

Name of STD :	e-PG3
Procurement Type :	Goods
Section :	Instructions to Tenderer

A. General

1. Scope of Tender	1.1 The Procuring Entity named in the Tender Data Sheet (TDS) (hereinafter referred to as the “PE”) wishes to issues these e- Tender Document (hereinafter referred to as the “e-TD”) for the supply of Goods, and related services incidental there to, as specified in the TDS. The name of the Tender and the number and identification of its constituent lot(s) are stated in the TDS.
	1.2 The successful Tenderer shall be required to complete the delivery of the Goods and related services as specified in the General Conditions of Contract.
2. Interpretation	2.1 Throughout this e-TD
	(a) “communication” means communication through e-GP System;
	(b) “e-GP” means procurement by a PE using the electronic government procurement system developed by the Government of Bangladesh.
	(c) “day” means calendar days unless otherwise specified as working days;
	(d) “date and time” means the date and time of e-GP System (www.eprocure.gov.bd) hosted in CPTU, IMED, Dhaka, Bangladesh;
	(e) “e-TD”, means the Document provided by a PE to a Tenderer as a basis for preparation of its e-Tender through the e-GP System;
	(f) “Person” means and includes an individual, body of individuals, sole proprietorship, partnership, company, association or cooperative society registered with e-GP system and wishes to participate in e-Procurement proceedings;
	(g) “e-Tender”, depending on the context, means a Tender submitted through e-GP System by a Tenderer for delivery of Goods and related services to a PE in response to an Invitation for e-Tender;
	(h) “Tenderer” means a Person who submits an e-Tender; and
	(i) if the context so requires, singular means plural and vice versa.
3. Source of Funds	3.1 The PE has been allocated public funds from the source as indicated in the TDS and intends to apply a portion of the funds to eligible payments under the contract for which this e-TD is issued.
	3.2 For the purpose of this provision, “public funds” means any funds allocated to a PE under Government budget, or loan, grants and credits placed at the disposal of a PE through the Government by the development partners or foreign states or organizations.
	3.3 Payments by the development partner, if so indicated in the TDS, will be made only at the request of the Government and upon approval by the development partner in accordance with the applicable Loan/Credit/Grant Agreement, and will be subject in all respects to the terms and conditions of that Agreement.
4. Corrupt, Fraudulent, Collusive, Coercive (or Obstructive in case of	4.1 The Government and the Development Partner require that PE’s, as well as Tenderers and Suppliers (including their manufacturers,

Development Partner) Practices	sub-contractors, agents, personnel, consultants, and service providers) shall observe the highest standard of ethics during implementation of procurement proceedings and the execution of Contracts under public fund.
	<p>4.2 For the purposes of ITT Sub-clause 4.3 the terms set forth below:</p> <p>(a) corrupt practice means offering, giving or promising to give, receiving, or soliciting, either directly or indirectly, to any officer or employee of a PE or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by a PE in connection with a Procurement proceeding or contract execution;</p> <p>(b) fraudulent practice means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;</p> <p>(c) collusive practice means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the PE, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, non competitive levels, thereby denying a PE the benefits of competitive price arising from genuine and open competition;</p> <p>(d) Coercive practice means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in a Procurement proceeding or the execution of a Contract;</p> <p>(e) Obstructive practice (applicable in case of Development Partner) means deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an 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.</p>
	<p>4.3 Should any corrupt, fraudulent, collusive, coercive or obstructive (in case of Development Partner) practice of any kind is determined by the Procuring Entity or the Development Partner, if applicable, this will be dealt in accordance with the provisions of the Public Procurement Act and Rules and Procurement Guidelines of the Development Partners as stated in the ITT sub-clause 3.3. In case of obstructive practice, this will be dealt in accordance with Development Partners Procurement Guidelines.</p>
	<p>4.4 If corrupt, fraudulent, collusive, coercive or obstructive (in case of Development Partner) practices of any kind is determined by the Procuring Entity against any Tenderer or Supplier (including its manufacturers, sub-contractors, agents, personnel, consultants, and service providers) in competing for or in executing a contract under public fund</p> <p>(a) Procuring Entity and/or the Development Partner shall exclude the concerned Tenderer from further participation in the concerned procurement proceedings;</p> <p>(b) Procuring Entity and/or the Development Partner shall reject any recommendation for award that had been proposed for that</p>

	<p>concerned Tenderer;</p> <p>(c) Procuring Entity and/or the Development Partner shall declare, at its discretion, the concerned Tenderer to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time;</p> <p>(d) Development Partner shall sanction the concerned Tenderer or individual, at any time, in accordance with prevailing Development Partner' sanctions procedures, including by publicly declaring such Tenderer or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Development Partner-financed contract; and (ii) to be a nominated sub-contractor, consultant, manufacturer or Supplier, or service provider of an otherwise eligible firm being awarded a Development Partner-financed contract: and</p> <p>(e) Development Partner shall cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Procuring Entity or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive, coercive or obstructive practices during the procurement or the execution of that Development Partner financed contract, without the Procuring Entity having taken timely and appropriate action satisfactory to the Development Partner to remedy the situation</p>
	<p>4.5 Tenderer shall be aware of the provisions on corruption, fraudulence, collusion, coercion (and obstruction, in case of Development Partner) of the Public Procurement Act, 2006, the Public Procurement Rules, 2008 and others as stated in GCC Clause 6.</p> <p>4.6 In further pursuance of this policy, Tenderers, Suppliers and their manufacturers, sub-contractors, agents, personnel, consultants, service providers shall permit the Government and the Development Partner to inspect any accounts and records and other documents relating to the Tender submission and contract performance, and to have them audited by auditors appointed by the Government and/or the Development Partner during the procurement or the execution of that Development Partner financed contract</p>
5. Eligible Tenderers	5.1 This Invitation for Tenders is open to all potential Tenderers from all countries, except for any specified in the TDS
	5.2 Tenderer must be registered in the e-GP system under appropriate user category of procurement process in order to have appropriate access and to get working dashboard with authorized functions in the e-GP System.
	5.3 Tenderer may be a physical or juridical individual or body of individuals, or company, association invited to take part in public procurement or seeking to be so invited or submitting a e-Tender in response to an Invitation for e-Tenders.
	5.4 Government-owned enterprises in Bangladesh shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the PE.
	5.5 Tenderer shall have the legal capacity to enter into the Contract
	5.6 Tenderer and all parties constituting the Tenderer shall not have a conflict of interest

	5.7 Tenderers in its own name or its other names or also in the case of its Persons in different names, shall not be under a declaration of ineligibility for corrupt, fraudulent, collusive, coercive practices as stated under ITT Sub Clause 4.4 (or obstructive practice (in case of Development Partner) in relation to the Development Partner's Procurement Guidelines in projects financed by Development Partner.
	5.8 Tenderer are not restrained or barred from participating in public Procurement on grounds of execution of defective supply in the past under any Contract.
	5.9 Tenderer shall not be insolvent, be in receivership, be bankrupt, be in the process of bankruptcy, be not temporarily barred from undertaking business and it shall not be the subject of legal proceedings for any of the foregoing.
	5.10 Tenderer shall have fulfilled its obligations to pay taxes and social security contributions under the provisions of laws and regulations of the country of its origin.
	5.11 Tenderer shall provide such evidence of their continued eligibility satisfactory to the PE, as the PE will reasonably request.
	5.12 These requirements for eligibility will extend, as applicable, to Sub-contractor proposed by the Tenderer.
6. Eligible Goods and related services	6.1 All goods and related services to be supplied under the contract are eligible, unless their origin is from a country specified in the TDS.
	6.2 For purposes of this Clause, the term "goods" includes commodities, raw material, machinery, equipment, and industrial plants; and "related services" includes services such as insurance, transportation, installation, and commissioning, training, and initial maintenance.
	6.3 For purposes of this clause, "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.
	6.4 The origin of goods and services is distinct from the nationality of the Tenderer. The nationality of the firm that produces, assembles, distributes, or sells the goods shall not determine their origin.
7. Site Visit	7.1 The costs of visiting the Site shall be at the Tenderer's own expense.
8. Disclaimer	8.1 Use of the e-GP System shall only be used for lawful purposes that do not infringe the rights of or restrict or inhibit the use of the system by any third party. Such restriction or inhibition includes, but is not limited to, conduct which is intended to mislead, or is defamatory, or which may harass, cause distress or inconvenience to any person and the transmission of obscene or offensive content or interruption of the normal flow of content within the e-GP System.
B. e-Tender Document	
9. e-Tender Document: General	<p>9.1 The Sections comprising the e-TD are listed below and should be read in conjunction with any addendum issued under ITT Clause 12.</p> <ul style="list-style-type: none"> • Section 1 Instructions to Tenderers (ITT) • Section 2 Tender Data Sheet (TDS) • Section 3 General Conditions of Contract (GCC)

	<ul style="list-style-type: none"> • Section 4 Particular Conditions of Contract (PCC) • Section 5 e-Tender and e-Contract Forms • Section 6 Drawings
	9.2 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the e-TD as well as addendum to e-TD, if any.
10. Clarification of e-TD	10.1 Clarification request must be posted through e-GP dashboard. Clarification posted by fax / post / e-mail will not be entertained
	10.2 A prospective Tenderer requiring any clarification of the e--TD shall be allowed to post clarification as stated sub clause 10.1 till the date and time as specified in the TDS, but not later than the date of pre-tender meeting as stated under ITT clause 11, if held
	10.3 The PE shall respond within five (5) working days of receipt of any such request for clarification received under ITT Sub-Clause 10.2
	10.4 The clarification posted by PE will be shared through e-GP System its response to all those who have purchased the e-TD, including a description of the enquiry but without identifying its source
	10.5 Should the PE deem it necessary to amend the e-TD as a result of a clarification, it shall do so following the procedure under ITT Clause 12
11. Pre-Tender Meeting	11.1 To clarify issues and to answer questions on any matter arising in the e-TD, the PE may, if stated in the TDS, hold a Pre-Tender Meeting
	11.2 Pre-Tender Meeting will be held online on the date and time as specified in the TDS. Clarifications to the queries of the Tenderer will be made online, and also responses will be shared through dashboard of the Tenderer, who have purchased the e-TD
	11.3 Minutes of the pre-Tender meeting, including the text of the questions raised and the responses given, together with any responses prepared after the meeting, will be uploaded on e-GP System within 5 working days
	11.4 Any amendment to the e-TD listed in ITT Sub-Clause 9.1 that may become necessary as a result of the pre-Tender meeting shall be made by the PE exclusively through the issue of an Amendment as stated under ITT Sub-Clause 12..1 and not through the minutes of the pre-Tender meeting
	11.5 Non-participation at the pre-Tender meeting will not be a cause for disqualification of a Tenderer
12. Addendum to e-E-TD	12.1 At any time prior to the deadline for submission of e-Tender, the PE on its own initiative or in response to a clarification request posted on e-GP System from a Tenderer, having purchased the e-TD or as a result of a Pre-Tender meeting, may revise the e-TD by issuing an addendum
	12.2 The addendum corresponding the e-Tender shall be posted in the e-GP System and shall become an integral part of the e-TD. Afterwards amendment notification through e-mail shall be sent to the Tenderer who have purchased e--TD
	12.3 To give a prospective Tenderer reasonable time in which to take an amendment into account in preparing its Tender, the PE may, at its

	discretion, extend the deadline for the submission of e-Tenders
	12.4 If an addendum is issued when time remaining is less than one-third of the time allowed for the preparation of e-Tenders, PE shall extend the deadline by an appropriate number of days for the submission of e-Tenders, depending upon the nature of the Procurement requirement and the addendum. The minimum time for such extension shall not be less than three (3) working days
C. Qualification Criteria	
13. General Criteria	13.1 The PE requires the Tenderer to be qualified by meeting predefined, precise minimum requirements, which entails setting pass/fail criteria, which if not met by the Tenderer, will result in rejection of its e-Tender
	13.2 In addition to meeting the eligibility criteria, as stated in ITT Clause 5, the Tenderer must satisfy the other criteria stated in ITT Clauses 14 to 16 inclusive
	13.3 To qualify for multiple number of contracts/lots in a package made up of this and other individual contracts/lots for which tenders are invited in the Invitation for Tenders, the Tenderer shall demonstrate having resources sufficient to meet the aggregate of the qualifying criteria for the individual contracts. The requirement of general experience under ITT Clause 15.1 (a) and specific experience, unless otherwise of different nature, under ITT Clause 15.1(b) shall not be separately applicable for each individual lot
14. Litigation History	14.1 Litigation history shall comply with the requirement as specified in ITT 16.1(b)
15. Experience Criteria	<p>15.1 Tenderer shall have the following minimum level of supply experience to qualify for supplying the Goods and related services under the contract:</p> <p>(a) A minimum number of years of General experience in the supply of goods and related services as specified in the TDS; and</p> <p>(b) Specific experience of satisfactory completion of supply of Goods similar to the proposed goods in at least a number of contract(s) and, each with a minimum value, over the period, as specified in TDS; and</p> <p>(c) A minimum supply and/or production capacity of Goods as specified in the TDS.</p>
16. Financial Criteria	16.1 Tenderer shall have the following minimum level of financial capacity to qualify for the supply of goods under the contract
	(a) Availability of minimum liquid assets i.e. working capital or credit line(s) from any Scheduled Bank, net of other contractual commitments of the amount as specified in the TDS.
	(b) Satisfactory resolution of all claims, arbitrations or other litigation cases and shall not have serious negative impact on the financial capacity of the Tenderer'
17. Appointment of Subcontractor	17.1 Tenderer shall specify in its e-Tender the portion of the Goods that will be subcontracted, if any, including the entity(ies) to whom each portion will be subcontracted to, subject to the maximum allowable limit for subcontracting of Goods specified in the TDS.
	17.2 All subcontracting arrangement must be disclosed at the time of e-Tendering, and subcontractors must be identified in the e-Tender submitted by Tenderer.

	17.3 A subcontractor may participate in more than one e-Tender, but only in that capacity.
	17.4 Subcontractors must comply with the provision of ITT Clause 5.
	17.5 If the PE determines that a subcontractor is ineligible, the subcontracting of such portion of the Goods assigned to the ineligible subcontractor shall be disallowed.
D. Tender Preparation	
18. Only One e-Tender	18.1 If an e-Tender for Goods is invited on 'lot-by-lot' basis, each lot shall constitute a separate contract.
	18.2 If an e-Tender for Goods is invited for one or more items on an 'item-by-item' basis, single item or assemble of more items shall constitute a separate contract.
19. Cost of Tendering	19.1 Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the PE shall not be responsible or liable for those costs, regardless of the conduct or outcome of the e-Tendering process
20. Sale of e-TD	20.1 e-TD can be accessed or downloaded in e-GP system by the Tenderer after paying the document fees, up to the day prior to the deadline for the submission of e-Tender through e-GP member bank's network and updated the payment transaction by the bank in e-GP system.
21. Language of e-Tender	21.1 The e-Tender shall be in English language. Communications and documents relating to the e-Tender shall be in the English language. Supporting documents and printed literature furnished by the Tenderer may be in another language provided they are accompanied by an accurate translation of the relevant passages into the English or Bangla language, in which case, for purposes of interpretation of the Tender, such translation shall govern.
	21.2 The Tenderer shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.
22. Contents of e-Tender	22.1 The e-Tender prepared by the Tenderer shall comprise the following:
	(a) e-Tender Submission Letter (Form e-PG3-1) as furnished in Section 5: e-Tender Forms;
	(b) Tenderer information sheet (Form e-PG3-2) as furnished in Section 5: e-Tender Forms;
	(c) The completed Price and Delivery Schedule for Goods and related services (Form e-PG3-3A and 3B) as furnished in Section 5: e-Tender Forms as stated under ITT Clauses 23 and 24;
	(d) Tender Security as stated under ITT Clause 29,30 and 31;
	(e) The completed Technical specification and compliance of Goods and related services (Form e-PG3-4) as furnished in Section 5: e-Tender Forms as stated under ITT clause 25.2;
	(f) Written confirmation authorising the signatory of the Tenderer including National ID to submit the e-Tender, as stated under ITT Sub-clause 35.4;
	(g) Valid Trade license to be mapped from e-GP Common document library of the Tenderer;
	(h) Documentary evidence of Tax Identification Number (TIN) and Value Added Tax (VAT) as a proof of taxation obligations as stated under ITT Sub Clause 5.9 to be mapped from e-GP Common

	document library of the Tenderer;
	(i) The country of origin declarations, to establish the eligibility of the Goods and related services as stated under ITT Clause 6, in the Price and Delivery Schedule for Goods and related services (Form e-PG3-3A and 3B) as furnished in Section 5: e-Tender Forms;
	(j) Documentary evidence as stated under ITT Clauses 25, that the Goods and related services conform to the e-TD;
	(k) Documentary evidences as stated under ITT Clause 26 that the Tenderer's qualifications conform to the e-TD;
	(l) Documents establishing legal and financial autonomy and compliance with commercial law, as stated under ITT Sub-clause 5.4 in case of government owned entity; and
	(m) Any other document as specified in the TDS.
23. Tender Prices	23.1 The unit prices shall be quoted by the Tenderer in the Price and Delivery Schedule for Goods and related Services (Form e-PG3-3A and 3B). The Total price will be generated automatically by the e-GP system and computation will be done from these price schedules.
	23.2 Tenders are being invited either for one or more items on an 'item-by-item' basis or a single lot or for a number of lots on 'lot-by-lot' basis, as specified in the TDS.
	23.3 Tenders being invited for a single lot or for a number of lots on 'lot-by-lot' basis, price quoted shall correspond to 100% of the items specified for each lot and to 100% of the quantities specified for each item of that particular lot and shall correspond to 100% of the total offered lot value,
	23.4 If an e-Tender for Goods is invited for one or more items on an 'item-by-item' basis, in such case the offer for each item shall correspond to full quantity under that particular item.
	23.5 All applicable taxes, custom duties, VAT and other levies payable by the Tenderer under the Contract, or for any other causes, as of the date twenty-eight (28) days prior to the deadline for submission of e-Tenders, shall be included in the unit prices
	23.6 The price of a Contract shall be fixed in which case the unit prices may not be modified in response to changes in economic or commercial conditions.
	23.7 The Goods covered by this Tendering process shall require to be delivered in accordance with the Delivery and Completion Schedule specified in the Price and Delivery schedule for Goods and related Service (e-PG3 – 3A and 3B). No credit will be given for earlier completion.
24. Tender Currency	24.1 All prices shall be quoted in Bangladesh Taka (BDT).
25. Documents Establishing the Conformity of the Goods and related services	25.1 To establish the conformity of the Goods and related services to the e-TD, the Tenderer shall furnish as part of its e-Tender the documentary evidence that the Goods and related services conform to the technical specifications and standards in (Form e-PG-4).
	25.2 Documentary evidence of conformity of the Goods and related services to the e-TD may be in the form of literature, drawings, and data, and shall consist of: (a) a detailed description of the essential technical and performance characteristics of the Goods and related services;

	(b) if so required in TDS, Tenderer 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 TDS, following commencement of the use of the Goods by the PE; and
	(c) an “item-by-item” commentary on the PE’s Technical Specifications demonstrating substantial responsiveness of the Goods and related services to those specifications, or a statement of deviations and exceptions to the provisions of Technical Specifications in (Form e-PG3-4).
26. Documents Establishing Qualifications of the Tenderer	<p>26.1 The documentary evidence of the Tenderer’s qualifications to perform the contract if its Tender is accepted shall establish to the PE’s satisfaction:</p> <p>(a) that the Tenderer meets each of the qualification criterion specified in Sub-section C; Qualification Criteria of the ITT;</p>
	(b) that, if required in the TDS, a Tenderer that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer’s Authorization Letter (Form e-PG3-5) furnished in Section 5: Tender and Contract Forms, to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply the Goods to Bangladesh.; and
	(c) that, if required in the TDS, in case of a Tenderer not doing business within Bangladesh, the Tenderer is or will be (if awarded the contract) represented by an Agent in the country equipped and able to carry out the Supplier’s maintenance.
27. Validity Period of Tender	27.1 Tenders shall remain valid for the period specified in the TDS after the date of Tender submission deadline as stated under ITT Clause 36.
28. Extension of e-Tender Validity and e-Tender Security	28.1 In exceptional circumstances, prior to the expiration of the e-Tender validity period, the PE may solicit, not later than ten (10) days before the expiry date of the e-Tender validity, compulsorily all the Tenderers’ consent to an extension of the period of validity of their Tenders.
	28.2 The request for extension of e-Tender validity period shall state the new date of the validity of the e-Tender.
	28.3 The request from the PE and the responses from the Tenderers will be made through e-GP System.
	28.4 Tenderer consenting to the request made by the PE under ITT Sub-Clause 28.1 shall also correspondingly extend the validity of its e-Tender Security for twenty-eight (28) days beyond the new date for the expiry of e-Tender validity. Extension of validity of Tender security will be done by the bank registered with e-GP System upon such request to the Bank from the Tenderer.
	28.5 Tenderer consenting to the request under ITT Sub- Clause 28.1 shall not be required or permitted to modify its Tender in any circumstances.
	28.6 If Tenderer are not consenting to the request made by the PE under ITT Sub-Clause 28.1, its Tender will not be considered for subsequent evaluation.
29. e-Tender Security	29.1 e-Tender security will be prepared by the bank registered with e-GP system in favour of the PE upon such request from the Tenderer. e-Tender security shall be kept in custody of the bank and transaction

	information will be updated in the e-GP system.
	29.2 Amount of the e-Tender security may be determined on the basis of different percentages for each lot, but the amount is fixed as specified in TDS, if so indicated that the e-Tenders are invited on lot-by-lot basis under ITT Sub clause 23.2,
	29.3 One e-Tender security, at the percentage as specified in TDS, of the total value of the items offered by the Tenderer, may be submitted, if so indicated that the Tenders for one or more items are invited on an 'item-by-item basis',
30. Form of Tender security	30.1 The Tender Security as stated under ITT sub clause 29.1 shall: (a) at the Tenderer's option, be either; i. in the form of a bank draft or pay order, or ii. in the form of an irrevocable bank guarantee in the format (Form e-PG3-6) furnished in Section 5: Tender and Contract Forms; (b) be payable promptly upon demand by the PE in the case of the conditions listed in ITT Clause 33 being invoked; and (c) remain valid for at least twenty eight (28) days beyond the expiry date of the Tender Validity in order to make a claim in due course against a Tenderer in the circumstances detailed under ITT Clause 33.
31. Valid Tender Security	31.1 e-Tender not accompanied/equipped by a valid e-Tender Security as stated under Sub-clauses 29, 30 shall be considered as non-responsive.
32. Return of e-Tender Security	32.1 No Tender Security shall be returned to the Tenderers before contract signing
	32.2 Unsuccessful Tenderer's e-Tender security will be discharged or released as soon as possible but within 28 days of the end of the e-Tender validity period specified in ITT Sub-clause 27.1.
	32.3 e-Tender securities of the Tenderers not consenting to the request under ITT Sub-clause 28.1 in regard to extension of its e-Tender validity shall be discharged or released forthwith.
	32.4 The bank will release the e-Tender security only upon a request from the PE.
33. Forfeiture of Tender Security	33.1 The Tender security may be forfeited if a Tenderer: (a) refuses to accept a Notification of Award as stated under ITT Sub-clause 54.3 ; or (b) fails to furnish performance security as stated under ITT Sub-clause 55.1; or (c) refuses to sign the Contract as stated under ITT Sub-clause 58.2 ; or
	33.2 In case e-Tender security is required to be forfeited, PE will instruct the concerned registered bank/branch with the e-GP system and bank/branch in turn will debit the amount and credit it in favour of the PE's bank account.
34. Online Tender Preparation	34.1 Prior to submission of a e-Tender, the Tenderer must ensure that all electronic records and files making up the Tender are completely virus free and also ensure integrity, completeness and authenticity of the tender.
E. Tender Submission	

