data Centres to enable VM mobility & availability.
5	It shall support STP (IEEE 802.1D, 802.1W, 802.1S),VLAN Trunking (802.1q),IEEE Link Aggregation and Ethernet Bonding functionality (IEEE 802.3ad) to group multiple ports for redundancy.
6	It shall act as Spine in SPINE-LEAF Architecture managed by Centralised Management Appliance or SDN Controller.
7	It shall support DC Bridging i.e. IEEE 802.1Qbb Priority Flow Control (PFC), Data Center Bridging Exchange (DCBX), IEEE 802.1Qaz Enhanced Transmission Selection (ETS), Explicit Congestion Notification) Layer 3 protocols like BGP, OSPF, EIGRP, RIPv2 and VRF route leaking functionality from Day 1.

8	It shall support control plane protection from unnecessary or DoS traffic by control plane protection policy, external database for AAA using TACACS+ and RADIUS, Role Based access control (RBAC) for restricting host level network access as per policy defined.
9	It shall support below telemetry features without impacting performance of the switch and without adding overload on the resources like CPU and Memory. <ul style="list-style-type: none"> •Full Inventory like Global, fabric, switch, ports, endpoints, VMs, L3 neighbours, IPv4/v6 routing table etc. •Verified Scale limits with Hardware/software lifecycle & EoS. •Network Topology and Utilization of Operational like MAC/Route & Hardware resources like port utilization/ BW. •Switch Anomalies related with Advisories, PSIRT and Field Notices. •Software upgrade check with TAC assist. •Bug Scanning , Switch's CAM Analyzer, Microbursts and log collector. •Real Time Interface statistics like CPU, memory, power, temperature, and interfaces with historical information.
10	It shall support monitoring using different type of Industry standard NMS /EMS tools using SNMP v3.
11	All relevant licenses for all the features and scale shall be quoted along with switch and all these licenses and features shall be available from Day 1, also Switch and Transceivers shall be from the same OEM. Same switches shall also be provided at DR site in order to maintain consistency of network infra and seamless management.

Leaf Switch:

Sno	Feature Set
1	It shall support non-blocking architecture supporting complete STACK of IPV4 and IPV6 services, all proposed ports shall provide wire speed line rate performance providing minimum of 3Tbps Switching Bandwidth.
2	It shall be supporting minimum of 48 non-blocking 10/25G interfaces for downlink connectivity and 6*40/100G for uplink connectivity, it shall be populated with appropriate 25G Transceivers for downlink connectivity and appropriate 100G Transceivers as per solution for uplink connectivity from Day 1. The proposed networking solution/switches shall be part of Gartner Leader Quadrant for DC Networking for last 3 years.
3	It shall support minimum 1000 VRF instances with route leaking functionality, minimum 400K IPV4 LPM routes, minimum 400K no. of MAC addresses, minimum 38 MB Packet Buffer with intelligent shared-memory buffered architecture.

4	It shall support VXLAN to achieve Network Virtualisation, along with VXLAN and EVPN symmetric IRB for supporting Spine - Leaf architecture to optimise the east - west traffic flow inside the Data center. It shall support Layer 2 extension over VXLAN across all Data Centres to enable VM mobility & availability.
5	It shall act as Leaf in SPINE-LEAF Architecture managed by Centralised Management Appliance or SDN Controller and support STP (IEEE 802.1D, 802.1W, 802.1S), VLAN Trunking (802.1q), IEEE Link Aggregation and Ethernet Bonding functionality (IEEE 802.3ad) to group multiple ports for redundancy.
6	It shall support BGP EVPN Route Type 2, Type 4 and Route Type 5 for the overlay control plane.
7	It shall support DC Bridging i.e. IEEE 802.1Qbb Priority Flow Control (PFC), Data Center Bridging Exchange (DCBX), IEEE 802.1Qaz Enhanced Transmission Selection (ETS), Explicit Congestion Notification) Layer 3 protocols like BGP, OSPF, EIGRP, RIPv2 and VRF route leaking functionality from Day 1.
8	It shall provide the capability to be integrated with different Hypervisor Managers viz. VMware vCenter, Microsoft Hyper-V with System Center, Kubernetes, Red hat, OpenShift and manage virtualise networking from the single pane of glass.
9	It shall support control plane Protection from unnecessary or DoS traffic by control plane protection policy, external database for AAA using TACACS+ and RADIUS, Role Based access control (RBAC) for restricting host level network access as per policy defined.
10	All ports on the switch shall provide encryption of traffic i.e. (802.1AE) in hardware.
11	It shall provide the capability of micro-segmentation rules and policies for the Virtualized and Non - Virtualized environment (Bare metal and Container) workloads connected to DC fabric for east-west traffic. It shall also support micro-segmentation based on VM attributes like hostname, OS, VM Tags, FQDN, Microsoft AD based classification.
12	It shall support below telemetry features without impacting performance of the switch and without adding overload on the resources like CPU and Memory. <ul style="list-style-type: none"> •Full Inventory like Global, fabric, switch, ports, endpoints, VMs ,L3 neighbours, IPv4/v6 routing table, etc. •Verified Scale limits with Hardware/software lifecycle & EoS. •Network Topology and Utilization of Operational like MAC/Route & Hardware resources like port utilization/ BW. •Switch Anomalies related with Advisories, PSIRT and Field Notices. •Software upgrade check with TAC assist. •Bug Scanning, Switch's CAM Analyzer, Microbursts and log collector •Real Time Interface statistics like CPU, memory, power, temperature, and interfaces with historical information.
13	It shall support monitoring using different type of Industry standard NMS/EMS tools using SNMP v3.
14	All relevant licenses for all the features and scale shall be quoted along with switch and all these licenses and features shall be available from Day 1, also Switch and Transceivers shall be from the same OEM. Same switches shall also be provided at DR site in order to maintain consistency of network infrastructure and seamless management.

Backup Software:

Parameter	Specification
Analyst Rating	Backup software proposed shall be in Gartner's leader quadrant for last five years in Gartner Magic Quadrant report for Data Protection / Backup Software.
Licensing	The proposed Backup software shall offer instance based licenses and meeting the 100% backup storage (275 TB) requirement of the proposed DC HCI servers, with no restrictions on type of arrays (protecting heterogenous storage technologies), front end production capacity or backup to disk target capacity restrictions. Licenses and associated hardware shall be supplied for 5 year term, Backup software license for 40 VMs shall be provided.
Reporting Capabilities	Backup software shall have Capability to do trend analysis for capacity planning of backup environment, extensive alerting and reporting with pre-configured and customizable formats. Any specialized reporting modules needed shall be quoted along with associated hardware to achieve this functionality. All necessary hardware resources required to run this module shall be supplied.
	Proposed solution shall support 24x7 real-time monitoring, with at-a-glance and drill-down views of health, performance and workload of the virtual hosts.
	Proposed solution shall have security and compliance dashboard inbuilt with the product.
	Proposed solution shall support automated action for popular alarms (automated or semi-automated), with at-a-glance and drill-down views of health, performance and workload of the virtual hosts.
Data Protection and Recovery in the cloud	Software shall be able to restore VMs to a cloud service provider like AWS, Azure or Google directly from the backup copy.
	Software shall be able to extend the backup repository to a public cloud service provider by moving older files to any S3 Compatible Object storage or Azure BLOB repositories.
	Backup software shall have capability to archive data to Amazon Glacier or Microsoft Azure storage Archive Tier. The Software shall have capability to restore the data from archive tier, it shall not be dependent on cloud vendor.
	Backup software shall support agentless backups of applications residing in VMs like SQL, Exchange, SharePoint, Oracle, etc. with non-staged granular recovery of all these applications. It shall support crash consistent VM level backup for all other workloads. Backup software shall support SAP HANA backup integrated with HANA Cockpit.
	The software shall have the functionality to back up on-prem data directly into cloud repositories such as AWS S3 or Microsoft Blob.
	Proposed backup software shall be able to leverage Immutable Cloud based storage like S3-Immutable service to prevent backup copies of data from any corruption or ransomware attacks.

Security & Compliance	The backup software shall have YARA rules defined in the system.
	The proposed solution shall have on demand scans available for malware attacks.
	The backup software shall have inline detection & in guest detection via guest indexing against any malware attacks.
	The proposed backup software shall have four eyes approval for any backup deletion.
Backup support for hypervisors and Applications	Backup software shall be a Hardware Agnostic software and it shall support snapshot integration with hypervisors like VMware, Hyper-V, Nutanix AHV and RHEV and support de-duplication on any storage target. It shall be able to backup data to tapes (like LTO) as well for long term retention.
	The proposed backup software shall provide Instant recoveries for any backup to VMware or Hyper-V Virtual machine. It shall also support the Instant VM recovery for AHV workloads as well.
	Backup software shall support file level recovery from any backup of any VM or physical server. It shall support a full system recovery in case of a system crash, either on a physical system or virtual machine or as a Cloud Instance (AWS, Azure or Google).
	The proposed backup Software shall support Syslog and Service Now integration.
	Backup software shall support instant database recoveries of MS SQL and Oracle from the backup files.
	Backup software shall support Multi factor authentication for accessing Backup console and console auto log-off functionality.
RPO/ RTO and Recovery Assurance	Backup software shall have a feature of data validation, whereby a workload (VM with OS and application) is powered-on in a sandbox environment and tested for its recoverability.
	Recovery verification shall automatically boot the server from backup and verify the recoverability of VM image, Guest OS and Application Consistency and then publish automated reports to be used in backup / recovery audits.
	Backup software shall provide Backup and Replication capabilities in one console only and also allow users to integrate with RBAC capabilities of the hypervisor, so that users can initiate backup and restore only those VMs to which they have access, without administrator intervention, thereby delivering self-serve capabilities.
	Proposed backup software shall be able to Hardened the Linux Repository. This service shall prevent backup copies of data from any corruption or ransomware attacks.
	The software shall support Group Managed Service Accounts which shall have an option to users to allow change passwords after every 30 days and allows for complex password policy.
	The proposed backup shall have object storage backup.

	Proposed backup software shall have the ability to perform staged restores to enable admins to comply to regulations by selectively deleting files/records which shall not be restored from the backup copies. This will help in complying to "right to be forgotten "regulations like GDPR, where user data is deleted from restored backup copies in an auditable manner.
	Backup software shall support instant file share recovery in NAS storages to allow users to access files fast after disaster.
Backup and Replication Performance and SLA	The proposed Backup software shall allow to configure the maximum acceptable I/O latency level for production data stores to ensure backup and replication activities do not impact storage Availability to production workloads.
	Backup software shall provide Recovery of Application Items, File, Folder and Complete VM recovery capabilities from the image level backup within 15Mins RTO.
	The software shall be Network-efficient, Secure backup data replication with variable-length encryption at the source, along with compression and encryption to ensure that backups are optimized for WAN transmission. This shall be ensured with or without need of any other 3rd party WAN Accelerator requirements.
Disaster Recovery Capabilities	Replication in the software shall be a VM level replication and shall replicate the VM level data with or without backing it up at the source site. It shall also include failover and failback capabilities and shall be able to perform automatic acquisition of network addresses at the destination site.
	The Proposed solution shall support Continuous replication at VM level. The RPO shall be less than 5 Seconds and it shall deliver application consistency.
	Backup and replication software shall deliver maximum investment protection by supporting replication of workloads between dis-similar systems like hyperconverged infrastructure to stand alone servers and storage running similar hypervisors across sites, thereby creating a disaster recovery environment for production workloads irrespective of the underlying hardware.
	Backup software shall have ability to backup data from one server platform and restore it to another server platform to eliminate dependence on a particular machine and for disaster recovery purposes. This bare metal recovery capability shall be built in for the physical servers and shall even work on the dissimilar hardware.
	Backup software shall have the ability to backing up a Cloud VM running in AWS or Azure and restore it as a valid VM workload.

Backup Hardware:

Parameter	Specification
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General	<p>The proposed backup solution shall be available on various OS platforms such as Windows, Linux and UNIX platforms. The backup solution shall support backup of industry-leading hypervisors Microsoft Hyper-V, Oracle VM, Red Hat KVM/ Virtualization, VMware ESXi and OpenStack.</p>
	<p>The proposed backup solution shall support all industry leading server platforms, operating systems and shall support LAN/SAN based D2D backup via proposed protocol like NFS v3, CIFS, FC SAN ,OST/Catalyst ,API protocols.</p>
	<p>The proposed backup solution shall be fully certified for all proposed protocols to virtualized application environments. The proposed disk based backup solution shall support like OST/Catalyst , CIFS and NFS v3.</p>
	<p>The proposed backup solution shall integrate with the supplied backup software/solution and provide all necessary hardware and software licenses to build backup solution End to End implementation.</p>
	<p>The Proposed Solution shall allow to define resources quota for tenants/project etc on the proposed solution. Quota /resources limit can set based on Groups, Roles or Users, etc.</p>
	<p>The proposed backup solution shall integrate with the supplied backup software/solution and provide all necessary hardware and software licenses to build backup solution End to End implementation.</p>
Hardware	<p>The backup solution shall not have any single point of failure. It shall have redundant power supply, cooling fans, NIC card and FC ports. If any other components is required like backup master media server, Switch etc. to complete the backup solution function requirement then the Contractor shall be obliged to provide them with the proposed solution free of charge.</p>
	<p>The Hardware Appliance needs to be sized and proposed according to below retention policy and base data mentioned in the back-up software.</p> <p>Basic Retention: 7 Day(s) Weekly Full : 5 Week(s) Monthly Full : 12 Month(s) Yearly Full- 5</p> <p>Daily Change Rate: 1%</p> <p>Bidder needs to ensure if the Backup size is more than the minimum mentioned in the appliance then that needs to be offered accordingly.</p>
	<p>The proposed backup solution shall be provided with a minimum of 500 TB usable capacity (Without consideration of deduplication and compression). It shall be offered RAID-6 /Erasure coding or equivalent RAID configuration with minimum 8 TB SATA/NL-SAS disk.</p> <p>It shall be offered with battery backed up RAM / NVRAM for protection against data loss in power failure scenario and continuous automated file system check to ensure data integrity.</p> <p>The proposed backup solution shall be provided with NVMe /SSD /SAS /NL SAS Disks.</p>

	The proposed backup hardware shall support data deduplication to reduce storage capacity requirements. Proposed backup hardware shall have Source and target level de-duplication licenses.
Backup Speed	Proposed backup solution shall support minimum backup throughput of 70 TB/hr and when enabled with source or destination level de-duplication and shall finish all full backups (Without any constraint on VM Size ,VM size less or equal to 5 TB) in less than 8 hours to the disk .
Ransomware Protection strategy	The backup solution shall be able to protect backup set from the ransomware protection and supply with required license from Day 1.
	The Backup solution shall be capable of exporting/replicating the backups to an immutable on-prem converge object-based storage with S3 protocol support.
	Proposed integrated solution shall support retention lock feature which ensures that no data is deleted accidentally and support for point-in-time copies of a LUN or volumes with minimal performance impact.
Disaster Recovery Features	Proposed backup Solution shall provide replication between Primary and secondary sites.
	The backup solution shall be able to seamlessly replicate data from on-site location to any off-site or DR site (Private cloud, etc.).
Connectivity	The Proposed solution shall have connectivity minimum 1x 1 Gbps NIC (Management) , 4 x 25 Gbps SFP28 based Ports . Proposed solution shall have the ability to perform different backup, restore, replication jobs simultaneously.
Security Features	It shall support 256 bit AES encryption for data at rest and data-in- flight during replication. It shall offer internal or external key management for encryption.
	The proposed backup solution shall have Role-based administration and it shall integrate with LDAP (Active Directory, etc.). The backup solution shall provide role based access control to help delegate specific privileged to users.
Management	The backup software shall have a unified, streamlined, web-based console.
	The backup solution shall provide access to different users based on role-based access control.
	The backup solution shall be able to manage multiple sites from a single console.
	The backup solution shall have inbuilt Remote access management for remote management of the disk devices.
Licensing	The backup solution shall be provided with all licensing for the entire capacity of the solution. The license shall not restrict the number of servers, VMs to be backed up.
	The proposed backup solution shall be configured in such a fashion that no extra license for client and media servers is required while moving from LAN to SAN based backup and shall have unlimited LAN/SAN Based Backup client licenses.
	The backup solution/Disk device shall not restrict the backups in terms of capacity based licensing. The backups shall continue until the storage on the disk device is full.

Reports	The backup solution shall be able to generate logs & report e.g. de-duplication, data growth analysis report during backup, etc.
	It shall support customized reports. The Bidder shall provide a comprehensive dashboard within the UI.
	The backup solution shall provide real time monitoring and reporting of the backup environment. It shall provide monitoring of trends and current status.
	GUI/Reports shall be provided giving the periodic status of the activity.
	The backup software shall support email alerts for backup success, backup failure, backup missed and also for storage utilization.
Support	The proposed backup solution hardware shall be supplied with 5 years support term.

Server Security:

Sno	Specification
	The security solution shall be provided to secure at least 40 VMs for a 5 years term.
	<u>Application Visibility & Dependency Mapping.</u>
1	The solution shall capture and analyse flow and process telemetry from all workloads across all DCs, in real time and store in a time-series for long data retention of minimum 3 months.
2	The solution shall automatically generate per application whitelist policy and enforce the auto generated whitelist policy allowing only the required traffic, blocking everything else.
3	The solution shall provide capability to edit and modify the discovered policies to define and include more absolute InfoSec protection policies. It shall export the policy to network fabric, security devices, etc.
4	The solution shall integrate with orchestration tools to ingest workload tags and annotations & enrich application context of the workloads dynamically.
5	The solution shall be able to enforce policies on workloads using OS native firewalls without any additional kernel modules and overheads. It shall provide consistent enforcement across all sites & workloads (Bare metal, virtual, container) to achieve east-west application segmentation.
6	The solution shall automatically group endpoints with similar behaviour and security posture into policy groups and shall be able to correlate network traffic to actual application process that generated it.
7	The solution shall provide application dependency map. As part of the application dependency map it shall provide detailed and accurate application to application and service relations and inter-dependencies.

8	The solution shall integrate with external systems such as vCenter, Kubernetes, IPAM or CMDB to bring in additional context for each application workload.
	<u>Application Protection.</u>
10	The solution shall track the process tree lineage for each server and maintain a historical record of the process tree over time.
11	The solution shall provide details about each process that is launched on a server including the process start time, command line process ID and user.
12	The solution shall detect user logon activities, execution of malicious activity, privilege escalations, shell code execution and side channel attacks and alerting based on failures.
13	The solution shall detect process hash consistency for similar processes across the application environment.
14	The solution shall provide capability to identify process behaviour anomalies and deviations including MITRE attack pattern and provide alerts and notifications.
15	The solution shall have threat intelligence to detect bad/anomalous process hash across workloads and capability to ingest anomalous/bad hash from 3rd party sources.
16	The solution shall provide capability to create customer forensic rules to identify process behaviour deviations and provide alerts and notifications.
17	The solution shall provide capability to identify stale ports without active communications across applications and workloads to provide visibility into potential attack surface.
	<u>Application Compliance and Monitoring</u>
18	The solution shall track application whitelist policy in near real-time for compliance deviations and generate alerts (including full detail of all flows in or out of policy compliance).
19	The solution shall have integration with any user identity system to give visibility into users accessing Datacentre resources, their groups and roles and device posture to enable segmentation based on those attributes.
20	The solution shall maintain policy modification and changes in policy versions and show the delta between different policy versions and provide ability to rollback between different versions.
21	The solution shall provide Micro-segmentation capability (application tier, workload) on application end host. The solution shall provide micro segmentation capability on application end host at remote location sites in offline mode. (once policy is applied from the DC to workloads on remote sites, in case the sites are disconnected, the enforcement policy is retained).
22	The solution shall provide full audit logging of all system access and changes applied.
23	The solution shall provide the ability to simulate and test the policies using real time and historical data, without having to enforce or configuring any rules on the workload.
24	Application policy be dynamically updated and enforced as application changes and evolves, e.g. scale-out, migration, DR, etc.

25	The solution shall detect, remediate and notify of any brute force override of the segmentation policy implementation.
26	The solution shall support enforcement of application whitelist policies on external security devices including SDN, load balancers and firewalls.
27	The solution shall be able to provide visibility into workload package vulnerabilities natively along with their CVE and CVSS Score data and create policies using CVE and CVSS Score to restrict access or quarantine workloads having these vulnerability attributes.
28	The solution shall support hierarchical policy enforcements on workloads to apply overriding InfoSec and Network security controls to be inherited by workloads.
29	The platform shall supported enforcing policies in whitelist/backlist or grey list model on a per application basis.
30	The solution shall provide full audit logging of all system access and changes applied.
	<u>Cloud Workload Policy and Enforcement</u>
31	The solution shall be able to discover workloads deployed on public cloud using agentless option for dynamic policy discovery and update across multiple public cloud provides without having to install agents on cloud workloads.
32	The solution shall be able to provide option to select workloads in Public cloud on a per VPC basis for automated policy discovery and enforcement.
33	The solution shall have an option to enforce policies for workloads (VM's, containers, PaaS etc) in clouds using native security controls provides by the cloud provider, e.g. AWS security group, Azure NSG.
34	The solution shall be able to aromatically discover, create and enforce polices for cloud managed container workloads e.g. AWS EKS, Azure AKE, GKE,etc.