35. e-Lodgment (e-submission)	35.1 Tenderer shall submit the e-Tender through e-GP system and must be received in completeness prior to the deadline for submission. The Tenderer acknowledge the receipt of the tender through the e-GP system
	35.2 The e-Tender lodged through e-GP system by the Tenderer is deemed for all purposes to be the true and legal version, duly authorized and duly executed by the Tenderer and intended to have binding legal effect. e-Signature / Digital Signature will identify and authenticate the Tenderer
	35.3 Tender submitted online will be stored in encrypted format in the e-Tender box
	35.4 Authorization letter from the firm / company shall be attached with Tender Submission Letter (Form e-PG3-1) to lodge the e-Tender
36. Deadline for lodgment (e-submission) of e-Tender	36.1 e-Tenders shall be lodged to the e-GP system not later than the date and time specified in the TDS.
	36.2 Lodgement of large electronic file may take time and as such sufficient time must be allowed to fully transmit all the files prior to the deadline for submission.
	36.3 PE may at its discretion on justifiably acceptable grounds duly recorded, extend the deadline for submission of Tender as stated under ITT Sub Clause 36.1, in which case all rights and obligations of the PE and Tenderers previously subject to the deadline will thereafter be subject to the new deadline as extended.
	36.4 e-Tenders lodged shall not be allowed to be withdrawn after the deadline for submission.
37. e-Tender Substitution/Modification/Withdrawal	37.1 The Tenderer shall be allowed to substitute / modify / withdraw its lodged tender before the deadline for submission.
F. e-Tender Opening and e-Evaluation	
38. e-Tender Opening	38.1 e-Tender opening process will be done by decrypt tender functionality as tenders will be stored in time stamped electronic tender box with encryption.
	38.2 Tender Opening Committee (TOC) shall open the tender within one (1) hour after tender submission deadline.
	38.3 Tender Opening Reports (TORs) will be generated by the e-GP system. TOR will be available after tender opening.
39. Evaluation of e-Tenders	39.1 e-Tenders shall be examined and evaluated only on the basis of the criteria specified in the e-TD
	39.2 Tender Evaluation Committee (TEC) shall examine, evaluate and compare Tenders that are responsive to the mandatory requirements of e-TD in order to identify the successful Tenderer.
40. Evaluation process	40.1 e-GP System will automatically generate the Tender Evaluation Reports (TERs) to assist the TEC. TEC should review the TERs, confirms the compliance and complete the TERs based on the criteria mentioned in e-TD
	40.2 TEC may consider a Tender as responsive in the Evaluation, only if it is submitted in compliance with the mandatory requirements set out in the e-TD. The evaluation process should begin immediately after tender opening following four steps: (a) Preliminary Examination; (b) Technical Examinations and Responsiveness;

	<p>(c) Financial evaluation and price comparison;</p> <p>(d) Post-qualification of the Tender.</p>
41. Preliminary Examination	41.1 TEC shall examine the e-Tenders to confirm that all documentation requested in ITT Clause 22 has been provided, to determine the completeness of each document submitted
	<p>41.2 TEC shall confirm that the following documents and information have been provided in the tender. If any of these documents or information is missing, the Tender shall be rejected.</p> <p>(a) Tender Submission Letter;</p> <p>(b) Price Schedule;</p> <p>(c) Written confirmation of authorization to submit the Tender; and</p> <p>(d) Tender Security.</p>
42. Technical Examinations and Responsiveness	42.1 If a Tender is not responsive to the mandatory requirements set out in the e-TD by the TEC and shall not subsequently be made responsive by the Tenderer by correction of the material deviation, reservation or omission.
	<p>42.2 A responsive tender is one that conforms in all respects to the requirements of the e-TD without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:</p> <p>(a) affects in any substantial way the scope, quality, or performance of the Goods and related services and Tender's qualification mentioned in the e-TD; or</p> <p>(b) limits in any substantial way, or is inconsistent with the e-TD, the PE's rights or the Tenderer's obligations under the Contract; or</p> <p>(c) if rectified would unfairly affect the competitive position of other Tenderers presenting substantially responsive tenders.</p>
	42.3 There shall be no requirement as to the minimum number of responsive tenders.
	42.4 There shall be no automatic exclusion of tenders which are above or below the official estimate.
	<p>42.5 TEC will examine the adequacy and authenticity of the documentary evidence which may follow the order below:</p> <p>(a) verification of the completeness of the country of origin declaration in the Price Schedule for Goods and related services (Form e-PG3-3A and 3B) to determine the eligibility of the Goods and related services.</p> <p>(b) verification and examination of the documentary evidence and completed Specification Submission Sheet (Form e-PG3-4) to establish the conformity of the Goods and related services .</p> <p>(c) verification and examination of the documentary evidence that the Tenderer's qualifications conform to the e-TD and the Tenderer meets each of the qualification criterion specified in Sub-Section C, Qualification Criteria.</p>
	42.6 Provided that a tender is responsive, TEC may request that the Tenderer submit the necessary information or documentation through e-GP System within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the tender related to documentation requirements. Such omission shall not be related to

	any aspect of the rates of the tender reflected in the Price Schedule. Failure of the Tenderer to comply with the request may result in the rejection of its tender.
	<p>42.7 TEC may regard a Tender as responsive even if it contains;</p> <p>(a) minor or insignificant deviations which do not meaningfully alter or depart from the technical specifications, characteristics and commercial terms and, conditions or other mandatory requirements set out in the e-TD; or</p> <p>(b) errors or oversights, that if corrected, would not alter the key aspects of the Tender.</p>
43. Clarification on Tender	43.1 The TEC may ask Tenderers for clarifications of their Tenders through e-GP System, in order to facilitate the examination and evaluation of the Tenders.
	43.2 Any request for clarifications by the TEC shall not be directed towards making an apparently non-responsive Tender responsive and reciprocally the response from the concerned Tenderer shall not be articulated towards any addition, alteration or modification to its Tender.
	43.3 If a Tenderer does not provide clarifications of its Tender by the date and time, its Tender shall not be considered in the evaluation.
	43.4 Requests for clarification shall be through e-GP system and shall be sent only by the Chairperson of the TEC.
44. Restrictions on the Disclosure of Information Relating to the Procurement Process	44.1 Following the opening of Tenders until issuance of Notification of Award no Tenderer shall, unless requested to provide clarification to its Tender or unless necessary for submission of a complaint, communicate with the concerned PE.
	44.2 Tenderers shall not seek to influence in anyway, the examination and evaluation of the Tenders.
	44.3 Any effort by a Tenderer to influence a PE in its decision concerning the evaluation of Tenders, Contract awards may result in the rejection of its Tender as well as further action in accordance with Section 64 (5) of the Public Procurement Act 2006.
	44.4 All clarification requests shall remind Tenderers of the need for confidentiality and that any breach of confidentiality on the part of the Tenderer may result in their Tender being disqualified.
45. Financial Evaluation	45.1 TEC shall evaluate each Tender that has been determined, up to this stage of the evaluation, to be responsive to the mandatory requirements set in the e-TD.
	<p>45.2 . The TEC shall evaluate and compare the Tenders taking into account:</p> <p>(a) Lowest evaluated tender for each lot if Tender is “lot-by-lot” basis</p> <p>(b) Lowest evaluated tender for each item if Tender is “item-by-item” basis</p>
	45.3 Variations, deviations, and other factors which are in excess of the requirements of the e-TD or otherwise result in unsolicited benefits for the PE will not be taken into account in Tender evaluation.
	45.4 If so indicated in the ITT Sub Clause 23.2 the PE may award one or multiple lots to one Tenderer following the methodology specified in ITT Sub Clause 45.5.

	45.5 To determine the lowest-evaluated combination of lots, the TEC will take into account: the resources sufficient to meet the aggregate of the qualifying criteria for the individual lot;
46. Price Comparison	46.1 The TEC shall compare all responsive Tenders to determine the lowest-evaluated Tender, as stated under ITT Clause 45.
	46.2 In the extremely unlikely event that there is a tie for the lowest evaluated price, the Tenderer with the superior past performance with the PE shall be selected, whereby factors such as delivery period, quality of Goods delivered, complaints history and performance indicators could be taken into consideration.
	46.3 In the event that there is a tie for the lowest price and none of the Tenderer has the record of past performance with the PE, then the Tenderer shall be selected, subject to firm confirmation through the Post-qualification process described in ITT Clause 48, after consideration as to whether the quality of Goods that is considered more advantageous by the end-users.
	46.4 The successful Tenderer as stated under ITT Sub Clauses 46.1, 46.2 and 46.3 shall not be selected through lottery under any circumstances.
47. Negotiation	47.1 No negotiations shall be held during the Tender evaluation or award with the lowest or any other Tenderer.
48. Post-Qualification	48.1 After determining the lowest-evaluated responsive tender as sated under ITT Sub-Clause 46.1, the PE's TEC shall carry out the Post-Qualification of the Tenderer, using only the requirements specified in Sub-Section C, Qualification Criteria.
	48.2 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in rejection of the tenderer's tender, in which event the PE shall proceed to the next lowest evaluated tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily
	48.3 TEC may verify information contained in the Tender by visiting the premises of the Tenderer as a part of the post qualification process, if practical and appropriate.
49. PE's Right to Accept any or to Reject Any or All Tenders	49.1 PE reserves the right to accept any tender, to annul the tender proceedings, or to reject any or all tenders at any time prior to contract award, without thereby incurring any liability to Tenderers, or any obligations to inform the Tenderers of the grounds for the PE's action.
50. Rejection of All e-Tenders	50.1 PE may, in the circumstances as stated under ITT Sub-Clause 50.2 reject all Tenders following recommendations from the Evaluation Committee only after the approval of such recommendations by the Head of the PE
	50.2 All Tenders can be rejected, if - (a) the price of the lowest evaluated Tender exceeds the official estimate, provided the estimate is realistic; or (b) there is evidence of lack of effective competition; such as non-participation by a number of potential Tenderers; or (c) the Tenderers are unable to propose completion of the delivery within the stipulated time in its Tender, though the stipulated time is reasonable and realistic; or (d) all Tenders are non-responsive; or (e) evidence of professional misconduct, affecting seriously the Procurement process, is established pursuant to Rule 127 of the

	Public Procurement Rules, 2008.
	50.3 Notwithstanding anything contained in ITT Sub-Clause 50.2 Tenders may not be rejected if the lowest evaluated price is in conformity with the market price.
	50.4 PE may, on justifiable grounds, annul the Procurement proceedings prior to the deadline for the submission of Tenders.
51. Informing Reasons for Rejection	51.1 Notice of the rejection, will be given promptly within seven (7) working days of decision taken by the PE to all Tenderers and, the PE will, upon receipt of a request through e-GP System, communicate to any Tenderer the reason(s) for its rejection but is not required to justify those reason(s).
G. Contract Award	
52. Award Criteria	52.1 PE shall award the Contract to the Tenderer whose Tender is responsive to the e-TD and that has been determined to be the lowest evaluated Tender, provided further that the Tenderer is determined to be Post-Qualified as stated under ITT Clause 48.
	52.2 A Tenderer shall not be required, as a condition for award of contract to undertake obligations not stipulated in the e-TD, to change its price, or otherwise to modify its Tender.
53. PE's Right to Vary Quantities	53.1 PE reserves the right at the time of Contract Award to increase or decrease the quantity, per item, of Goods and related services originally specified in Price Schedule, provided this does not exceed the percentages indicated in the TDS, and without any change in the unit prices or other terms and conditions of the Tender and the e-TD.
54. Notification of Award (NOA)	54.1 Prior to the expiry of the Tender validity period and within seven (7) working days of receipt of the approval of the award by the Approving Authority, the PE shall issue the Notification of Award (NOA) to the successful Tenderer through e-GP System.
	54.2 NOA, attaching the contract as per the sample (Form e-PG3-7) to be signed, shall state: (a) the acceptance of the Tender by the PE; (b) the price at which the contract is awarded; (c) the amount of the Performance Security and its format; (d) the date and time within which the Performance Security shall be submitted; and (e) the date and time within which the contract shall be signed.
	54.3 NOA shall be accepted through e-GP System by the successful Tenderer within seven (7) working days from the date of issuance of NOA.
	54.4 If Tenders were invited for one (1) or more items on an 'Item-by-Item basis, contract will comprise the item(s) awarded to the successful Tenderer and only one (1) Contract will be signed with each successful Tenderer covering all items awarded to him or her.
	54.5 Until a formal contract is signed, the NOA shall constitute a Contract, which shall become binding upon the furnishing of a Performance Security and the signing of the Contract by both parties.
55. Performance Security	55.1 Performance Security shall be furnished by the successful Tenderer in the amount as specified in the TDS.
	55.2 Performance security will be issued by the bank registered with e-GP System on the request of the successful Tenderer. Bank shall

	immediately update the payment transaction information in the e-GP System.
	55.3 Upon instruction from the PE, the performance security will be credited in the PE's bank account as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
56. Form and Time Limit for furnishing of Performance security	56.1 The Performance Security shall be in the form of a Bank draft, pay order or an irrevocable Bank Guarantee in the format (Form e-PG3-9) as stated under ITT Clause 55, issued by any bank registered with the e-GP System.
	56.2 Within fourteen (14) days from the date of issuance of the NOA but not later than the date specified therein, the successful Tenderer shall furnish the Performance Security for the due performance of the Contract in the amount specified under ITT Sub Clause 55.1
57. Validity of Performance Security	57.1 The Performance Security shall be required to be valid until a date twenty-eight (28) days beyond the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations.
58. Contract Signing	58.1 At the same time as the PE issues the NOA, the PE shall send the draft Contract Agreement and all documents forming the Contract to the successful Tenderer.
	58.2 Within twenty-eight (28) days of the issuance of Notification of Award, the successful Tenderer and the PE shall sign the contract.
	58.3 Failure of the successful Tenderer to submit the Performance Security, as stated under ITT Sub-Clause 55, or sign the Contract, as stated under ITT Sub-Clause 58.2, shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the PE may award the Contract to the next lowest evaluated Tenderer, whose Tender is responsive and is determined by the TEC to be qualified to perform the Contract satisfactorily.
59. Publication of Notification of Award of Contract	59.1 NOA shall be published in the e-GP system.
60. Debriefing of Tenderers	60.1 The tenderer shall be debriefed through e-GP system by PE upon request without disclosing information about any other Tenderer.
	60.2 In the case of debriefing confidentiality of the evaluation process shall be maintained.
61. Right to Complain	61.1 Tenderer has the right to complain in accordance with the Public Procurement Act 2006 and the Public Procurement Rules, 2008.

Tender/Proposal Detail			
Tender/Proposal ID :	1016745	Invitation Reference No. :	18.11.0000.181.14.417.24.266
Closing Date and Time :	20-Nov-2024 16:00	Opening Date and Time :	20-Nov-2024 16:00
Procuring Entity :	Office of the Project Director of BRWTP1		
Brief :	BRWTP-G3A Modern training and campus management software including computers and electronic equipment.		

Instructions for completing Tender/Proposal Data Sheet are provided in italics in parenthesis for the relevant ITT clauses	
ITT Clause	Amendments of, and Supplements to, Clauses in the Instructions to Tenderers/Consultants

Name of STD :	e-PG3
Procurement Type :	Goods
Section :	General Conditions of Contract

.	
1. Definitions	<p>1.1 The following words and expressions shall have the meaning hereby assigned to them. Boldface type is used to identify the defined term:</p> <p>(a) Completion Schedule means the fulfilment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract;</p> <p>(b) Contract Agreement means the Agreement entered into between the PE and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein;</p> <p>(c) Contract Documents means the documents listed in the Contract Agreement, including any amendments thereto;</p> <p>(d) Contract Price means the price stated in the Notification of Award and thereafter as adjusted in accordance with the provisions of the Contract;</p> <p>(e) Day means calendar days unless otherwise specified as working days;</p> <p>(f) Delivery means the transfer of ownership of the Goods from the Supplier to the PE in accordance with the terms and conditions set forth in the Contract;</p> <p>(g) GCC mean the General Conditions of Contract;</p> <p>(h) Goods means raw materials, products and equipment and objects in solid, liquid or gaseous form, electricity, and related Services if the value of such Services does not exceed that of the Goods themselves ;</p> <p>(i) Government means the Government of the People's Republic of Bangladesh;</p>
	<p>(j) Procuring Entity (PE) means a Entity having administrative and financial powers to undertake Procurement of Goods, Works or Services using public funds, as specified in the PCC;</p>
	<p>(k) Related Services means Services linked to the supply of Goods contracts.;</p> <p>(l) PCC means the Particular Conditions of Contract;</p> <p>(m) Subcontractor means any natural 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;</p> <p>(n) Supplier means a Person under contract with a PE for the supply of Goods and related Services under the Act;</p>

	<p>(o) Site means the point(s) of delivery named in the PCC</p>
	<p>(p) Writing means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail.</p> <p>(q) Verified Report means the report submitted by the PE to the Head of the PE setting forth its findings as to the existence of grounds or causes for termination and explicitly stating its recommendation for the issuance of a Notice to Terminate.</p>
2. Contract Documents	<p>2.1 Subject to the order of precedence set forth in the GCC Sub-Clause 5.1, 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.</p>
3. Corrupt, Fraudulent, Collusive or Coercive (and obstructive in case of Development Partner) Practices	<p>3.1 The Government and the Development Partner requires that the Procuring Entity as well as the Supplier (including their manufacturers, sub-contractors, agents, personnel, consultants and service providers), shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of contracts under public funds. The Government requires that PE, as well as Suppliers, shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of contracts under public funds.</p> <p>3.2 For the purpose of GCC Sub-clause 3.3 the terms set forth below–</p> <p>(a) corrupt practice means offering, giving or promising to give, receiving, or soliciting, either directly or indirectly, to any officer or employee of a PE or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by a PE in connection with a Procurement proceeding or contract execution;</p> <p>(b) fraudulent practice means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;</p> <p>(c) collusive practice means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the PE, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, noncompetitive levels, thereby denying a PE the benefits of competitive price arising from genuine and open competition;</p> <p>(d) coercive practice means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in a Procurement proceeding or the execution of a Contract, and this will include creating obstructions in the normal submission process used for Tenders;</p> <p>(e) obstructive practice (applicable in case of Development Partner) means deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an 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.</p>
	<p>3.3 Should any corrupt, fraudulent, collusive, coercive practice (or</p>

	<p>obstructive practice in case of Development Partner) of any kind, in competing for or in executing the Contract, is determined by the Procuring Entity, then the Procuring Entity may, upon giving 14 days' notice to the Supplier, terminate the Supplier's employment under the Contract and the provisions of Clause 42 shall apply as if such expulsion had been made under sub-clause 42.1 (Termination for Default).</p>
	<p>3.4 If corrupt, fraudulent, collusive or coercive or obstructive (in case of Development Partners) practices of any kind determined by the Procuring Entity or the Development Partner against the Supplier alleged to have carried out such practices, the Procuring Entity and/or the Development Partner shall;</p> <p>a. exclude the Supplier from further participation in the particular Procurement proceeding; or</p> <p>b. declare, at its discretion, the Supplier to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time</p> <p>3.5 The Supplier shall be aware of the provisions on corruption, fraudulence, collusion, coercion and obstruction of the Public Procurement Act, 2006, the Public Procurement Rules, 2008 and in case of Development Partner financed contract, the Procurement Guidelines of the Development Partner.</p> <p>3.6 The Supplier (including its manufacturers, sub-contractors, agents, personnel, consultants and service providers) shall permit the Government and/or the Development Partner to inspect the Supplier's accounts and records and other documents relating to the submission of e-Tender and contract performance, and to have them audited by auditors appointed by the Government and/or the Development Partner, if so required</p>
4. Interpretation	<p>4.1 In interpreting the GCC, singular also means plural, male also means female or neuter, and the other way around. Headings in the GCC shall not be deemed part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract. Words have their normal meaning under the English language unless specifically defined.</p> <p>4.2 Entire Agreement (a) The Contract constitutes the entire agreement between the PE and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract Agreement; except those stated under GCC Sub Clause 5.1(i) .</p> <p>4.3 Amendment (a) 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 authorised representative of each party thereto</p> <p>4.4 Non-waiver (a) Subject to GCC Sub-Clause 4.4(b), 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.</p> <p>(b) Any waiver of a party's rights, powers, or remedies under the Contract</p>

	<p>must be in writing, dated, and signed by an authorised representative of the party granting such waiver, and must specify the right and the extent to which it is being waived</p> <p>4.5 Severability</p> <p>(a) 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.</p>
5.Documents Forming the Contract and the order of precedence	<p>5.1 The following documents forming the Contract shall be in the following order of precedence, namely :</p> <p>(a) Signed Contract Agreement;</p> <p>(b) e-Notification of Award;</p> <p>(c) completed e-Tender;</p> <p>(d) Particular Conditions of Contract;</p> <p>(e) General Conditions of Contract;</p> <p>(f) Technical Specifications and Compliance of Goods and related services</p> <p>(g) Drawings;</p> <p>(h) Price and Delivery Schedule for Goods;</p>
	(i) Price and Completion Schedule for Related Services;
	(j) Other Documents including correspondences listed in the PCC forming part of the Contract.
6.Eligibility	<p>6.1 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.</p> <p>6.2 All Goods and Related Services to be supplied under the Contract 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.</p>
8.Governing Law	8.1 The Contract shall be governed by and interpreted in accordance with the laws of the People's Republic of Bangladesh
9.No fees/ Gratuities	9.1 No fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the Tender or the contract, shall be given or received in connection with the procurement process or in the contract execution.
10.Use of Contract Documents and Information	10.1 The Supplier shall not, except for purposes of performing the obligations in this Contract, without the PE's prior written consent, disclose this Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the PE. Any such disclosure shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

	10.2 Any document, other than this Contract itself, enumerated in GCC Clause 10.1 shall remain the property of the PE and shall be returned (all copies) to the PE on completion of the Supplier's performance under this Contract if so required by the PE.
	.
11. Communications and Notices	11.1 Communications between Parties (notice, request or consent required or permitted to be given or made by one party to the other) pursuant to the Contract shall be in writing to the addresses specified in the PCC
	11.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later. 11.3 A Party may change its address for notice hereunder by giving the other Party notice of such change to the address
12. Trademark, Patent and Intellectual Property Rights	12.1 The PE should not be liable for any infringement of intellectual property rights arising from use of the goods procured. In case there are third-party claims of such infringement of patent, trademark, or industrial design rights, the supplier must indemnify and hold the PE free and harmless against such claims and shall not be in contravention of Trademark Act, 2009 and Patent and Design Act, 1911.
13. Copyright	13.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the PE by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the PE 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
14. Assignment of Rights	14.1 The Supplier shall not assign his rights or obligations under the Contract, in whole or in part, except with the PE's prior written consent
15. Sub contracting	15.1 Any subcontracting arrangements made during contract implementation and not disclosed at the time of the Tendering shall not be allowed. 15.2 Subcontracting of any portion of the GOODS shall not relieve the Tenderer from any liability or obligations that may arise from its performance. 15.3 Supplier shall retain full responsibility for the contract and can not pass any contractual obligations to the subcontractor and under no circumstances assignment of the contract to the subcontractor be allowed. 15.4 Subcontractors shall comply with the provisions of GCC Clause 3 and 6.
16. Supplier's Responsibilities	16.1 The Supplier shall supply all the Goods and Related Services specified in the Scope of Supply as stated under GCC Clause 18 and the Delivery and Completion schedule, as stated under GCC Clauses 23 and 24 in conformity with the provisions of the Contract Agreement
17. PE's Responsibilities	17.1 Whenever the performance of the obligations in this Contract requires that the Supplier obtain permits, approvals and other license from local public authorities, the PE may, if so needed by the Supplier, make its best effort to assist the Supplier in complying with such requirements in a timely and expeditious manner. However, the supplier shall bear the costs of such permits and/or licenses. On the other hand, the PE shall pay all costs involved in the performance of its responsibilities, in accordance with the contract.

	<p>17.2 The PE shall pay the Supplier, in consideration of the provision of Goods and Related Services, the Contract Price under the provisions of the Contract at the times and manner prescribed in the Contract Agreement.</p>
18.Scope of Supply	<p>18.1 Subject to the PCC, the Goods and Related Services to be supplied shall be as specified in e-PG3-3A and e-PG3-3B : Price and Delivery Schedule for Goods and Price and Completion Schedule for Related Services.</p>
	<p>18.2 Unless otherwise stipulated in the Contract, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.</p>
19.Amendment to Order	<p>19.1 The PE may make an amendment to Order for necessary adjustment within the general scope of the contract in any one or more of the following aspects in order to fully meet the requirement of the Contract:</p> <p>(a) Drawing, design or specifications of the goods, provided that:</p> <p>i. The goods to be furnished are to be specifically manufactured for the government in accordance therewith;</p> <p>ii. The change is an improvement of the goods and advantageous to the Government;</p> <p>iii. It is done at no extra cost; and</p> <p>iv. It is not prejudicial to the losing Tenderers in the sense that such change/s could not have been foreseen during the conduct of the tendering and would have significantly affected the other tenderer's tender;</p> <p>(b) The place of delivery;</p> <p>(c) The place of performance of the services;</p> <p>(d) Additional items needed and necessary for the protection of the goods procured, which were not included in the original contract.</p> <p>19.2 Such amendment may or may not result to an increase or a decrease of the contract price, and/or an extension or reduction of the delivery period. However, the amendment should not have the result of changing the subject matter of the contract or the specifications of the goods or services, in any material aspect and to such an extent that, if introduced during the Tendering stage, may have had a significant effect on other Tenderer's tender, because this situation would actually require another tendering activity.</p>
20.Instances When Amendment to Order May be Issued	<p>20.1 The PE may issue amendments order at any time during contract implementation, through a notice as stated under GCC Clause 11, provided that such adjustment is required to fully meet the requirements of the contract. Any of the following circumstances may serve as basis for such amendment/s:</p> <p>(a) Emergency cases, fortuitous events or unforeseen contingencies arising during contract implementation, and such contingencies have an impact on the procurement at hand, such as:</p> <p>i. Changes in the conditions affecting the contract, e.g., a change in the</p>

	<p>place of delivery;</p> <p>ii. Time is of the essence in the implementation of the contract, and any changes require immediate implementation; and</p> <p>iii. Additional requirements have been identified as necessary for the protection of the goods procured, such as changes in the packaging of the goods, or additional items have become necessary to ensure that the goods are sufficiently protected from the elements;</p> <p>(b) When the contract does not reflect the real intention of the parties due to mistake or accident, and the amendment is necessary to reflect the party's intention; and</p> <p>(c) Other analogous circumstances that could affect the conditions of the procurement at hand</p>
	.
21. Adjustments in Contract Price and/or Delivery Schedule in Amendment to Order	<p>21.1 If an amendment to order increases or decreases the cost of ,or the time required for executing any part of the delivery under the original contract, an equitable adjustment in contract price and/or delivery schedule should be mutually agreed upon between parties concerned, and the contract should be modified as stated under GCC Clause 46</p> <p>21.2 If the amendment to order consists of additional items, the price adjustment shall be based on the unit price in the original contract for items of goods similar to those in the original contract. If the contract does not contain any rate applicable to the additional items, then suitable prices shall be mutually agreed upon between the parties, based on prevailing market prices.</p> <p>21.3 It is required, however, that any increase in contract price must not exceed ten percent (10%) of the original contract price.</p>
22. Packing and Documents	<p>22.1 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 and in accordance with existing industry standards. 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.</p>
	<p>22.2 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 as stated under GCC Clause 22.1, including additional requirements, if any, specified in the PCC, and in any subsequent instructions ordered by the PE.</p>
	<p>22.3 The outer packaging must contain a "Packing List" which must reflect the actual contents of the package.gl</p>
23. Delivery and Documents	<p>23.1 Subject to GCC Sub-Clause 19, the Delivery of the Goods and completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section 6: Schedule of Requirements. The documents to be furnished by the Supplier shall be</p>

	specified in the PCC.
24. Acceptance	<p>24.1 Acceptance by the PE shall be processed not later than fourteen (14) days from receipt of the goods at final destination in the form of an Acceptance Certificate, unless any defects in the supply, any damage during transportation or any failure to meet the required performance criteria of the supply are identified and reported to the Supplier as stated under GCC Clause 31 and GCC Clause 32. In such cases the Acceptance Certificate will be issued only for those parts of the contract supplies which are accepted. The Acceptance Certificate for the remaining supplies will only be issued after the Supplier has remedied the defects and/or any non-conformity under GCC Clause 31 and GCC Clause 32.</p> <p>24.2 The appropriate Technical Inspection and Acceptance Committee of the PE must commence the inspection and acceptance process within twenty-four(24) hours from delivery of the goods, and shall complete the same as soon as practicable.</p>
25. Contract Price	25.1 The Contract Price shall be specified in the PCC.
	25.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the price as stated under GCC Sub-Clause 25.1, with the exception of any change in price resulting from a Change Order issued under GCC Clause 19, or if applicable, adjustments authorized in accordance with the price adjustment provision specified in the PCC.
26. Transportation	26.1 The Supplier is required under the Contract to transport the Goods to a specified place of destination as specified in Section 6: Schedule of Requirements, defined as the Site, transport to such place of destination, including insurance, other incidental costs, and temporary storage, if any. These costs shall be included in the Contract Price.
27. Terms of Payment	27.1 The Contract Price, including any Advance Payments, if applicable, shall be paid in the manner as specified in the PCC.
	27.2 The Supplier's request for payment shall be made to the PE in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and Related Services performed, and accompanied by the documents as stated under GCC Clause 23 and 24 and upon fulfilment of any other obligations stipulated in the Contract.
	27.3 Payments shall be made promptly by the PE, but in no case later than the days indicated in the PCC after submission of an invoice or request for payment by the Supplier, and after the PE has accepted it.
	27.4 Payment shall be made to the Supplier under this Contract shall be in Bangladeshi Taka.
	27.5 In the event that the PE fails to pay the Supplier any payment by its respective due date or within the period set forth in the PCC, the PE shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the PCC, for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.
28. Insurance	28.1 The Goods supplied under this Contract shall be fully insured by the Supplier in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery. The Goods remain at the risk and title of the Supplier until their final acceptance by the PE.
29. Taxes and Duties	29.1 The Supplier shall be entirely responsible for all taxes, duties, license fees, and other such levies imposed or incurred until delivery of the

	contracted goods to the PE.
30. Performance Security	<p>30.1 The proceeds of the Performance Security shall be payable to the PE as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.</p> <p>30.2 The Performance Security shall be discharged by the PE and returned to the Supplier not later than Thirty (30) days following the date of Completion of the Supplier's performance obligations under the Contract and the issuance of certification to that effect by the PE, including any warranty obligations as stated under GCC Clause 33, unless specified otherwise in the PCC, provided that there are no claims filed against the supplier.</p>
31. Specifications and Standards	<p>31.1 The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section 7, Technical Specification and in Section 8, Drawings, if any.</p> <p>31.2 If there is no applicable standard, the goods must conform to the authoritative standards appropriate to the good's country of origin. Such standards must be the latest issued by the concerned institution.</p> <p>31.3 Subject to the GCC Clause 19, 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 PE, by giving a notice of such disclaimer to the PE.</p> <p>31.4 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 Technical Specification. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the PE and shall be treated under GCC Clause 19.</p>
32. Inspections and Tests	<p>32.1 The PE shall have the right to test the Goods to confirm their conformity to the Contract specifications. The PCC and Technical specifications shall specify what tests the PE requires and where they are to be conducted. The supplier shall at its own expense and at no cost to the PE, carry out all such tests of the Goods and related services as are specified in the Contract.</p>
	<p>32.2 The Supplier shall provide the PE with a report of the results of any such test.</p> <p>32.3 The PE may engage external agents for the purpose of conducting inspection of Goods, provided that the PE shall bear all of its costs and expenses.</p> <p>32.4 The PE or its designated representative as specified shall be entitled to attend the tests and/or inspections under GCC Clause 32.1, provided that the PE shall bear all of its own costs and expenses incurred in connection with such attendance.</p> <p>32.5 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 PE. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the PE or its designated representative to attend the test and/or inspection.</p> <p>32.6 The PE may require the Supplier to carry out any test and/or inspection not required by the Contract, but deemed necessary to verify</p>

	<p>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 impede 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.</p> <p>32.7 The PE 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 PE, and shall repeat the test and/or inspection, at no cost to the PE, upon giving a notice under GCC Sub-Clause 32.5.</p> <p>32.8 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 PE or its representative, nor the issue of any report as stated under GCC Sub-Clause 32.2, shall relieve the Supplier from any warranties or other obligations under the Contract.</p>
33. Warranty	<p>33.1 The Supplier warrants that all the Goods supplied under the Contract are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, except when the design and/or material required by the PE provides otherwise under GCC Clause 19.</p> <p>33.2 The Supplier further warrants that the all Goods supplied under this Contract shall have no defect, arising from design, materials, or workmanship or from any act or omission of the Supplier that may develop under normal use of the supplied Goods in the conditions prevailing in Bangladesh.</p>
	<p>33.3 In order to assure that manufacturing defects shall be corrected by the Supplier, manufacturer, or distributor, as the case may be, a warranty shall be required from the Supplier for a minimum period of three (3) months, in the case of supplies, and one (1) year, in the case of equipment, after performance of the contract or other such period as may be specified in the PCC.</p>
	<p>33.4 The warranty periods may vary among the various items and lots. The warranty for Goods delivered ahead will lapse earlier than the succeeding deliveries.</p> <p>33.5 The PE shall promptly notify the Supplier in writing of any claims arising under this warranty.</p>
	<p>33.6 Upon receipt of such notice, the Supplier shall, within the period specified in the PCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the PE.</p>
	<p>33.7 If the Supplier, having been notified, fails to remedy the defect(s) within the period as stated under GCC Sub Clause 33.6, the PE may proceed to call upon the Performance security without prejudice to any other rights which the PE may have against the Supplier under the Contract and under the applicable law.</p> <p>33.8 Performance Security under GCC Clause no 30 shall only be released after the lapse of the warranty period, provided that the goods supplied are free from patent and latent defects and all the conditions imposed under the contract have been fully met.</p>

	<p>(a) A patent defect, which is one that is apparent to the buyer on normal observation. It is an apparent or obvious defect.</p> <p>i. For example, a ball pen that does not write is patently defective.</p> <p>(b) A latent defect, which is one that is not apparent to the buyer by reasonable observation. A latent defect is “hidden” or one that is not immediately determinable.</p> <p>i. For example, a ball pen that writes .75 kilometers instead of the expected 1.5 kilometers, has a latent defect.</p>
34. Delays in Delivery and Extensions of Time	<p>34.1 The Supplier must deliver the Goods or perform the services procured within the period prescribed by the PE, as specified in the Contract.</p> <p>34.2 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 as stated under GCC Clause 23, the Supplier shall promptly notify the PE in writing. It must state therein the cause/s and duration of the expected delay. The PE shall decide whether and by how much to extend the time. In all cases, the request for extension should be submitted before the lapse of the original delivery date.</p> <p>34.3 Within twenty-one (21) days of receipt of the Supplier’s notice, the PE shall evaluate the situation and may grant time extensions, if based on justifiable grounds, without liquidated damages.</p> <p>34.4 The Procuring may extend up to twenty percent (20%) of the original contract time, above 20% of the original contract time approval of Head of PE (HOPE) shall be required, in which case the extension shall be ratified by the Parties by amendment of the Contract as stated under GCC Clause 46.</p> <p>34.5 Except in the case of Force Majeure, as provided under GCC Clause 38, 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 as stated under GCC Clause 35, unless an extension of time is agreed upon, under GCC Sub-Clause 34.3.</p>
35. Liquidated Damages	<p>35.1 Subject to GCC Clause 34 and 38, if the Supplier fails to complete the delivery of Goods and related services within the Delivery and Completion Schedule specified in the contract or as extended, the Procuring Entity shall, as Liquidated Damages or Delay Damages, deduct from the Contract Price, a sum at the percent-rate per day of delay as specified in the PCC, of the contract value of the undelivered Goods and related services or part thereof delivered after the Delivery and Completion Schedule or as extended. The total amount of Liquidated Damages or Delay Damages shall not exceed the amount specified in the PCC. The Procuring Entity may deduct Liquidated damages from payments due to the Supplier. Payment of Liquidated damages shall not affect the Supplier’s liabilities.</p>
	-
36. Limitation of Liability	<p>36.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement of patent and intellectual property rights, if applicable, the Supplier shall not be liable to the PE, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use,</p>

	<p>loss of production, or loss of profits or interest costs, the aggregate liability of the Supplier to the PE 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 pay liquidated damages to the PE.</p>
37. Change in Laws and Regulations	<p>37.1 Unless otherwise specified in the Contract, if after the Contract, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in Bangladesh (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, under GCC Clause 25</p>
38. Definition of Force Majeure	<p>38.1 In this Clause, "Force Majeure" means an exceptional event or circumstance:</p> <ul style="list-style-type: none"> (a) which is beyond a Party's control; (b) which such Party could not reasonably have provided against before entering into the Contract; (c) which, having arisen, such Party could not reasonably have avoided or overcome; and (d) which is not substantially attributable to the other Party. <p>38.2 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:</p> <ul style="list-style-type: none"> (i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies; (ii) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war; (iii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel; (iv) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and (v) natural catastrophes such as cyclone, hurricane, typhoon, tsunami,

	<p>storm surge, floods, earthquake , landslides, fires, epidemics, quarantine restrictions, or volcanic activity;</p> <p>(vi) freight embargoes;</p> <p>(vii) acts of the Government in its sovereign capacity.</p>
39. Notice of Force Majeure	<p>39.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.</p> <p>39.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.</p> <p>39.3 Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.</p>
40. Duty to Minimise Delay	<p>40.1 Each Party shall at all times use all reasonable endeavours to minimise any delay in the performance of the Contract as a result of Force Majeure.</p> <p>40.2 A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.</p>
41. Consequences of Force Majeure	<p>41.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.</p> <p>41.2 The PE may suspend the delivery or contract implementation, wholly or partly, by written order for a certain period of time, as it deems necessary due to force majeure as defined in the contract.</p> <p>41.3 Delivery made either upon the lifting or the expiration of the suspension order. However, if the PE terminates the contract as stated under GCC clause 42, resumption of delivery cannot be done.</p> <p>41.4 Head of PE determines the existence of a force majeure that will be basis of the issuance of suspension of order.</p> <p>41.5 Adjustments in the delivery or contract schedule and/or contract price, Including any need to modify contract under GCC Clause 46.</p>
42. Termination for Default	<p>42.1 The PE shall terminate this Contract for default when any of the</p>

following conditions attends its implementation:

(a) Outside of force majeure, the Supplier fails to deliver or perform any or all of the GOODS within the period(s) specified in the contract, or within any extension thereof granted by the PE pursuant to a request made by the Supplier prior to the delay;

(b) As a result of force majeure, the Supplier is unable to deliver or perform any or all of the GOODS, amounting to at least ten percent (10%) of the contract price, for a period of not less than sixty (60) calendar days after receipt of the notice from the PE stating that the circumstance of force majeure is deemed to have ceased; or

(c) The Supplier fails to perform any other obligation under the Contract;

(d) If the Supplier, in the judgment of the PE has engaged in corrupt, fraudulent, collusive or coercive practices, as stated under GCC Clause 3, in competing for or in executing the Contract;

(e) When deductible amount due to liquidated damage reaches its maximum as stated under GCC Clause 35.

42.2 Termination of a contract for default is without prejudice to other remedies available to the PE for breach of contract, such as payment of liquidated and other damages, if there are grounds for the latter.

42.3 In the event the PE terminates the Contract in whole or in part, as stated under GCC Clause 42.1, the PE 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 PE 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.

42.4 In the event as stated under GCC Clause 42.1(d), the PE shall,

(a) terminate the Supplier's employment under the Contract and cancel the contract, after giving 14 days notice to the Supplier and the provisions of Clause 42 shall apply as if such expulsion had been made under Sub-Clause 42.1

(b) declare, at its discretion, the concerned Person to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time.