COMPONENT 3: Hardware

Laser MFD Wireless Printer & Scan - All in One:

Functions	Print, Copy, Scan
Duty cycle (monthly)	80,000 pages or more
Print technology	Laser
Print Speed Black	Normal: 38 ppm or more
Printing quality Black	600 x 600 dpi or more
Monthly page volume	500 to 2000 (varies)
Duplex printing	Automatic (standard), both sides
Print speed black (normal, letter & A4)	38 ppm or more
Mobile printing capability	Wireless direct printing; and mobile over Mobile Apps
Wireless Printing	Yes; from Day-1
USB	Hi-Speed USB 2.0 port (host/device)
Ethernet	Yes; Ethernet 10/100/1000 Base-T network, on Day-1
Scanner type	SPDF
Scan Resolution	600 x 600 dpi or more
Scanner File Formats	Windows Scan Software to support file format: JPG, RAW(BMP), PDF, TIFF, PNG.
	Mac Scan Software shall support file format: TIFF, PNG, JPEG, JPEG-2000, PDF, PDF-Searchable, RTF, TXT.
Scan Size	210 x 297 mm (A4) or larger
Colour scanning	Yes
Bit depth	24-bit
Levels of Gray	256 or more

EOC Computers with 4 Displays:

Processor	Intel Xeon W5-3425 or AMD Ryzen Thread ripper PRO 7945WX (or higher variants).
RAM	64 GB (4 x 16 GB or 2 x 32 GB RDIMMs) of DDR 5 Memory or better.
Drive Controllers	Integrated controller with RAID 0, 1.
SSD	M.2 1TB PCIe NVMe Class 40 Solid State Drive.
Boot Drive	2 x Greater or Equal to 512 GB, SSD, PCIe Storage for OS in RAID-1.
4K, 27" Displays	4 no's of 27" IPS/VA display of 4K, 27-inch USB-C Monitor from OEM. Each display shall have 300 nits or more, each monitor to have dedicated at least 1x DisplayPort-Out and 1x DisplayPort-In that support Daisy-chaining. Connecting DisplayPort cables shall be also part of supply.
Multi-monitor supported Graphics Card	GPU RAM - 8GB GDDR6, Memory, Bandwidth - 160 GB/s or more, Connectors 2 or more Mini DisplayPort 1.4, Form Factor – Workstation Supported, System Interface - PCI Express 3.0 x 16, Support for Simultaneous Displays – 4 x Displays + 1 x Videowall out.
Keyboard and Mouse	Minimum 104 keys USB Keyboard and USB Optical Scroll mouse - Same make as that of the workstation
Communications & Networking	2 x 1GbE ports, from Day-1
Bays/Slot	5 x Internal/External, 4 x PCI Express Gen5/Gen3, 4 x M.2
Ports	Type-A, Type-C USB ports. At least 4 USB ports.
Operating System	Genuine Win 11 Pro 64 ver. 23H2 or higher for Workstations. All drivers required for proper integration of components shall be supplied by the Contractor. All latest drivers shall be available to download from vendor's website. All licenses shall be perpetual.
Power Supply	OEM system shall have the PSU (650 watt or higher) to ensure full support to the enhanced peak power needs of GPU.
Warranty	5 years comprehensive warranty for system

EOC Workstations with 3 Displays:

Processor	Intel Xeon W3-2435 or AMD Ryzen™ 7 PRO 8700G (or higher variants)
RAM	64 GB (4 x 16 GB or 2 x 32 GB RDIMMs) of DDR 5 Memory
Drive Controllers	Integrated controller with RAID 0, 1.
SSD	M.2 1TB PCIe NVMe Class 40 Solid State Drive.
Boot Drive	2 x Greater or Equal to 512 GB, SSD, PCIe Storage for OS in RAID-1.

4K, 27" Displays	3 no's of 27" IPS/VA display of 4K, 27" USB-C Monitor from OEM. Each display shall have 300 nits or more, each monitor to have dedicated at least 1x DisplayPort-Out and 1x DisplayPort-In that support Daisy-chaining. Connecting DisplayPort cables shall be also part of supply.
Multi-monitor supported Graphics Card	GPU RAM - 6GB GDDR6, Memory, Bandwidth - 160 GB/s or more, Connectors 2 or more Mini DisplayPort 1.4, Form Factor – Workstation Supported, System Interface - PCI Express 3.0 x 16, Support for Simultaneous Displays – 3 x Displays + 1 x Videowall out.
Keyboard and Mouse	Minimum 104 keys USB Keyboard and USB Optical Scroll mouse - Same make as that of the workstation
Communications & Networking	Integrated Intel® I219LM GbE Controller with Intel® vPro™ with Intel® AMT 16.0 support. 2 x 1GbE ports
Bays/Slot	5 x Internal/External, 4 x PCI Express Gen5/Gen3, 4 x M.2
Ports	Type-A, Type-C USB ports. At least 4 USB ports
Operating System	Genuine Win 11 Pro 64 ver. 23H2 or higher for Workstations. All drivers required for proper integration of components shall be supplied by the Contractor. All latest drivers shall be available to download from vendor's website. All licenses shall be perpetual.
Power Supply	OEM system shall have the PSU that will ensure full support to the enhanced peak power needs of GPU.

EOC Workstation with 2 Displays:

Processor	Intel Xeon W3-2435 or AMD Ryzen™ 7 PRO 8700G (or higher variants)
RAM	32 GB (2 x 16, 4 x 8 GB RDIMMs) of DDR 5 Memory
Drive Controllers	Integrated controller with RAID 0, 1. (Should support RAID)
SSD	M.2 1TB PCIe NVMe Class 40 Solid State Drive.
Boot Drive	2 x Greater or Equal to 512 GB, SSD, PCIe Storage for OS in RAID-1.
4K, 27" Displays	2 no's of 27" IPS/VA display of 4K ,27-inch USB-C Monitor from OEM. Each display shall have 300nits or more, Each monitor to have dedicated at least 1x DisplayPort-Out and 1x DisplayPort-In that support Daisy-chaining. Connecting DisplayPort cables shall be also part of supply.
Multi-monitor supported Graphics Card	GPU RAM - 4GB GDDR6, Memory Bandwidth - 90 GB/s or more, Connectors 2 or more Mini DisplayPort 1.4, Form Factor – Workstation Supported, System Interface - PCI Express 3.0 x 16, Support for Simultaneous Displays – 2 x Displays + 1 x Videowall out.
Keyboard and Mouse	Minimum 104 keys USB Keyboard and USB Optical Scroll mouse - Same make as that of the workstation.
Communications & Networking	Integrated Intel® I219LM GbE Controller with Intel® vPro™ with Intel® AMT 16.0 support. 2 x 1GbE ports

Bays/Slot	5 x Internal/External,4 x PCI Express Gen5/Gen3,4 x M.2
Ports	Type-A, Type-C USB ports. At least 4 USB ports
Operating System	Genuine Win 11 Pro 64 ver. 23H2 or higher for Workstations. All drivers required for proper integration of components shall be supplied by the Contractor. All latest drivers shall be available to download from vendor's website. All licenses shall be perpetual.
Power Supply	OEM system shall have the PSU that will ensure full support to the enhanced peak power needs of GPU.

Laptop:

Processor	Intel i7-1355U CPU or higher. (Higher means, over 10 core, over 12M Cache, and 5.00 GHz)
Chipset	Chipset is integrated with processor.
RAM	2 x 16 GB DDR5 5200 MHz Memory; upgrade up to 64GB with Two DIMM slots
HDD	1TB PCIe NVMe Solid State Drive.
Laptop GPU Card	NVIDIA RTX A500 4GB.
Display	14" WUXGA (1920x1200) LED, 250 Nits LCD Panel, Full HD built-in camera for VC sessions.
Input devices	Back Light, Spill Resistant Keyboard. Trackpad to manage functions with a single keystroke.
Audio	2 x Integrated stereo speakers , Discrete Amplifiers & Integrated dual array microphone.
Communications	Intel AX211 Wi-Fi 6E
Ports	2 x USB Type-A, 1 x HDMI, 2 x Thunderbolt 4/USB-C, 1 x Headphone / Microphone Combo
Power	50 Watt or higher Li-ion polymer Battery with fast charge & 65 Watt USB-C AC Adapter
Operating System	Windows® 11 perpetual license factory preloaded. All latest drivers shall be available to download from vendor's website.
Warranty	5 years comprehensive warranty

User Work Desktops and PC Systems:

Processor	13th Gen Intel® Core™ i5-13500 or higher
Operating System	Windows® 11 perpetual license factory preloaded.
Type of RAM	DDR5 ECC Memory
RAM Size	2 x 8 GB or higher
RAM Expandability up to (Using spare DIMM Slots in GB)	64 or higher
Capacity of SSD	1TB or higher NVMe. (we require higher speed for data transfer)
Type of Ethernet port	10/100/1000 on board integrated Gigabit port
USB Port 3.0 / 2.0 or higher	4 or more
Number of display Port in CPU (HDMI, DP)	1 x Display port or DVI-I, 1 x HDMI port
Display Size	27" Same Make of Desktop PC, 4K
Display Technology	IPS/VA/TN
Type of Mouse	Wired (USB) optical scroll & keyboard same make as PC

Dual Monitor Computers for Citizen Helpdesk:

Processor	Intel® Core TM i5-13500K CPU
Chipset	Intel® W680 chipset or better compatible chipset without any bottleneck
RAM	32GB DDR5 ECC Memory & speed shall be 4400 MHz. or better 2 or more DIMM slots.
Drive Controllers	Integrated SATA controller with minimum 4 x 6 Gbps ports & SATA Controller shall support RAID 0, 1.
HDD	M.2 512GB SATA Class 20 Solid State Drive (Boot) + 1TB 7200RPM 3.5" SATA HDD (Storage).
Displays	2 no's of 27" IPS/VA display of 4K or more. Each display shall have 300 nits or more, each monitor to have dedicated at least 1x DisplayPort-Out and 1x DisplayPort-In that support Daisy-chaining. Connecting DisplayPort cables shall be also part of supply.
Graphics Card	Integrated Graphics Card with at least one DisplayPort.
Keyboard and Mouse	Minimum 104 keys USB Keyboard and USB Optical Scroll mouse - Same make as that of the workstation.
Audio	Universal Audio Jack for head phone and mic, 1 audio Lineout.
Communications & Networking	Integrated Intel® I219LM GbE Controller with Intel® vPro™ with Intel® AMT 16.0 support. 2 x 1GbE ports.
Bays/Slot	5 x Internal/External, 2 x PCI Express Gen5/Gen3, 4 x M.2
Ports	Type-A, Type-C USB ports. At least 5 USB ports.
Operating System	Genuine Win 11 perpetual license. All drivers required for proper integration of components shall be supplied by the Contractor. All latest drivers shall be available to download from vendor's website. All licenses shall be perpetual.
Power Supply	OEM system shall have the PSU that will ensure full support to the enhanced peak power needs of GPU.
Broad Project Scope	Install the project hardware, software and other resources at SEOC, as per OEM directions and guidelines. Integrate with SEOC IP PBX. Configure the IVR, agents, supervisors. Prove the functionalities and operational customisation as per site needs, and customer demands and as indicated in the above project technical requirements.

Antivirus & Unified Endpoint Cyber Security/EDR:

Sno	Technical Specifications
1	The Bidder shall propose an endpoint-based solution to protect all the systems across network from Advanced Targeted Attacks and APT's. The solution shall be licensed for 150 users leveraging both signature and signature less mechanisms to stop threats via a single agent on endpoint.
2	The proposed endpoint solution shall be able to support continuous and root cause analysis to help in triaging of security incidents. Root Cause analysis shall include - Sequential and chronological trace of events with details including host, username, IP, client application involved. - Details shall highlight which file/process/services that are affected.
3	Proposed endpoint software shall support malware tracking and provide visualization at the network level: systems and users affected, patient zero, and method/point of entry.
4	Proposed system shall support continuous and persistent monitoring of files to detect polymorphic and time bound malware whenever they start turning bad and report on the number of endpoints where the file had been previously seen.
5	Remediation at endpoints for incident response shall include (and not limited to):
	- Track and capture files on suspected machine with option for lookups on suspected devices.
	- Block of files / process / services that are showing malicious behaviors.
	- Dropper detection and blocking of downloads via URL / sites.
	- Submit suspected malicious files for further analysis.
6	The proposed solution shall have the capability to quarantine the malicious application/program/file automatically without quarantining the entire user machine from network which would affect business productivity of the user.
7	The solution shall have a single EDR management dashboard for all operating systems; namely- Windows, Windows server, Linux, MacOS and capable of working in Windows, Windows Server, Mac, Linux Red hat, CentOS, Ubuntu, Amazon Linux, Android and iOS operating systems.
8	The proposed endpoint solution shall run as is and not require any system changes at OS level like enabling Volume Shadow copy Service, remote registry, printer/file sharing and default local admin enabled or any other user level change.
9	The proposed solution shall be a continuous analysis agent that constantly monitors all system and file activity rather than being an on-demand agent that is triggered only when there is a event.

10	The proposed endpoint solution shall not transmit files automatically across the network from the endpoint to any network component unless done so manually by the administrator as this would clog the network bandwidth.
11	The proposed endpoint solution shall have Exploit protection - for protecting certain popular applications like MS Word, Excel, PowerPoint, Internet Explorer, Firefox, Chrome, Adobe Reader and others from attacks loading malwares that directly into the memory of these processes without being dependent on the Common Vulnerabilities and Exposures (CVE) database.
12	The proposed endpoint solution shall have Endpoint IOCs which can help in incident response for scanning post-compromise indicators across multiple computers, can be imported from open IOC-based files that are written to trigger on file properties.
13	The proposed solution shall have the ability to trace and record user activity like files downloaded, programs executed etc. across platforms like Windows, Mac and Linux continuously for a minimum of 30 days and not just malicious events.
14	The proposed solution shall be able to dynamically analyze unknown suspicious files in a separate virtualized environment and take action based on its results. Solution shall be able to analyze files of up to 250MB size.
15	The solution shall have queries predefined and mapped to the Mitre ATT&CK framework to conduct a search across all endpoints.
16	The live search feature shall not require constant and continuous flow of information into the dashboard thereby consuming network resources and shall work on an on-demand basis. The live search capability shall not require a data lake or data storage to work.
17	The proposed solution shall capture a snapshot of data from an endpoint such as running processes, more at the time of detection or on demand.
18	The solution shall provide option to configure automatic response actions such as isolating endpoints, submission of malicious file for sandboxing, moving endpoints from one group to another, etc.

Web Conferencing:

Sno	Technical Specifications
1	The Web Conferencing Platform shall allow up to 300 Participants to join in a meeting. The users shall be able to join from Windows PC, Apple Mac, Android Phones and Tablets, Apple Phones and iPads, Linux through a dedicated application.
2	Each meeting shall allow at least 200 H.323/SIP Devices to join the meeting over H.323 and SIP. It shall also support H.239/BFCP for content sharing.
3	The Platform shall allow users to join from non-smart phones by dialing a PSTN - India Toll free/Toll Number.
4	The solution shall support recording on cloud with 1 GB of storage. It shall also allow recording on Local Host PC if required.
5	The solution shall support Content Sharing, Annotation and White Boarding from PC/Laptop/Phones and Tablets.

COMPONENT 4: AUDIO-VIDEO

65" 4K UHD Display

Size	65" Diagonal
Resolution	4K UHD
Operation	Shall be suitable for 16/7 operations
Brightness	Backlight LED with 500 nit brightness or better
Display Colours	8-bit, 16.7 M, with a Contrast ratio of over 4000:1
Inputs	2x HDMI, USB 2.0, External controller RS232C(in)
Processor	Built-in Quad-core processor, 2 GB DDR3 RAM, 16 GB Memory, built in Double Core Mali 600 MHz GPU or higher, with HDR 10 or equivalent processor
Accessories	Complete set with wall mount kit for installation and signage application
VESA Mounts	Wall/Floor Mount Kit - VESA Mount for above Display, as per site requirements
Certifications	CE,FCC,UL,BIS

75", 4K, Multi-touch interactive display

Size	75" interactive Display
Resolution	4K or better
Brightness	Min 350 cd/m2
Processor	Built-in Mali GPU MP4@750MHz or faster, Quad-core or higher CPU and Android/Tizen OS
Memory	2GB memory, 8 GB Storage or better
Touch Points	20 points or more
Ports	Min 2x HDMI
VESA Mounts	Wall/Floor Mount Kit - VESA Mount for above Display, as per site requirements
Certifications	CE,FCC,UL,BIS

75", 4K UHD Display

Size	75" Diagonal
Resolution	4K UHD
Operation	Shall be suitable for 16/7 operations
Brightness	Backlight LED with 500 nit brightness or better
Display colours	8-bit, 16.7 M, with a Contrast ratio of over 4000:1
Inputs	2x HDMI, USB 2.0, External controller RS232C(in)
Processor	Built-in Quad-core processor, 2 GB DDR3 RAM, 16 GB Memory, built in Double Core Mali 600 MHz GPU or higher, with HDR 10 or equivalent processor
Accessories	Complete set with wall mount kit for installation and signage application
VESA Mounts	Wall/Floor Mount Kit - VESA Mount for above Display, as per site requirements
Certifications	CE,FCC,UL,BIS

85", 4K UHD Display

Size	85" Diagonal
Resolution	4K UHD or better
Operation	Shall be suitable for 16/7 operations
Brightness	Backlight LED with 500 nit brightness or better
Display colours	8-bit, 16.7 M, with a Contrast ratio of over 4000:1
Inputs	2x HDMI, USB 2.0, External controller RS232C(in)
Processor	Built-in Quad-core processor, 2 GB DDR3 RAM, 16 GB Memory, built in Double Core Mali 600 MHz GPU or higher, with HDR 10 or equivalent processor
Accessories	Complete set with wall mount kit for installation and signage application
VESA Mounts	Wall/Floor Mount Kit - VESA Mount for above Display, as per site requirements
Certifications	CE,FCC,UL,BIS

85" Interactive / Annotation

Size	85/86" Interactive Display
Display Protection	Toughened or Strengthened glass
Resolution	4K or better
Brightness	300 nits or more
Contrast ratio & Refresh rate	Better than 4,000:1, Refresh rate: 60~120Hz
Viewing angle	More than 170° (H) and 170° (V)
Processor	Built-in Mali GPU MP4@750MHz or faster, Quad-core or higher CPU and Android/Tizen OS
Memory	2GB memory, 8 GB Storage or better
Touch Points	20 points or more – Continuous
Ports	Minimum 2x HDMI
VESA Mounts	Wall/Floor Mount Kit - VESA Mount for above Display, as per site requirements
Certifications	CE,FCC,UL,BIS

98", 4K UHD Display

Size	98" Diagonal
Resolution	4K UHD
Operation	Shall be suitable for 16/7 operations
Brightness	Minimum 350 cd/m2
Native Contrast Ratio (Typ.)	1200:1 or Higher
Inputs	2x HDMI, USB 2.0, External controller RS232C(in)
Processor	Built-in Quad-core processor, 2 GB DDR3 RAM, or equivalent processor
Accessories	Complete set with wall mount kit for installation and signage application
VESA Mounts	Wall/Floor Mount Kit - VESA Mount for above Display, as per site requirements
Certifications	CE,FCC,UL,BIS

Active Videowalls -2 Metres height (±5%) x 5 Metres length (±5%)

Display Wall Area	The Display Wall Area available in the respective room is approximately, 2 Metres height (±5%) x 5 Metres length (±5%) (for 2nd-floor conference room)
Diode Technology	CoB (Chip-on-Board) or Flip-chip LED
Pixel Pitch	<1.27 mm
Peak Brightness	800 Nits or more
Brightness Uniformity	Minimum 95 %
Contrast Ratio	20,000 : 1 or more
Refresh Rate	3,840 Hz or better
Frame Rate	60 Hz or better
Colour Bit	18 bit or better
Signal Inputs	RJ45 in LED wall cabinet
HDCP	Supported
HDR	HDR or HDR10+ or HDR Pro or HLG or Dolby Vision
Viewing Angles	150° (H), 150°(V) or more
LED Life Time	Over 100,000 hours
Serviceability	Full front
PSU	The power supply shall be built within the cabinet.
Power Redundancy	Cabinet shall have provision to add a redundant power supply later if required.
IP Rating	IP2x with 3H coating or IP3x or above

Active Videowalls - 3.7 Metres (± 5%) height X 6.9 Metres length (± 5%)

Display Wall Area	The Display Wall Area available in the respective rooms is approximately 3.7 Metres height (± 5%) X 6.9 Metres length (± 5%) (for 3rd floor EOC Room Main Wall)
Diode Technology	CoB (Chip-on-Board) or Flip-chip LED
Pixel Pitch	<1.27 mm
Peak Brightness	800 Nits or more
Brightness Uniformity	Minimum 95 %
Contrast Ratio	20,000 : 1 or more

Refresh Rate	3,840 Hz or better
Frame Rate	60 Hz or better
Colour Bit	18 bit or better
Signal Inputs	RJ45 in LED wall cabinet
HDCP	Supported
HDR	HDR or HDR10+ or HDR Pro or HLG or Dolby Vision
Viewing Angles	150° (H), 150°(V) or more
LED Life Time	Over 100,000 hours
Serviceability	Full front
PSU	The power supply shall be built within the cabinet.
Power Redundancy	Cabinet shall have provision to add a redundant power supply later if required.
IP Rating	IP2x with 3H coating or IP3x or above

3X2 Matrix Video Wall(LCD)

Bazel to Bazel Width	0.88mm or less and 0.44mm for a Single unit
Panel Size	50 inch - 55 inch (Diagonal)
Number of Panels	6
Native Resolution per Panel	1920 x1080 (Full HD)
Aspect Ratio of Panel	16:9
Pixel Pitch	0.63x0.63 mm
Contrast Ratio	Better than 1000:1
Brightness	500 nits or more
Viewing angle	Larger than 175° (H) and 175° (V)
Connectivity	DP/HDMI
Bit Depth	10 Bit or better
Serviceability	Front Access
HDCP	HDCP
Operation Hour	24 x 7
MTBF	50000 hours or more

Video Wall Control Processor (Type 1):

System	Video Wall Controller with outputs and sources Configurable videowall processor that shall support the real-time window display of multiple video, graphic, picture and streamed input sources on a single or tiled video display. Video wall Processor to drive proposed number of matrix videowalls
Operating system	Controller shall be MacOS or Windows or Linux based or equivalent for faster processing and reliability
Inputs	4 x inputs (minimum) HDMI with Audio and 4K or better resolution.
Outputs	Minimum 2 x HDMI
Certification	BIS, FCC
Other	The Bidder shall supply all necessary supporting appliances, software, installation kits for the commissioning of the item supplied.

Video Wall Control Processor (Type 2)

<p>Type 2 video wall controller shall have a powerful, yet easy to use controller to manage the video walls. The controller shall be configurable, and no programming shall be required. It shall be intuitive and running the manufacturer's source management software, which shall feature at minimum the following:</p> <ul style="list-style-type: none"> • Powerful video processing platform with real-time non-compressed pixel to pixel image processing with 12 inputs. • Intuitive control of the solution in a user-friendly, non-technical way with, no programming required to modify the sources being displayed on the video wall. • Easily defined Pre-sets that can be called on with no programming required. • The Video Wall processor shall provide visualization of one single desktop across the entire video wall (as a main source PC) in native resolution without stretching and scaling to allow users to utilize the entire contents and other data sources natively. The secondary sources shall appear on top of the main source as dynamic Picture in Picture (PiP). The transition shall be glitch free, seamless transition while switching between different presets. • The video processor, the control system and video wall management platform shall be from the same manufacturer, enabling native communication for real-time. Scalable architecture shall be available to expand the number of PiPs as per design requirements. Thus, the operator/s GUI shall have easy-to-use drag and drop functions that allow users to easily manage display and manipulate several sources in real-time as dynamic PiPs (Picture in Picture).

- Unlimited Presets will be available for users to create personalized display configurations and save them for future use, without any programming requirements-sets shall give the user a “One-click meeting” experience. The controller shall re-create the pre-defined workflow by organizing content on the display wall; call video participants; positioning cameras and initiate sharing of video sources.
- The input and output ports of video processor shall support 4K@60Hz independently and number of ports shall be scalable in needed cases. It shall also accept customized/ nonstandard resolution, dedicated high bandwidth video bus that delivers unparalleled real-time performance for future ready resolution which can handle 8K and more at needed scenarios.
- The video wall processor shall be 24x7 rated and enabled with SSD to ensure long run and fast bootup.
- Control system shall be intuitive and the source management software developed by same manufacturer, to provide native control of manufacturer video wall processors and mission critical AV systems.
- For easy to use and flexibility, users shall be able to save their personal presets. It is not acceptable to have only the vendor program pre-sets for this feature.
- The control system and video processor combination shall have the provision of display sharing. The solution shall be easily integrable with common VC platforms, and enable screen area sharing feature.
- Separate videowall shall be fed and managed by separate video processor to avoid single point of failure. Distributed room control functionality is required as it is likely that multiple users will want to interact with the display wall environment at the same time. Each user shall need to access the display controller and it is not practical to share one control interface.
- The solution shall seamlessly be integrable and can manage content sharing with other video walls and displays in the campus.
- The control system deployed shall be equipped with both a graphical user interface and an open API. The API will allow the control system to act like an interface for other devices that want to control the system. Users will be able to control the display wall from their own computer (or other HTML5 enabled device) in parallel with other users from multiple devices.
- To ensure smooth cross functionality and operability as key components, the video processor, controller and remote management control server software /support system shall be from the same manufacturer.

All-in-one Soundbar with Camera : (VC End Point)

Video Standards	Latest video standards H.264.
Video Frame Rate	Shall support 30 fps with 1080p resolution.
Video Features	Ability to send and receive two live simultaneous video sources in a single call, so that the image from the main camera and PC or document camera can be seen simultaneously.
	Shall support H.239 and BFCP protocols.
	The system shall have the ability to pair with laptop for sending content without any wires to the VC system.
	In case the above feature is not available natively, then additional components can be provided to achieve this.
Video Input	Shall have at least 1 x integrated camera.
	Shall have 1 additional HDMI inputs to connect two laptops/PC/Camera for presentations supporting up to 4K30fps Resolution including 1080p60fps.
	Shall support the ability to view and share presentations at a resolution up to 3840 x 2160 at 15 fps.
	The system shall have the ability to pair with laptop for sending content without any wires to the VC system. It shall also support Miracast.
Video Output	Shall have at least 2 no.'s of HDMI output to connect Full High Definition display devices such as plasma and projectors for both Video and Content (Dual Monitor Support). The codec shall support up to 4K60fps resolution on both video outputs.
Audio standards supported	G.711, G.722, G.722.1, AAC-LD standard shall be supported.
Other Desirable (Not required) Audio features	Automatic Gain control, Acoustic Echo Canceller, Active Lip synchronization.
Audio Inputs	Shall have Integrated 4-element beamforming microphone array
	Shall support additional one (1) microphone inputs to connect to table microphones.
	The pick-up of the microphones shall be at least 10 feet from the microphone.
	Shall support content Audio Sharing via HDMI Input.
	Shall support Bluetooth Audio.
Audio Outputs	Shall support HDMI audio output
Network Interfaces	1 xLAN /Ethernet--10/100/1000 Mbps full duplex. Wi-Fi 802.11a/b/g/n/ac 2.4 GHz. / 5 GHz. for calls.
Bandwidth	H323/SIP up to 6 Mbps point-to-point.
Network Capabilities	Packet Loss Based Down speeding

H.323/ IP Features	QoS
	IP adaptive bandwidth management (including flow control)
	Auto Gatekeeper discovery
	802.1X network authentication
	System shall support IPv4 and IPv6 from Day 1.
	Shall support URL Dialling.
	Support for H.245 DTMF tones in H.323.
Menu Control	Password protected system menu.
Encryption of video call	ITU-T standards based encryption of the video call.
	Call shall be encrypted end-to-end on IP.
	Shall support Standards-based: H.235 v3 and AES Encryption via Automatic key generation and exchange. The same shall be available in a call with Video with presentation (dual video).
	Ability to manually turn encryption ON/ OFF shall be there.
	Automatic key generation and exchange.
Management	System Management using HTTPS and SSH.
Camera	10 MP Camera.
	1920 x 1080 pixels progressive @ 30fps
	It shall support Speaker Tracking and Auto Framing.
	The camera and codec shall be from the same manufacturer.
	Shall have at least 120 degrees Horizontal field of view and 90 degrees vertical field of view.
Directory services	Shall support Local and Global directories.
	Shall support LDAP and H.350 protocols for directory transfer.
Multipoint Capability	Shall support built-in multiconference capability to connect 1 + 3 sites at 720p 30fps in a continuous presence mode. This shall be available by adding a license key in future.
	All sites shall be visible in a continuous presence mode with rate matching and transcoding such that different sites may connect at different speeds and protocols and still maintain a resolution of at least 720p.
User Interface	In order to provide a good user experience, the unit shall be equipped with an intuitive Touch Screen/Panel for controlling the VC unit.
	Shall have ability to browse the directory, search a contact, change layouts, mute/ unmute, increase-decrease volume.
	The Touch Interface shall be able to provide Room information such as display Room Temperature, humidity, air quality, ambient light, etc.

USB Passthrough	It shall be possible to connect the device (directly or via external device) to a PC/Laptop and Make use of Camera, Microphone and Display to work with any Soft Client applications such as Webex, Zoom, MS Teams, Google Meet, Bharat VC, etc.
Inclusions	System shall be supplied with 2 Nos of HDMI Cables for connecting displays and Camera Mounting Bracket.

VC Codec with 3 Camera:

Technical Specifications	
1	The unit shall be supplied with codec, 3 no's of 1080p60 Full HD 20x or higher optical zoom PTZ Cameras, 6 Mic inputs, touch panel for operations. The codec, camera, microphones, touch panel shall be from same OEM for better interoperability and shall be controlled using a single touch panel. All 3 cameras shall be controlled for PTZ capabilities using the same touch panel.
2	The system shall integrate with the external audio mixer in the overall solution on audio input ports.
3	The device shall have the latest video standards H.264, H.265.
4	The device shall have 60 fps with 1080p resolution.
5	As part of the solution, the video feeds from all 3 cameras shall be combined such that they can be displayed together and send it to far end site in a meeting. Ability to send minimum four live simultaneous video sources in a single call as main video channel.
6	The device shall be H.239 and BFCP compliant for content sharing.
7	The device shall have at least 4 x HDMI inputs to connect four Full HD cameras/Document Camera at 60 fps and 1 HDMI inputs to connect laptops/PC/Document Camera/ Visualizer for presentation/content with up to 4K resolution.
8	The codec shall support Wireless Content sharing via Airplay and Miracast.
9	The device shall have audio standards: G.711, G.722, G.722.1, Opus or equivalent or better standard shall be supported.
10	The device shall have audio features such as Noise Reduction, Automatic Gain control, Acoustic Echo Canceller, Active Lip synchronization.
11	The VC device shall have 3 x 4K Video outputs to connect external displays.
12	The device shall have minimum 6 microphone inputs either directly or on the codec. The mics shall have echo cancellation. The Mic inputs shall get connected to the Audio DSP.
13	The device shall have 1x LAN /Ethernet--10/100/1000 Mbps full duplex.
14	The device shall support Wi-Fi 802.11a/b/g/n/ac 2.4 GHz. and 5 GHz. for calling.
15	The device shall have bandwidth capability of H323/SIP up to 6 Mbps point-to-point.

16	The device shall have password protected system menu and AES based encryption mechanism for secure video calling.
17	ITU-T standards based Encryption of the video call supporting AES 128 and AES 256 bit.
18	The device shall be supplied with 3 PTZ Cameras with 20x or higher optical zoom, PAN: +/- 90 deg; TILT: 20 deg.
19	These cameras shall have 70 deg FoV.
20	The system shall support wireless content sharing.
21	The camera, codec and touch panel shall be from the same OEM for better interoperability.
22	Remote software upload: via web server, HTTP, HTTPS.
23	The video endpoint shall be accompanied with Power Cable, LAN Cable, presentation HDMI Cable, Power adaptors.
24	It shall have an intuitive Touch Screen/Panel for controlling the VC system and the four cameras.
25	It shall have the Touch Panel with option to Control Pan Tilt Zoom Capabilities of all the cameras, merge feed of multiple cameras, Start/Stop Court Video, Join/Disconnect from any meeting.
26	It shall be possible to select 1 or 2 or 3 camera view from the touch interface on the fly from the touch interface.
27	It shall be possible to share Visualizer/PC in addition to 3 cameras as and when required. The Touch Panel shall have the capability to Start/Stop Content Sharing from Document Camera/PC.
28	The codec shall be a Non-Windows hardware to prevent from any virus attacks.
29	The Proposed VC shall be able to join all Standard based SIP Conferencing bridges like Webex, VCONSOL, Zoom, etc.

VC Codec with 2 cameras:

Technical Specifications	
1	The unit shall be supplied with codec, 2 no's of 1080p60 Full HD 20x or higher optical zoom PTZ Cameras, 3 Mic inputs, touch panel for operations. The codec, camera, microphones, touch panel shall be from same OEM for better interoperability and shall be controlled using a single touch panel. All 2 cameras shall be controlled for PTZ capabilities using the same touch panel.
2	The system shall integrate with the external audio mixer in the overall solution on audio input ports
3	The device shall have the latest video standards H.264, H.265.
4	The device shall have 60 fps with 1080p resolution.
5	As part of the solution, the video feeds from all 2 cameras shall be combined such that they can be displayed together and send it to far end site in a meeting. Ability to send minimum four live simultaneous video sources in a single call as main video channel.
6	The device shall be H.239 and BFCP compliant for content sharing.
7	The device shall have at least 4 x HDMI inputs to connect four Full HD cameras/Document Camera at 60 fps and 1 HDMI inputs to connect laptops/PC/Document Camera/Visualizer for presentation/content with up to 4K resolution.
8	The codec shall support Wireless Content sharing via Airplay and Miracast.
9	The device shall have audio standards: G.711, G.722, G.722.1, Opus or equivalent or better standard shall be supported.
10	The device shall have audio features such as Noise Reduction, Automatic Gain control, Acoustic Echo Canceller, Active Lip synchronization.
11	The VC device shall have 3 x 4K Video outputs to connect external displays.
12	The device shall have minimum 3 microphone inputs either directly or on the codec. The microphones shall have echo cancellation. The microphone inputs shall get connected to the Audio DSP.
13	The device shall have 1x LAN /Ethernet--10/100/1000 Mbps full duplex.
14	The device shall support Wi-Fi 802.11a/b/g/n/ac 2.4 GHz and 5 GHz for calling.
15	The device shall have bandwidth capability of H323/SIP up to 6 Mbps point-to-point.
16	The device shall have password protected system menu and AES based encryption mechanism for secure video calling.
17	ITU-T standards-based Encryption of the video call supporting AES 128 and AES 256 bit.
18	The device shall be supplied with 2 PTZ Cameras with 20x or higher optical zoom , PAN: +/- 90 deg; TILT: 20 deg.
19	These cameras shall have 70 deg FoV.
20	The system shall support wireless content sharing.

21	The camera, codec and touch panel shall be from the same OEM for better interoperability.
22	Remote software upload: via web server, HTTP, HTTPS.
23	The video endpoint shall be accompanied with Power Cable, LAN Cable, presentation HDMI Cable, Power adaptors.
24	It shall have an intuitive Touch Screen/Panel for controlling the VC system and the four cameras.
25	It shall have the Touch Panel with option to Control Pan Tilt Zoom Capabilities of all the cameras, merge feed of multiple cameras, Start/Stop Court Video, Join/Disconnect from any meeting.
26	It shall be possible to select 1 or 2 camera view from the touch interface on the fly from the touch interface.
27	It shall be possible to share Visualizer/PC in addition to 2 cameras as and when required. The Touch Panel shall have the capability to Start/Stop Content Sharing from Document Camera/PC.
28	The codec shall be a Non-Windows hardware to prevent from any virus attacks.
29	The Proposed VC shall be able to join all Standard based SIP Conferencing bridges like Webex, VCONSOL, Zoom, etc.

4 x 1:1 HDMI Switcher:

Multiformat HDBT 4K Transmitter and Scaler	4K Transmitter shall meet the minimum specs as mentioned below:
	It shall have minimum four HDMI Video inputs & 1xHDMI & 1xRJ45/Twisted Pair Output scaling presentation switcher having 2x Line audio outputs ,2x Mic Inputs, 2x Line Inputs.
	It shall support 1 HDMI and 1x RJ45/Twisted Pair Transmitter Output.
	It shall support Auto Switching, Front Panel Control and push-button, 1xLAN Port/TCP/IP for switching among all inputs.
	It shall support easy integration of required I/O selection.
	CE, FCC certifications required.

4K 4:4:4, HDBT Module Type:

4K twisted pair HDBT / HDMI Receiver	The offered 4K twisted pair HDBT / HDMI Receiver shall meet the minimum specs as mentioned below:
	It shall support minimum HDMI 2.0 4096 X2160 @60 4:4:4.
	It shall support High-speed USB 2.0 data transmission.
	It shall support High-speed USB 2.0 data transmitted without the need of separate cables.

	It shall support HD BaseT Compatible.
	It shall support connectivity of USB Host Port; Type B.
	It shall support connectivity of USB Device Port; Type A.
	CE, FCC certifications required.

4K 4:4:4, AVoIP Wall / Floor Plate Type Encoder:

4K60 4:4:4 AVoIP Encoder Wallplate	The 4096x2160 4K60 4:4:4 AVoIP with Dual Input Encoder Wallplate/Surface shall meet the minimum specs as mentioned below:
	It shall support High-Quality, Low-Latency 4096x2160 4K60 encoding.
	Minimum 1 x USB 2.0 port for KVM integration.
	Onboard control ports of minimum 1x RJ45/LAN for controlling third party devices.

4K60 4:4:4 Box type AVoIP Encoder:

4K60 4:4:4 Box type AVoIP Encoder	The offered 4096x2160 @60 4:4:4 Box type AVoIP Encoder shall meet the minimum specs as mentioned below:
	It shall support High-Quality, Low-Latency 4096x2160 @60 4:4:4 encoding.
	It shall support video resolutions 4096 x 2160 @60 4:4:4.
	Minimum 1 x USB 2.0 port for KVM integration.
	It shall support minimum 2XHDMI inputs with Auto switching feature.
	It shall support High security network and features, including multicast, VLAN tagging and QoS, PoE powered with low-power mode for energy savings, Open Direct-Control API, etc.

4K60 4:4:4 & H.264 1080p Multi-Codec Box Type Decoder

4K60 4:4:4 Decoder	The offered 4K60 4:4:4 Box Type Decoder shall meet the minimum specs as mentioned below:
	It shall support 4096X2160 4K60 4:4:4.
	It shall support video resolutions 4096 x 2160.
	Minimum 1 x USB 2.0 port for KVM integration, it shall have 1 x Line Audio Input/ Audio Output. It shall support 7.1 Surround audio. It shall have 1x RJ45 & 1X SFP Port.

	It shall have 1 x AVoIP inputs as RJ45 port.
	It shall have minimum 1 x HDMI Output and 1 x USB 2.0.
	It shall support High security network support and features, including multicast, VLAN tagging and QoS, PoE powered with low-power mode for energy savings, Open Direct-Control API.
	It shall support resolution Support 4096 x 2160 @60 4:4:4.
	It shall support audio Inputs PCM audio up to 8-channel LPCM.
	Certifications complying to CE, UL, FCC. Note: Encoder and Decoder shall be of same make and Encoder can be used as decoder and vice versa.

Audio-over-IP Transceiver:

Audio-over-IP Transceiver	The offered Audio-over-IP Transceiver shall meets the minimum specs as mentioned below:
	It shall support independent digital and analog audio networks.
	It shall support Dante, AES67, and PCM audio-over-IP streams.
	It shall have balanced and unbalanced analog audio based functionality.
	Certifications complying to CE, UL, FCC.

Digital Interactive Podium:

Podium Design	Metallic Frame and Wooden Top with movable wheels
Approximate Size	H-1.05MXW-0.687M X D-0.86M
Interactive Monitor	23" Interactive Display for Podium: 23-inch full HD display with digital pen pressure for precise drawing, writing, and annotating, in addition to multi-touch inputs. The display shall be protected with a tempered glass surface. Connectivity with PC shall include DVI-I or DP and USB 2.0 as the communication interface. Support for operating systems Windows 10, 64-bit, Mac OSX 10.11 or later.
Gooseneck Mic	Slot for Mounting Gooseneck Microphone.
Keyboard Tray	Required.
Ports	Top connectivity plate with HDMI, USB-C, audio and power socket for external laptop connectivity.
Power consumption	AC 100V–240V, 50/60 Hz; Consumption: 12V, 2A PoE+: 802.3 at

Wireless & Wired Presentation System:

	The offered Wireless Presentation Gateway shall meet the minimum specs as mentioned below:
	It shall support minimum connectors : 4x USB 3.0, 2x USB 2.0, 2x HDMI.
	It shall support 2x RJ-45 connector for gigabit Ethernet connectivity.
	It shall support analog stereo input as 1/8" mini-stereo jack.
	It shall also HDMI Resolution Up to 4K30.
	It shall support wireless protocols Wi-Fi 802.11 a/b/g/n/ac.

Integrated Controller:

Integrated Controller	The offered Integrated Controller shall meets the minimum specs as mentioned below:
	It shall support minimum one or more RS-232/422/485 Ports.
	It shall support minimum two or more RS-232 Ports.
	It shall support minimum eight or more IR / One Way Serial Ports.
	It shall support minimum eight or more Low voltage Digital IO Ports.
	It shall having ethernet port of 10/100/1000 Mbps-industry-standard TCP/IP stack, DHCP, SSL/ TLS/SSH, IEEE 802.1xX, SNMP, HTTPS.
	It shall support 24/7/365 operation.
	It shall support Ultra-Fast 1600 MIPS processor.
	It shall support Minimum 512 MB onboard RAM.
	It shall support 1 M Non-Volatile Memory.
	It shall support 8 GB SDHC FLASH Memory, Supports SD and SDHC cards up to 32 GB, External Storage -Supports USB mass storage devices up to 1 TB.
	It shall support 1 RU Rack Space.
	It shall have BACnet™ for integration. It shall comply to CE, UL, FCC.

10" Tabletop Capacitive Touch Panel/iPad:

General Description	Supply, installation, testing and commissioning of 10 in Tabletop touch screen. They shall support H.264 and MJPEG formats streaming video.
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Brightness	Minimum 1920 x 1200 pixels.
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Network Based Keypad Controller:

	It shall have minimum 6 buttons customizable capacitive buttons with replaceable labels or better. It shall be supplied with minimum 25xpre-labeled icon & minimum 5 x blackout buttons or better.
	It shall support computer and web-based controls. It shall be able to be controlled through Mobile Devices like I-pad, I-phone, Android without the need of any additional hardware.
	It shall have IEEE 802.1X, SNMP, Active Directory service authentication, SMTP email client, HTTPS web server, HTTPS web browser setup, it shall be IEEE 802.3af & 802.3at Type 1 PoE compliant. It shall be CE, IC, FCC Part 15 Class B digital device Compliance.
	It shall have an option of Cloud management via IoT based platform for remotely provisioning, monitoring, and managing devices across an enterprise or an entire client base by the same OEM.