43. Termination for insolvency

43.1 The PE shall terminate this Contract if the Supplier is declared bankrupt or insolvent as determined with finality by a court of competent jurisdiction. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the PE

	and/or the Supplier.
44. Termination for Convenience	<p>44.1 The PE, by written notice sent to the supplier, may terminate this Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that the termination is for the PE's convenience, the extent to which performance of the supplier under the contract is terminated, and the date upon which such termination becomes effective.</p> <p>44.2 Any of the following circumstances may constitute sufficient grounds to terminate a contract for conveniences :</p> <p>(a) If Physical and economic conditions have significantly changed so as to render the contract no longer economically, financially or technically feasible, as determined by the Head of PE;</p> <p>(b) The Head of PE has determined the existences of conditions that make contract implementation impractical and/or unnecessary, such as, but not limited to , fortuitous event/s, change in laws and government policies;</p> <p>(c) Funding for the contract has been withheld or reduced;</p> <p>(d) Any circumstances analogous to the foregoing.</p> <p>44.3 The GOODS that have been delivered and/or performed or are ready for delivery or performance within thirty (30) calendar days after the Supplier's receipt of Notice to Terminate shall be accepted by the PE at the contract terms and prices. For GOODS not yet performed and/or ready for delivery, the PE may elect:</p> <p>(a) to have any portion delivered and/or performed and paid at the contract terms and prices; and/or</p> <p>(b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed and/or performed goods and for materials and parts previously procured by the Supplier.</p>
45. Procedures for Termination of Contracts	<p>45.1 The following provisions shall govern the procedures for termination of this Contract as stated under GCC Clauses 42,43 and 44:</p> <p>(d) Upon receipt of a written report of acts or causes which may constitute ground(s) for termination as aforementioned, or upon its own initiative, the PE shall, within a period of seven (7) calendar days, verify the existence of such ground(s) and cause the execution of a Verified Report, with all relevant evidence attached;</p> <p>(e) Upon recommendation by the PE, the Head of the PE shall terminate this Contract only by a written notice to the Supplier conveying the termination of this Contract. The notice shall state:</p> <p>i. that this Contract is being terminated for any of the ground(s) aforementioned, and a statement of the acts that constitute the ground(s) constituting the same;</p>

- ii. the extent of termination, whether in whole or in part;
 - iii. an instruction to the Supplier to show cause as to why this Contract should not be terminated; and
 - iv. special instructions of the PE, if any.
- (f) The Notice to Terminate shall be accompanied by a copy of the Verified Report;
- (g) Within a period of seven (7) calendar days from receipt of the Notice of Termination, the Supplier shall submit to the Head of the PE a verified position paper stating why this Contract should not be terminated. If the Supplier fails to show cause after the lapse of the seven (7) day period, either by inaction or by default, the Head of the PE shall issue an order terminating this Contract;
- (h) The PE may, at anytime before receipt of the Supplier's verified position paper to withdraw the Notice to Terminate if it is determined that certain items or works subject of the notice had been completed, delivered, or performed before the Supplier's receipt of the notice;
- (i) Within a non-extendible period of ten (10) calendar days from receipt of the verified position paper, the Head of the PE shall decide whether or not to terminate this Contract. It shall serve a written notice to the Supplier of its decision and, unless otherwise provided, this Contract is deemed terminated from receipt of the Supplier of the notice of decision. The termination shall only be based on the ground(s) stated in the Notice to Terminate; and
- (j) The Head of the PE may create a Contract Termination Review Committee (CTRC) to assist him in the discharge of this function. All decisions recommended by the CTRC shall be subject to the approval of the Head of the PE.

46. Contract Amendment	<p>46.1 Subject to applicable laws, no variation in or modification of the terms of this Contract shall be made except by written amendment signed by the parties.</p> <p>46.2 The PE, in accordance with their Delegation of Financial Powers, may amend the Contract to reflect the changes introduced to the Original terms and Conditions of the Contract.</p>
47. Settlement of Disputes	<p>47.1 Amicable Settlement:</p> <p>(a) The PE and the Supplier shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.</p> <p>47.2 Adjudication</p>

	<p>(a) If the Supplier /PE believe that amicable settlement of dispute is not possible between the two parties, the dispute shall be refereed to the Adjudicator within fourteen (14) days of first written correspondence on the matter of disagreement;</p>
	<p>(b) The arbitration shall be conducted in accordance with the Arbitration Act (Act No 1 of 2001) of Bangladesh as at present in force and in the place shown in the PCC.</p>
	<p>(c) The Adjudicator shall give its decision in writing to both parties within twenty-eight (28) days of a dispute being referred to it;</p> <p>(d) The supplier shall make all payments (fees and reimbursable expenses) to the Adjudicator, and the PE shall reimburse half of these fees through the regular progress payments;</p> <p>(e) Should the Adjudicator resign or die, or should the PE and the Supplier agree that the Adjudicator is not functioning in accordance with the provisions of the Contract; a new Adjudicator will be jointly appointed by the PE and the Supplier. In case of disagreement between the PE and the Supplier the Adjudicator shall be designated by the Appointing Authority designated in the PCC at the request of either party, within fourteen (14) days of receipt of a request from either party.</p>
	<p>47.3 Arbitration</p> <p>(a) If the Parties are unable to reach a settlement under GCC Clause 47.1(a) within twenty-eight (28) days of the first written correspondence on the matter of disagreement, then either Party may give notice to the other party of its intention to commence arbitration in accordance with GCC Sub-Clause 47.3(b);</p>
	<p>(b) The arbitration shall be conducted in accordance with the Arbitration Act (Act No 1 of 2001) of Bangladesh as at present in force and in the place shown in the PCC.</p>

Tender/Proposal Detail			
Tender/Proposal ID :	1016745	Invitation Reference No. :	18.11.0000.181.14.417.24.266
Closing Date and Time :	20-Nov-2024 16:00	Opening Date and Time :	20-Nov-2024 16:00
Procuring Entity :	Office of the Project Director of BRWTP1		
Brief :	BRWTP-G3A Modern training and campus management software including computers and electronic equipment.		

Particular Conditions of Contract		
PCC Clause		
.		
1. Definitions		
(j) Procuring Entity (PE) means a Entity having administrative and financial powers to undertake Procurement of Goods, Works or Services using public funds, as specified in the PCC;		
The PE is [Md. Ayub Ali, Office of the Project Director of BRWTP1,		
Address	: 141-143, Motijheel, Dhaka-1000	
City	: Dhaka	
Thana	: Dhaka South City Corporation	
District	: Dhaka - 1000	
Country	: Bangladesh	
] The Development Partner is [World Bank]		
(o) Site means the point(s) of delivery named in the PCC		
Sl. No	Site location	Site detailed information
1	DEPTC, Narayanganj, BIWTA.	DEPTC, Narayanganj, BIWTA.
5.Documents Forming the Contract and the order of precedence		
(i) Price and Completion Schedule for Related Services;		
Sl. No	Other documents forming part of the Contract	
1	The following documents shall also be part of the Contract: I. Signed Tender Submission sheet, II. Photocopy of Bank Guarantee (Performance Security) ` III. Technical Documents.	
.		
11. Communications and Notices		
11.1 Communications between Parties (notice, request or consent required or permitted to be given or made by one party to the other) pursuant to the Contract shall be in writing to the addresses specified in the PCC		
The PE""""s address for the purpose of communications under this contract is [19th floor, BSC Tower, Motijheel, Dhaka-1000]		
18.Scope of Supply		

18.1 Subject to the PCC, the Goods and Related Services to be supplied shall be as specified in e-PG3-3A and e-PG3-3B : Price and Delivery Schedule for Goods and Price and Completion Schedule for Related Services.

Sl. No	The scope of Supply
1	Price and Delivery Schedule for Goods and Price and Completion Schedule for Related Services are mentioned in e-PG3-3A and e-PG3-3B

22. Packing and Documents

22.2 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 as stated under GCC Clause 22.1, including additional requirements, if any, specified in the PCC, and in any subsequent instructions ordered by the PE.

Sl. No	The packages packing, marking and documentation
1	The packing, marking and documentation within and outside the packages shall be: A complete packing list indicating the content of each package shall be enclosed in a water proof envelope and shall be secured to the outside of the packing case. In addition, each package shall be marked with indelible ink/paint in bold letters, as follows: BIWTA i. Name and address of Procuring Entity ii. Name of the Supplier iii. Contract Description iv. Final Destination/Delivery Point v. Gross weight vi. Package number of total number of packages vii. Brief description of the content viii. Any special lifting instructions ix. Any special handling instructions Upright markings, where appropriate, shall be placed on all four vertical sides of the package. All materials used for packing shall be environmentally neutral.

23. Delivery and Documents

23.1 Subject to GCC Sub-Clause 19, the Delivery of the Goods and completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section 6: Schedule of Requirements. The documents to be furnished by the Supplier shall be specified in the PCC.

Sl. No	The documents to be furnished by the Supplier
1	The documents to be furnished by the Supplier shall be as follows: a. Copies of Suppliers invoice showing goods description, quantity, unit price, total amount; b. Delivery note, railway receipt, or truck receipt (if any); c. Manufacturer or Manufactures agent/dealer/supplier warranty certificate; d. Certificate of origin from manufacturer/manufacturers authorized agent/ dealer/distributor of supplied goods. e. Import document (bill of lading, L/C papers, Customs clearance documents etc) (if any); f. copies of the packing list identifying the contents of each package; g. Inspection certificate issued by the representative(s) of Purchasers that the goods supplied are new and original h. Receiving certificate after completion of the supply issued by the representative(s) of Purchasers

25. Contract Price

25.1 The Contract Price shall be specified in the PCC.

The original Contract price is [104894201.968]

25.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the price as stated under GCC Sub-Clause 25.1, with the exception of any change in price resulting from a Change Order issued under GCC Clause 19, or if applicable, adjustments authorized in accordance with the price adjustment provision specified in the PCC.

The Prices charged for the Goods supplied and the Related services performed shall not be adjustable.

27. Terms of Payment

27.1 The Contract Price, including any Advance Payments, if applicable, shall be paid in the manner as specified in the PCC.

Advance Amount Percentage	Days to Complete Advance Payment	On Delivery and Acceptance Percentage	On Delivery and Acceptance Due Date supported by the Acceptance Certificate issued by the PE
0.000	0	100.000	30

27.3 Payments shall be made promptly by the PE, but in no case later than the days indicated in the PCC after submission of an invoice or request for payment by the Supplier, and after the PE has accepted it.

Payments shall be made in no case later than the days [[60]] after submission of an invoice or request for payment by the Supplier, and after the PE has accepted it

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

Payment-delay period	Payment-delay percentage
60	1.000

32. Inspections and Tests

32.1 The PE shall have the right to test the Goods to confirm their conformity to the Contract specifications. The PCC and Technical specifications shall specify what tests the PE requires and where they are to be conducted. The supplier shall at its own expense and at no cost to the PE, carry out all such tests of the Goods and related services as are specified in the Contract.

Goods	Type of test	Time or milestone	Place	Procedure
All goods	Functionality	2 days	DEPTC, Narayanganj, BIWTA.	The purchaser or its representative(s) shall have the right to inspect and/or test the goods to confirm their conformity to the contract. A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods. All inspection cost will be borne by the supplier including travelling, and fooding.

33. Warranty

33.3 In order to assure that manufacturing defects shall be corrected by the Supplier, manufacturer, or distributor, as the case may be, a warranty shall be required from the Supplier for a minimum period of three (3) months, in the case of supplies, and one (1) year, in the case of equipment, after performance of the contract or other such period as may be specified in the PCC.

The period of validity of the Warranty shall be [730] days

33.6 Upon receipt of such notice, the Supplier shall, within the period specified in the PCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the PE.

The Supplier shall correct any defects covered by the Warranty within [14] of days of being notified by the PE of the occurrence of such defects.

35. Liquidated Damages

35.1 Subject to GCC Clause 34 and 38, if the Supplier fails to complete the delivery of Goods and related services within the Delivery and Completion Schedule specified in the contract or as extended, the Procuring Entity shall, as Liquidated Damages or Delay Damages, deduct from the Contract Price, a sum at the percent-rate per day of delay as specified in the PCC, of the contract value of the undelivered Goods and related services or part thereof delivered after the Delivery and Completion Schedule or as extended. The total amount of Liquidated Damages or Delay Damages shall not exceed the amount specified in the PCC. The Procuring Entity may deduct Liquidated damages from payments due to the Supplier. Payment of Liquidated damages shall not affect the Supplier's liabilities.

Liquidated Damages for the uncompleted Works or any part per day of delay (%)	The maximum amount of Liquidated Damages (%)
0.100	10.000

.

47. Settlement of Disputes

(b) The arbitration shall be conducted in accordance with the Arbitration Act (Act No 1 of 2001) of Bangladesh as at present in force and in the place shown in the PCC.

Adjudicator Name *	Fees *	The name of the appointing authority of the Adjudicator *
Chairman, BIWTA.	20000.000	PIU BRWTP-1, BIWTA.

(b) The arbitration shall be conducted in accordance with the Arbitration Act (Act No 1 of 2001) of Bangladesh as at present in force and in the place shown in the PCC.

The arbitration shall be conducted in the place mentioned below;
[Office of the chairman, BIWTA.]

Package Detail	
Package No.:	BRWTP-G3A
Package Description:	Modern training and campus management software including computers and electronic equipment.

e-Tender Submission Letter (Form e-PG3 1)

Table Name :	
Description	Tenderer's Response
<p>We, the undersigned, offer to supply the Goods and related Services in conformity with the Conditions of Contract and associated Contract documents and e-TD. In signing this letter in the form of e-Signature/Digital Signature (by clicking on a Final Submission button, Tenderer is signing this e-Tender submission document), and in submission of our e-Tender, we also confirm that: a) Our Tender shall be valid for the period stated in the Tender Data Sheet and it shall remain binding upon us and may be accepted at any time before the expiration of that period. b) If our Tender is accepted, we commit to furnishing a Performance Security in the amount stated in the Tender Data Sheet in the form stated in Tender Data Sheet and valid for a period of 28 days beyond the date of completion of our performance obligations. c) We have examined and have no reservations to the e-TD including Addendum issued in accordance with the instructions to Tenderer. d) We, declare that we are not associated, nor have been associated in the past, directly or indirectly, with a consultant or any other entity that has prepared the design, specifications and other documents. e) We, including any manufacturer or subcontractor for any part of the contract have or will have nationalities from eligible countries, in accordance with ITT 5.1. f) We, our affiliates or subsidiaries, including any of our manufacturer or subcontractors for any part of the contract, have not been declared ineligible by the Government of Bangladesh or the Development Partner, under the laws of Bangladesh or official regulations or by an act of compliance with a decision of the United Nations Security Council on charges of engaging in corrupt, fraudulent, collusive, coercive or obstructive practices in accordance with ITT sub-clause 5.7. g) Furthermore, we are aware of ITT concerning such practices and pledge not to indulge in such practices in competing for or in executing the Contract. h) We, confirm that we do not have a record of poor performance as stated in ITT sub-clause 5.8, and that we do not have, or have had, any litigation against us, other than that stated in the Tenderer Information (e-PG3-2) i) We, confirm that we do not have a record of insolvency, receivership, bankrupt or being wound up, our business activities were not been suspended, and it was not been the subject of legal proceedings in accordance with ITT sub-clause 5.9. j) We, confirm that we have fulfilled our obligations to pay taxes and social security contributions applicable under the relevant national laws and regulations of Bangladesh in accordance with ITT sub-clause 5.10 k) We, including any manufacturer or subcontractor for any part of the contract, do not have any conflict of interest in accordance with ITT sub-clause 5.6. l) We understand that your Notification of Award through e-GP system shall become a binding Contract between us, until a formal Contract is prepared and executed. m) We understand that you reserve the right to accept or reject any Tender, to cancel the Tender proceedings, or to reject all Tenders, without incurring any liability to Tenderers., n) The total price of our Tender is mentioned in the summary of Price Schedules as auto generated by the e-GP system</p>	<div></div>
Attachment 1: Scanned copy of written confirmation authorising the above signatory to submit the Tenderer, in accordance with ITT Sub-Clause 35.4.	

Tenderer Information Form (e-PG3-2)

Tenderer's profile information will come from the e-GP System.

A. Individual Tenderers

Table Name :	
1. Litigation History:	
Litigation history shall comply with the requirement as specified in ITT 16.1(b)	
Description (to be filled by Tenderer)	
<div></div>	

Table Name : 2. Qualification Information of the Tenderer:

Description	Tenderer's Response
2.1 Number of years of general experience of the Tenderer in the supply of goods and related services as stated under ITT Sub-Clause 15.1(a):	
2.2 Number of completed supply contracts in the supply of similar goods and related services of required value within the period as stated under ITT Sub-Clause 15.1(b):	
a) Number of Contracts:	
b) Value of the Contracts:	
c) Period of the Contract:	
2.3 The supply and/or production capacity of Goods, if applicable, as stated under ITT Sub-Clause 15.1.(c)	
2.4 Availability of liquid assets i.e. working capital or credit line(s) from any Scheduled Bank, net of other contractual commitments as stated under ITT Clause 16.1(b)	

Technical Specifications and Compliance of Goods and related services (Form e-PG3-4)

Notes on Technical Specifications:

Note 1:

[The PE shall follow the Rule 29 of Public Procurement Rule, 2008 while preparing the Technical Specifications of the Goods]

[A set of precise and clear specifications is a prerequisite for Tenderes to respond realistically and competitively to the requirements of the PE. In the context of Competitive Tender, the specifications must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness and economy in procurement be realized, responsiveness of Tenders be ensured, and the subsequent task of Tender evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials]

Note 2:

[The PE must explain in clear terms the exact Technical Specification and any relevant National or International Standards which have to be followed for the manufacture and supply of the goods or related services. Technical Specifications shall specify what inspection and/or tests the PE requires and where they are to be conducted]

Note 3:

Keep the same Item no. in price schedule and technical specification form.

Table Name :

Item No.	Name of Goods	Detailed Technical Specification and Standards required	Inspection and/or tests required and test place	Country of Origin	Make, and Model or Brand (when applicable)	Full Detailed Technical Specifications and Standards offered
1	Wireless Microphone System (Hand Held) 01 set	MICROPHONE: Hand Held Mic- 04 RF OUTPUT POWER: 22 mw (Max) MODULATION MODE: UHF MICROPHONE ELEMENT: Dynamic Super Cardiod CARRIER FREQUENCY: 200 Multi Frequency BATTERY LIFE: 6-8 hrs depend on battery quality DIMENSIONS Hand mic ? 52 X L242 mm. Body Pack ? W63 x H33 x D100 RECEIVER: AUDIO OUTPUT Balanced 0-50mv Unbalanced HI: 0-80mv; LO: 0-25mv FREQUENCY	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		<p>RESPONSE 50-16000 Hz POWER REQUIRED 240V AC 50Hz for Adapter CONTROLS Power ON/OFF Switch, Audio Output Volume Control for each channel OPERATING RANGE (APPROX.) 50 ~ 150 Meters Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>			
2	Wireless Microphone System (Head Mic) (01 Set)	<p>MICROPHONE: Body Pack + 04 Head Mic RF OUTPUT POWER: 20 mW (Max) MODULATION MODE: UHF MICROPHONE ELEMENT: Dynamic Super Cardioid CARRIER FREQUENCY: 700 ~ 800MHz BATTERY LIFE: 6-8 hrs depend on battery quality DIMENSIONS: Hand mic ? ◆52 X L242 mm. Body Pack: W63 x H33 x D100 RECEIVER: Single Channel System AUDIO OUTPUT: Balanced 0-50mV Unbalanced HI: 0-80mV; LO: 0-25mV FREQUENCY RESPONSE: 50-16000 Hz POWER REQUIRED 240V AC 50Hz for Adapter CONTROLS: Power ON/OFF Switch Audio Output Volume Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods		
3	16 Channel Professional Mixer (01 Set)	<p>Carrier Wave Frequency Range: 863.1MHz to 864.9MHz Oscillation Mode: Quartz Controlled Fixed Frequency Carrier Wave Stability: 10PPM Sensitivity: -105dB@sinad=12dB S/N Ratio: >105dB T.H.D: < 0.5%@1KHz Image Rejection: 85dB typical Spurious Rejection: 85dB typical Frequency Responses: 4Hz~18KHz Working Distance: 200 fee Support 2 groups output, and 2 AUX (including FX) Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods		
4	Audio Processor: Digital Sound Processor (01 Set)	<p>Digital Sound Processor Echo & Reverb / Chorus separate section to use separately or mixed mode. Individual Control. Echo Switch to select 3 modes Echo and mixed 2 modes. Reverb / Chorus ? Depth & Duration Controls (Parameter). Input 2 Mic. & Aux IN / OUT. Output level LCD display. Bass & Treble Effects. Effects On / Off Switch. Option to operate direct Mic. through Mixer Power Supply: AC 220V 50 Hz. Dimension: 428 (W) x 208 (D) x 105 (H) mm. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required Dimension: 428 (W) x 208 (D) x 105 (H) mm. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods		
5	Two-Way Full Range Speaker (06	<p>15" High-Power Two-Way Loudspeaker Light-weight and very high-power. 75◆x</p>	A committee consisting of 5 (five)		