Touch Based 10" Room Scheduler:

	The offered 10"-10.1" Network based Room Scheduler shall meet the minimum specs as mentioned below:
	It shall be fully configurable for easy operation as per the end user requirement.
	It shall support LED Indicators and ceiling mount indicators as required.
	It shall support Microsoft® Exchange, Office 365™, Google Calendar™, Zoom Room, it shall have 1xUSB 2.0 host for connecting Light bar OR provide separate indicator connected to I/O or relay.
	It shall have brightness of 350 cd/m2 or better.
	It shall have 2 GB LPDDR3 and a storage of 16 GB eMMC pSLC
	It shall be able to powered via PoE+ only for remote powering.
	It shall comply to CE, UL, FCC.
	It shall have built-in /external proximity sensor for automatic wakeup screen, and automatic brightness controls for optimal visibility. It shall support pairing & integration of occupancy sensor with in the room scheduler for room status reservation. It shall support 802.1X authentication, TLS encryption, HTTPS connectivity, and Active Directory® service integration to protect network against malicious intrusions to comply to organization's network policies.

Audio Equipment and Amplifiers:

Digital Handheld Microphone	Wireless digital handheld microphone with 18 or more channels, RF output 100 mW or more, super cardioid pickup pattern, frequency range : 1880 to 1930 MHz, Connectivity : RJ-45, Battery backup : 10 or more hours and complete as required.
Wireless digital lavalier Microphone	Wireless digital lavalier microphone with 18 or more channel, RF output 100mW or more, omni directional pickup pattern, Frequency range : 1880 to 1930 MHz, Connectivity : RJ-45, Battery backup : 10 or more hours and complete as required.
Wireless digital Gooseneck Microphone	Wireless digital gooseneck microphone with 18 or more channels, RF output 100 mW or more, cardioid pickup pattern, Frequency range : 1880 to 1930 MHz., Connectivity : RJ-45, Battery backup : 10 or more hours and complete as required.
Antenna system	Antenna system with built in all accessories to extend the wireless microphone range (wireless, Handheld / Lavalier / Gooseneck) and complete as required.
Two-Way Line Array Column loudspeaker	Two-Way Line Array Column loudspeaker with Asymmetrical Vertical Cove and shall come with minimum Four or more 130 mm (5 inches) LF drivers , Sixteen or more 25 mm (1 inch) HF drivers; Frequency Range (-10 dB.): 60 Hz.–20 KHz. or better; Coverage :150 Degree Horizontal x 45 Degree Vertical or better; Sensitivity (@1m) :98 dB or better ; Nominal Impedance 8 Ohms or better; Power Capacity (pk) 2000 W or more; Max SPL (pk) 131dB or better; etc.
Column loudspeaker for Media room	Constant Beam width Technology, Line Array Column Loudspeaker with Power rating (pk) of 600 W or better at 8 Ohms; shall support minimum three transformer taps incl. 60 W (Max.) at 70V/100V; Frequency Range 80 Hz.-20 KHz. or more; Coverage (Vertical) 20°ormore, Coverage (Horizontal) 150° or more; Sensitivity (2.83V@ 1m) : 93 dB or better; Enclosure: Fiberglass reinforced ABS cabinet; Components: Minimum Eight or more 50 mm (2 in) Full-Range drivers; it shall support IP55 rating with optional accessories (if needed); it shall supplied with OEM specific wall mount bracket to avoid any compatibility issue(s) during installation and/or post installation; etc.
Two-Way 4.0inch - 4.5inch speaker	Two-Way 4.0 inch - 4.5 inch Coaxial Ceiling Loudspeaker with Frequency Range 74 Hz– 0 KHz. or more; Power Capacity 60 Watts - 70Watts Continuous Program or more; 120 - 130 Degree or better conical Coverage; Max SPL (pk) 108 dB. or more; Materials: ABS baffle with UL94-V0 and UL94-5VB flame class fire rating; Safety

	Agency: UL1480, UL2043, NFPA90 & NFPA70; S7232/UL Listed; it shall have 70/100V Transformer taps 25W, 12.5W, 6.3W or more.
2x300 w Amplifier	Dual Channel Digital Network Based Power Amplifier with Power output 2 x 300W @ 8 Ohms. It shall support minimum two channel external audio amplifier , 2x 300 W at 4 or 8 Ohm; 70Vrms or 100Vrms output on all two channels; THD (at full rated power, 20Hz - 20kHz) up to 0.35% ; Cooling Continuously variable speed forced air Voltage Gain Max level= 34 dB.; Audio Digital channel bus compatibility up to 8 channel; bridgeable channels - even in 100 Vrms mode; 2digital audio bus RJ 45 port; 1 Ethernet R 45 port for monitoring and configuration; it shall have Limiters , Input/output EQ , Delay ,Matrix Mixer ,Speaker Line Monitoring Damping Factor (20 Hz to 100 Hz) : >1000
4x600 W Digital Amplifier	Multichannel Digital Network Based Power Amplifier with Power output 4 x 600 W @ 8 Ohms. It shall support minimum two channel external audio amplifier , 2x 600 W at 4 or 8 Ohm; 70Vrms or 100Vrms output on all two channels; THD (at full rated power, 20Hz - 20kHz) up to 0.35% ; Cooling Continuously variable speed forced air Voltage Gain Max level= 34 dB; Audio Digital channel bus compatibility up to 8 channel; bridgeable channels - even in 100Vrms mode; 2digital audio bus RJ 45 port; 1 Ethernet R 45 port for monitoring and configuration; it shall have Limiters , Input/output EQ , Delay ,Matrix Mixer ,Speaker Line Monitoring Damping Factor (20 Hz to 100 Hz) : >1000
Digital Signal Processor	Digital signal processor with built in Dante (32 X 32 channel), 6 inputs with AEC and 6 outputs, complete required.
3 inch - Ceiling Speaker	3.0 inch - 3.5 inch Compact Full Range Ceiling Loudspeaker with 40W - 50W Continuous Program Power or better; Frequency Range 72 Hz.-17 KHz. or more; Max SPL (pk) 103 dB. or more; it shall support 70V/100V Transformer Taps for 15W, 7.5W or better; 130° or better Conical Coverage; N54-24 Compliant; etc.
Wall Mount Controller	8 or more Buttons Ethernet enable Wall Mount Controller; It shall support PoE (Power Over Ethernet); 8 or more Programmable Buttons (Multi-coloured); Capable to trigger any DSP logic; Multi-coloured 2 Programmable 64x128 Pixel LCDs; Sleep Function; Security: Remote Lock/Unlock and Local Unlock via PIN Entry; it shall have knob and capable to control multiple zones separate; itshall be from same OEM of supplied DSP Unit(s) to avoid any compatibility issue(s).

8x300 W Amplifier	Multichannel Digital Network Based Power Amplifier with Power output 8 x 300W @ 8 Ohms; it shall support 70Vrms and 100Vrms output on all eight (8) channels; THD 0.35% or better; Cooling Continuously variable speed forced air; Voltage Gain 34 dB or more; Digital bus compatibility up to 8 or more audio channel; bridgeable channels even in 100Vrms mode to operate with 200Vrms output; 2digital audio bus RJ 45 port; 1 Ethernet R 45 port for monitoring and configuration; it shall have DSP features like Limiters, Input/output EQ, Delay, Matrix Mixer, Speaker Line Monitoring; Damping Factor (20 Hz. to 100 Hz.) : >1000; etc.
Ceiling Microphone Type 1	Ceiling microphone tile with built in 28 or more microphone, lighting indications: 3 or more corner, Dante: redundant/dual, PoE connectivity, built in capability to voice lift (local discussion), capability to make at least 3 . exclusions and 1 priority zone/area, analog output, camera control capability and complete as required.
Ceiling Microphone Type 2	Ceiling microphone tile with built in 15 or more microphones, lighting indications, Dante connectivity, PoE connectivity, built in capability to voice lift (local discussion), capability to make at least 3 exclusions and 1 priority zone/area, analog output, camera control capability and complete as required.

COMPONENT 5: OTHER ITEMS**UPS**

UPS 200 KVA	<p>200 KVA UPS having true online double conversion VFI technology, High Frequency PWM using IGBT technology, 3 phase AC Input & 3 phase AC Output. Input range shall be 360 VAC-450 VAC, Dual input (separate input for rectifier and separate input for bypass). Provisions for maintenance by pass switch module. Microprocessor based LCD display & indication for various electrical parameters. LED indication with alarm for major fault. Provisions for remote monitoring indication with potential free contact.</p> <p>Battery Bank:</p> <p>12VDC Monoblock suitable size and no's of sealed maintenance free batteries supporting for UPS System for providing 15 minutes back up time with each UPS at full load (200 KVA) with interconnecting leads, mounting racks/stands for stacking the batteries, along with Battery Circuit Breaker, Connection, Interconnections, and standard accessories, etc., complete as required.</p> <p>Additional Requirements:</p> <ol style="list-style-type: none"> 1. The UPS output shall be Unity Power Factor (UPF) 200 KVA = 200 KW. 2. The Isolation transformer shall be identical inbuilt with UPS at input side. 3. The UPS shall have Inbuilt Phase Sequence corrector. 4. The UPS shall have Parallel Kit for synchronization of UPS. 5. The UPS shall have SNMP card for monitoring remotely. 6. OEM Service Centre shall be in Uttarakhand for prompt service during failure.
UPS 40 KVA	<p>40 KVA UPS having true Online double conversion VFI technology, High Frequency PWM using IGBT technology, 3 phase AC Input & 3 phase AC Output. Input range shall be 360 VAC-450 VAC, Dual input (separate input for rectifier and separate input for bypass). Provisions for maintenance by pass switch module. Microprocessor based LCD display & indication for various electrical parameters. LED indication with alarm for major fault. Provisions for remote monitoring indication with potential free contact.</p> <p>Battery Bank:</p> <p>12VDC Monoblock suitable size and no's of sealed maintenance free batteries supporting for UPS System for providing 15 minutes back up time with each UPS at full load (40 KVA) with interconnecting leads, mounting racks/stands for stacking the batteries, along with Battery Circuit Breaker, Connection, Interconnections, and standard accessories, etc., complete as required.</p> <p>Additional Requirements:</p> <ol style="list-style-type: none"> 1. The UPS output shall be Unity Power Factor (UPF) 40 KVA = 40 KW. 2. The isolation transformer shall be identical inbuilt with UPS at input side.

	<p>3. The UPS shall have Inbuilt Phase Sequence corrector.</p> <p>4. The UPS shall have Parallel Kit for synchronization of UPS.</p> <p>5. The UPS shall have SNMP card for monitoring remotely.</p> <p>6. OEM Service Centre shall be in Uttarakhand for prompt service during failure.</p>
<p>VOLTAGE STABILIZER 100 KVA</p>	<p>Constant Voltage Constant Frequency suitable for unbalanced supply Unbalanced load fully IC controlled sensing circuit with built in filters to improve the output wave to the pure sinusoidal and control each phase individually. The detailed specifications are as under :- Input Voltage range - 360-460VAC, 3phase Input Frequency - 47-53 Hz. Output Voltage - 415VAC+/- 0.5% Output Frequency – 50 Hz. Rate of Correction of Voltage - More than 150V/sec. Manual Control - Unit shall have arrangement to control output manually. Voltage Adjustment - Provision for setting of Output voltage within +/- 5% Cooling - Forced Air - Cooled Bypass arrangement - Automatic bypass provided as well as Manual Bypass provided A suitable indicator lamp to indicate that the unit is ON shall be provided on the front panel. No moveable part IGBT based High Switching Frequency-control Voltmeter shall be provided. The terminals shall have markings. The input, output and earth terminals shall be marked clearly. No wave from distortion shall be introduced by the CVCF.</p>
<p>ACTIVE HARMONIC FILTER (AHF) 30 A</p>	<p>Active Harmonic Filter with CT Kit for controlling harmonic distortion to stabilize less than 4% and improving power factor from 0.7 to up to unity complete with monitoring of phase current, phase voltage, frequency, active power, reactive power, apparent power, power factor, total harmonic distortion of current and total harmonic distortion of voltage of each phase. It shall have self-diagnosis with current and voltage wave form. It shall have features like current limiting, under / over voltage protection overloading and over temperature, etc. It shall have RS232 port for remote monitoring.</p>

Transient Voltage Surge Suppression (TVSS) System:

Capacity	100 KA
All Modes Protection	L-L, L-N, L-G, N-G
Connection Type	Parallel
Protection Level	< 0.8 kV
MCOV	Minimum 320 Volts
Response Time :	< 0.5 nanoseconds
Status Indication:	LED, Dry contacts
EMI/RFI Attenuation:	40 dB typical
Fusing :	Individual Fusing of MOV's including N-G
Enclosure :	IP-20
Mounting :	Wall Mounting
Certification :	UL 1449-2
	<ul style="list-style-type: none"> •The main incoming switchboard (MSB) and distribution boards (DB) shall be equipped with TVSS as defined in the IEEE standard 1100 (1999). •The TVSS shall be constructed of Metal Oxide Varistor (MOV) technology and internal surge capacitors. •The surge protective devices shall be sized per IEEE Std. C62.41-1991 and IEEE Std C62.45-1992. •Surge protective devices used for three-phase, four-wire circuits shall be connected in all combinations of line-to-line, line-to-neutral, line-to-ground, and neutral-to-ground. (L-L, L-N, L-G, N-G)
	<ul style="list-style-type: none"> • The TVSS shall have a UL listing and labelled 1449-2 suppressed voltage rating of 800V peak. The unit shall have a maximum continuous operating voltage: <ul style="list-style-type: none"> • (MCOV) rating of minimum 320VRMS. • The Response time of TVSS shall be 0.5 nanoseconds or less. • The TVSS shall provide up to 40 dB for RFI & EMI noise attenuation. • TVSS monitoring shall consist of indicator lamps and form C dry contacts. Monitoring of all modes, including N-E is required. <ul style="list-style-type: none"> • Wide Input Voltage Acceptance –320VAC-480VAC. • Wide Input Frequency Acceptance –47Hz to 63Hz. • Protection against Electromagnetic Interference (EMI) & Radio Frequency Interference (RFI) • TVSS is certified by IEEE/ UL 1449/ IEC-6034-4 • Protection against High Energy Transients & Natural Lighting on Erratic Power Supply

Water Leak Detection System (WLDS)

Feature	Specification
General	Water Leak Detection System (WLDS) shall be designed to protect the air-conditioned premises and to alert the personnel about the leak in the AC systems. The system shall be capable of interfacing to Water leak detection sensors, cable sensors & I/O modules. Events shall be clearly reported on LCD/LED display with full English language description of the nature of the fault in the panel.
	The complete system shall include electronic alarm panel, sensing cable, suitable alphanumeric display, and auxiliary equipment, as indicated on the design drawings. The system shall simultaneously detect the presence of water at any point along the cable's length and switch the module's leak alarm relays.
	The sensing cable shall be of such construction by using Non-conductive polymers in the leak detection cable's construction. The Sensing Cable shall be an abrasion resistant polymer cores to increases the strength of the cable. Pressure on the sensing cable shall not create a false alarm.
	Sensor Cable shall be provided with pre-connectorized sensing cable components.
Equipment	The Water leak detection system shall comprise of Cable-Sensors, Water Leak detection modules, I/O modules and sounders all connected to a main Control Panel.

Gas Suppression System (GSS)

This specification is for SITC of Clean Agent Based Fire Suppression System comprising of Gases/Agents approved as FK-5112 (NOVEC-1230) as the extinguishing agent and other related items for supply installations, testing, commissioning, putting into operation and handing over in working condition of the equipment. This specification outlines the requirements for a "Total Flood" Clean Agent Fire Suppression System. The work described in this specification includes all engineering, labour, materials, equipment and service necessary, and required, to complete and test the suppression system. It shall be used as a standard for the system Equipment, System Installation and Acceptance testing.

Fire suppression system shall deploy nontoxic clean agents with properties such as Ozone Depleting Potential (ODP) of zero (0) and Global Warming Potential (GWP) of very low values, maximum one (1). The agent shall not produce toxic by-products as well.

The fire suppression system shall include and might not be limited to gas release control panel, CCE approved seamless cylinders, discharge valve, discharge pipe, non-return valve, electric & pneumatic actuators and all other accessories required to provide a complete operation system meeting applicable requirements of NFPA 2001 (2012 edition) standards and installed in compliance with all applicable requirements of the local codes and standards.

The smoke detector/heat detectors shall be arranged in a manner that they activate the suppression system zone wise to cater to only the affected area.

There shall be a fail-safe alarm system to prevent false discharge or tampering. **CODES AND COMPLIANCE**

The design, equipment, installation, testing and maintenance of the Clean Agent Suppression System shall be in accordance with the applicable requirements set forth in the latest edition of the following codes and standards and regulatory

NFPA	2001,	2012	edition	NFPA	72,	2013	edition
Volume							VI
:	Clean	Agent	Fire	Extinguishing	Systems	:	National
UL	864,	9th	edition	UL	2166		
ANSI/ASME B1.20.1	NFPA-72						

Rodent Repellant System (RRS)

Very High Frequency Oscillator (VHFO) system shall transmit high frequency sound waves (above the 20 KHz. frequency) which are inaudible and harmless to humans but audible and painful to pests thus driving them away.

VHFO system shall consist of one Master Console and shall include up to twelve satellites / transducers, cables, stands.

The master control shall be installed in the server room, and the transducers in problematic areas i.e. above/below false ceilings & below false floorings.

Transducers

Each Transducer shall cover an open floor area of approximately 45 sqm.

Nature of sound waves: The sound waves propagated shall be linear sine waves with constantly varying frequencies.

Operating environment: Range of –4 deg C to 55 deg C, 90 % (non-condensing) humid environment.
Power supply: 5A Power Socket (230 V AC) shall be provided for each VHFO.
Operating frequency: Above 20 KHz. (Variable)
Sound output: 80 dB to 110 dB at 1 Mtr.
Power supply: 230 V AC, 50 Hz.
Mounting: Wall / Table

Air-Sampling Smoke Detection(ASD)

<p>GENERAL SCOPE</p> <p>This specification details of the Intelligent Air-sampling Smoke Detection (ASD) products to assist in their installation and commissioning. Intelligent ASD range provides a single pipe and four pipe products. Intelligent aspiration smoke detector is referred to as ASD throughout this document.</p> <p>ASD System Information</p> <p>a) A ASD System shall be installed throughout the areas nominated on the drawings as per BOQ.</p> <p>b) The ASD system shall consist of highly sensitive short wavelength LASER- based Smoke Detectors with aspirators connected to networks of sampling pipes.</p> <p>Approvals and Standards</p> <p>The ASD shall be of a type submitted to, tested, approved, and/or listed to the Standards mentioned below by a Nationally Recognized Testing Laboratory (NRTL):</p> <p>a) UL268 and UL268A: UL (Underwriters Laboratories Inc), USA.</p> <p>b) UL268: ULC (Underwriters Laboratories Canada), Canada c) Category 7259: CSFM (California State Fire Marshal), USA.</p>
<p>Quality Assurance Manufacturer</p> <p>a) The manufacturer shall have a production experience in the design and manufacture of high sensitivity air sampling smoke detection systems.</p> <p>b) The manufacturer shall be certified as meeting ISO 9001:2008 for manufacturing.</p>
<p>SYSTEM DESCRIPTION ASD</p> <p>System Features</p> <p>The ASD system shall:</p> <p>a) Consist of a highly sensitive, short wavelength LASER-based, particle imaging and light scattering smoke detector, aspirator, and filter.</p> <p>b) It shall be modular, with each detector having a display with indicator LEDs and a reset control button and/or optionally with a LCD Display showing detector status including fault categories and smoke level.</p> <p>c) It shall consist of an air sampling pipe network to transport air to the detection system, supported by calculations from a computer-based design modelling tool.</p> <p>d) It shall support optional equipment like dedicated graphics software.</p> <p>e) Be tested and approved to cover up to 1,000 sq. m. (10,760 sq. ft.) for the single pipe ASD, or up to 2,000 sq. m. (21,520 sq. ft.) for four pipes ASD.</p> <p>f) Be approved to provide Very Early Warning Fire Detection (VEWFD) / Class A, Early Warning Fire Detection (EWFD) / Class B and Standard Fire Detection (SFD) / Class C.</p> <p>g) Provide four output levels corresponding to Alert, Action, Fire 1 and Fire 2. These levels shall be</p>

programmable and able to be set at sensitivities ranging from 0.005-20% obs/m (0.0016–6.25% obs/ft) with a resolution of 0.0002% obs/m (0.00006%obs/ft).

h) Report any fault on the detector by direct communications on the SLC loop of a fire alarm control panel or a monitoring software tool running on a PC or hand-held device such as a tablet or smart phone.

i) Be self-monitoring for filter contamination.

Detection Technology

Light Source

The Detection Chamber shall employ a highly sensitive, short wavelength LASER light source.

Detection Method

The detection sensing method shall use both a two-dimensional image sensing array and at least five (5) photodiodes spaced inside the chamber to detect various scattering angles.

The output data from the sensing method shall include particle size and mass scattering measures,

A particle counting method shall be employed for the purposes of:

A. Minimizing the effect of large dust particles on the true smoke obscuration.

B. Monitoring contamination of the filter (dust & dirt, etc.) to automatically notify the user when maintenance is required.

Absolute Calibration

The detection chamber shall be factory calibrated and shall not use adaptive algorithms or drift compensation techniques to adjust the sensitivity or detector output from that established during commissioning.

Automatic Transfer Switch (ATS)

High switching frequency microprocessor based with built-in Technical Protections like short circuit, Overload, High/Low Voltage cutoff protection of load from source inclusive of Bypass facility. ATS shall be automatically activated during malfunctioning conditions of load like:-
· Fire
· Short Circuit
· Overload
· Bypassing of particular load if required
· Resulting in none tripping of main UPS unit.
· Input Voltage (415VAC)
· Input frequency 50Hz
INDICATION & MONITORING
· Source-I ON
· Load on source -I
· Source-II ON
· Load on source-II
· Over Load
· Alarm OFF
· Auto mode
· Manual mode
· Remote Monitoring through D B9 Connector(Optional)
ENVIRONMENT
· Relative Humidity (Non Condensing)-0 to 90%
· Operating Temperature – 0 to 50 Deg Celcius
· Acoustic Noise Level Less than 45 dBA at 1 meter distance.
OPERATING PROCEDURES CHECKS
Ensure that the following is correct prior to operating the ATS:
Input & Output Cables are correctly and securely terminated and that there are no short circuits on the input, output cables, this is to be confirmed by authorized personnel.
The Input Voltage and frequency is within specification.
That the correct size of cable is connected to the Static Switch module and to the connected load.
That phase and Neutral rotation is as described within standards to the electricity board.
All panels and covered plates are securely fastened.

OEM AMC and SUPPORT REQUIREMENTS

No	Items	AMC (Years)
1. Networking		
A	Core Switches	5 Years
B	Access Switches (PoE and Non-PoE)	
C	Wireless Networking (All)	
D	UCS Telephony (All)	
E	Router	
F	Firewall	
G	NAC	
H	EMS	
3. Servers		
A	HCI Solution	5 Years
B	Leaf-Spine Switches	
C	Server Security	
D	Backup Solution	
E	Backup Hardware	
4. Hardware		
A	Printers	1 Year
B	SEOC Workstations	5 Years
C	Laptops and all other PCs	1 Year
D	EDR	5 Years
E	Web Conferencing	5 Years
5. Audio-Video		
A	Displays	1 Year
B	Video Walls	5 Years
C	Switching System	1 Year

D	Control System	1 Year
E	Audio System	1 Year
6. Other Items		
A	UPS	5 Years
B	CVCF	
C	AHF	
D	TVSS	
E	Rodent Repellant System	
F	WLDS	
G	Gas Suppression System	
H	ASD	
I	ATS	

General Conditions:

OEM Support and Product Lifecycle Commitment

For all proposed components, the Bidder shall ensure that a minimum **OEM support period of five (5) to seven (7) years** is provided, calculated from the **date of GO-LIVE**.

The OEM shall provide a **written confirmation** stating the following that:

None of the proposed products will reach **End of Support (EOS)** or **End of Life (EOL)** during the specified support period.

All necessary **upgrades, patches, security updates, and replacements** will be made available during this period.

Bidders must attach the **OEM Compliance Confirmation** in the format provided below under Annexure- 01, duly signed and stamped by the OEM, along with their bid submission.

Any failure by the OEM or Bidder to comply with this commitment during the contract period shall be considered a breach of contract and will attract penalties as specified in the Contract.

Commencement of OEM License and Support Period

The validity of all OEM licenses and associated support services (including warranty updates, technical assistance, and related support obligations) shall commence only from the **GO-LIVE Date**, which will be formally declared by U-PREPARE.

Any administrative or procedural delays arising during the execution of the project shall not be considered as the basis for commencement of the OEM license/support period.

The Bidder/Supplier shall submit a **written undertaking as per the format attached under Annexure -02** along with the bid, confirming compliance with the above condition.

E-Waste Management and Buyback Requirement

The Bidder/OEM shall provide a buyback/e-waste take-back service for all computer hardware and associated peripherals supplied under this Contract.

The buyback/take-back terms shall be clearly specified in the bid and shall form an integral part of the Contract.

The Bidder/OEM shall ensure that the collection, disposal, and recycling of replaced/end-of-life equipment is carried out in compliance with the E-Waste (Management) Rules, 2022 and any other applicable Government of India or State regulations.

The Supplier shall ensure that disposal/recycling is conducted only through **authorized e-waste recyclers/vendors** approved by the Central Pollution Control Board (CPCB) or the respective State Pollution Control Board (SPCB).

The Supplier shall submit a **written undertaking** along with the bid, in the format provided in **Annexure- 03**, confirming compliance with the above requirements.

Upon completion of e-waste disposal, the Supplier shall furnish to the Purchaser a **certificate of disposal/recycling** issued by the authorized recycler/vendo

The Purchaser reserves the right to exercise the buyback/take-back option at the time of hardware replacement or at the end of the equipment's lifecycle.

The objective is to promote environmentally responsible procurement and ensure safe handling of e-waste to prevent e-pollution.

Annexure 01

Annexure-01: OEM Compliance Confirmation Format
(To be submitted on OEM's Letterhead, duly signed and stamped by an authorized signatory)

Date: _____

Tender Reference No.: _____

To,

[Purchaser's Name]

[Purchaser's Address]

Subject: OEM Compliance Confirmation for Product Lifecycle and Support Commitment

Sir/Madam,

We, the undersigned, being the Original Equipment Manufacturer (OEM) for the products and solutions proposed by our authorized partner/bidder [Bidder's Name], hereby confirm and certify the following:

We guarantee that all the proposed products shall be fully supported by us for a minimum period of five (5) to seven (7) years, calculated from the Go-Live Date as declared by U-PREPARE.

None of the proposed products shall reach End of Support (EOS) or End of Life (EOL) during the above-specified period.

We shall provide all necessary firmware/software upgrades, patches, bug fixes, security updates, technical assistance, and replacement parts/services during the support period, in line with industry standards and our OEM policies.

We acknowledge that failure to comply with this commitment during the contract period shall be treated as a breach of contract and may attract penalties/liquidated damages as specified by the Purchaser.

We hereby affirm that the above commitments are true and correct and are issued in accordance with the tender requirements.

Yours faithfully,

For [OEM Name]
(Authorized Signatory)

Name: _____

Designation: _____

Contact Details: _____

Official Seal/Stamp: _____

Annexure- 02**Annex – Undertaking on Commencement of OEM License and Support Period
(To be submitted on Bidder’s Letterhead, duly signed and stamped)****Date:** ____/____/2025

Tender Reference No.: _____

To,
The Purchaser
[Insert Name & Address of Purchaser]**Subject: Undertaking regarding commencement of OEM License/Support Period**

Dear Sir/Madam,

We, the undersigned, hereby undertake and confirm the following:

That we fully acknowledge and accept that the validity of all OEM licenses and related support services (including warranty updates, technical assistance, and other support obligations) under the subject contract shall commence **only from the Go-Live Date**, as will be formally declared by U-PREPARE.

That we further confirm that any administrative or procedural delays arising during the execution/implementation phase of the project shall **not** be considered as the basis for commencement of the OEM license or support service period.

That we agree to abide by this condition throughout the contractual period, and the same shall be binding on us, our partners, and the respective OEM(s) associated with the solution being offered.

We submit this undertaking in compliance with the bidding requirements.

Sincerely,

Authorized Signatory

(Signature with seal)

Name: _____

Designation: _____

Firm/Company: _____

Annexure 03

Undertaking for Buy-Back / E-Waste Disposal
(To be submitted on the Letterhead of the Bidder and countersigned by the OEM)

Date: _____

Tender Reference No.: _____

To,

[Purchaser's Name]

[Purchaser's Address]

Subject: Undertaking for Buy-Back / E-Waste take back Service

Sir/Madam,

We, the undersigned, hereby undertake that:

All old/obsolete ICT equipment taken under **buy-back arrangement** or collected for disposal during the execution of this contract shall be handled strictly in accordance with the provisions of the **E-Waste (Management) Rules, 2016**, and any subsequent amendments thereof, as notified by the Government of India.

Such equipment shall be disposed of only through **authorized e-waste recyclers/vendors** approved by the Central Pollution Control Board (CPCB) or the respective State Pollution Control Board (SPCB).

No equipment, component, or accessory shall be disposed of in an **unauthorized or environmentally harmful manner**.

The responsibility for safe transportation, storage, and recycling/disposal of such e-waste rests entirely with us.

We agree to provide the Purchaser with the **documentary proof/certificate of e-waste disposal** issued by the authorized recycler/vendor upon completion of the disposal process.

We hereby certify our compliance with the above undertaking and accept that failure to adhere shall attract penalties as per the contract terms and applicable laws.

For the Bidder

(Authorized Signatory)

Name: _____

Designation: _____

Company Seal: _____

SERVICE LEVEL AGREEMENT

COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT - *Server, Security, Information, Telecommunication and Networking Equipment for USDMA Building*

1. Introduction

This Comprehensive Annual Maintenance Contract (CAMC) shall come into force on the day of project commissioning and shall cover all those items for which maintenance services were applicable during the period. This document represents comprehensive Terms and Conditions (T&C), Scope of Works (SoW), Service Level Agreement (SLA), obligations and the associated Payment Conditions governing the contract between the Buyer and AMC Service Provider (Successful Bidder). Accordingly, this CAMC for the Uttarakhand Disaster Preparedness & Resilience Project (U-PREPARE) project shall be governed by the following set of guidelines and mutually agreed operating procedures. The objective of this document is to ensure that the proper elements and commitments are in place to provide consistent delivery of project maintenance service. Other goals of this document are:

Provide clear reference to service ownership, accountability, roles and/or responsibilities.

Present a clear, concise and measurable description of service provision to the buyer.

To ensure that both parties understand the consequences in case of termination of services due to any of the stated reasons or breach of trust.

Based on further discussions, this draft document shall be further modified as a Memorandum of Understanding (MoU) and will be signed by both parties. However, the terms, conditions, scope of work, payment procedures etc. shall remain more or less the same and will be a reference document. Accordingly, concerned parties have to read, familiarize and understand the clauses and have agreed to comply with the same.

2. Applicability

The general clauses indicated herein as part of this document shall apply to the following project components of USDMA:-

Hyper Converge Infrastructure (HCI) Clusters.

Networking & other Active Components.

Complete Software & Hardware.

Complete project Audio-Video (AV) systems, devices and allied equipment.

3. Terms & Definitions.

The general terms and definitions used as part of this AMC are as follows:-

Terms	Definitions
Contractor/Service Provider/Vendor	The Successful Bidder or any other nominated agency
Buyer	Uttarakhand Disaster Preparedness & Resilience Project (U-PREPAR)
User Agency	Uttarakhand State Disaster Management Authority
Project Systems/Project Works or Project or Project Components	Project sub-component, as indicated in Para 2. Along with associated functional systems like electrical equipment, connectivity, software, interfaces, other allied components etc. Integrated as part of the Uttarakhand Disaster Preparedness & Resilience Project (U-PREPRE).
Parties and Party	USDMA & Successful Bidder, collectively referred to as "Parties" and individually referred to as "Party"
AMC Agreement or Contract	The mutually agreed and signed contractual agreement between the Contractor and the Client.
Services	The broad list of respective scope of works listed herein
Comprehensive Annual Maintenance Contract (CAMC)	The CAMC shall start immediately on the commissioning of the project and will be for Five (05) years. CAMC includes the OEM Warranty Period, with prompt Planned Preventive Maintenance (PPM) service (as per documented SLAs) for repairs and replacements of faulty parts or devices. It covers any and all additional spare parts, and labour, including the packaging, and transportation costs that could come up while servicing the supplied project items/products.
Planned Preventive Maintenance Service (PPMS)	Taking the necessary proactive precautions and periodical actions, as recommended by the original equipment manufacturer (OEM) to prevent downtime, interruptions to critical operations, increased workplace safety or equipment failures from occurring before they happen. Further, PPM also includes periodical maintenance like dusting, cleaning, routine inspections for faults etc.

Uptime	The period for which the specified services/components with specified technical and service standards are available to USDMA and other Uttarakhand Disaster Preparedness & Resilience Project (U- PREPARE) user departments and sections. Uptime shall be represented in percentage.
Downtime	The time that is logged by the system automatically in its system logs or event reports or reported by the project NMS or by an official user. The downtime starts with such logging and ends with the "Restoration Time". However excludes, the scheduled outages, if any planned in advance by SEOC and the link failures that are owing to respective telecom service provider responsibility.
Incident/Event/defect	Any event/abnormalities or defect in the functioning of a project equipment/specified services or its non-availability of any other project component that may or may not lead to disruption in normal operations of the project.
Critical Defects	Those incidents impact the overall functioning of the project. Such Incidents may also require additional investment in components or time or could involve coordination with OEMs. For example, the breakdown of a controller or a Remote Siren, software bug fixing etc.
Medium Defects	Incidents, whose resolution requires the hot or cold replacement of hardware parts or software patches, that demand an interruption to EOC works or system shutdown. For example, system upgrade, patching of an operating system, replacement of a networked device or switch or redundant hardware etc.
Low Impact Defects	Incidents whose resolution may require changes in the configuration of hardware or software, that may not interrupt the normal working of that component or EOC, For example, installation of the device driver, printer replacement, change of patch chord etc.

Fault or defect or incident or complaint	Any event/abnormalities in the functioning of a project equipment/ specified services or any other project component that may or may not lead to disruption in normal operations of the project.
Support	The centre or the person who handles all AMC support services such as Fault reporting, Trouble Ticketing and related enquiries during the term of AMC.
Incident Time	The time logged by the system automatically in its system logs or NMS/EMS event reports or verbally or thru documented any other communications to the helpdesk-whichever is earlier.
Response Time	Amount of time from the initial notification to the Contractor until a technician physically arrives at the location or remotely attends to the issue.
Restoration Time	The time at which the system is back online or operational again.
Repair Time	Amount of time taken from initial notification, until its "Restoration Time", However, any type of temporary repairs or replacement to meet the urgent service restoration requirement is not counted.
Permanent Repair Time	Amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor is required to make temporary repairs to meet the service restoration requirement.
Day or Business Day	Any day other than a Sunday or declared national Holiday on which all businesses are required to work or operate as per the rule in India.
Recurring Defects	Defects that are occurring 2nd time or again with the same nature and system shall be termed "Recurring Defects". Further, if a defective item or its part or a module or PCB board has been replaced and the replacement becomes defective or malfunctions any time afterwards within six months, the Contractor shall make a thorough investigation into the cause of the defect or malfunction and report his finding to the USDMA/SDMA in Charge, together with his recommendations for permanently rectifying the defect or malfunction and ensuring it will not re-

	occur in the item of plant and any other items of plant that are of a similar material or installation.
Resolution Time	The time taken (after the incident has been reported), in resolving (diagnosing, troubleshooting and fixing) or escalating (to the second level or respective EOMs, or Vendors, getting the confirmatory details about the same from the Vendor and conveying the same to the end user), till its functional restoration to the satisfaction of the buyer.
Period of Contract	The initial contract period will be for 05 years (from the date of project commissioning) and can be extended further, as per the mutual understanding of both parties.

4. Scope of the CAMC Services or Works

The contract shall be on a comprehensive basis, inclusive of backend OEM warranty, repairs or/and replacement of defective parts without any extra payments. The AMC Contractor shall carry out maintenance services as per the schedule and conditions indicated in this document. If nothing is indicated Planned Preventive Maintenance Service (PPMS) or Preventive Maintenance Service (PMS) of equipment may be done once at three months during the currency of the contract. The scope of the Annual Comprehensive Maintenance Service covers upkeep & smooth working of the equipment within the SEOC/SDMA premises and at all allied outdoor and indoor (SDC) installations as per the laid down SLA and other provisions contained in the agreement document. Accordingly, the AMC Contractor shall set up and provide necessary manpower, spares, and technical support as per the SLAs and acceptable downtimes indicated in this document. The broad terms and conditions of the AMC are enumerated in this document.

In case, the system or device cannot be repaired within the stipulated SLA period, the vendor should provide a stand-by of the same till the item is returned duly repaired at no extra cost to the client. If online support is essential, the contractor is to ensure the availability of their staff at the site for interaction and liaison and other service personnel.

Insurance & Indemnities. The vendor shall ensure comprehensive insurance (with any of the reputed insuring agencies) for personnel safety, life, property damage and loss of items by theft, during the entire term of the contract. Also, the vendor shall indemnify the client and its staff and representatives in respect of any claim, directly or indirectly resulting from or arising out of any breach or claimed breach of this contract. The limitation of liability on any default of the vendor, will not be more than the annual contracted value, arising out of this contract.

If an item has to be despatched or returned to the OEM, its removal, packing, transporting insurance, refitting in place etc shall be the sole responsibility of the vendor. Also, the items that are shipped from the buyer site for replacement or repairs shall be insured by the Contractor against all risks of loss or damages from the date of shipment till such time, the same is returned and installed at the original buyer location.

AMC tasks and responsibilities shall include all packing/unpacking, transportation (to and from OEM service centres), allied labour, insurance of the devices, components etc end-to-end.

Online Fault Management: The vendor shall set up and maintain an online facility at the project BMS Room, or a mobile application with all necessary infrastructure, software and manpower for logging, registering, tracking, reporting, and escalating, each user's incident calls or system complaints with their time and ticket numbers. Supervisory control of this utility will be provided to the client for the proper tracking and administration of contract SLA.

Such an online portal system or the mobile app shall have a mechanism to ensure that all issues noted, complaints made and problems faced are identified by a unique trouble ticket/token number within the stipulated timeline. All trouble tickets shall be centrally noted, monitored and logged in the SEOC/SDMA facility. The system shall automatically mark all trouble tickets as "closed" upon resolution of the issue after informing its initiator.

The Contractor shall deploy service management tools, help/service desk, service level management and tools for further automation, configuration management, change management and problems/incident management.

Further, the online CAMC support services shall incorporate a provision for user feedback to monitor the satisfaction level of users, which is an essential criterion for annual AMC renewal.

5. Contractor Duties & Responsibilities

The broad duties and responsibilities of the AMC Contractor shall include, but not be limited to,

Round-the-clock (24x7) operations and on-call services (as indicated), monitoring & performance management of project inventory along with its complete maintenance, including all the associated/allied infrastructure.

At least 80% of the CAMC manpower shall be on the bidder's payroll for atleast 3 years. Proof of employment may be justified by salary slips. However, highly specialised sub- services may be offloaded to OEM or another professional sub-contractor.

Overall physical, electronic, and technical security of the project components and allied services along with its SLA management

Administration and Management. End-to-end management of the equipment on an ongoing basis to ensure smooth functioning. Performance monitoring and tuning of the equipment regularly. Equipment upgrades or patch upgrades as and when required with minimal downtime.

Planned Preventive and System Maintenance (PPM) services as recommended by the device/system manufacturers, including their periodical dusting and cleaning. Further, this also includes periodic health checks of the systems, troubleshooting early warning signs and analysing and implementing rectification measures, before the system breaks down.

Initiation of timely actions on every event and incident as and when observed through NMS/EMS reports.

All defects related to viruses, intrusion/hack/ransom attacks or OS malfunctions are also within the scope of work. Accordingly, the Contractor may install and maintain proper protection systems, AV network configuration, VLAN & AD management, on a required basis.

Generation of various reports and prints as per USDMA requirements, checks and verifications.

System maintenance, loading of software updates, patches, renewal of applicable licenses, subscriptions etc for all software and hardware endpoints.

AMC shall also include, all project-associated software issues, OS and antivirus upgrades/maintenance, software installation/reinstallation, driver/API/patch and ROM upgrades, system configurations, customisations (as per client requests), data backup etc.

All project-related defect rectifications, as per the SLAs and Uptimes prescribed herein, including first-level maintenance of all EOC functional components that are part of the U-PREPARE ICT inventory of Uttarakhand SEOC & SDMA.

Proactive monitoring, maintenance, repair and replacement of defective project components, as per the agreed SLAs

The Contractor shall maintain essential stock of onsite and offsite spare parts and spare components to ensure that the uptime commitment as per SLA is met.

The component that is reported to be down on a given date shall be either fully repaired or replaced by a temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA).

All associated power supply and earthing-related faults also complaints, faults and defects shall be part of AMC. Vendor to manage all associated electrical hygiene-related issues and maintain associated electrical subsystems and their utilities. Similarly, all repairs or rectification of defects on the civil or other project works done as part of the U-PREPARE project also will be part of the AMC scope of works.

All hardware, software and networking component-level problems, network failures, including cable faults and snags like rat bites etc. This work also includes LAN cable crimping, fiber optic cable patching and splicing of all passive cables, coaxial cable, display and other cables, resetting of equipment etc. on a required basis.

The timely updating of the location-wise inventory list along with its serial numbers will be the responsibility of the vendor. Accordingly, the Contractor shall also maintain records of all maintenance of the system and shall maintain an online log that can be regularly inspected/monitored and approved by IN-CHARGE, USDMA at any time. Event log analysis is generated in all the sub-systems including but not limited to servers, operating systems, databases, application software, device ROMs, embedded PLC, etc. Ensuring that the logs are backed up and truncated on a quarterly basis, if not at intervals ordered by the buyer.

IAW the above, the Contractor shall position all relevant procedures, policies, infrastructures manpower etc in consultation with IN-CHARGE, USDMA for the operations, management, fault registration, etc and shall enforce adherence to the downtime conditions and SLAs documented at the later part of this section.