	Set)	50❖coverage. Bi-amplified or full-range passive operation. 800 watts continuous, 1600 watts program and 3200 watts peak Dual-angle pole socket for applications requiring tripod mounting. Flying version available with five suspension points. May be used with optional M10 eyebolts or detachable track fittings. Differential Drive❖ woofer with neodymium magnet for high power capacity and very light-weight. 3 in. (voice-coil) compression driver with neodymium magnet. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
6	Professional Speaker Bracket (06 Set)	Professional Speaker Bracket (Wall Mount) Local	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
7	Professional Stereo Digital Power Amplifier (05 Set)	2 temperature-dependant variable speed fans 2RU rack mountable amp designed for live sound reinforcement applications such as for parties, clubs, and concerts. The amplifier is capable of outputting 4080W bridged at 4Ω, 2040W per channel at 4Ω, and 1250W per channel at 8Ω with a frequency response of 10 to 100,000 Hz. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
8	Professional Stage Speaker (02 Set)	15" High-Power Two-Way Loudspeaker Light-weight and very high-power. 75❖x 50❖coverage. 800 watts continuous, 1600 watts program and 3200 watts peak Bi-amplified or full-range passive operation. Dual-angle pole socket for applications requiring tripod mounting. Flying version available with five suspension points. May be used with optional M10 eyebolts or detachable track fittings. Differential Drive❖ woofer with neodymium magnet for high power capacity and very light-weight. 3 in. (voice-coil) compression driver with neodymium magnet. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
9	Monitor Speaker with amplifier (02 Set)	Sound Guard 44 high frequency driver protection circuit Frequency response: 67 Hz ? 18 kHz; ❖3 dB Sensitivity: 97 dB Dispersion: 60❖ x 60❖ Max SPL: 133 dB 1000 Watts continuous, 2000 Watts	A committee consisting of 5 (five) members of different decipline shall attend			

		program, 4000 Watts peak Two full range, two bi-amp Neutrik Speakon connectors Throughput panel on opposite end from input panel has one full-range and one bi-amp Neutrik Speakon connector SA? 1 black pole-mount stand adapter Durable GatorHyde finish Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
10	High Power Subwoofer Speaker (02 Set)	Dual 18", 2-way, bass-reflex, subwoofer. Frequency Range (-10 dB): 27 Hz - 220 Hz. Frequency Response (±3 dB): 33 Hz - 220 kHz. Power Rating (Continuous/Program/Peak): 1600 W/3200 W 640 W. Dimensions (H x W x D): 24 in. x 42 in x 33 in. Net Weight: 166.5 lbs. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
11	8 Channel Power Supply Sequency Controller (01 Set)	Universal socket, can meet the needs of various types of plug Total Max current 16A, each channel Max current 10A Each channel will be turned on/off in order, so as to protect the power grid With activating trigger of 6.3mm phone jack interface Aluminium fashionable panel, 1 U slim design, suitable for rack mounting Power supply: AC 220-240V/50-60Hz/20A Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
12	XLR (Female)-XLR (Male) Connector (12 Nos)	XLR (Female)-XLR (Male) Connector	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
13	20U 19" Floor Stand Audio Rack with Electric Fan (01 Nos)	Construction and Features: ? Front Door: o Double opened wave curve vented front door equipped with an MS818 handle lock (1PC) ? Rear Door: o Double open flat vented rear door with MS818 handle lock (1PC) ? Side Panels: o Side panels with round locks (2PCS) ? Shelves: o Fixed shelf (1PC) o Sliding shelf (1PC) ? Cooling: o Fans: 4PCS with 2.00 M line each ? Power Distribution Units (PDU): o Two 10-port PDUs with logo, mounted within the 42U rack dimensions of 800mm x 1000mm ? Mobility and Stability: o 2.0-inch castor wheels (4PCS), with two featuring locks and adjustable feet ? Hardware: o Philip screws and nuts (50 Sets) ? Aesthetics: o Logo: Displayed on the front door o Color: Black	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		? Material Thickness: o Mounting profile: 2.0mm o Other components: 1.2mm to 1.5mm ? Cable Management: o Vertical cable managers with covers (2PCS)				
14	Cable (10 Coil)	Audio Cable 40/76	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
15	Installation testing and commissioning (01 Job)	Complete installation of all the equipment, testing, commissioning and support for one-year.	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
16	Projector with screen and accessories (10 set)	Bright WXGA DuraCore laser projector - 5200 lumens and IP6X certified Compact for easy installation - 1.3x zoom, 360- degree and portrait projection Reduced power consumption for a long-life span - DuraCore laser technology delivers 30,000 hours maintenance free laser light source External power supply - More reliability, portability and energy efficiency Compatible with interactive board Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
17	Desktop Computer (30 Set)	MOTHERBORD- GIGABYTE AMD A520M K V2 MOUSE LOGITECH ORIGINAL M90 USB GRAY KEYBORD LOGITECH USB K120 or equivalent CHASSIS REVENGER GOOD QT RGB FIRE GAMING POWER SUPPLY ACEpower GOOD MSPU-80+/FP450 SSD TRANSCEND VERY GOOD TS120GSSD220S 120GB PROCESSOR AMD GOOD AMD RYZEN 5 5600G 4.4GHz DEXTOP RAM TRANSCEND MEMORY U-DIMM 8GB JM DDR4 3200MHz UPS PowerGard ORIGINAL PG1200VA-PS 1200VA Offline MONITOR SAMSUNG ORIGINAL LS22C310EAE 21.5 INCH FHD HDD WD 3.5 1TB Warranty: At least 2 year for motherboard, processor	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
18	Laptop computer (15 Set)	11TH GEN I7L i7-1165G7 (2.8- 4.7GHZ, 12MB), 8GB DDR4 3200, 512GB M.2 NVME SSD, 720P CAM+ P SHUTTER, INTEL IRIS Xe GFX,15.6"	A committee consisting of 5 (five) members of different			

		FHD 250N AG , DOLBY SOUND, BL KB, FP, WIN11H, AC WiFi 5 x 2+ BT 5.0, FW TPM 2.0, A.GREY Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required	decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
19	Pen Interactive panel and Podium (8 Set)	Interactive Whiteboard Writing school white board size 100 X 200 cm Technology: Infrared ray shading detection Type: Wall mount (Default) Aspect ratio: 4:3, Shortcut Key, Pen, Finger, pointer or other object can operate, 10 Touch Points, Surface: High density polyester, Low reflection, support mark pen, No need install extra drive, plug and play, Supports Win10/Win8/Win7/Vista/XP/Mac Resolution: 32767X32767 Interface to Computer: USB 1.1, USB 2.0 Gesture & Pen Recognition Technology. Power Supply: USB cable. Warranty: 01 Year Highly Appreciated Digital Podiums Material: Stainless steel, aluminum Dimension: 790 mm L x 620mm W x 1100-1300 mm H High quality load-bearing casters: Four wheels for easy movement, TOP SCREEN: All-in-one 23.6" multi-touch screen PC pre-installed, Electric lifting stand: Monitor angle can be adjusted electrically, preset with wireless voice transmitting system, gooseneck microphone, Electric power lifting (up to 250 mm) to adjust podium height, Ports for audio, USB, VGA, HDMI, volume adjusting, height adjusting, etc. Built-in cable management and rounded handrails The removable laptop computer tray x2 (at the left & right side) Suitable for use in conference rooms, lecture halls, hotels, meeting rooms, school and university classrooms, churches, and places of entertainment. Elegant design to add style to presentation spaces. Improve your presentation delivery with the ease and confidence that the comfortable design of this podium provides. I Integrates the technology of PC display, AV, and touch screen. This podium makes it easy to use and display AV files, images, and documents! Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
20	Interior design in class room (4000 Square feet)	Interior design in class room will be carried out by veneer board, garjon wood, LED lighting and painting as required sufficient led lighting, painting etc. as per approval of interior design from consultant/client authority	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to			

			inspect the all supplied goods			
21	Combined Table and chair as per sample (240 Set)	? Should be made from the Mild Steel Structure & Treated & Seasoned (KILN Dried) Local Mahogany Wood with Natural Varnish. ? 2All surface of Mild Steel should be mig welded, chemically de-rusted and zinc phosphate coated with oven backed heated powder paint finish to confirm anti rust, shiny color and longevity. ? PVC stopper should be used in bottom to prevents moisture content of the floor. ? Size L 400 x W390 x SH420 x BH450 mm	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
22	CCTV camera and accessories (1 Set)	CCTV camera and accessories for full campus coverage. - 64*4.0 MP IP Day & Night Vision Camera - 1*64Channel Network Video Readers (NVR) - 8*8HDD - RJ 45 Connector - 2*50? Smart TV - UTP Cable, 305m UTP CAT-6, - 7*08 Port POE Giga Network Switch - 1*16 Port POE Giga Network Switch - 1*24-Port Gigabit PoE+ SFP Managed Switch - Fiber Cable 04 Core - Media Converter - TJ+Patch Cord - Fiber Splicing - DB Box - 12U Server Rack - 06 KVA UPS - Power Cable 23/76 - Camera Stand with Housing - 48 port cable Manager (Panduit/equivalent) - 48 port patch panel (Panduit/equivalent) - Necessary faceplate with modular (Panduit/equivalent), - Others Accessories (Tape, Screw, Royal plug Etc.) - Piping, Channelling with PVC Pipe, Channel - Camera Supply Installing Warring, Fittings charge and support for one year Original Manufacturer Warranty for camera and NVR: 2 years Manufacturer Authorization Letter: Required for camera and NVR	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
23	Tower Server (2 Set)	Dell EMC PowerEdge T150 server Dependable performance for file/print, email, web hosting, and collaboration applications. This tower server Must have Intel Xeon E-2314 processor, 16GB DDR4 RAM, and scalable storage with various accessories, - Cable, - Switch, - Hub - Router, - Rack etc Original Manufacturer Warranty: 2 years	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
24	Training and campus management software (1 Package)	software so as to get the total integration of activities for all the departments of DEPTC and its training management system. This will enable DEPTC to efficiently manage its overall academic activities with its different wings and would enable DEPTC to make easy decisions and preserve records for future analysis/evaluation. Academic	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the			

		<p>learning management system and all other related activities would also be made easy. Necessary features and additional modules will be added in the system. The system will be development latest architecture. Mentionable that the DEPTC system automation will be named as ?DEPTC Training and Campus Management System?. Details description has attached in drawing section.</p>	all supplied goods			
25	Interior of the Command-and-Control Center training unit. (SFT 6,000)	<p>Interior of the Command-and-Control Training Unit ? The main Command and Control Training area should be around 4000 SFT and Server room, and other area should be comprised of 2000 SFT. ? The training area can be raised above the floor to facilitate all the cabling to be freely running under the deck. ? The main training area should have an unobstructed view to the main training video wall. ? There should be a provision of a conferencing table, preferably in C or U Shape, facing the video training wall with a provision of 15 seats. ? The room should have a well designed ceiling along with the optimum but attractive illumination. ? The interior materials should be carefully considered to be contemporary looking, durable, with an accepted level of fire proofing ? The interior of this training room should consider the acoustic environment of the room too ? The rack room should have computer raised floor, matching the same height of the raised floor of the training room. ? The overall colour scheme and illumination should be of high standard considering the training room to be a 24/7 operational space. ? The entrance area should have adequate signage and visual notion to establish the importance and functionality of this space. ? The vendor must provide a 3D design and layout of the Command-and-Control Training Unit Interior following the state-of-the-art command area design area</p>	<p>A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods</p>			
26	Installation, Commissioning and Support (1 Job)	<p>Complete installation of all the equipment, testing, commissioning and support for one-year.</p>	<p>A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods</p>			
27	PA Network Conference Main Unit (1 Nos)	<p>Supports ring backup connections. Equipped with built-in environmental noise canceller, digital equalization circuits,</p>	<p>A committee consisting of 5 (five) members of</p>			

		<p>preventing feedback. CAT 6-core DIN cables for microphone connections, effectively preventing electromagnetic interference on the lines. Dual-machine hot backup mode functionality, allowing system backup. Equipped with a 4.3-inch true color touchscreen and an embedded Linux system with a Chinese operating interface. Allows touchscreen settings for conference modes, system volume adjustment, microphone management, unit numbering, camera parameters, video tracking settings, and ring light settings, among other functions. Conference modes include free mode, rotation mode, restriction mode, application mode, voice control mode, PTT mode, VIP mode, and timing mode. Supports 5V-24V fire linkage alarm interfaces for expanded functionality, such as connecting to fire alarm ports. USB recording function for conferences. Offers 1-way expansion RS232 port support for our hybrid switching matrix. Supports control of up to 512 camera positions for automatic tracking. Supports two camera protocols: Pelco-D/P and VISCA. Supports three camera control interfaces: RS232, RS422, and RS485. The main unit can centrally adjust the output gain of attendance units and set audio adjustment locks. Features DATA network control interface, extending network cables up to 1000 meters for conference management. Offers live "hot-swappable" functionality for enhanced system safety. Includes request service feature for flexible and convenient conferencing. Provides two sets of audio input interfaces for connecting other audio devices, offering users more options. Support 120 pcs microphone with one CCU with extend CCU unit support up to 4096 pcs microphone units. Features "hand-in-hand" and loop connections for easy installation and maintenance. Support PC control commands for management software and central control devices. When paired with a telephone coupler, enables remote telephone conferences. When paired with network conferencing software and video conferencing terminals, it must enable remote video conferencing. Original Manufacturer Warranty: 1 year. Manufacturer Authorization Letter: Required.</p>	different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
28	PA Conference Chairman Unit (1 Nos)	<p>Chairman Microphone: ? Chairman Unit can turn down all the delegate by Priority Key ? Microphone On/Off Key with Indicator Light YC838D Ant interference ? Network The</p>	A committee consisting of 5 (five) members of different discipline	<input type="text"/>	<input type="text"/>	<input type="text"/>

		<p>indicator light and microphone tube indicator light will be on constantly when the microphone is turned on. Detachable ?</p> <p>Microphone Tube Interface (Some microphones have built-in tubes and do not have this interface). CAT 6-core Connection Network Cable Connection Port Camera The network cable version of the microphone has two network cable interfaces, allowing for daisy-chain connections. Include free mode, rotation mode, restriction mode, application mode, voice control mode, PTT mode, VIP mode, and timing mode. Built in speaker Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>	shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
29	PA Conference Delegate Unit (20 Nos)	<p>Delegate Unit Microphone: ?</p> <p>Chairman Unit can turn down all the delegate by Priority Key ?</p> <p>Microphone On/Off Key with Indicator Light YC838D Ant interference ?</p> <p>Network The indicator light and microphone tube indicator light will be on constantly when the microphone is turned on. Detachable ?</p> <p>Microphone Tube Interface (Some microphones have built-in tubes and do not have this interface). CAT 6-core Connection Network Cable Connection Port Camera The network cable version of the microphone has two network cable interfaces, allowing for daisy-chain connections. Include free mode, rotation mode, restriction mode, application mode, voice control mode, PTT mode, VIP mode, and timing mode. Built in speaker Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
30	Full Range Speaker (4 Nos)	<p>2-way bass reflex speaker</p> <p>Cost-effective high power PA box speaker Various installation options Low impedance (8Ω) or high impedance (100V) selectable by rotary switch</p> <p>Splashproof construction in compliance with IPX4 Rated Input 30W Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
31	Professional Speaker Bracket (4 Nos)	Upgraded model	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
32	Power	Professional Stereo Digital	A committee			

	Amplifier (2 Nos)	Power Amplifier The A-2120 is a high-cost-performance mixer power amplifier suited for broadcasting paging or background music in schools, offices, shops, factories, mosques, churches, and large rooms, Easy to handle, High cost-performance, Both AC and DC operation possible, and Suitable for commercial audio systems, Scratch- and fingerprint-resistant front panel, A wide range of power outputs from 120W, A-2120 is a high cost-performance mixer power amplifier, equipped with balanced mic inputs for better isolation from external noise / compared to unbalanced inputs, improved durability compared with conventional, suited for broadcasting paging or background music in schools/offices/shops/factories /mosques /churches and large rooms. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required	consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
33	HD Conference Camera (1 Nos)	HD Conference Camera: 4K Ultra HD Resolution: Utilizing a SONY 1/2.8-inch 8.5-megapixel high-quality image sensor, with an effective pixel count of 8.29 million, capable of delivering premium-quality images at a maximum resolution of 3840x2160. 20x Optical Zoom Lens: Equipped with a high-quality telephoto lens, with a 58.7° field of view, offering 20x optical zoom and supporting 16x digital zoom. USB3.0+HDMI+LAN+3G-SDI Full Interface: Default Version: Supports HDMI and USB3.0 for 4K Ultra HD synchronous output, and LAN for high-definition 1080 output. Optional Version: Supports HDMI and LAN for 4K Ultra HD synchronous output, and USB3.0 for high-definition 1080 output. Low Illumination: Utilizes a new CMOS image sensor with ultra-high signal-to-noise ratio to effectively reduce image noise in low-light conditions. Applies 2D and 3D noise reduction algorithms to significantly reduce image noise, maintaining clean and clear images even in extremely low-light conditions, with an image signal-to-noise ratio of over 50dB.Infrared Passthrough: Aside from receiving its own dedicated remote-control signals, it can also receive user infrared remote-control signals and transmit them to video conferencing terminals via the VISCA IN port. Multiple Video Compression Standards: Supports various video compression formats including YUY2, H265, MJPG, and H264 across different interfaces. Multiple Network Protocols:	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		Supports ONVIF, SRT, RTSP, RTMP, RTMPS, and optional NDIHX2 network protocols. Multiple Control Protocols: Supports VISCA (including VISCA Over IP), PELCO P/D, and NDI protocols, with automatic protocol recognition. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required				
34	Audio Rack (1 Nos)	20U 19" Floor Stand Audio Rack with Electric Fan.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
35	Display (1 Nos)	Samsung Smart TV 75" Inch or similar. Original Manufacturer Warranty: 1 year	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
36	Accessories (1 Nos)	Extension Cord, Audio Cable	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
37	Installation Testing and Commissioning (1 Job)	Complete installation of all the equipment, testing, commissioning and support for one-year.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

Price and Delivery Schedule for Goods (Form e-PG3-3A)

Note 1: Delivery period starts from the date of contract signing.

Table Name :											
Item No (1)	Description of Item (2)	Measurement Unit (3)	Quantity (4)	Point of Delivery (5)	Delivery Period (in days)	Country of Origin	Unit Price in Figure (BDT) (8)	Unit Price in Words	Total Price in Figure	Total Price in Words	

(1)	(2)	(3)			(Note:1) (6)	(7)	(8)	(BDT) (9)	(BDT) (10)	(BDT) (11)
1	Wireless Microphone System (Hand Held)	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	Wireless Microphone System (Head Mic)	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	16 Channel Professional Mixer	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	Audio Processor: Digital Sound Processor	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
5	Two-Way Full Range Speaker	No	6	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
6	Professional Speaker Bracket (Wall Mount)	No	6	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7	Professional Stereo Digital Power Amplifier (8Ω; 2x650W)	No	5	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8	Professional stage speaker	No	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
9	Monitor Speaker with amplifier	No	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
10	High Power Subwoofer Speaker	No	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
11	8 Channel Power Supply Sequency Controller	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
12	XLR (Female)-XLR (Male) Connector	No	12	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

13	20U 19" Floor Stand Audio Rack with Electric Fan	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
14	Cable	Coil	10	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
15	Installation testing and commissioning	Job	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
16	Projector with screen and accessories	Nos	10	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
17	Desktop Computer	Nos	30	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
18	Laptop computer	Nos	15	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
19	Pen Interactive panel and Podium	Nos	8	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
20	Interior design in class room	Sq.ft	4000	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
21	Combined Table and chair as per sample	Nos	240	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
22	CCTV camera and accessories	Set	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
23	Tower Server	Nos	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
24	Training and campus management software	Package	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
25	Interior of the	Sq.ft	6000	Deck and Engine	180					

	Command-and-Control Center training unit.			Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh						
26	Installation, commissioning and support	Job	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
27	PA Network Conference Main Unit	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
28	PA Conference Chairman Unit	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
29	PA Conference Delegate Unit	Nos	20	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
30	Full Range Speaker	Nos	4	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
31	Professional Speaker Bracket	Nos	4	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
32	Power Amplifier	Nos	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
33	HD Conference Camera	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
34	Audio Rack	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
35	Display	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
36	Accessories (Extension cord, audio cable)	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
37	Installation Testing and Commissioning	Job	1	Deck and Engine Personnel Training Center	180					

				(DEPTC),BIWTA, Narayanganj, Bangladesh						
									Grand Total :	

The Goods covered by this Tendering process shall require to be delivered in accordance with this Delivery and Completion Schedule. No credit will be given for earlier completion.

Price and Delivery Schedule for Related Services (Form e-PG3-3B)

Note 1: Delivery period starts from the date of contract signing.

Table Name :										
Item No. (1)	Description of Item (2)	Measurement Unit (3)	Quantity (4)	Point of Completion (5)	Completion Period (in days) (6)	Country of Origin (7)	Unit Price in Figure (BDT) (8)	Unit Price in Words (BDT) (9)	Total Price in Figure (BDT) (10)	Total Price in Words (BDT) (11)
01	Related service	Pacakage	1	Deck and Engine Personnel Training Center (DEPTC), BIWTA, Narayanganj, Bangladesh	180					
								Grand Total :		

Price and Delivery Schedule for Goods (Form e-PG3-3A)-Part-01

Note 1: Delivery period starts from the date of contract signing.

Table Name :										
Item No (1)	Description of Item (2)	Measurement Unit (3)	Quantity (4)	Point of Delivery (5)	Delivery Period (in days) (Note:1) (6)	Country of Origin (7)	Unit Price in Figure (BDT) (8)	Unit Price in Words (BDT) (9)	Total Price in Figure (BDT) (10)	Total Price in Words (BDT) (11)
38	Video wall matrix mainframe Controller box	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
39	4CH HDMI encoding card	No	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
40	6CH HDMI decoding card	No	4	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
41	1 CH Ultra HD Decoder	No	9	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					

42	1 CH Ultra HD Decoder	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
43	64 Ch Standalone NVR	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
44	8 TB Surveillance HDD	No	16	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
45	R450 Server	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
46	55" FHD Industrial-scale Brightness LCD Display Unit with DP Daisy Chain Function (0.88mm)	No	16	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
47	55" Bracket of Front Maintenance:	No	15	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
48	HDMI 15m Male-Male/1080P with Buckle	No	18	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
49	Project Accessory Kit	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
50	Wooden case for 55" front-maintenance bracket (2 in 1; 1250*675*135)	No	8	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
51	Wooden case for 55" display unit (2 in 1; external dimension: 1403*583*1088)	No	8	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
52	IR to RS232 Controller	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
53	Multi Socket for Power Source:	No	20	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

54	MK Box	No	20	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
55	Port Multi Plug for Power Source:	No	5	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
56	1M HDMI Cable	No	20	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
57	Other Necessary Accessories	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
58	DTH-Setup box	No	15	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
59	Video Wall installation and testing	Job	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
60	Video wall matrix - maintenance	Package	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
61	Video wall-matrix operational and training software for Decision support system including 100 user license compatible with the video wall matrix	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
62	Video-wall matrix integration with all the BIWTA river port with real-time software uplink	Job	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
63	Smart Port management software	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
64	Satellite-image based river encroachment and simulation software component	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
65	IP PABX Server	No	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA,	180					

				Narayanganj, Bangladesh						
66	FXO GW	No	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
67	Video IP Telephone Set POE	No	16	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
68	Extension Module	No	16	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
69	IP Phone	No	16	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
70	SIP Number	No	16	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
71	Installation of IP telephony system	Package	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
72	PoE switch 24 port	No	4	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
								Grand Total :		

The Goods covered by this Tendering process shall require to be delivered in accordance with this Delivery and Completion Schedule. No credit will be given for earlier completion.

Price and Delivery Schedule for Goods (Form e-PG3-3A)-Part-02

Note 1: Delivery period starts from the date of contract signing.