Problem Management: The Contractor should provide performance metrics and auto thresholds to alert potential bottlenecks and problems before they occur. He shall manage dependencies between the entire chain of network components, servers and applications. This information is utilized in correlation of events and alarms - enabling quick identification of problems and resolution. The Contractor should also provide event cause analysis that helps in isolating top causes that need immediate attention to help in proactive management.

Change Management: In case of any change in AV Equipment, the Contractor shall have to set the total environment under his scope of work, integrated with the change within the set SLA time.

Any other work found relevant by Program Director/ Program Manager in the project/ work/ administrative/ public interest shall be performed by the bidder.

6. Exclusions

This AMC does not include:

Payment of recurring rentals, usage charges, royalty fees or other rents etc. During the term of the CAMC contract, all recurring expenditures such as monthly usage charges, telecom rentals, API subscriptions, expenditures on various consumables, royalty fees etc shall be the responsibility of the buyer / client/ department.

Further, all costs and expenditures associated with the major software version upgrades, periodical licenses, OEM service subscriptions, functional and feature enhancement of user applications etc shall also be the responsibility of the Buyer.

Damage resulting from Force Majeure or God's act such as accidents, fire, lightning, floods, earthquakes, explosions or even damages caused by animals or rodents etc, or any other cause/circumstances of whatsoever nature beyond the vendor's control.

However, any unforeseen damages arising from sabotage, theft, vandalism, fire etc shall be settled, only after the resolution of its impending investigations or based on the reports and recommendations of its follow-up investigations.

Any work external to the equipment such as maintenance of non-AMC attachments, accessories etc.

The system maintenance or the CAMC does not include the cost of user consumables.

7. Conditions of AMC Services

The general conditions applicable for this CAMC Service as well as to the extent applicable are as follows:-

Manpower. The period of AMC starts with the commissioning of the project mentioned in Para 2 above. The details of indicative manpower required for the respective project components, along with their Job Descriptions (JD) are indicated in the "Appendix" to this document. The contractor shall depute the requisite number of engineers and support technicians to maintain and manage the uptime, goals of the SLAs and milestones documented. Hence, specific number or requirement of their mandatory presence at the site is specified herein as part of this CAMC.

At least 80% of the CAMC manpower shall be on the bidder's payroll. However, highly specialised sub-services may be offloaded to OEM or another sub-contractor, with the written consent of the client.

To ensure the project uptime, the Contractor may offload, part of his AMC tasks or responsibilities to another professional agency or OEM, on written approval of IN- CHARGE, USDMA, on a case-to-case basis. This will not anyway absorb the Contractor from his responsibilities and he shall be solely responsible and answerable for the doings of his sub-contractor. To ensure the contracted uptime and the documented SLA conditions, the Contractor has the freedom to increase the number of manpower, on-site spares, etc. In such case, additional financial implications if any shall have to be borne by the Contractor himself.

The Contractor shall nominate a senior-level officer as the Single Point of Contact (SPOC) for all communications, and interactions. He would be also accountable for all errors and shortcomings of his support staff and technicians, sub-contractors, OEMs, 3rd parties, if any.

Administratively and operationally the Contractor shall report and be responsible to the IN-CHARGE, USDMA for all the functions, system performance and operations. Based on the instructions from USDMA, the Contractor shall manage (including operations) and maintain the entire project inventories on behalf of USDMA for the entire duration of the AMC, (unless otherwise terminated or extended by IN-CHARGE, USDMA).

The Contractor shall be responsible for the accommodation and lodging facilities of his personnel, in addition to their safety and security.

All personnel employed directly or indirectly by the Contractor for managing the AMC functions and services shall strictly adhere to and comply with the rules, and regulations of the Uttarakhand SDMA and Govt Uttarakhand.

Stores & Spares: Further to manpower, the Contractor shall store and supply all necessary spares, project replacements and support materials, for the upkeep of the SLAs at no additional cost to the State.

The safety, security, storage and accounting of all such AMC stores and spares along with their shipment from one site to another, would be the sole responsibility of the Contractor.

The safety, security, storage and accounting of all such AMC stores and spares along with their shipment from one site to another, would be the sole responsibility of the Contractor.

Service Level Agreement (SLA): The purpose of this Service Level Agreement (herein after referred to as SLA) is to define the levels of service which shall be provided by the Contractor to the client for the duration of this contract. The Contractor and Client shall regularly review the performance of the services being provided by the Contractor and the effectiveness of this SLA. In the case of intermittent failures and repetitive problems due to improper diagnosis or repair, the system will be treated as continuously down and a penalty will be imposed as per SLA terms and conditions, documented herein.

The CAMC Contractor shall be fully responsible for the maintenance of all system components, and devices, including all other allied hardware, software applications and networking equipment installed and integrated as part of the project. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the public, Contractor operations, or other means. The potential cost of replacing or repairing any malfunctioning or damaged equipment shall be included in the CAMC and will not be paid for separately. The Contractor shall promptly clear the defective parts, unit, items and circuit discontinuity and restore the system to service as per the documented SLA timelines.

Non-compliance to SLA's: The Contractor will be subject to SLA penalties as indicated in the table below, to be deducted from the next payment due the Contractor.

Failure to Respond: The buyer/client reserves the right to assign any work not completed within a respectable timeframe to any other maintenance agencies, at the risks and costs to the Contractor. All expenses associated with such repairs of uncompleted or non-attended works shall be the responsibility of the Contractor. These costs will be deducted from the next payment due the Contractor.

Repeated Occurrences: Repeated failures and/or a gross failure of maintenance shall result in calling for another professional and capable organisation to correct all deficiencies and the resulting costs will be deducted from any amount owed to the Contractor. Any allied damages caused by the Contractor's operations or his negligence shall be also repaired at no additional cost to the contract.

8. Payment Terms

AMC charges will be paid on a half-yearly basis, after deducting the SLA penalties, and on the issue of the "User Satisfaction Certificate" (USC). The agreed amount as specified in the agreement shall NOT be subject to any escalation.

Any changes applicable consequent to the periodical revision of GST or other taxes (as applicable) shall be factored in, as applicable. However, these taxes are to be clearly shown in the invoices raised.

Penalties. The client expects proper service support during the contract period. All complaints are to be resolved as per the SLA stipulations stated below. In case the vendor cannot repair/replace the device or systems within the SLA timeframes, the client can get it repaired from any outside agency and the cost of such repairs, along with its miscellaneous expenses shall be recovered from the AMC payment schedule.

Deduction of Penalties. In case of downtime beyond the SLAs, the following conditions shall apply:-

The penalty shall be calculated half-yearly, as per the SLA stipulations indicated in the table below.

Based on the penalty calculations, the Contractor is required to raise his invoice and payment is subject to the client's verifications and approval of invoices.

No advance payment will be released against any service order or invoices.

The maximum deduction shall not exceed 60% of the half-yearly payment.

No interest shall be applicable in delayed payments, due to government processes and procedures.

Two consecutive deductions of 40% or more of the applicable fee, on account of any reason shall be deemed to be an event of default and termination.

Consolidated defect/ticket reports furnishing the details of the remote location-wise breakdown of calls or incidents lodged/attended, along with the certificate of work completion must be submitted, as attachments along with the invoices, for the release of each payment.

The USC certifications should be obtained by the Contractor by the end of each half-year, failing which the Payments shall be deferred till the certifications are obtained.

9. SLA Deviations & Penalties

Time in which a complaint/query is resolved after it has been reported to the Contractor. The tables shown below list the response time, service restoration, and permanent repair time the Contractor shall be allowed to perform corrective action on each complaint and system defect.

Type of Incident	Resolution Time	Penalty
Critical: For critical the resolution time shall be mutually agreed upon by the Client and the Contractor at the time of award of the contract.	T (Agreed 6 hours Resolution Time)	No Penalty.
	T1 = T + 6 hours (resolved within Agreed Resolution Time + 6 hours)	1.5 % of the quarterly Payment for every unresolved call.
	T2 = T + 18 hours (resolved within Agreed Resolution Time + 18 hours)	2.5% of the quarterly Payment for every unresolved call.

"T" shall be the agreed resolution time.	> T2 (resolved after 18 hours)	5% of the quarterly Payment for every unresolved call.
Medium:	T (2 days from the time of the incident logged).	No penalty
	T > 2 days and T < 4 days (resolved within 2 to 4 days)	0.5% of the Half-yearly Payment for every unresolved call
	T > 4 days (resolved after 4 days)	1% of the Half-yearly Payment for every unresolved call
Low:	T (within 7 days from the time of response logged).	No Penalty
	T > 7 days and T ≤ 10 days (resolved within 7 to 10 days)	0.5% of the Half-yearly Payment for every unresolved call
	>10 days (resolved after 10 days)	1% of the Half-yearly Payment for every unresolved call

Max Penalty up-to 10% of quarterly payment can be imposed for every quarter for the time period of maximum 3 times after this the contract may be terminated.

Severity:

Critical	Medium	Low
<p>The breakdown of any project device or component shall not cause or affect the overall U-Prepare, USDMA or ULMMC functional tasks or the working of SEOC.</p> <p>The breakdown of any project device or component shall not cause or affect the functioning of U-PREPARE remote sites.</p> <p>All power and earthing-related issues, cable cuts or system burnouts that are associated with allied U-PREPARE systems</p>	<p>Breakdowns that do not affect the overall U-Prepare, USDMA or ULMMC working, but sub-system defects that affect the local working of a remote site.</p> <p>Other software bugs or system hanging or user devices inaccessible due to malware, viruses, security breaches, or violations of security norms.</p>	<p>Failure or faults in any non-essential project sub-systems such as Wi-Fi AP, CCTV, Printers, etc</p>

10. SLA Accounting cum MIS Reporting Tool

As part of his CAMC responsibilities, the Contractor is required to set up an SLA management cum Management Infrastructure System (MIS) reporting software integrated with project NMS/EMS at SEOC to account for, track, and monitor the penalty resolution of the project. The utility shall be linked to the U-PREPARE/USDMA Active Directory (AD) for role-based access authorization and will be networked with the project NMS/EMS for the real-time extraction of all device operating logs, system records, and other reports that document the operations and service status of each project equipment. Based on the MIS reporting utility, the serviceability status for the requisite period can be extracted on demand, as per the access rights. The periodical MIS status, pending tasks, together with its reporting shall be undertaken with the help of this tool and the half-yearly penalties along with its calculations. Using this software tool, the measurements and targets shall be tracked and reported regularly, to log and generate the MIS reports. All the targets for the measurements are calculated half-yearly. No reason shall be entertained (unless those mentioned in Force Majeure) in case of unavailability of any service given in the scope of work and the appropriate penalty shall be levied.

11. Management Infrastructure System (MIS) Reports

The online portal system shall have the capability or feature to track the complaints and auto-generate the reports, in a mutually decided format. The Contractor shall submit the reports as indicated below, in a mutually decided format. The following is only an indicative list of these periodical MIS reports that may be submitted to the client. The client or the CAMC contractor is however free to add/delete/modify the reports on a required basis:-

(a) Daily MIS Reports

The daily statement, comprising the summary of issues/complaints logged and pending tickets etc.

Summary of resolved, unresolved and escalated issues/complaints.

Major hardware malfunctions or breakdowns, if any.

Connectivity-related issues, if any.

Status report of all displays.

Status report of all encoders and decoders.

The power status of each project location.

Room-wise details of Planned Preventative Maintenance (PPM) routines undertaken.

Other reports as requested by the U-Prepare, USDMA or ULMMC periodically.

Traffic and their link status, downtime etc within the Server, Campus and AV network.

Security breaches, if any.

Details of other system events and incidents.

Any disciplinary or other personnel management issues.

(b) Weekly MIS Reports

Weekly summary of all daily reports.

Weekly system configuration reports.

Discrepancy report.

Details of unresolved issues/Complaints and their hindrances.

List of system defects, outstanding for more than 48 hours.

Summary of unauthorized entry attempts and failed logins along with their details.

Summary of issues/complaints lodged with respective OEMs.

Summary of changes undertaken on the system, including major changes like configuration changes, patch upgrades, database reorganization, changes made in AD, storage reorganization, etc, and minor changes like log truncation, volume expansion, user creation, user password reset, etc.

Other reports as requested by the U-Prepare, USDMA or ULMMC periodically.

System backup and restore reports.

(c) Monthly MIS Reports

All project sirens shall be tested on the first Sunday of every month at 12:00 PM

Consolidate SLA/ performance report.

Summary of component-wise uptime/downtime.

Log of PPM schedules pending.

Details of patch and subscriptions/signature update.

Log of break-fix maintenance undertaken.

Summary of security violations reported and observed.

Status of storage space in server-storage systems.

Major incident reports.

Summary of major and minor system defects pending with OEMS.

Expenditure summary (Basically to work out the true cash outflow-to work out the likely AMC outlay for subsequent years).

Other reports as requested by the SEOC periodically.

(d) Quarterly Reports

Consolidated component-wise physical and AV infrastructure availability and resource utilization.

Details of licenses and subscriptions due for renewal in the upcoming quarter.

Consolidated quarterly SLA performance report of 3rd party applications and hardware infra across vendors for review/consideration by the client.

Other reports as requested by the SEOC periodically.

(e) Half-yearly Reports

Overall SLA Audit Report, with deviation in service levels.

Consolidated signed User Satisfaction Certificates, with details of pending USCs.

Infrastructure Upgrade/Obsolescence Report.

Details of hardware to be upgraded or changed.

Details of software that needs version upgrades along with its implications.

Other reports as requested by the SEOC periodically.

12. Compliance Reporting Procedures, Schedules & Penalties

Measurement	Definition	Target Schedules	Penalty
Submission of MIS Reports	The contractor shall submit the MIS reports as requested by the Client in this document	Daily reports have to be generated by four (16:00 Hm)"O" clock, every evening.	0.1% of the Half-yearly Payment for every 1 hour of delay in the submission on an incremental basis to a maximum of 0.5%.
		The weekly reports shall be generated by every Monday afternoon.	0.2% of the Half-yearly Payment for every 1 day of delay in the submission on an incremental basis to a maximum of 0.5%.
		The report for the previous month shall be submitted by the 5th of the next month.	0.25% of the Half-yearly Payment for every 1 day of delay in the submission on an incremental basis to a maximum of 1%.

		The quarterly report is to be submitted along with the Monthly reports	0.25% of the Half-yearly Payment for every 1 day of delay in the submission on an incremental basis to a maximum of 2%.
		The half-yearly report is to be submitted along with the Monthly reports	0.5% of the Half-yearly Payment for every 1 day of delay in the submission on an incremental basis to a maximum of 3%.

13. SLA Review Process

Either the Client or Contractor may raise an issue by documenting the operational or technical problem, which presents a reasonably objective summary of both points of view and identifies specific points of disagreement with possible solutions.

On a required basis, a meeting of all concerned shall be called by the Client to resolve the issue promptly. The documented issues and other agenda shall be distributed to the concerned parties at least 48 hours before the discussion if the issue is not an emergency requiring immediate attention.

The Client and the Contractor shall develop an interim solution if required, and subsequently the permanent solution for the problem at hand. The Contractor shall then communicate the resolution to all interested parties.

The Client can also call for a periodical performance review meeting with the Contractor at the appropriate level as demanded by the situation and, on a required basis.

Major issues that remain unresolved for over a month along with their hindrances shall be brought before Secretary, Disaster Management.

Dispute Resolution. Kindly Refer SCC clause 10.2 of the contract document.

14. Termination Clause

Either party may terminate the agreement prior to the expiry of the contract period by giving 120 days of written notice in any of the following events:

The Vendor commits a material breach of the AMC Agreement which is incapable of remedy;
or

The Vendor commits a material breach which is capable of remedy but which the Vendor fails to remedy within 14 days of written notice by the Client specifying the event of default and requiring its remedy.

Repeated breaches of SLA

The Client and the Vendor may by notice in writing to the other terminate the Agreement if the other shall have a receiver or liquidator appointed, shall agree to winding up, if an Adjudicator or court shall make an order to that effect if the other party shall enter into composition or arrangement with its creditor(s) or shall become insolvent. Such an event shall be deemed to be a material breach incapable of remedy.

Any termination of the Agreement howsoever caused shall not affect any accrued rights or liabilities of either the Client or the vendor arising out of the contract.

Appendix

Job Descriptions & Manpower Requirements for CAMC

The SDMA functions under the provisions of the Disaster Management Act, 2005 (Central Act 53 of 2005) and Uttarakhand State Disaster Management Rules, 2007. The team UKSDMA needs to have the close support of multidisciplinary experts having in-depth knowledge, as part of their day-to-day activities. This support could be in the form of technical expertise depth knowledge, as part of vng around various modes of communication and information transfer, including Wired and Wireless telephony services, Cellular, Radio and Satellite communications, HCI, servers, store wind dies, the costing for the following manpower/Human resources shall be included as CAMC part of the BoQs of the following packages. Please be noted that at least 80% of the CAMC manpower shall be on the bider's payroll. However, highly specialised sub-services may be offloaded to OEM or another sub-contractor.

S. No	Human Resources	Task to be performed	Numbers of Manpower	Description
	HCI Server Experts	Server Manager	03	General duty
	Hardware & Software Administrator	Hardware & Software monitoring & Maintenance	02	General duty <i>(1 additional employee - with practical</i>

				<i>knowledge of Network management and AV)</i>
	Network Administrator	Network monitoring & Maintenance	01	General duty
	Security Administrator	Server and campus Network Security monitoring & Maintenance	01	General duty
	AV Systems Manager	Audio Video (AV)	01	General duty
<p>1. The manpower shall be deployed / stationed at the SEOC / USDMA building upon the commencement of CMC period up to the completion of CMC</p> <p>2. In case of emergency/ requirement by the department, the manpower shall be available 24 X 7</p> <p>3. The cost of manpower must be included in the total cost of CMC and not to be quoted separately in the BOQ</p> <p>4. (1 employee will be available on call) at time.</p>				

Hyper-Converged Infrastructure (HCI) Expert

Job specifications and qualifications for the roles of the Hyper-Converged Infrastructure (HCI) Specialist are the following: -

Required Skills and Abilities.

Should have the knowledge and experience to:-

Deploy, configure, and manage the HCI cluster.

Monitor and optimize cluster performance.

Troubleshoot and resolve hardware and software issues.

Configure and maintain network connectivity for the HCI cluster.

Troubleshoot network issues.

Implement security measures for network access.

Manage storage resources within the HCI cluster.

Allocate storage capacity to VMs and applications.

Implement data protection and backup strategies.

Create and manage virtual machines (VMs) within the HCI environment.

Optimize VM performance and resource allocation.

Implement high availability and disaster recovery for VMs.

Implement security policies and access controls in the HCI cluster.

Monitor for security threats and vulnerabilities.

Ensure compliance with security standards.

Develop and maintain data backup and recovery plans.

Test and execute disaster recovery procedures.

Ensure data integrity and availability.

Monitor HCI cluster performance and resource utilization.

Identify and address performance bottlenecks.

Will have experience with a variety of server technologies, including Windows, and Linux OS. Familiarity with scripting languages such as PowerShell or Python is also a plus.

Any other skill and ability required to accomplish the job.

Qualifications.

Should have the following qualifications and experience:-

B.Tech. or B.E. (CS / IT or ECE) having minimum 3 Yrs related Experience in a reputed institutions/firm or companies.

Experience with virtualization technologies (e.g., VMware, Hyper-V)

Knowledge of storage and networking concepts.

HCI vendor-specific certification (e.g., VMware vSAN, Nutanix-Depends on bidder offer).

Familiarity with HCI networking requirements,

Experience with storage technologies (e.g., SAN, NAS).

VMware Certified Professional (VCP) or equivalent virtualization certification.

Strong understanding of virtualization concepts.

Experience with HCI security features.

Microsoft Certification (MCSE) or equivalent certification in relevant programs desired.

Microsoft Certified Systems Administrator (MCSA) is a plus

Advanced knowledge of Windows Server (2012/2016/2019) and all popular desktop Operating Systems

Managing more than 50 Windows Server Networking infrastructure

Managing deployments/rollouts

Managing large-scale Virtual Machine (VM) installations, using virtualization technologies like VMWare Server/ESX or Microsoft HyperV/Virtual Server or RedHat (RHEL)

A solid understanding of LAN/WAN networking. Cisco Certified Network Associate or Professional (CCNA/CCNP) or its equivalent from other networking manufactures

Install/upgrade technology components and software, manage virtual servers, and integrate automation processes on a required basis

Troubleshoot hardware and software errors by running diagnostics, documenting problems and resolutions, prioritizing problems, and assessing the impact of issues

r) Administer on-call and after-hours technical support during scheduled outages and unscheduled emergencies.

s) Strong communication and documentation skills.

Network Administrators

Job Summary: An Experienced System Administrator to maintain, upgrade and manage modern technology inventory that includes software, ICT hardware and networks. Plan,

implement, oversee and maintain every technology infrastructure and project of USDMA, SEOC, U-Prepare & ULMCC.

Job Duties & Responsibilities:

Design, install and configure internal and customer-facing network devices, LAN/WAN switches, routers and their associated security devices.