Table Name :										
Item No (1)	Description of Item (2)	Measurement Unit (3)	Quantity (4)	Point of Delivery (5)	Delivery Period (in days) (Note:1) (6)	Country of Origin (7)	Unit Price in Figure (BDT) (8)	Unit Price in Words (BDT) (9)	Total Price in Figure (BDT) (10)	Total Price in Words (BDT) (11)
73	Network switch 24 port	No	6	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
74	UTP Cat6 Cable	Roll	20	Deck and Engine Personnel Training Center	180					

				(DEPTC),BIWTA, Narayanganj, Bangladesh						
75	Power Cable	Coil	20	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
76	UPS 6KVA	Nos	3	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
77	Server rack	Nos	3	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
78	PDU	Nos	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
79	Patch panel 24port	Nos	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
80	Cable Manager	Nos	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
81	Modular	Nos	20	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
82	RJ-45 Cat-6	Nos	100	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
83	Faceplate with Modular	Nos	20	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
84	Patch Cord	Nos	40	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
85	Patch Cord	Nos	10	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
86	HDMI Amplifier Splitter	Nos	3	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj,	180	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

				Bangladesh						
87	HDMI Cable	Meter	1000	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
88	Firewall	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
89	Necessary Power Accessories	Lot	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
90	Installation of all networking inside a raised floor.	Package	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
91	PA Conference Main Unit	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
92	PA conference Chairman unit	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
93	PA conference delegate unit	Nos	16	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
94	PA conference Audio Amplifier	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
95	PA Conference Sound Box Ceiling Type	Nos	4	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
96	Wireless Microphone	Nos	3	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
97	Accessories	Lot	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
98	Monitor	Nos	17	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					

99	Installation	Job	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
100	Video Conference Camera	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
101	Video Conference Camera stand	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
102	Smart TV 75" 4K	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
103	Multi-Function Duplex Copier	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
104	Printer	Nos	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
105	Control Station	Nos	2	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
106	Customizable Network Management	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
107	Core Switch	Nos	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
108	Installation	Job	1	Deck and Engine Personnel Training Center (DEPTC),BIWTA, Narayanganj, Bangladesh	180					
								Grand Total :		

The Goods covered by this Tendering process shall require to be delivered in accordance with this Delivery and Completion Schedule. No credit will be given for earlier completion.

Technical Specifications and Compliance of Goods and related services (Form e-PG3-4)-Part-01

Notes on Technical Specifications:

Note 1:

[The PE shall follow the Rule 29 of Public Procurement Rule, 2008 while preparing the Technical Specifications of the Goods]

[A set of precise and clear specifications is a prerequisite for Tenderes to respond realistically and competitively to the requirements of the PE. In the context of Competitive Tender, the specifications must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness and economy in procurement be realized, responsiveness of Tenders be ensured, and the subsequent task of Tender evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials]

Note 2:

[The PE must explain in clear terms the exact Technical Specification and any relevant National or International Standards which have to be followed for the manufacture and supply of the goods or related services. Technical Specifications shall specify what inspection and/or tests the PE requires and where they are to be conducted]

Note 3:

Keep the same Item no. in price schedule and technical specification form.

Table Name :						
Item No.	Name of Goods	Detailed Technical Specification and Standards required	Inspection and/or tests required and test place	Country of Origin	Make, and Model or Brand (when applicable)	Full Detailed Technical Specifications and Standards offered
38	Video wall matrix mainframe Controller box (01 Nos)	? 19? standard 4U ATCA industry box ? Easy and flexible configuration with pluggable card module design ? 40ch@1080P signal encoding (full configured) ? 20ch@32MP or 80ch@8MP or 320ch@1080P or 720ch@720P or 1280ch@D1 signal decoding (full configured) ? Support 240@D1 nonstandard stream signal decoding(full configured) ? Support 240@D1 nonstandard stream signal decoding(full configured) ? Support max 60 screens splicing ? Support analog/digital video signals input and matrix output ? Support SD/HD video signal matrix switch and output ? Support non-compressed digital signal encoding output ? 6 RJ-45 gigabit network ports for matrix control, preview and online central storage ? Support TCP/IP/RTP/RTSP/RTCP/TCP/UDP/DHCP/PPPoE and etc. network protocols Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
39	4CH HDMI encoding card (02 Nos)	? 4 HDMI input module for M70-4U and M70-4U-E ? H264 /MPEG4 encoding format ? Interface 4 HDMI inputs ? Encoding capacity 4 channels @1080P ? Supported resolutions 1080P, 720P, UXGA, SXGA+, SXGA, XGA, SVGA, VGA	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
40	6CH HDMI decoding card (04 Nos)	? From reputed brand ? HDMI graphics card ? 6 HDMI channels ? Screen divisions: 1/4/6/8/9/16/25/36 ? Resolution 12MP@15fps / 4K@30fps / 2MP, 1,3MP, 1MP, 720p@60fps ? Decoding capacity 2CH@32MP, 8CH@12MP, 8CH@4K, 32CH@1080p, 72CH@720p ? Compatible with M70-4U-E	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
41	1 CH Ultra HD Encoder (09 Nos)	The system reorganization is flexible, convenient and stable, and the equipment can be flexibly configured according to customer needs ? Support DP/HDMI	A committee consisting of 5 (five)			

		interface video and audio acquisition, automatically switch signal source, and insert the default acquisition HDMI IN at the same time ? Support 1 HDMI loop output and 1 local HDMI output ? Supports up to 4K@30 resolution capture and encoding ? The encoding resolution is adaptive to the computer resolution, without manual switching ? Support H.264/H.265 encoding, default H.264 ? Support audio format encoding G.711a ? Support Dahua/RTSP and other protocol access ? Support POE or DC 12V dual power supply ? Supports multiple devices to achieve ultra-high resolution acquisition synchronization only through the network ? Support image cropping to only display the area selected by the user ? Support network photoelectric hot standby and automatic switching ? Fanless design, silent, high reliability, low failure rate ? Ultra-low latency, smooth mouse operation ? Embedded design, ultra-low power consumption: ≤10W ? Product size: 42mm◆150mm◆100mm (height x width x depth)	members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
42	1 CH Ultra HD Decoder (01 Nos)	The system reorganization is flexible, convenient and stable, and the equipment can be flexibly configured according to customer needs ? One person at multiple levels, one machine with multiple screens, separation of man and machine, flexible signal takeover and push ? Support multi-node seat splicing and mouse cross-screen roaming ? Visual menu, real-time preview of signal source ? The display screen displays the device name and IP in real time, making operation and maintenance more convenient ? Support remote power on/off (need to be equipped with central control) ? Support 1 HDMI 2.0, maximum support 4K@60 resolution output display ? A single node supports up to 8K@30 resolution decoding ? Support H.264/H.265 and other stream decoding ? Support private/RTSP/Onvif and other protocol access ? Support network photoelectric hot standby and automatic switching ? Fanless design, silent, high reliability, low failure rate ? Ultra-low latency, smooth mouse operation ? Product size: 44mm◆220mm◆170mm (height◆width◆depth)	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
43	64 Ch Standalone NVR (01 Nos)	? Supports Smart H.265+, H.265, Smart H.264+, H.264 and MJPEG decoding formats ? Max. decoding capability: 32 ◆ 1080p@30 fps or 32 ◆ 2MP@30 fps ? Max. 384/384/384 Mbps incoming/recording/outgoing bandwidth ? Supports IP cameras with a resolution up to 32 MP ? Supports AcuPick with up to 32 channels ? Supports N+M cluster, iSCSI ? Supports Raid0/1/5/6/10 ? AI by Recorder: 2-channel face detection and recognition, up to 20 face databases and 20,000 face images; 4-channel perimeter protection; 8-channel SMD Plus ? AI by Camera: face detection and recognition, perimeter protection, SMD Plus, metadata, ANPR, stereo analysis, heat map, and people counting ? Supports EPTZ, and one-click arming and disarming Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
44	8 TB Surveillance HDD (16 Nos)	Cost-effective reliability ? Robust 24◆7 performance ? Easy integration, optimal TCO ? Advanced security features ? Trusted expertise	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
45	R450 Server (1 Nos)	Product Specification: 2U Rack Mountable Server ? Brand Name: To be mentioned by bidder ? Model: To be mentioned by bidder Technical Specifications: ? Form Factor: 2U Rack Mountable ? Processor: 2 x Intel Xeon-Gold, Minimum 28 Cores, 28MB Cache per processor ? Memory: o Minimum 32 GB DDR4	A committee consisting of 5 (five) members of different decipline			

		<p>RAM o Scalable up to 1TB in the future Internal Storage: ? Minimum 4 x 1.2 TB SATA disks from Day 1 ? Server should support at least 8 hot-swappable 12Gbps SAS HDD and SSD drives Storage Array Controller: ? Configured with an array controller with a minimum of 2GB flash cache memory ? Supports RAID 0, 1, 5, and 10 ? Should include a Smart Storage Battery with cable Expansion Slots and I/O: ? Five (5) x PCIe 3.0 slots ? Serial port, VGA Port, Display Port, USB 3.0 Network Interface Controller: ? 1 x mLOM Ethernet adapter with 4x 1GE copper ports ? 1 x PCIe Ethernet adapter for future expansion Management Port & Features: ? Supports industry-standard management protocols like IPMI v2 and SNMP v3 ? One 1-Gbps RJ-45 management port Power Supply & Cooling: ? Minimum 1000W AC Platinum class redundant power supply ? Hot plug fans in full redundancy OS Support: ? Windows Server Most Recent Version ? Microsoft Hyper-V Server (Latest version) ? VMware vSphere (Latest version) ? Red Hat Enterprise Linux (Latest version) ? CentOS Certification: ? Manufacturer Authorization Certificate must be included during submission Warranty & Services: ? 3 years (three) OEM warranty & support</p>	shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
46	55" FHD Industrial-scale Brightness LCD Display Unit with DP Daisy Chain Function (0.88mm) (16 Nos)	<p>- Industrial level IPS LCD panel, suitable for continuous 24h/7 operation - Ultra-narrow 1.74mm B-to-B (Panel Bezel to Panel Bezel) design - Anti-glare and high brightness panel, vivid and memorable image quality - Factory calibration technology for high color uniformity - Built-in 3D noise reduction system and picture splicing function - Abundant interfaces: HDMI, DVI, VGA, DP (UHD daisy chain), RS232, Audio - Up to 4K@60Hz signal input by DP IN or HDMI 1 interface, up to 4K@30Hz signal output by DP OUT interface - Infrared, RS232 dual mode, supporting remote control by computer - Professional thermal design to extend device lifespan - Built-in power, low energy consumption, ultra-quiet - Modular structure design, multiple installation modes - Widely used in surveillance centers, command centers, meeting rooms, commercial display scenes, etc. Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required</p>	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
47	55" Bracket of Front Maintenance (15 Nos)	As per PIU required	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
48	HDMI 15m Male-Male/1080P with Buckle (18 Nos)	- HDMI cable - Length: 15 meters - Suitable for video wall line and monitors -Controller type: Modular series	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
49	Project Accessory Kit (01 Nos)	<p>? ES & EG Series, extra order of IR-3.5MM-3M extended cable for EF Series ? Weight: 1 kg ? Inclusions: - Remote control board - Remote control - IR Extended cable</p>	A committee consisting of 5 (five) members of different discipline shall attend			

			at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
50	Wooden case for 55" front-maintenance bracket (08 Nos)	Description: Wall mount for 55" 2 rows x 2 columns videowall (2 in 1; 1250✧675✧135)	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
51	Wooden case for 55" display unit (08 Nos)	Wooden case for 55" display unit (2 in 1; external dimension: 1403*583*1088)	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
52	IR to RS232 Controller (01 Nos)	Signal Interface: IR(3.5mm)✧1, RS232 in✧1, RS232 out✧1 Accessory: IR cable✧1, power adapter✧1 Power Supply: DC 12V Power Consumption: ≤5W Gross Weight: 0.37kg(0.82lb) Net Weight: 0.42kg(0.93lb) Dimension (W✧D✧H): 126.4mm✧69.3mm✧31.0mm(5.0"✧2.7"✧1.2") Package (W✧D✧H): 170mm✧166mm✧65mm(6.7"✧6.5"✧2.6") Work Environment: Temperature 0✧C~+50✧C Humidity 10%RH~90%RH	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
53	Multi Socket for Power Source (20 Nos)	- Durable / Long Life - High-Quality ABS Plastic - Fire Retardant High-Quality ABS Plastic Body - High Moisture Resistance - Pure Copper Made Metal Parts (High Resistance to Corrosion)	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
54	MK Box (20 Nos)	Anti Corrosive & Anti Rust Metal ? Silver Tip Contact for proper conductivity ? 100% Pure Copper Connecting Plate ? SS Spring ensures strong contact strength ? High-Quality PC & PA Plastic: Fire retardant ? Highly Resistant to Moisture, Heat & Fire ? Extinguishes Flames & Glowing at the specimen within 30s ? Switching compatibility more than 5,000 cycles ? Applicable for AC & DC	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
55	Port Multi Plug for Power Source: (05 Nos)	Durable / Long Life ? High-Quality ABS Plastic ? Fire Retardant High-Quality ABS Plastic Body ? High Moisture Resistance ? Pure Copper Made Metal Parts (High Resistant to Corrosion) ? Meter Flexible Cable ? 3Pin plug with Earthing	A committee consisting of 5 (five) members of different			

			decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
56	1M HDMI Cable (20 Nos)	1M HDMI Cable	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
57	Accessories (01 Nos)	Other Necessary Accessories	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
58	DTH-Setup box (15 Nos)	DTH-Setup box	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
59	Video Wall installation and testing (01 job)	Video Wall installation and testing	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
60	Video wall matrix - maintenance (1 Job)	Video wall matrix - maintenance. Provide at least one person on round the clock to ensure proper maintenance and support for two-years	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
61	Video wall-matrix operational	Video wall-matrix controller software including 100 user license compatible with the video wall matrix. The software Must have following modules and	A committee consisting of 5 (five)			

	and training software for Decision support system including 100 user license compatible with the video wall matrix (01 Nos)	features. Video Wall: Display/Hide screen ID. Display alarm output channels. List and locate alarm sources by clicking on the alarms. Must support screen combinations. Bind decode channels to the corresponding screens. Control Client: Display device tree with options to show/hide offline devices. Display device IP address or name in the device tree. View real-time video with various layout options (1, 4, 6, 8, 9, 13, 16, 20, 25, 36, 64). Control PTZ cameras, set manual recording, take snapshots, perform instant playback, and digital zoom. Apply fisheye dewarping and smart tracking for fisheye, speed dome, and panoramic cameras. Audio talk, decode to a video wall, and turn on/off audio in live view. Set Region of Interest (ROI) and display maps in Live View. Supports NKB1000 keyboard for camera control in Live View. Adjust video image and display mode (full screen or original). Perform electronic focus adjustments. Playback: Playback recordings from front-end devices or central storage. Apply video filters: normal, motion, alarm, video loss, video tampering. Sync play, reverse playback, and support for up to 64x fast play and 1/64x slow play. Frame-by-frame playback, lock or mark important recording segments. Must support .avi, .dav, .flv, .mp4, and .asf video output. Decode to a video wall, apply fisheye dewarping, and take snapshots. Switch between Live View and Playback mode. Adjust video image and display mode (full screen or original). other technical specification attached in drwaing section.	members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
62	Video-wall matrix integration with all the BIWTA river port with real-time software uplink (01 Job)	Video-wall matrix integration with all the BIWTA river port with real-time software uplink. Integrate the video-wall matrix with all the CCTV camera exists in various BIWTA port, dredging base and other installation in at least 20 facilities. Conduct necessary wiring, networking, technical work to integrate feed from the existing BIWTA facilities to the DSS software. Make provision of integrating video-feed from all the CCTV to be setup in future BIWTA facilities.	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
63	Smart Port management software (01 Nos)	Smart Port management software training module for BIWTA officials with integration with the Video-wall matrix.	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
64	Satellite-image based river encroachment and simulation software component (01 Nos)	High-level software specification for a satellite-image based river encroachment monitoring component are as follows: 1. Satellite Image Acquisition and Processing: - Integrate with satellite data providers (e.g., NASA, ESA) to acquire high-resolution imagery. - Implement image preprocessing techniques (e.g., noise reduction, cloud masking) to enhance image quality. 2. River Boundary Detection and Monitoring: - Develop algorithms to detect and delineate river boundaries using satellite imagery. - Implement periodic monitoring to track changes in river boundaries over time. 3. Encroachment Detection: - Create a module to identify and classify encroachments based on changes in river boundaries. - Use machine learning techniques to improve accuracy and automate detection. 4. Simulation Engine: - Build a simulation engine to model past changes of river encroachment. 5. Data Integration and Management: - Integrate with existing GIS databases, Google Earth engine for comprehensive data analysis. - Implement a robust data management system to store, retrieve, and manage	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		satellite images and simulation results. 6. User Interface and Visualization: - Develop an intuitive user interface for easy access to satellite images, monitoring data, and modeling results. - Implement visualization tools (e.g., interactive maps, time-lapse animations) to display river encroachment trends and simulation outcomes. 7. Alert and Reporting System: - Implement an automated alert system to notify stakeholders of significant encroachment events. - Generate comprehensive reports summarizing monitoring and simulation findings, customizable for different user needs. 8. Scalability and Performance: - Design the software to handle large datasets and support concurrent processing for real-time monitoring. - Optimize performance for efficient image processing and simulation execution.				
65	IP PABX Server (1 Nos)	500 Line IP PABX Main Unit Model: UCM6301, User: 500 Concurrent Calls Max: 45, IP Number Support: 50 Analogue Telephone: 02 You Can use 500 IP Set or 500 analogue Phone set, For Analogue Phone Set you have to use FXS GW Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
66	FXO GW (2 Nos)	08 Ports Analog VOIP Gateway, Model: GXW4108/ HT881, T&T Line: 08 Port, You Can Add 08 T&T line to Existing UCM6301 Server Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
67	Video IP Telephone Set POE (16 Nos)	16 lines with up to 16 SIP accounts Built-in 1 mega-pixel camera for video calling Runs on the Android 7.0 operating system Integrated dual band Wi-Fi (2.4GHz & 5GHz) 5.0? (1280x720) capacitive 5-point touch screen HD TFT LCD 6-way audio conferencing & 3-way 720p HD video conferencing capability Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes"	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
68	Extension Module (16 Nos)	4.3 inch (272x480) TFT color LCD 20 per page (each module contains 2 pages, for up to 40 lines per module) Combine up 4 daisy-chained modules for 160 contacts/extensions BLF, call park /pick-up, speed-dial, presence, intercom, voice conferencing transfer/forward and more.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
69	IP Phone (16 Nos)	IP Telephone Set POE ** 02 SIP A/C, 02 Line Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj,			

			BIWTA. to inspect the all supplied goods			
70	SIP Number (16 Nos)	IP Number Premium e.g. 096XX 11 22 33 (in subject of availability) One time number cost Rent per Month, Any IPTSP @ No Charge Call Any BD Number @ BDT 0.45 (1 Sec pulse) ISD Rate @ Govt Rate Chart.	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
71	Installation (01 Job)	Installation of IP Telephony system with one year support.	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
72	PoE switch 24 port (04 Nos)	Product Specification: 24-Port PoE Switch ? Brand Name: To be mentioned by bidder ? Model: To be mentioned by bidder Physical Characteristics: ? Form Factor: 19-inch rack mountable chassis ? Ports: o Minimum 24 x 1G Copper PoE Ports o 4 x 1G SFP Fiber Ports o Includes 1x 1G Short Range (up to 0.5KM) optical transceiver (same brand as switch) Performance Specifications: ? Switching Capacity: Minimum 55 Gbps ? Packet Forwarding Rate: Minimum 41 Mpps ? System Memory: Minimum 512 MB ? System Storage: Minimum 256 MB Capacity: ? MAC Address Entries: Minimum 16K ? VLAN Table: Minimum 4K ? VLAN Interfaces: Minimum 32 ? IPv4 Routing Entries: Minimum 1K ? IPv4 ARP Entries: Minimum 1K ? IPv4 Multicast L2 Entries: Minimum 1K ? IPv4 ACL Entries: Minimum 500 ? IPv6 Unicast Routing Entries: Minimum 240 ? Jumbo Frame Length: Minimum 9K Network Protocols and Features: ? Max Stacking Devices: 9 ? Max Stacking Bandwidth: 16 Gbps ? Port Aggregation: o Dynamic aggregation o Static aggregation o LACP (Link Aggregation Control Protocol) Port Characteristics: ? Supports IEEE 802.3x flow control (full duplex) ? Supports storm suppression based on port rate percentage ? Supports PPS-based and bps-based storm suppression VLAN Capabilities: ? Port-based VLAN ? MAC-based VLAN ? Protocol-based VLAN ? VLAN mapping ? Voice VLAN ? Private VLAN ? QinQ (802.1Q-in-802.1Q) ? Access/Trunk/Hybrid VLAN DHCP Features: ? DHCP Client ? DHCP Snooping ? DHCP Snooping option82 ? DHCP Relay ? DHCP Server ? DHCP auto-config IP Routing: ? Static routing, RIP, OSPF ? IPv6 static routing, RIPng, OSPFv3 ? IPv4/IPv6 dual stack ? Supports various IPv6 capabilities Multicast: ? PIM snooping ? IGMP Snooping ? Multicast VLAN ? IPv6 PIM snooping ? MLD Snooping ? IPv6 Multicast VLAN Layer 2 Network Protocols: ? STP, RSTP, MSTP ? PVST (Compatible with PVST+/RPVST+) ? LLDP/LLDP-MED Security Features: ? AAA authentication support ? RADIUS and TACACS authentication ? SSH2.0 ? 802.1X authentication ? Centralized MAC authentication ? Port security ? IP Source Guard ? Support for BPDU guard and Root guard ? Dynamic ARP inspection Management and Maintenance: ? Zero Touch Provisioning ? Configuration through CLI, Telnet, and console port ? SNMPv1/v2c/v3 and Web-based NMS ? Supports	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

Restful API ? RMON and system logging
 Certifications: ? EMC: FCC Part 15 Subpart B
 CLASS A, EN 55032 CLASS A, AS/NZS CISPR32
 CLASS A, EN 55024, EN 61000-3-2 ? Safety:
 CAN/CSA C22.2 No 60950-1, IEC 60950-1, EN
 60950-1, AS/NZS 60950-1 Operating Conditions: ?
 Temperature: Min. -5. to 45. (23. to 113.) ? Humidity:
 Min. 5% RH to 95% RH, non-condensing
 Manufacturer Authorization: ? Manufacturer
 Authorization Certificate must be included during
 submission Warranty: ? 3 years OEM warranty from
 Day 1

Technical Specifications and Compliance of Goods and related services (Form e-PG3-4)-Part-02

Notes on Technical Specifications:

Note 1:

[The PE shall follow the Rule 29 of Public Procurement Rule, 2008 while preparing the Technical Specifications of the Goods]

[A set of precise and clear specifications is a prerequisite for Tenderes to respond realistically and competitively to the requirements of the PE. In the context of Competitive Tender, the specifications must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness and economy in procurement be realized, responsiveness of Tenders be ensured, and the subsequent task of Tender evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials]

Note 2:

[The PE must explain in clear terms the exact Technical Specification and any relevant National or International Standards which have to be followed for the manufacture and supply of the goods or related services. Technical Specifications shall specify what inspection and/or tests the PE requires and where they are to be conducted]

Note 3:

Keep the same Item no. in price schedule and technical specification form.

Table
Name :

Item No.	Name of Goods	Detailed Technical Specification and Standards required	Inspection and/or tests required and test place	Country of Origin	Make, and Model or Brand (when applicable)	Full Detailed Technical Specifications and Standards offered
73	Network switch 24 port (06 Nos)	Product Specification: 19-Inch Rack Mountable Switch ? Brand Name: To be mentioned by bidder ? Model: To be mentioned by bidder ? Country of Origin: To be mentioned by bidder Physical Characteristics: ? Form Factor: 19 inch Rack mountable chassis ? Ports: o Minimum 24 x 1G Copper Ports o 4 x 1/10G SFP Fiber Ports o Includes 2 x 1G and 2 x 10G Short Range (up to 0.5KM) optical transceivers (same brand as switch) Performance Specifications: ? Switching Capacity: Minimum 126 Gbps ? Packet Forwarding Rate: Minimum 94 Mpps ? System Memory: Minimum 1 GB ? System Storage: Minimum 512 MB Capacity: ? MAC Address Entries: Minimum 32K ?	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

VLAN Table: Minimum 4K ?
 VLAN Interfaces: Minimum
 32 ? IPv4 Routing Entries:
 Minimum 6K ? IPv4 ARP
 Entries: Minimum 4K ? IPv4
 Multicast L3 Entries:
 Minimum 2K ? IPv4 Multicast
 L2 Entries: Minimum 2K ?
 IPv4 ACL Entries: Minimum
 500 ? IPv6 Unicast Routing
 Entries: Minimum 240 ?
 Jumbo Frame Length:
 Minimum 9K Network
 Protocols and Features: ?
 Max Stacking Devices: 9 ?
 Max Stacking Bandwidth: 80
 Gbps ? Port Aggregation: o
 Dynamic aggregation o
 Static aggregation o LACP
 (Link Aggregation Control
 Protocol) Port
 Characteristics: ? Support
 IEEE 802.3x flow control
 (full duplex) ? Supports
 storm suppression based on
 port rate percentage ?
 Supports PPS-based and
 bps-based storm
 suppression VLAN
 Capabilities: ? Port-based
 VLAN ? MAC-based VLAN
 ? Protocol-based VLAN ?
 VLAN mapping ? Voice
 VLAN ? Private VLAN ?
 QinQ (802.1Q-in-802.1Q) ?
 Access/Trunk/Hybrid VLAN
 DHCP Features: ? DHCP
 Client ? DHCP Snooping ?
 DHCP Snooping option82 ?
 DHCP Relay ? DHCP
 Server ? DHCP auto-config
 IP Routing: ? Static routing,
 RIP, OSPF ? IPv6 static
 routing, RIPng, OSPFv3 ?
 IPv4/IPv6 dual stack ?
 Pingv6, Telnetv6, FTPv6,
 TFTPv6, DNSv6, ICMPv6
 Multicast: ? PIM snooping ?
 IGMP Snooping ? Multicast
 VLAN ? IPv6 PIM snooping
 ? MLD Snooping ? IPv6
 Multicast VLAN Layer 2
 Network Protocols: ? STP,
 RSTP, MSTP ? PVST
 (Compatible with
 PVST+/RPVST+) ?
 LLDP/LLDP-MED ACL
 Features: ? Packet filtering
 from Layer 2 to Layer 4 ?
 Traffic classification based
 on multiple criteria ? Time
 range-based, VLAN-based,
 and Bidirectional ACL
 Security Features: ? AAA
 authentication support ?
 RADIUS authentication ?
 TACACS ? SSH2.0 ?
 802.1X authentication ?
 Centralized MAC
 authentication ? Port security
 ? IP Source Guard ?
 Support for BPDU guard,
 Root guard ? Dynamic ARP
 inspection Management and
 Maintenance: ? Zero Touch
 Provisioning ? Configuration
 through CLI, Telnet, and
 console port ?
 SNMPv1/v2c/v3 and Web-

		<p>based NMS ? Restful API support ? RMON and system logging Certifications: ? Electromagnetic Compatibility (EMC) Certification: o FCC Part 15 Subpart B CLASS A o EN 55032 CLASS A o AS/NZS CISPR32 CLASS A o EN 55024 o EN 61000-3-2 ? Safety: o CAN/CSA C22.2 No 60950-1 o IEC 60950-1 o EN 60950-1 o AS/NZS 60950-1 Operating Conditions: ? Temperature: Min. -5. to 45. (23. to 113.) ? Humidity: Min. 5% RH to 95% RH, non-condensing Manufacturer Authorization: ? Manufacturer Authorization Certificate must be included during submission Warranty: ? 3 years OEM warranty should be included from Day 1</p>				
74	UTP Cat6 Cable (20 Roll/Box)	Type - Network Cable, Length - 305 Meter Cable Shielding - UTP (Unshielded Twisted Pair) Conductor Material - Solid-Bare Copper (99.95%), Jacket Material - PVC	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
75	Power Cable (20 Coil)	BRB 14/76	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
76	UPS 6KVA (03 Nos)	<p>Product Specification: 6KVA UPS System ? Brand: To be mentioned by the Tenderer ? Model Number: To be mentioned by the Tenderer Specifications: ? Capacity: 6KVA ? Input Voltage: 300 ? 480V ? Frequency: 30-70 Hz ? Input Total Harmonic Distortion: o ≤3% @ 100% load o < 5% Non-linear load ? Output Voltage: 380V/400V/415VAC ? Output Voltage Distortion: Less than 3% ? Output Frequency (Sync to Mains): o 50 Hz Sync to mains o 60 Hz Sync to mains ? Efficiency: o Double Conversion Mode: Up to 96% o EcoMode: 96% ? Overload Capacity in Utility Operation: o 125% for 10 minutes o 150% for 60 seconds ? Output Voltage Tolerance: ♦1.5% static Battery and Backup: ?</p>	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		<p>Battery Type: VRLA ? Battery Configuration: 16X40AH ? Backup Time: 30min Communication and Interface: ? Communication Interface: SNMP card ? Control Panel: 3? User Graphical LCD Interface Environmental and Safety: ? Protection Class: IP20 ? Operating Temperature: o Standard: 0 - 40 C o With internal batteries: 20 ? 25 C ? Relative Air Humidity: 95% non- condensing Certifications: ? Safety: IEC 60950-1 / EN 62040-1 ? EMC: IEC 62040-2 ? Performance: IEC 62040-3, CE Additional Requirements: ? Manufacturer Authorization: Certificate must be included during submission ? Warranty: 1 Year</p>				
77	Server rack (03 Nos)	<p>Product Specification: High-Density Vented Server Rack ? Brand: To be mentioned by the Tenderer ? Model: To be mentioned by the Tenderer Environmental Compliance: o Maintains international quality and environmental safety standards Rack Specifications: ? Type: High Density Vented; Floor Standing ? Dimensions: 42U x 1000mm (Depth) x 600mm (Width) ? Color: Black ? Static Loading: 1000Kgs or above Doors: ? Front Door: Single panel front door, perforated, lockable, and removable ? Rear Door: Double section vertically split rear door, perforated, lockable, and removable Side Panels: ? Double section horizontal split solid panels ? Two security key locks and quick release latches on each panel Rack PDU: ? 2 x Basicrack PDU, Basic, 32A, 230V ? At least 8 nos C13 power outlets Integrated Electrical Grounding: ? The roof, side panels, and front and rear doors should be provisioned to be grounded to the frame of the enclosure. Enclosure Adjustment Tools and Hardware: ? Enclosures are provided standard with a hardware bag that includes hardware for mounting IT equipment and tools for simple enclosure adjustment. Warranty: ? 1 Year</p>	<p>A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods</p>			
78	PDU (02 Nos)	6 Port PDU	<p>A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj,</p>			

			BIWTA. to inspect the all supplied goods			
79	Patch panel 24 port (02 Nos)	CommScope 24 Port Patch Panel Loaded	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
80	Cable Manager (02 Nos)	CommScope Wire Manager	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
81	Modular (20 Nos)	CommScope -6A-F180B CAT6A Keystone Jack/Modular Jack	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
82	RJ-45 Cat-6 (100 Nos)	RJ45 CAT-6 Connector.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
83	Faceplate with Modular (20 Nos)	wall mount custom sizing	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
84	Patch Cord (40 Nos)	Patch Cord 1.5 Mtr	A committee consisting of 5 (five) members of different discipline shall attend			

			at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
85	Patch Cord (10 Nos)	Patch Cord 3.0 Mtr	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
86	HDMI Amplifier Splitter (3 Nos)	1✧8 HDMI Amplifier Splitter	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
87	HDMI Cable (1000 Mtr)	HDMI Cable.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
88	Firewall (1 Nos)	<p>? Brand: To be mentioned by the bidder ? Model: To be mentioned by the bidder ? Country of Manufacture: USA/EU/UK/Taiwan</p> <p>Certifications (Safety, EMC, Quality): ? CB, CE, UL, FCC, ISED, VCCI, KC, RCM, NOM, Anatel, CCC, BSMI, Checkmark, ICASA Labs, EAL4+, ISO 9000.</p> <p>Environmental Conditions: ? "Operating Temperature: 0✧C to 40✧C ? Humidity (non-condensing): 10% to 90%" Part No ? Bidder should submit BOQ of proposed device including the detailed part numbers.</p> <p>Hardware Architecture: ? Should have multicore architecture and should not be any proprietary ASIC-based in nature ? Should have at least 4GB system memory ? Should have dedicated Network Processor (NPU) with 3GB NPU Memory for hardware acceleration ? Should have 64GB SSD from day 1 ? Should have Dual Internal</p>	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		<p>redundant auto-ranging AC-DC 100-240VAC, 3.7-7.4A@50-60Hz power supply from day 1. "Power consumption: ? 30 W/100 BTU/hr (idle) ? 59 W/202 BTU/hr (max.)" Interface Requirement (minimum): ? "Should have the following fixed ethernet ports from day 1: ? 12 x 1GbE, ? 2 x 1G SFP" ? Should have 1 x Expansion Slot ? All interfaces should be freely configurable as LAN, WAN & DMZ ports without any limitation. ? Should not be any fixed WAN ports so that any port can be configured as WAN for multiple WAN load balancing. ? "Management I/O Ports: ? 1 x COM RJ45 ? 1 x COM Micro-USB (w/cable) Security Performance (minimum): ? Firewall throughput ? 10 Gbps ? Firewall IMIX throughput ? 5 Gbps ? NGFW throughput ? 2 Gbps ? Firewall Latency (64 byte UDP): 8ms ? IPS throughput ? 3 Gbps ? Threat Protection (combined FW, IPS, App Ctrl, & malware prevention enabled using HTTP 200 KB packet size) throughput ? 850 Mbps ? IPsec VPN throughput ? 5 Gbps ? Xstream SSL/TLS Inspection throughput ? 750 Mbps ? Xstream SSL/TLS concurrent connections ? 12K ? Concurrent connections ? 4.5M ? New connections/sec ? 68K ? Wireless Access Point Supported - 12 ? Maximum licensed users ? unrestricted/unlimited Please see attached file in drawing section for others technical specification</p>				
89	Necessary Power Accessories (01 lot)	Multiplug, Power cable, Power socket, others Accessories	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
90	Installation of all networking (01 Job)	This item involves the comprehensive installation and commissioning of specified systems or equipment as detailed in the project scope. The objective is to ensure that all components are installed accurately, fully integrated with existing systems, and operational to meet the project's technical requirements. The tenderer	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		<p>must submit detailed plans and documents illustrating a thorough approach to installation and commissioning, including critical activities such as wiring, networking, and system configuration: 3D Render: Must provide a 3D rendering that visually represents the system in its operational environment, showing all components in their final installed state. Floor Layout: Must submit a detailed floor layout plan that includes the placement of all system components, equipment paths, and connectivity points. Architectural Design: Architectural design documents must integrate the new systems into the existing infrastructure, showing any necessary structural adaptations and system supports. Associated Technical Diagrams: Must include a comprehensive technical diagram that cover electrical schematics, mechanical systems, and network cabling layouts. Installation Details: Wiring and Cable Laying: Detailed plans for wiring paths, types of cables used, and cable laying methodologies. Networking: Network design including routers, switches, and hubs placement along with backbone connections and network topology. Face Plates and Modular Connections: Placement of face plates and modular connectors including details on types and standards used. Rack Dressing: Plans for rack arrangement, cable management, equipment mounting, and dressing. Testing and Validation: Procedures for network testing, signal integrity checks, and functionality tests to ensure full system operation. Labelling: Labelling scheme for all equipment, cables, and termination points to facilitate maintenance and future upgrades. Submission Specifications: Documents should be provided in high-resolution format and should not be generic internet images. Ensure that all designs comply with local codes and industry standards. Diagrams should be annotated and include legends to clarify elements within the design and layouts.</p>				
91	PA Conference Main Unit (1 Nos)	<p>Designed in accordance with ISO and IEC914 standards. Built-in power supply device and signal amplifier, which</p>	<p>A committee consisting of 5 (five) members of</p>			

		can support more than 70 groups of speech equipment. Four groups of 9p-DIN plugs for several systems join. Can offer the power and date communication socket for video central processor. Possess the output socket of audio frequency equipment. Equipped with BAL socket for connection kinds of result device. Built-in volume processor for volume regulating. Built-in monitor loudspeaker (1w) for volume regulating.	different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
92	PA Conference Chairman Unit (01 Nos)	Frequency Response: 40-16000Hz. Sensitivity: -42±2dB. Reference sound 接收距离: 20-120cm. Built-in monitor loudspeaker (1w) for volume regulating. Chairman unit could control the whole process of the conference. Red indicator light on the MIC. Electric capacity type microphone, equipped with windshield cover, extension pipe optional. The chairman unit in the systems is unrestricted, can join with any position in the circuit	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
93	PA Conference Delegate Unit (16 Nos)	Frequency response: 40-16000Hz. Sensitivity: -42±2dB. Reference: sound 接收距离: 20-120cm. Built-in monitor loudspeaker (1w) for volume regulating. Red indicator light on the MIC. Electric capacity type microphone, equipped with windshield cover, extension pipe optional. Warranty: One Year.	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
94	PA conference Audio Amplifier (01 Nos)	80 WATTS AC & 12V DC OPERATING 80 Watts RMS at 10% THD 100 Watts Max. MIC:4 mic 0.65 mV/4.7KΩ. AUX: 1 x AUX 100mV / 470kΩ. 50 - 15k Hz 3dB Bass: 10dB at 100Hz Treble: 10dB at 10K Hz 40, 80, 160, 70V & 100V IV/1kΩ AC: 220 - 240 V 50/60 Hz DC: 12V (12V Car Battery) MP3 Player / Recorder with Bluetooth / USB / MMC / SD With Remote Control 88 - 108 MHz Tuning range 60ms to 300ms, 300ms to 500ms, 500 ms to 650ms Delay Time: 20ms to 600ms L 440 xW 360 xH 160mm GW-7.200 Warranty: One Year.	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
95	PA Conference Sound Box Ceiling Type (04 Nos)	Ceiling Speaker, for Better Sound Input Power: 20W RMS, Power Taps on 100v 20/10/5W Impedance: 1.6/3.3k/6.6k, Frequency response 70-15, 000Hz SPL at 1kHz(1W/1m) 85dB, Dimensions w105x h80 mm Weight 0.47kg, Material ABS (UV Protected) Warranty:	A committee consisting of 5 (five) members of different decipline shall attend at DEPTC, Narayanganj, BIWTA. to			

		One Year.	inspect the all supplied goods			
96	Wireless Microphone (03 Nos)	UHF RECEIVER Carrier Wave Frequency Range: UHF 610-815 Mhz Oscillation Mode: Quartz Controlled Fixed Frequency Carrier Wave Stability: 10PPM Sensitivity:-105 dB@ sinad 12dB SINRatio: > 105 dB T.H.D: < 0.5%@1KHz Image Rejection:85 dB Typical Spurious Rejection:75dB TYPICAL Frequency Responses:40Hz - 18KHz Working distance:100M Squelch Control: Dual-squelch Circuit AF Output Impedance:2.2K ohm Max. Output Level Balance:0-400mv; Unbalance:0-200mv; Display: LED Power Supply: ExternalDC Power Supply,0.35A , 12-18VDC Output Connector:2XLR Balanced Socket, Unbalance TRs 6.35mm Socket TRANSMITTER Transmitter Power:30mW Spurious Emission: < 40dB(with Carrier) Display: LED Battery Voltage:1.5v x2 Battery Life: 10Hrs Warranty: One Year. "	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
97	Accessories (1 Nos)	Extension Cord, Audio Cable	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
98	Monitor (17 Nos)	16" Portable Multi-Touch IPS FHD Monitor	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
99	Installation (01 Job)	Full PA system installation, programming, testing & Commissioning Charge Warranty: One Year.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
100	Video Conference	1080p Full-HD video, up to 3-way video conferences,	A committee consisting of			

	Camera (1 Nos)	support for 2 monitor outputs through 2 HDMI outputs 3-way hybrid-protocol conferencing with no external MCUs/servers or extra software licenses PTZ Camera with 9x optical zoom Based on Android Integrated Bluetooth, Gigabit ports, video recording, Screen sharing through HDMI/VGA input Installed in just 3 simple steps (connect to network, TV monitors and speaker/mic Built-in Meeting scheduler Plug and Play connection to IP. Video Talk video conferencing service Supports third party SIP video conferencing platforms Original Manufacturer warranty: 1 year Manufacturer Authorization Letter: Yes	5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
101	Video Conference Camera stand (01 Nos)	As per PE required	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
102	Smart TV 75" 4K (01 Nos)	75" UHD 4K (3840 x 2160) Display Dynamic Crystal Color, Crystal Processor 4K Motion Xcelerator, Auto Game Mode Connectors (channels): USB 2, HDMI 3	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
103	Multi-Function Duplex Copier (01 Nos)	Toshiba e-Studio 2323AM Multi-Function Duplex Copier ? Functions: Print, Scan, Copy ? Copy / Print Speed (ppm): 23 ? Zoom: 25 - 400% ? Warm-up Time: 15 sec.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
104	Printer (02 Nos)	Multi-Function laser printer	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
105	Control	Control station for Command	A committee			

	Station (02 Nos)	Center Training Unit - Control workstation with size to accommodate at least 4 monitors - Desk Mount Quad Monitor Arm - VESA 4 Monitor 2 x 2 - 2 x i7 12th Gen 16 GB DDR4, 512 GB SSD, 2 TB HDD Tower Desktop PC - 4 x 27-inch 4K UHD IPS Dual HDMI DP USB Monitor compatible with VESA mount - Steel frame ergonomic chair	consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			
106	Customizable Network Management Software (NMS) (1 Package)	<p>Tailored Network Monitoring:</p> <ul style="list-style-type: none"> o Real-time monitoring of all network devices, including routers, switches, firewalls, and servers. o Customized alerts for device failures, bandwidth anomalies, and critical performance issues. o Personalized dashboard showing network health metrics specific to the organization's needs. <p>Performance and Traffic Analysis:</p> <ul style="list-style-type: none"> o Customized performance tracking with configurable KPIs (CPU, memory, traffic throughput). o Advanced traffic analysis and detailed reporting of bandwidth utilization by device, user, or application. o Custom thresholds for monitoring performance degradation and network bottlenecks. <p>Custom Fault Management:</p> <ul style="list-style-type: none"> o Automated detection of faults with customized alert thresholds. o Configurable alert escalation protocols with notification options such as SMS, email, and app integration. <p>Enhanced Security Monitoring:</p> <ul style="list-style-type: none"> o Integration with existing security systems for real-time monitoring of firewalls, intrusion detection systems (IDS), and anti-malware solutions. o Customizable security alerts for unauthorized access attempts, traffic anomalies, and potential breaches. o Automated vulnerability scans and compliance monitoring based on regulatory standards. <p>Custom Reporting and Analytics:</p> <ul style="list-style-type: none"> o Tailored reporting features based on business-critical metrics, with custom formats for executive or technical reporting. o Real-time analytics with historical data comparisons for trend analysis and capacity planning. o Custom scheduling for automated reports and alerts delivered to predefined stakeholders. <p>Scalability and High Availability:</p> <ul style="list-style-type: none"> o Customized architecture for scalability based on current and future network growth. o High- 	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