Proactively manage and maintain network and allied security systems

Administer and support core LAN and WAN networking. IP Telephony technologies

Develop and implement various project plans, risk assessments, backup/recovery and contingency plans

Setup user accounts, develop, implement and maintain access controls (thru AD, LDAP user and group administration), firewalls, DMZ, VLANs, Firewall policies, DNS, DHCP etc

Design and implement monitoring, configuration management and reporting functions that will make a hands-off SSO environment

h) Define and document best practices and support procedures

Liaise with various product and device OEMs and ensure 24x7 support for all installed technology Infrastructure including Audio-Video and voice/telephony systems

Monitor the system proactively and respond immediately to security or usability concerns

Assist with hardware, firewall, telecom and software vendor evaluation, recommendation and negotiations

Review all application logs and take action on a proactive basis

Maintain inventory and asset configuration documentation

Mentor/cross-train team members on existing and emerging technologies

Carry out special /additional tasks at the Superior's directions

Interact with customers and staff at the technical level, as required.

Undertake all other duties as assigned

Qualifications & Requirements:

Master's degree or Bachelor's degree in ICT/Electronics & Communications or a closely related field. or equivalent on-hand experience is preferred.

5-Year plus experience with MS databases, Windows and Linux OS, Networks (LAN, WAN, MAN), Telephony systems, Wireless and associated Wired AV systems or data centre operations

Advanced knowledge of system vulnerabilities and security issues

Knowledge of system security (e.g., intrusion detection systems, firewalls, access controls, video surveillance, DMZ) and data backup/recovery etc

Ability to create scripts in HTML / Java / Python / Perl or other language

Familiarity with various office applications such as MS Word, Excel, PowerPoint or its open equivalents and MS Exchange platform

Resourcefulness and problem-solving aptitude

Excellent communication skills

Ability to troubleshoot network issues including backbone telecom infrastructure issues

Good knowledge and experience in LAN Routing and Switching design, configuration, troubleshooting (VLANs, IP Subnetting, 802.1Q trunks) and networking protocols

Provide technical support for both hardware and software issues of all our state-wide networked rs over VPN and RDP

Manage, deploy and configure hardware upgrades, software updates, security patches and other necessary items on an as-needed basis

Administer on-call and after-hours technical support during scheduled outages and unscheduled emergencies.

Strong communication and documentation skills

Flexible and able to adapt to a rapidly changing environment

Willingness to work 24x7 as a team leader

Must be organized and have the ability to manage projects of varying length

Positive, self-motivated individual who can complete tasks independently

Must be a team player and a motivator

Hardware & Software Administrator

Duties/Responsibilities:

Creating different ways to solve the existing operations and maintenance.

Testing and checking the system for upgrades in software and hardware.

Determining the latest technologies and processes that improve the overall functionality of the system.

Using industry-standard analysis criteria to test the software upgrade level of the firm.

Developing tracking documents to note system vulnerabilities.

Reporting the analysis and monitoring findings.

Troubleshoot hardware & Software issues.

Qualifications & Requirements:

Should have at least 3 years of experience and have a minimum qualification of BE/ B.Tech / MCA relevant qualification. The following are the minimum required Skills and Abilities:

2-3 years of demonstrated experience in the Hardware & Software field

Certifications in the field of hardware/software shall be an added advantage

Should have implemented at least two hardware/software projects.

Experience with live event set-up, staging and production required

Able to work flexible work hours, be self-motivated, and able to work under tight deadlines

Has excellent interpersonal and communication skills and is comfortable dealing with a variety of end users, including C-level executives, talent, various internal departments (Network Engineering, Facilities, etc.) external vendors

Audio Video (AV) Systems Manager

Duties/Responsibilities:

Creating different ways to solve the existing operations and maintenance.

Testing and checking the system for upgrades in software and hardware.

Determining the latest technologies and processes that improve the overall functionality of the system.

Using industry-standard analysis criteria to test the AV upgrade level of the firm.

Developing tracking documents to note system vulnerabilities.

Reporting the analysis and monitoring findings.

Contribute to the design and documentation of IT systems, including cost plan advice, ranging from Core networks, IP Tel, WLAN, TV distribution, Asset Tracking, audio-visual systems, video conferencing, people counting, and security systems

Review work of third-party audio/video install teams to ensure compliance with company standards

Support audio conferences

Support Video Conferencing platforms

Conduct advanced programming allowing for a single point of control for audio-visual systems

Perform appearance and preventive maintenance visits to SEOC and other conference rooms (VC connections, wires, peripherals, speakers)

Collaborate with other enterprise technology teams as needed to support Audio/Video product solutions

Responds to requests and reports escalated for immediate assistance and service fulfillment in the SEOC.

Qualifications & Requirements:

Should have at least 3 years of experience and have a minimum qualification of BE/B. Tech/relevant qualification. The following are the minimum required Skills and Abilities:

2-3 years of demonstrated experience in the Audio Visual and communications engineering field

Certifications like CTS/CTS/CTSD shall be an added advantage

Should have implemented at least two large AV projects.

Design solutions using AV system components such as LED/LCD displays, DLP projection systems, UHD camera systems, control systems, microphones, speakers, video/audio distribution amplifiers, scalars, and switchers power distribution

Shall have extensive experience in implementing specific Videowall of similar complexity

Planning, engineering, and monitoring the arrangements for the AV systems.

Identifying, and defining the requirements of the overall AV system

Assist in the design and implementation of video systems

Identify and provide support for Unified Communications platforms including integration into AV systems, video conferencing platforms and other IT tools as necessary

Extensive knowledge with demonstrated experience in engineering conference rooms, Webcasting, Television Systems and Streaming Video systems

Develop low-voltage wiring, cable termination, installation and rack-mounting AV components as needed

Project/production management of in-house live events such as Media Halls, conferences, screenings and "VIP" presentations

Experience with audio-visual conference room/presentation equipment required

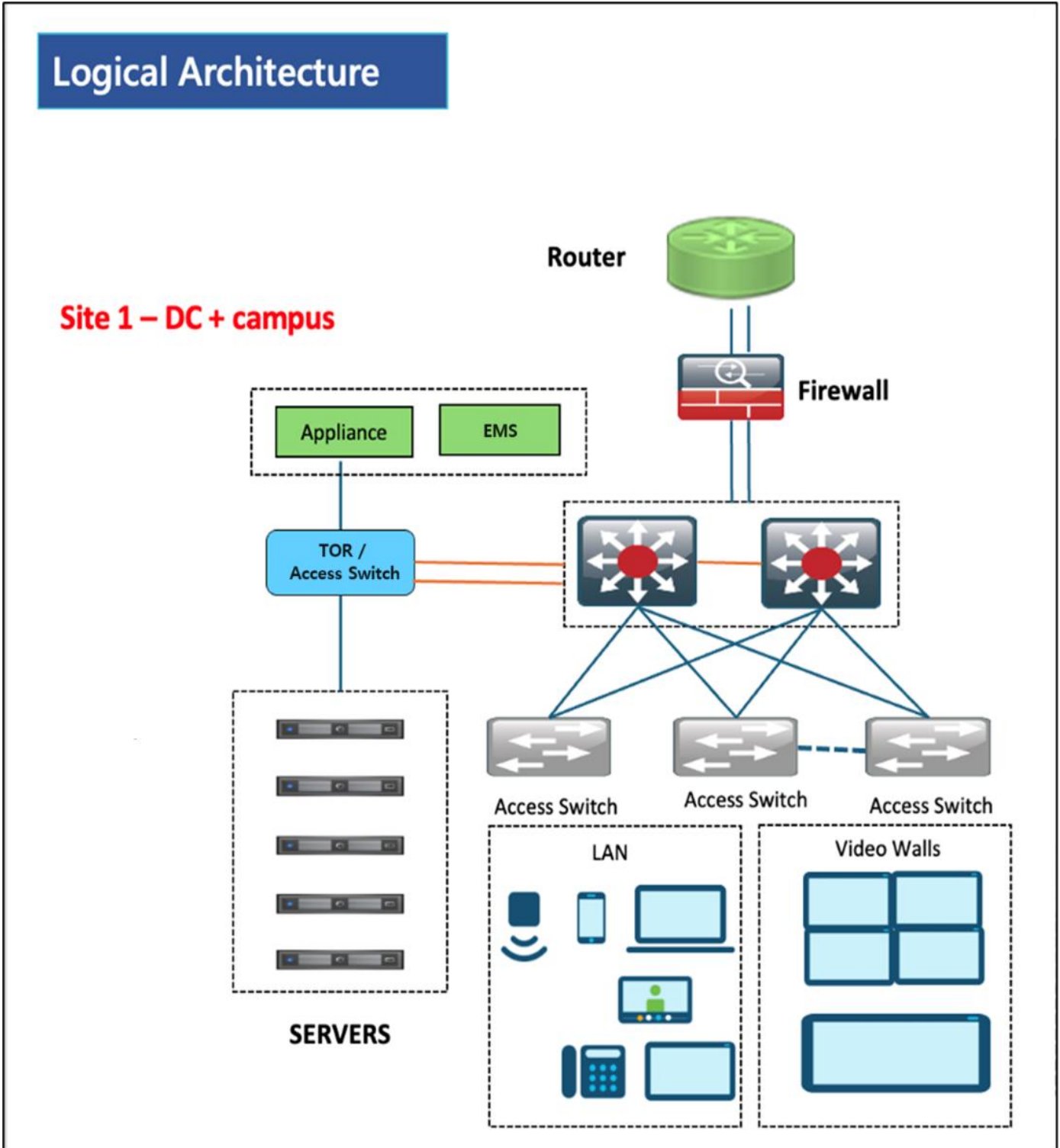
Experience with live event set-up, staging and production required

Able to work flexible work hours, be self-motivated, and able to work under tight deadlines

Has excellent interpersonal and communication skills and is comfortable dealing with a variety of end users, including C-level executives, talent, various internal departments (Network Engineering, Facilities, etc.) external vendors

Drawings

3. Drawings



5. Inspections and Tests

After manufacture, the supplier shall get each equipment/item of Goods inspected in manufacturer's works and forward to the Purchaser along with his letter seeking inspection, a test certificate along with guarantee/warranty certificate confirming that the equipment/Goods conform to contract specifications.

Upon receipt of the test certificate, the purchaser or its representative shall arrange for inspection and/or test, of any or all the equipments/Goods prior to issuance of dispatch clearance.

However, the inspection and dispatch clearance by the Purchaser or the waiver thereof will not prejudice the right of the Purchaser or its consignee to test the equipment/goods on receipt at destination. Upon receipt of the goods at final destination, the Purchaser shall have the right to inspect and/or test the equipment/Goods to confirm their conformity to the contract specifications.

If the equipment fails to meet the contract specifications during inspection, whether pre-dispatch or upon receipt of at final destination, the supplier shall take immediate steps to remedy the deficiency or replace the defective equipment to ensure that all supplies meet with the specifications specified in the contract.

6. Proforma of Certificate for issue by the Purchaser after Successful Installation and Startup of the Supplied Goods

[This is to be attached for supply, erection, supervision of erection and startup contracts only]

No. _____ Date: _____

M/s. _____

Sub: Certificate of startup of the supplied Goods

1. This is to certify that the plant/s as detailed below has/have been received in good condition along with all the standard and special accessories (subject to remarks in Para No. 2) and a set of spares in accordance with the Contract/Specifications. The same has been installed and commissioned.

(a) Contract No. _____ dated _____

(b) Description of the plant _____

(c) Plant Nos. _____

(d) Quantity _____

(e) Rail/Roadways Receipt No. _____ dated _____

(f) Name of the consignee _____

(g) Date of startup and proving test _____

2. Details of accessories/spares not yet supplied and recoveries to be made on that account.

<u>S. No.</u>	<u>Description</u>	<u>Amount to be recovered</u>
---------------	--------------------	-------------------------------

3. The proving test has been done to our entire satisfaction and operators have been trained to operate the plant.

4. The supplier has fulfilled his contractual obligations satisfactorily. *

or

The supplier has failed to fulfill his contractual obligations with regard to the following:

- (a)
 - (b)
 - (c)
 - (d)
5. The amount of recovery on account of non-supply of accessories and spares is given under Para No. 2.
6. The amount of recovery on account of failure of the supplier to meet his contractual obligations is as indicated in endorsement of the letter.

Signature _____

Name _____

Designation with Stamp _____

* Explanatory notes for filling up the certificates:

- (a) He has adhered to the time schedule specified in the contract in dispatching the documents/drawings pursuant to Technical Specifications.
- (b) He has supervised the startup of the plan in time i.e., within the period specified in the contract from the date of intimation by the Purchaser in respect of the installation of the plant.
- (c) Training of personnel has been done by the supplier as specified in the contract
- (d) In the event of documents/drawings having not been supplied or installation and startup of the plant have been delayed on account of the supplier, the extent of delay should always be mentioned.

PART 3 – Contract

Section VIII - General Conditions of Contract

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Section VIII. General Conditions of Contract

1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

- (a) “Bank” means the World Bank and refers to the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).
- (b) “Contract” means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (c) “Contract Documents” means the documents listed in the Contract Agreement, including any amendments thereto.
- (d) “Contract Price” means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.
- (e) “Day” means calendar day.
- (f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (g) “GCC” means the General Conditions of Contract.
- (h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (i) “Purchaser’s Country” is the country specified **in the Special Conditions of Contract (SCC)**.
- (j) “Purchaser” means the entity purchasing the Goods and Related Services, as **specified in the SCC**.
- (k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.
- (l) “SCC” means the Special Conditions of Contract.
- (m) “Subcontractor” means any person, private or government entity, or a combination of the above, to whom any part of

the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

- (n) “Supplier” means the person, private or government entity, or a combination of the above, whose Bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
- (o) “The Project Site,” where applicable, means the place **named in the SCC.**

2. Contract Documents

- 2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

3. Fraud and Corruption

- 3.1 The Bank requires compliance with the Bank’s Anti-Corruption Guidelines and its prevailing sanctions policies and procedures as set forth in the WBG’s Sanctions Framework, as set forth in Appendix 1 to the GCC.
- 3.2 The Purchaser requires the Supplier to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the Bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

4. Interpretation

- 4.1 If the context so requires it, singular means plural and vice versa.
- 4.2 Incoterms
 - (a) Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms **specified in the SCC.**
 - (b) The terms EXW, CIP, FCA, CFR and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms **specified in the SCC** and published by the International Chamber of Commerce in Paris, France.
- 4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.
- 4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

- (a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.
- (b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

- 5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the **SCC**. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified, in which case, for purposes of interpretation of the Contract, this translation shall govern.
- 5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.

6. Joint Venture, Consortium or Association

- 6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

- 7. Eligibility**
- 7.1 The Supplier and its Subcontractors shall have the nationality of an eligible country. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country.
- 7.2 All Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their origin in Eligible Countries. For the purpose of this Clause, origin means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.
- 8. Notices**
- 8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address **specified in the SCC**. The term “in writing” means communicated in written form with proof of receipt.
- 8.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.
- 9. Governing Law**
- 9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser’s Country, unless otherwise **specified in the SCC**.
- 9.2 Throughout the execution of the Contract, the Supplier shall comply with the import of goods and services prohibitions in the Purchaser’s Country when:
- (a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country; or
 - (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.
- 10. Settlement of Disputes**
- 10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter

provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure **specified in the SCC.**

10.3 Notwithstanding any reference to arbitration herein,

- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
- (b) the Purchaser shall pay the Supplier any monies due the Supplier.

11. Inspections and Audit by the Bank

11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its Subcontractors and subconsultants to keep, accurate and systematic accounts and records in respect of the Goods in such form and details as will clearly identify relevant time changes and costs.

11.2 Pursuant to paragraph 2.2 e. of Appendix 1 to the General Conditions the Supplier shall permit and shall cause its agents (where declared or not), subcontractors, subconsultants, service providers, suppliers, and personnel, to permit, the Bank and/or persons appointed by the Bank to inspect the site and/or the accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have such accounts, records and other documents audited by auditors appointed by the Bank. The Supplier's and its Subcontractors' and subconsultants' attention is drawn to Sub-Clause 3.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).

12. Scope of Supply

12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

13. Delivery and Documents

13.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of

Requirements. The details of shipping and other documents to be furnished by the Supplier are **specified in the SCC**.

14. Supplier's Responsibilities

- 14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.
- 14.2 The Supplier, including its Subcontractors, shall not employ or engage forced labor or persons subject to trafficking, as described in GCC Sub-Clauses 14.3 and 14.4.
- 14.3 Forced labor consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.
- 14.4 Trafficking in persons is defined as the recruitment, transportation, transfer, harbouring or receipt of persons by means of the threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power, or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purposes of exploitation.
- 14.5 The Supplier, including its Subcontractors, shall not employ or engage a child under the age of 14 unless the national law specifies a higher age (the minimum age).
- 14.6 The Supplier, including its Subcontractors, shall not employ or engage a child between the minimum age and the age of 18 in a manner that is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.
- 14.7 Work considered hazardous for children is work that, by its nature or the circumstances in which it is carried out, is likely to jeopardize the health, safety, or morals of children. Such work activities prohibited for children include work:
 - (a) with exposure to physical, psychological or sexual abuse;
 - (b) underground, underwater, working at heights or in confined spaces;
 - (c) with dangerous machinery, equipment or tools, or involving handling or transport of heavy loads;
 - (d) in unhealthy environments exposing children to hazardous substances, agents, or processes, or to temperatures, noise or vibration damaging to health; or

- (e) under difficult conditions such as work for long hours, during the night or in confinement on the premises of the employer.
- 14.8 The Supplier shall comply, and shall require its Subcontractors if any to comply, with all applicable health and safety regulations, laws, guidelines, and any other requirement stated in the Technical Specifications.
- 14.9 **Pursuant to the SCC**, the Supplier, including its Subcontractors/ suppliers/ manufacturers shall take all technical and organizational measures necessary to protect the information technology systems and data used in connection with the Contract. Without limiting the foregoing, the Supplier, including its Subcontractors/ suppliers/ manufacturers, shall use all reasonable efforts to establish, maintain, implement and comply with, reasonable information technology, information security, cyber security and data protection controls, policies and procedures, including oversight, access controls, encryption, technological and physical safeguards and business continuity/disaster recovery and security plans that are designed to protect against and prevent breach, destruction, loss, unauthorized distribution, use, access, disablement, misappropriation or modification, or other compromise or misuse of or relating to any information technology system or data used in connection with the Contract.
- 14.10 The Supplier shall comply with additional obligations as **specified in the SCC**.
- 15. Contract Price**
- 15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its Bid, with the exception of any price adjustments **authorized in the SCC**.
- 16. Terms of Payment**
- 16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as **specified in the SCC**.
- 16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.
- 16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.

16.4 The currencies in which payments shall be made to the Supplier under this Contract shall be those in which the Bid price is expressed.

16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period **set forth in the SCC**, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate **shown in the SCC**, for the period of delay until payment has been made in full, whether before or after judgment or arbitrage award.

17. Taxes and Duties

17.1 For goods manufactured outside the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's Country.

17.2 For goods Manufactured within the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

18. Performance Security

18.1 If required as specified in the SCC, the Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount **specified in the SCC**.

18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

18.3 As specified in the SCC, the Performance Security, if required, shall be denominated in the currency (ies) of the Contract, or in a freely convertible currency acceptable to the Purchaser; and shall be in one of the format stipulated by the **Purchaser in the SCC**, or in another format acceptable to the Purchaser.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless **specified otherwise in the SCC**.

19. Copyright

19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if

they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

20. Confidential Information

- 20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.
- 20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.
- 20.3 The obligation of a party under GCC Sub-Clauses 20.1 and 20.2 above, however, shall not apply to information that:
- (a) the Purchaser or Supplier need to share with the Bank or other institutions participating in the financing of the Contract;
 - (b) now or hereafter enters the public domain through no fault of that party;
 - (c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or
 - (d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- 20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.

21. Subcontracting

21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Notification by the Supplier, for addition of any Subcontractor not named in the Contract, shall also include the Subcontractor's declaration in accordance with Appendix 2 to the GCC- Sexual exploitation and Abuse (SEA) and/or Sexual Harassment (SH) Performance Declaration. Such notification, in the original Bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.

22. Specifications and Standards

22.1 Technical Specifications and Drawings

- (a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VII, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin.
- (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
- (c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

23. Packing and Documents

23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where

appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, **specified in the SCC**, and in any other instructions ordered by the Purchaser.

24. Insurance

24.1 Unless otherwise **specified in the SCC**, the Goods supplied under the Contract shall be fully insured—in a freely convertible currency from an eligible country—against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the **SCC**.

25. Transportation and Incidental Services

25.1 Unless otherwise **specified in the SCC**, responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.

25.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, **specified in the SCC**:

- (a) performance or supervision of on-site assembly and/or start-up of the supplied Goods;
- (b) furnishing of tools required for assembly and/or maintenance of the supplied Goods;
- (c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
- (d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
- (e) training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

25.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services

26. Inspections and Tests

- 26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are **specified in the SCC**.
- 26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the Goods' final destination, or in another place in the Purchaser's Country as **specified in the SCC**. Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.
- 26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.
- 26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.
- 26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall

repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.

- 26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

- 27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage **specified in the SCC** of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage **specified in those SCC**. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

- 28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 28.2 Subject to GCC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 28.3 Unless otherwise **specified in the SCC**, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination **indicated in the SCC**, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.
- 28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

28.5 Upon receipt of such notice, the Supplier shall, within the period **specified in the SCC**, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

28.6 If having been notified, the Supplier fails to remedy the defect within the period **specified in the SCC**, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
- (b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. Limitation of Liability

30.1 Except in cases of criminal negligence or willful misconduct,

- (a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser and
- (b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier to indemnify the Purchaser with respect to patent infringement

31. Change in Laws and Regulations

31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's Country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already

been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

- 32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 32.2 For purposes of this Clause, “Force Majeure” means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

33. Change Orders and Contract Amendments

- 33.1 The Purchaser may at any time order the Supplier through notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:
- (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (b) the method of shipment or packing;
 - (c) the place of delivery; and
 - (d) the Related Services to be provided by the Supplier.
- 33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier’s performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier’s receipt of the Purchaser’s change order.
- 33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not

exceed the prevailing rates charged to other parties by the Supplier for similar services.

33.4 **Value Engineering:** The Supplier may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;

- (a) the proposed change(s), and a description of the difference to the existing contract requirements;
- (b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Purchaser may incur in implementing the value engineering proposal; and
- (c) a description of any effect(s) of the change on performance/functionality.

The Purchaser may accept the value engineering proposal if the proposal demonstrates benefits that:

- (a) accelerates the delivery period; or
- (b) reduces the Contract Price or the life cycle costs to the Purchaser; or
- (c) improves the quality, efficiency or sustainability of the Goods; or
- (d) yields any other benefits to the Purchaser,

without compromising the necessary functions of the Facilities.

If the value engineering proposal is approved by the Purchaser and results in:

- (a) a reduction of the Contract Price; the amount to be paid to the Supplier shall be the percentage specified **in the PCC** of the reduction in the Contract Price; or
- (b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Supplier shall be the full increase in the Contract Price.

33.5 Subject to the above, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 13, the Supplier shall promptly notify

the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

- (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:
 - (i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34;
 - (ii) if the Supplier fails to perform any other obligation under the Contract; or
 - (iii) if the Supplier, in the judgment of the Purchaser has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix 1 to the GCC, in competing for or in executing the Contract.
- (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency.

- (a) The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect

any right of action or remedy that has accrued or will accrue thereafter to the Purchaser

35.3 Termination for Convenience.

- (a) The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- (b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
 - (i) to have any portion completed and delivered at the Contract terms and prices; and/or
 - (ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

- 36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

**37. Export
Restriction**

- 37.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, which arise from trade regulations from a country supplying those products/goods, systems or services, and which substantially impede the Supplier from meeting its obligations under the Contract, shall release the Supplier from the obligation to provide deliveries or services, always provided, however, that the Supplier can demonstrate to the satisfaction of the Purchaser and of the Bank that it has completed all formalities in a timely manner, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract. Termination of the Contract on this basis shall be for the Purchaser's convenience pursuant to Sub-Clause 35.3.

APPENDIX 1

(Text in this Appendix shall not be modified)

Fraud and Corruption

1. Purpose

1.1 The Bank's Anti-Corruption Guidelines and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption.

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

- i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- v. "obstructive practice" is:
 - (a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

- b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- d. Pursuant to the Bank's Anti-Corruption Guidelines, and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;¹ (ii) to be a nominated² sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;
- e. Requires that a clause be included in bidding/request for proposals documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants/proposers), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents, personnel, permit the Bank to inspect³ all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

¹ For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

² A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

³ Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

APPENDIX 2

Sexual Exploitation and Abuse (SEA) and/or Sexual Harassment (SH) Performance Declaration for Subcontractors*

[The following table shall be filled in by each subcontractor proposed by the Supplier, that was not named in the Contract]

Subcontractor’s Name: *[insert full name]*

Date: *[insert day, month, year]*

Contract reference *[insert contract reference]*

Page *[insert page number]* of *[insert total number]* pages

SEA and/or SH Declaration
We: <ul style="list-style-type: none"> <input type="checkbox"/> (a) have not been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. <input type="checkbox"/> (b) are subject to disqualification by the Bank for non-compliance with SEA/ SH obligations. <input type="checkbox"/> (c) had been subject to disqualification by the Bank for non-compliance with SEA/ SH obligations, and were removed from the disqualification list. An arbitral award on the disqualification case has been made in our favor.
<p><i>[If (c) above is applicable, attach evidence of an arbitral award reversing the findings on the issues underlying the disqualification.]</i></p>
Period of disqualification: From: _____ To: _____

Name of the Subcontractor _____

Name of the person duly authorized to sign on behalf of the Subcontractor _____

Title of the person signing on behalf of the Subcontractor _____

Signature of the person named above _____

Date signed _____ day of _____, _____

Countersignature of authorized representative of the Supplier:
Signature: _____

Date signed _____ day of _____, _____

Section IX - Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(i)	The Purchaser's Country is: India
GCC 1.1(j)	The Purchaser is: Program Director
GCC 1.1 (o)	The Project Site(s)/Final Destination(s) is: <i>USDMA Building, 36, IT Park, Dehradun (U.K.)</i>
GCC 1.1 (p)	<p>The term SEA/SH where used in the Contract has the following meaning:</p> <ul style="list-style-type: none"> • “Sexual Exploitation and Abuse” “(SEA)” means the following: <p>Sexual Exploitation is defined as any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.</p> <p>Sexual Abuse is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.</p> • “Sexual Harassment” “(SH)” is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature by supplier's personnel with other supplier's, or purchaser's personnel.
GCC 4.2 (a)	The meaning of the trade terms shall be as prescribed by Incoterms.
GCC 4.2 (b)	The version edition of Incoterms shall be 2010
GCC 5.1	The language shall be: English
GCC 8.1	<p>For notices, the Purchaser's address shall be:</p> <p>Attention: <i>Program Director, U-PREPARE</i></p> <p>Address: <i>USDMA Building, 36 IT Park, Sahastradhara Road, Dehradun-248013 (U.K.)</i></p> <p>Country: India</p> <p>Electronic mail address: <i>procurement.uprepare@gmail.com</i></p>
GCC 9.1	The governing law shall be the law of: Union of India
GCC 9.2	Deleted.

GCC 10.2	<p>The rules of procedure for adhoc arbitration proceedings pursuant to GCC Clause 10.2 shall be as follows:</p> <p>(a) In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Purchaser and the Supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the *Indian Council of Arbitration/president of the institution of Engineers (India)/The International center for Alternative Dispute Resolution (India).</p> <p>(b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) above, within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the *Indian Council of Arbitration/president of the Institution of Engineers (India)/The International Centre for Alternative Dispute Resolution (India), shall appoint the arbitrator. A certified copy of the order of the *Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India), making such an appointment shall be furnished to each of the parties.</p> <p>(c) Arbitration proceedings shall be held at Dehradun India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.</p> <p>(d) The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.</p> <p>(e) Where the value of the contract is Rs. 10 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely the *Indian Council of Arbitration/President of the Institution of</p>
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	<p>Engineers (India)/The International Centre for Alternative Dispute Resolution (India).</p> <p>(f) Except as otherwise agreed to by the Parties, Arbitrators should give a decision in writing within 120 days of receipt of notification of dispute</p> <p>Any dispute or difference whatsoever arising between the parties out of or relating to the supply, erection, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by arbitration in accordance with the Rules of Domestic Commercial Arbitration of the Indian Council of Arbitration and the award made in pursuance thereof shall be binding on the parties.</p> <p>The arbitral tribunal shall consist of 3 Arbitrators, arbitration proceedings shall be held at Dehradun, Uttarakhand, India and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.</p> <p>Except as otherwise agreed to by the Parties, Arbitrators should give a decision in writing within 120 days of receipt of notification of dispute.</p>
GCC 12	<p>GCC 12.1 is replaced with the following:</p> <p>“The Goods and Related Services to be supplied shall be as specified in the Special Conditions of Contract.”</p>
GCC 12.1	<p>The scope of supply for the Goods and Related Services to be supplied shall be as specified below: <i>details as specified in BOQ, specifications, Schedule of requirement & Technical Specifications.</i></p>
GCC 13.1	<p>Details of Shipping and other Documents to be furnished by the Supplier are given below:</p> <p>Upon delivery of the goods to the transporter/consignee, the supplier shall notify the purchaser and mail the following documents to the Purchaser:</p> <ul style="list-style-type: none"> (i) 3 Copies of the Supplier invoice showing contract number, goods description, quantity, unit price, total amount; (ii) Manufacturer’s/Supplier’s warranty certificate; and (iii) Pre dispatch inspection report <p>The Supplier shall also be responsible for submitting all payment-related documents to the Purchaser.</p>
GCC 14.9	<p>Cyber Security <i>applies</i></p>

GCC 14.10	<p>GCC 14.10.1 The Supplier shall have a code of conduct, and provide appropriate sensitization, for the Supplier’s personnel carrying out <i>installation/operation/maintenance/operation and maintenance</i>, that include, but not limited to, maintaining a safe working environment and not engaging in the following practices:</p> <ul style="list-style-type: none"> (i) any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Supplier’s or Purchaser’s personnel; (ii) any form of sexual exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another; (iii) any form of sexual abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions; and (iv) any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage. <p>GCC 14.10.2 The Purchaser may require the Supplier to remove (or cause to be removed), from the site or other places where the <i>installation/operation/maintenance/operation and maintenance</i>] is being executed, a Supplier’s personnel that undertakes behaviors that are inconsistent with the code of conduct stated in GCC 14.9.1. Notwithstanding any requirement from the Purchaser to replace any such person, the Supplier shall immediately remove (or cause to be removed) any such person, from the site or other places where the <i>installation/operation/ maintenance/ operation and maintenance</i> is being executed. In either case, the Supplier shall promptly appoint, as appropriate, a suitable replacement with equivalent skills and experience.</p>
GCC 15.1	The prices charged for the Goods supplied and the related Services performed <i>shall not</i> be adjustable.
GCC 16.1	<p>GCC 16.1—Payment shall be made in Indian Rupees, as follows:</p> <ul style="list-style-type: none"> I. Advance Payment: Twenty (20) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract against a bank guarantee for the equivalent amount (<i>which will be returned once the 20% is adjusted in the next payment</i>) valid until

	<p>the goods are delivered, and in the form provided in the bidding document.</p> <p>II. On installation: Sixty (60) percent (minus advance) of the Contract Price shall be paid on receipt of the Goods and upon submission of the documents specified in GCC/SCC Clause 13.</p> <p>III. On Final Acceptance/Go-Live: Twenty-Five (25) percent of the Contract Price shall be paid to the Supplier within thirty (30) days after the date of the acceptance certificate for the respective delivery issued by the Purchaser’s representative in the proforma given in Section VII – item 6.</p> <p>IV. Payments During O & M/CMC period:</p> <p>a. Five (05) percent of the Contract Price shall be paid on completion of first year CAMC including OEM warranty period.</p> <p>b. Five (05) percent of the Contract Price shall be paid on completion of Second year CAMC including OEM warranty period</p> <p>c. Five (05) percent of the Contract Price shall be paid on completion of Third year CAMC including OEM warranty period</p> <p><i>For all the payments to be made, against Bank guarantees, the bank guarantee shall be issued by a Scheduled Indian Bank or a foreign bank located in India in the format enclosed at Section X. The guarantees issued by other banks should be confirmed by a Scheduled Indian Bank or a foreign bank operating in India.</i></p>
GCC 16.4	The payments to the Supplier shall be made in Indian Rupees under this Contract.
GCC 16.5	<p>The payment-delay period after which the Purchaser shall pay interest to the supplier shall be 30 days.</p> <p>The interest rate that shall be applied is 5 %</p>

<p>GCC 17</p>	<p>GCC 17.1 is replaced with the following:</p> <p>“The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.”</p> <p>GCC 17.2 is deleted.</p> <p>GCC 17.3 is replaced with the following:</p> <p>“In the case of Excise duty waiver, the purchaser will issue only the certificates in terms of the Central Excise notification as per information given by supplier in the Form “DECLARATION for Claiming Excise Duty Exemption” of Section IV. Supplier is solely responsible for obtaining such benefits and in case of failure to receive such benefits, the purchaser will not compensate the supplier separately.”</p>
<p>GCC 18</p>	<p>In GCC 18.1 ‘twenty-eight (28) days’ is replaced with ‘twenty-one (21) days’</p> <p>GCC 18.3 is replaced with the following:</p> <p>“As specified in the SCC, the Performance Security, if required, shall be denominated in the Indian Rupees, and shall be in the format stipulated by the Purchaser in the SCC.”</p> <p>Add the following as Clause 18.5 to the GCC:</p> <p>“In the event of any contractual amendment, the Supplier shall, within 28 days of receipt of such amendment, furnish the amendment to the Performance Security, rendering the same valid for the duration of the Contract, as amended for 45 days after the completion of performance obligations including warranty obligations.”</p>
<p>GCC 18.1</p>	<p>A Performance Security <i>shall be required</i>.</p> <p>Performance Security shall be for an amount of 10% of the contract value, valid up to 45 days after the date of completion of performance obligations including warranty obligations.</p> <p>In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/ replaced material shall be extended to a further period of 12 months and the Performance Bank guarantee for proportionate value shall be extended 45 days over and above the extended warranty period.</p>

GCC 18.3	If required, the Performance Security shall be in the form of a “Bank Guarantee” or “a cashier’s cheque or banker’s certified cheque or crossed demand draft or pay order” drawn in favour of the Purchaser.
GCC 18.4	Discharge of the Performance Security shall take place not later than 45 days following the date of completion of the Supplier’s performance obligations, including the warranty obligation, under the contract.
GCC 21.3	Add the following as sub-clause 21.3: “12.3 If the Supplier uses a Subcontractor without obtaining the written consent of the Purchaser, this will be treated as violation of GCC Clause 3 (Fraud and Corruption) and will attract remedial actions as mentioned in Appendix-1 to the GCC.”
GCC 22	In GCC 22.1(a), the words “appropriate to the Goods’ country of origin” are replaced with “appropriate to the Goods in India”
GCC 23.2	<u>Packing Instructions:</u> The Supplier will be required to make separate packages for each Consignee. <i>[insert the type of packing required (if necessary), the markings in the packing and all documentation required]</i> Each package will be marked on three sides with proper paint/indelible ink with the following: (i) Project; (ii) Contract No.; (iii) Supplier’s Name; (iv) Packing List Reference Number.
GCC 24	In GCC 24.1, the following is deleted: ‘—in a freely convertible currency from an eligible country—’
GCC 24.1	The insurance shall be paid in an amount equal to 110 percent of the EXW value of the Goods from “Warehouse to warehouse (final destination)” on “All Risks” basis including War Risks and Strikes.
GCC 25.1	The Supplier is required under the Contract to transport the Goods duly insured to the specified final destination, and all related costs shall be included in the Contract Price.
GCC 25.2	NA

GCC 26.1	<p>The inspections and tests shall be:</p> <p>The supplier shall get each item indicated in the Schedule of requirement inspected in manufacturer’s facility and submit a test certificate and also manufacturer’s guarantee /warranty certificate that the items conform to the laid down specification.</p> <p>The Purchaser or its representatives (maximum 6 experts) may inspect and /or test any or all the items to confirm their conformity to the contract specification, prior to dispatch from the manufacturer’s premises or place of dispatch informed by the supplier. Such inspection and clearance will not prejudice the right of the consignee to inspect and test the items on receipt at destination to verify conformity to technical specification. All the expenses related to such inspection including transport, fooding and accommodation shall be borne by the supplier.</p> <p>If any of the items fail to meet the laid down specifications, the supplier shall take immediate steps to remedy the deficiency or replace the defective parts to the satisfaction of the purchaser/consignee.</p>
GCC 26.2	<p>The Inspections and tests shall be conducted at: At mutually agreed location by purchaser and supplier</p>
GCC 27.1	<p>The liquidated damage shall be: 0.5% of contract price per week or part thereof.</p>
GCC 27.1	<p>The maximum amount of liquidated damages shall be 10% of the contract price.</p>
GCC 28	<p>In GCC 28.3, the following is deleted: ‘from the port or place of loading in the country of origin’</p>
GCC 28.3	<p>The period of validity of the Comprehensive Maintenance Contract including OEM Warranty Period shall be: 3 Years</p> <p>The CMC shall start immediately on the commissioning of the project/GO-LIVE of the project and will be for Three (03) years. CMC includes the OEM Warranty Period, with prompt Planned Preventive Maintenance (PPM) service (as per documented SLAs) for repairs and replacements of faulty parts or devices. It covers any and all additional spare parts, and labour, including the packaging, and transportation costs that could come up while servicing the supplied project items/products.</p> <p>For purposes of the Warranty, the place(s) of final destination(s) shall be: <i>USDMA Building, 36 IT Park, Sahastradhara Road, Dehradun, Uttarakhand</i></p> <p>“The validity of all OEM licenses and related support services (including warranty updates, technical assistance, etc.) shall commence only from the Go-Live Date, which will be formally declared by U-PREPARE.”</p>

GCC 28.5 & 28.6	The period for repair or replacement shall be: 15 days.
GCC 31.1	This clause will apply only to variations in Sales tax/ Octroi etc. payable in India on the final product which is being supplied and not for variations in tax on the individual components/ raw materials which go into the product.
GCC 33.4	Provisions related to Value Engineering do not apply.
GCC 37.1	Deleted.

Section X - Contract Forms

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Letter of Acceptance

[letterhead paper of the Purchaser]

[date]

To: *[name and address of the Supplier]*

Subject: **Notification of award Contract No.**

This is to notify you that your Bid dated *[insert date]* for execution of the
[insert name of the contract and identification number, as given in the SCC] for
the Accepted Contract Amount of *[insert amount in numbers and words in Rupees]*,
as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by
our Agency.

You are requested to furnish the Performance Security within 21 days in accordance with the
Conditions of Contract, using for that purpose the Performance Security Form included in
Section X - Contract Forms, of the Bidding Document.

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Agency: _____

Attachment: Contract Agreement

Contract Agreement

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS AGREEMENT made the *[insert: **number**]* day of *[insert: **month**]*, *[insert: **year**]*.

BETWEEN

- (1) *[insert complete name of Purchaser]*, a *[insert description of type of legal entity, for example, an agency of the Ministry of of the Government of { insert name of Country of Purchaser }, or corporation incorporated under the laws of { insert name of Country of Purchaser }]* and having its principal place of business at *[insert address of Purchaser]* (hereinafter called “the Purchaser”), of the one part, and
- (2) *[insert name of Supplier]*, a corporation incorporated under the laws of *[insert: country of Supplier]* and having its principal place of business at *[insert: address of Supplier]* (hereinafter called “the Supplier”), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and ancillary services, viz., *[insert brief description of Goods and Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Services

The Purchaser and the Supplier agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other contract documents.
 - (a) the Letter of Acceptance
 - (b) Letter of Bid - Technical Part
 - (c) Letter of Bid - Financial Part and original completed Schedules including Price Schedules
 - (d) the Addenda Nos. _____ (if any)
 - (e) Special Conditions of Contract
 - (f) General Conditions of Contract
 - (g) the Specification (including Schedule of Requirements and Technical Specifications)
 - (h) Joint Venture Agreement [for JVs if permitted]

- (i) any other document listed in GCC as forming part of the Contract
3. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of India on the day, month and year indicated above.

For and on behalf of the Purchaser:

Signed: *[insert signature]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness – name, signature, address, date]*

For and on behalf of the Supplier:

Signed: *[insert signature of authorized representative(s) of the Supplier]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness - name, signature, address, date]*

Performance Security - Bank Guarantee

[Guarantor letterhead or SWIFT identifier code]

Performance Guarantee No.....*[insert guarantee reference number]*

Date.....*[insert date of issue of the guarantee]*

To: _____ *[name of Purchaser]*

_____ *[address of Purchaser]*

WHEREAS _____ *[name and address of Supplier¹⁰]* (hereinafter called "the Applicant") has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ *[name of Contract and brief description of Goods and related Services]* (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Applicant shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Applicant such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Applicant, up to a total of _____ *[amount of guarantee¹¹]* _____ *[in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ *[amount of guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Applicant before presenting us with the demand.

¹⁰ *In the case of a JV, insert the name of the Joint Venture*

¹¹ *An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Indian Rupees.*

We further agree that no change or addition to or other modification of the terms of the Contract or of the Goods and related Services to be supplied thereunder or of any of the Contract documents which may be made between you and the Applicant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until (i.e.) 45 days following the Completion date of the Contract including any warranty obligations¹², and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor _____

Name of Bank _____

Address _____

Date _____

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

¹² Completion date as described in GC Clause 18.4

Advance Payment Security
Demand Guarantee
[Guarantor letterhead or SWIFT identifier code]

Advance Payment Guarantee No.....*[insert guarantee reference number]*
 Date.....*[insert date of issue of the guarantee]*

To: _____ *[name of Purchaser]*
 _____ *[address of Purchaser]*
 _____ *[name of Contract]*

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Clause 16 ("Terms of Payment") of the above-mentioned Contract, _____ *[name and address of Supplier¹³]* (hereinafter called "the Applicant") shall deposit with _____ - _____ *[name of Purchaser]* a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of _____ *[amount of guarantee¹⁴]* _____ *[in words]*.

We, the _____ *[bank or financial institution]*, as instructed by the Applicant, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to _____ *[name of Purchaser]* on his first demand without whatsoever right of objection on our part and without his first claim to the Applicant, in the amount not exceeding _____ *[amount of guarantee]* _____ *[in words]*.

We further agree that no change or addition to or other modification of the terms of the Contract or of Goods and related Services to be supplied thereunder or of any of the Contract documents which may be made between _____ *[name of Purchaser]* and the Applicant, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

¹³ In the case of a JV, insert the name of the Joint Venture

¹⁴ An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until _____ [*name of Purchaser*] receives full repayment of the same amount from the Applicant. Consequently any demand for payment under this guarantee must be received by us at this office on or before that date.

Yours truly,

Signature and seal: _____

Name of Bank: _____

Address: _____

Date: _____

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.