		<p>availability configuration with redundancy and failover solutions designed to meet business continuity requirements.</p> <ul style="list-style-type: none"> o Custom resilience measures for critical services and systems. <p>Integration with Existing Systems:</p> <ul style="list-style-type: none"> o Seamless integration with third-party tools like ticketing systems, e-Traffic management, and custom-built internal tools. o API support for interconnecting with business systems, ensuring a holistic view of network and business operations. <p>Role-Based Access Control (RBAC):</p> <ul style="list-style-type: none"> o Custom role-based access for various user levels, from administrators to technicians, tailored to internal organizational hierarchy. o Multi-layered security with configurable access permissions and custom activity logs for auditing. <p>User Interface Customization:</p> <ul style="list-style-type: none"> o Fully customizable user interface (UI) with personalized dashboards for BIWTA with their own branding, widgets, and reports. o Custom layouts and visualizations to highlight mission-critical components based on organizational priorities. <p>Warranty and Licensing</p> <ul style="list-style-type: none"> o 36-month support and warranty to be provided o 50 license <p>Product details should be provided. Should be used by reputed clients in Bangladesh. Must provide a client list.</p>				
107	Core Switch (1 Nos)	<p>Product Specification: Core Switch ? Brand: To be mentioned by the tenderer ? Model: To be mentioned by the tenderer Physical Characteristics: ? Enclosure Type: 19-inch Rack-mountable modular chassis with a minimum of 5 slots available from Day 1 Environmental Standards: ? Must maintain International Quality Environmental Safety standards Detailed Specifications: ? Part Number and BOQ: Tenderer must submit a Bill of Quantities (BOQ) of the proposed device including the details part numbers and required performance documentation. Switch Architecture: ? Port Configuration: At least 24 x 10G SFP+ fiber ports and 48 x 10/100/1000Gbps Copper ports from Day 1. ? Optical Transceivers: Must provide 12 x 10G short-range optical transceivers, same brand as the switch,</p>	<p>A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods</p>			

		<p>from Day 1. ? Power and Cooling: o Support for Redundant Power Supplies o Redundant Fan modules ? Memory and Storage: o Minimum 4GB Memory and 2GB Flash ? Processing and Management: o At least one separate central processing engine o RJ45-based Console Ports and at least one 1Gbps dedicated Ethernet Management Port Switch Performance: ? Switching Bandwidth: At least 15 Tbps ? Forwarding Rate: At least 3000 Mpps Layer 3 Features: ? Routing Protocols: Support for RIP, OSPF, BGPv4, IS-IS, VRRP ? IPv6 Support: Routing capable protocols such as OSPFv3 in hardware. ? Advanced Routing: o Policy Based Routing (PBR) or similar technology o IP Multicast, PIM Sparse Mode, PIM Dense Mode o Basic IP Unicast routing protocols (static, RIP & RIPng) Layer 2 Features: ? VLAN: 802.1q VLAN encapsulation ? Spanning Tree: 802.1d, 802.1s, 802.1w ? Link Aggregation: 802.3ad (dynamic link aggregation) ? MAC Configuration: Static MAC configuration ? VXLAN: L2 switching and VTEP MPLS Features: ? L3 VPN ? L2 VPN ? MPLS OAM ? Hierarchy VPLS Security Features: ? Port Security ? IEEE 802.1x ? AAA/Radius authentication ? Standard and extended ACLs ? Ingress and egress ACLs ? Traffic shaping, priority marking, and remarking ? Congestion avoidance ? uRPF (Unicast Reverse Path Forwarding) Switch Management: ? SNMP v1/v2/v3 ? NetFlow / sFlow ? SSHv2 ? OpenFlow 1.3 Certifications: ? Manufacturer Authorization Certificate must be included during submission Warranty: ? Three (3) years</p>				
108	Installation and commissioning (01 Job)	Cable laying, rack dressing, punching, crimping, testing, labelling, camera mounting and other necessary work.	A committee consisting of 5 (five) members of different discipline shall attend at DEPTC, Narayanganj, BIWTA. to inspect the all supplied goods			

Section 7. Technical Specifications

(Modern Training and Campus Management Software Including Computers and Electronic Equipment)

The purpose of the Technical Specifications (TS), is to define the technical characteristics of the Goods and Related Services required by the Purchaser. The Purchaser shall prepare the detailed TS take into account that:

- The TS constitute the benchmarks against which the Purchaser will verify the technical responsiveness of bids and subsequently evaluate the bids. Therefore, well-defined TS will facilitate preparation of responsive bids by bidders, as well as examination, evaluation, and comparison of the bids by the Purchaser.
- The TS shall require that all goods and materials to be incorporated in the goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the contract.
- The TS shall make use of best practices. Samples of specifications from successful similar procurements in the same country or sector may provide a sound basis for drafting the TS.
- The Bank encourages the use of metric units.
- Standardizing technical specifications may be advantageous, depending on the complexity of the goods and the repetitiveness of the type of procurement. Technical Specifications should be broad enough to avoid restrictions on workmanship, materials, and equipment commonly used in manufacturing similar kinds of goods.
- Standards for equipment, materials, and workmanship specified in the Bidding Documents shall not be restrictive. Recognized international standards should be specified as much as possible. Reference to brand names, catalogue numbers, or other details that limit any materials or items to a specific manufacturer should be avoided as far as possible. Where unavoidable, such item description should always be followed by the words “or substantially equivalent.” When other particular standards or codes of practice are referred to in the TS, whether from the Borrower’s or from other eligible countries, a statement should follow other authoritative standards that ensure at least a substantially equal quality, then the standards mentioned in the TS will also be acceptable.
- Any applicable environmental and social requirements shall be specified. The ES requirements should be prepared in manner that does not conflict with the relevant General Conditions (and the corresponding Special Conditions if any) and other parts of the specifications.

Reference to brand names and catalogue numbers should be avoided as far as possible; where unavoidable the words “or at least equivalent” shall always follow such references.

- Technical Specifications shall be fully descriptive of the requirements in respect of, but not limited to, the following:

- (a) Standards of materials and workmanship required for the production and manufacturing of the Goods.
 - (b) Detailed tests required (type and number).
 - (c) Other additional work and/or Related Services required to achieve full delivery/completion.
 - (d) Detailed activities to be performed by the Supplier, and participation of the Purchaser thereon.
 - (e) List of detailed functional guarantees covered by the Warranty and the specification of the liquidated damages to be applied in the event that such guarantees are not met.
- The TS shall specify all essential technical and performance characteristics and requirements, including guaranteed or acceptable maximum or minimum values, as appropriate. When the Purchaser requests that the Bidder provides in its bid a part or all of the Technical Specifications, technical schedules, or other technical information, the Purchaser shall specify in detail the nature and extent of the required information and the manner in which it has to be presented by the Bidder in its bid.

[If a summary of the Technical Specifications (TS) has to be provided, the Purchaser shall insert information in the table below. The Bidder shall prepare a similar table to justify compliance with the requirements]

“Summary of Technical Specifications. The Goods and Related Services shall comply with following Technical Specifications and Standards

<u>Item No</u>	<u>Name of item of Goods Required</u>
Auditorium Unit	
1	Wireless Microphone System (Hand Held)
2	Wireless Microphone System (Head Mic)
3	16 Channel Professional Mixer
4	Audio Processor: Digital Sound Processor
5	Two-Way Full Range Speaker
6	Professional Speaker Bracket (Wall Mount)
7	Professional Stereo Digital Power Amplifier (8Ω; 2x650W)
8	Professional stage speaker
9	Monitor Speaker with amplifier
10	High Power Subwoofer Speaker
11	8 Channel Power Supply Sequency Controller
12	XLR (Female)-XLR (Male) Connector
13	20U 19" Floor Stand Audio Rack with Electric Fan
14	Cable
15	Installation testing and commissioning
Modern Training and Campus Management Unit	
1	Projector with screen and accessories
2	Desktop Computer
3	Laptop computer

4	Pen Interactive panel and Podium
5	Interior design in class room
6	Combined Table and chair as per sample
7	CCTV camera and accessories
8	Tower Server
9	Training and campus management software
10	Interior of the Command and Control Center training unit
11	Installation, commissioning and support
Conference Unit	
1	PA Network Conference Main Unit
2	PA Conference Chairman Unit
3	PA Conference Delegate Unit
4	Full Range Speaker
5	Professional Speaker Bracket
6	Power Amplifier
7	HD Conference Camera
8	Audio Rack
9	Display
10	Accessories (Extension cord, audio cable)
11	Installation Testing and Commissioning
Command and Operation Training Unit	
1	Video wall matrix mainframe Controller box
2	4CH HDMI encoding card
3	6CH HDMI decoding card
4	1 CH Ultra HD Encoder
5	1 CH Ultra HD Decoder
6	64 Ch Standalone NVR
7	8 TB Surveillance HDD
8	R450 Server
9	55" FHD Industrial-scale Brightness LCD Display Unit with DP Daisy Chain Function (0.88mm)
10	55" Bracket of Front Maintenance
11	HDMI 15m Male-Male/1080P with Buckle
12	Project Accessory Kit
13	Wooden case for 55" front-maintenance bracket (2 in 1; 1250×675×135)
14	Wooden case for 55" display unit (2 in 1; external dimension: 1403*583*1088)
15	IR to RS232 Controller
16	Multi Socket for Power Source
17	MK Box
18	Port Multi Plug for Power Source
19	1M HDMI Cable
20	Accessories
21	DTH-Setup box

22	Video Wall installation and testing
23	Video wall matrix - maintenance
24	Video wall-matrix operational and training software for Decision support system including 100 user licenses compatible with the video wall matrix
25	Video-wall matrix integration with all the BIWTA river port with real-time software uplink
26	Smart Port management software
27	Satellite-image based river encroachment and simulation software component
28	IP PABX Server
29	FXO GW
30	Video IP Telephone Set POE
31	Extension Module
32	IP Phone
33	SIP Number
34	Installation of IP telephony system
35	PoE switch 24 port
36	Network switch 24 port
37	UTP Cat6 Cable
38	Power Cable
39	UPS 6KVA
40	Server rack
41	PDU
42	Patch panel 24port
43	Cable Manager
44	Modular
45	RJ-45 Cat-6
46	Faceplate with Modular
47	Patch Cord
48	Patch Cord
49	HDMI Amplifier Splitter
50	HDMI Cable
51	Firewall
52	Necessary Power Accessories
53	Installation of all networking
54	PA Conference Main Unit
55	PA conference Chairman unit
56	PA conference delegate unit
57	PA conference Audio Amplifier
58	PA Conference Sound Box Ceiling Type
59	Wireless Microphone
60	Accessories
61	Monitor
62	Installation

63	Video Conference Camera
64	Video Conference Camera stand
65	Smart TV 75" 4K
66	Multi-Function Duplex Copier
67	Printer
68	Control Station
69	Customizable Network Management Software (NMS)
70	Core Switch
71	Installation

3.3 Descriptions, Specifications and Features of Goods Required.

Descriptions, technical specifications, features and provisions of each item shall be in compliance with the Purchaser's minimal requirements furnished below:

Package: Auditorium

Item No. 1: Wireless Microphone System (Hand Held) 01 set

1.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <p>MICROPHONE: <i>Hand Held Mic- 04</i> <i>RF OUTPUT POWER: 22 mw (Max)</i> <i>MODULATION MODE: UHF</i> <i>MICROPHONE ELEMENT: Dynamic Super Cardiod</i> <i>CARRIER FREQUENCY: 200 Multi Frequency</i> <i>BATTERY LIFE: 6-8 hrs depend on battery quality</i> <i>DIMENSIONS Hand mic – Ø52 X L242 mm.</i> <i>Body Pack – W63 x H33 x D100</i></p> <p>RECEIVER: <i>AUDIO OUTPUT Balanced 0-50mv</i> <i>Unbalanced HI: 0-80mv; LO: 0-25mv</i> <i>FREQUENCY RESPONSE 50-16000 Hz</i> <i>POWER REQUIRED 240V AC 50Hz for Adapter</i> <i>CONTROLS Power ON/OFF Switch,</i> <i>Audio Output Volume</i> <i>Control for each channel</i></p>

		<i>OPERATING RANGE (APPROX.) 50 ~ 150 Meters</i> <i>Original Manufacturer Warranty: 1 year</i> <i>Manufacturer Authorization Letter: Required</i>
Item No. 2: Wireless Microphone System (Head Mic) (01 Set)		
2.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <p>MICROPHONE: <i>Body Pack + 04 Head Mic</i> <i>RF OUTPUT POWER: 20 mW (Max)</i> <i>MODULATION MODE: UHF</i> <i>MICROPHONE ELEMENT: Dynamic Super Cardiod</i> <i>CARRIER FREQUENCY: 700 ~ 800MHz</i> <i>BATTERY LIFE: 6-8 hrs depend on battery quality</i> <i>DIMENSIONS: Hand mic – Ø52 X L242 mm.</i> <i>Body Pack: W63 x H33 x D100</i></p> <p>RECEIVER: <i>Single Channel System</i> <i>AUDIO OUTPUT: Balanced 0-50mV</i> <i>Unbalanced HI: 0-80mV; LO: 0-25mV</i> <i>FREQUENCY RESPONSE: 50-16000 Hz</i> <i>POWER REQUIRED 240V AC 50Hz for Adapter</i> <i>CONTROLS: Power ON/OFF Switch</i> <i>Audio Output Volume</i> <i>Original Manufacturer Warranty: 1 year</i> <i>Manufacturer Authorization Letter: Required</i></p>
Item No. 3: 16 Channel Professional Mixer (01 Set)		
3.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <p><i>Carrier Wave Frequency Range: 863.1MHz to 864.9MHz</i> <i>Oscillation Mode: Quartz Controlled Fixed Frequency</i> <i>Carrier Wave Stability: 10PPM</i> <i>Sensitivity: -105dB@sinad=12dB</i> <i>S/N Ratio: >105dB</i> <i>T.H.D: <0.5%@1KHz</i> <i>Image Rejection: 85dB typical</i> <i>Spurious Rejection: 85dB typical</i> <i>Frequency Responses: 4Hz~18KHz</i> <i>Working Distance: 200 fee</i></p>

		Support 2 groups output, and 2 AUX (including FX) Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required
Item No. 4: Audio Processor: Digital Sound Processor (01 Set)		
4.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer Digital Sound Processor Echo & Reverb / Chorus separate section to use separately or mixed mode. Individual Control. Echo Switch to select 3 modes Echo and mixed 2 modes. Reverb / Chorus – Depth & Duration Controls (Parameter). Input 2 Mic. & Aux IN / OUT. Output level LCD display. Bass & Treble Effects. Effects On / Off Switch. Option to operate direct Mic. through Mixer Power Supply: AC 220V 50 Hz. Dimension: 428 (W) x 208 (D) x 105 (H) mm. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required Dimension: 428 (W) x 208 (D) x 105 (H) mm. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required
Item No 5: Two-Way Full Range Speaker (06 Set)		
5.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer 15" High-Power Two-Way Loudspeaker Light-weight and very high-power. 75°x 50°coverage. Bi-amplified or full-range passive operation. 800 watts continuous, 1600 watts program and 3200 watts peak Dual-angle pole socket for applications requiring tripod mounting. Flying version available with five suspension points. May be used with optional M10 eyebolts or detachable track fittings. Differential Drive® woofer with neodymium magnet for high power capacity and very light-weight. 3 in. (voice-coil) compression driver with neodymium magnet. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required
Item No. 6: Professional Speaker Bracket (06 Set)		
6.1	Technical Specifications/Features	

	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Professional Speaker Bracket (Wall Mount) Local</i>
Item No. 7: Professional Stereo Digital Power Amplifier (05 Set)		
7.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> 2 temperature-dependant variable speed fans 2RU rack mountable amp designed for live sound reinforcement applications such as for parties, clubs, and concerts. The amplifier is capable of outputting 4080W bridged at 4Ω, 2040W per channel at 4Ω, and 1250W per channel at 8Ω with a frequency response of 10 to 100,000 Hz. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required
Item No. 8: Professional Stage Speaker (02 Set)		
8.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> 15" High-Power Two-Way Loudspeaker Light-weight and very high-power. 75°x 50°coverage. 800 watts continuous, 1600 watts program and 3200 watts peak Bi-amplified or full-range passive operation. Dual-angle pole socket for applications requiring tripod mounting. Flying version available with five suspension points. May be used with optional M10 eyebolts or detachable track fittings. Differential Drive® woofer with neodymium magnet for high power capacity and very light-weight. 3 in. (voice-coil) compression driver with neodymium magnet. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required
Item No. 9: Monitor Speaker with amplifier (02 Set)		
9.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i>

	(minimum or equivalent)	<p>Sound Guard 44 high frequency driver protection circuit</p> <p>Frequency response: 67 Hz – 18 kHz; ± 3 dB</p> <p>Sensitivity: 97 dB</p> <p>Dispersion: 60° x 60°</p> <p>Max SPL: 133 dB</p> <p>1000 Watts continuous, 2000 Watts program, 4000 Watts peak</p> <p>Two full range, two bi-amp Neutrik Speakon connectors</p> <p>Throughput panel on opposite end from input panel has one full-range and one bi-amp Neutrik Speakon connector</p> <p>SA™ 1 black pole-mount stand adapter</p> <p>Durable GatorHyde® finish</p> <p>Original Manufacturer Warranty: 1 year</p> <p>Manufacturer Authorization Letter: Required</p>
Item No. 10: High Power Subwoofer Speaker (02 Set)		
10.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>Dual 18", 2-way, bass-reflex, subwoofer.</p> <p>Frequency Range (-10 dB): 27 Hz - 220 Hz.</p> <p>Frequency Response (± 3 dB): 33 Hz - 220 kHz.</p> <p>Power Rating (Continuous/Program/Peak): 1600 W/3200 W 640 W.</p> <p>Dimensions (H x W x D): 24 in. x 42 in x 33 in.</p> <p>Net Weight: 166.5 lbs.</p> <p>Original Manufacturer Warranty: 1 year</p> <p>Manufacturer Authorization Letter: Required</p>
Item No. 11: 8 Channel Power Supply Sequency Controller (01 Set)		
11.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>Universal socket, can meet the needs of various types of plug</p> <p>Total Max current 16A, each channel Max current 10A Each channel will be turned on/off in order, so as to protect the power grid With activating trigger of 6.3mm phone jack interface Aluminium fashionable panel, 1 U slim design, suitable for rack mounting</p> <p>Power supply: AC 220-240V/50-60Hz/20A</p> <p>Original Manufacturer Warranty: 1 year</p> <p>Manufacturer Authorization Letter: Required</p>

Item No. 12: XLR (Female)-XLR (Male) Connector (12 Nos)		
12.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer XLR (Female)-XLR (Male) Connector
Item No. 13: 20U 19" Floor Stand Audio Rack with Electric Fan (01 Nos)		
13.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer Construction and Features: <ul style="list-style-type: none"> • Front Door: <ul style="list-style-type: none"> ○ Double opened wave curve vented front door equipped with an MS818 handle lock (1PC) • Rear Door: <ul style="list-style-type: none"> ○ Double open flat vented rear door with MS818 handle lock (1PC) • Side Panels: <ul style="list-style-type: none"> ○ Side panels with round locks (2PCS) • Shelves: <ul style="list-style-type: none"> ○ Fixed shelf (1PC) ○ Sliding shelf (1PC) • Cooling: <ul style="list-style-type: none"> ○ Fans: 4PCS with 2.00 M line each • Power Distribution Units (PDU): <ul style="list-style-type: none"> ○ Two 10-port PDUs with logo, mounted within the 42U rack dimensions of 800mm x 1000mm • Mobility and Stability: <ul style="list-style-type: none"> ○ 2.0-inch castor wheels (4PCS), with two featuring locks and adjustable feet • Hardware: <ul style="list-style-type: none"> ○ Philip screws and nuts (50 Sets) • Aesthetics: <ul style="list-style-type: none"> ○ Logo: Displayed on the front door ○ Color: Black • Material Thickness: <ul style="list-style-type: none"> ○ Mounting profile: 2.0mm ○ Other components: 1.2mm to 1.5mm • Cable Management:

		○ Vertical cable managers with covers (2PCS)
Item No. 14: Cable (10 Coil)		
14.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> Audio Cable 40/76
Item No. 15: Installation testing and commissioning (01 Job)		
15.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Complete installation of all the equipment, testing, commissioning and support for one-year.</i>

Package: Modern Training and Campus Management Software Including Computers and Electronic Equipment:

Item No. 1: Projector with screen and accessories (10 set)

1.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> Bright WXGA DuraCore laser projector - 5200 lumens and IP6X certified Compact for easy installation - 1.3x zoom, 360-degree and portrait projection Reduced power consumption for a long-life span - DuraCore laser technology delivers 30,000 hours maintenance free laser light source External power supply - More reliability, portability and energy efficiency Compatible with interactive board Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required


Item No. 2: Desktop Computer (30 Set)

2.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> MOTHERBORD- GIGABYTE AMD A520M K V2 MOUSE LOGITECH ORIGINAL M90 USB GRAY KEYBOARD LOGITECH USB K120 or equivalent CHASSIS REVENGER GOOD QT RGB FIRE GAMING POWER SUPPLY ACEpower GOOD MSPU-80+/FP450 SSD TRANSCEND VERY GOOD TS120GSSD220S 120GB PROCESSOR AMD GOOD AMD RYZEN 5 5600G 4.4GHz DESKTOP RAM TRANSCEND MEMORY U-DIMM 8GB JM DDR4 3200MHz UPS PowerGard ORIGINAL PG1200VA-PS 1200VA Offline MONITOR SAMSUNG ORIGINAL LS22C310EAE 21.5 INCH FHD HDD WD 3.5 1TB Warranty: At least 2 year for motherboard, processor

Item No. 3: Laptop computer (15 Set)

3.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i>

	(minimum or equivalent)	<p>11TH GEN ITL i7-1165G7 (2.8- 4.7GHZ, 12MB), 8GB DDR4 3200, 512GB M.2 NVME SSD, 720P CAM+ P SHUTTER, INTEL IRIS Xe GFX,15.6" FHD 250N AG , DOLBY SOUND, BL KB, FP, WIN11H, AC WiFi 5 x 2+ BT 5.0, FW TPM 2.0, A.GREY</p> <p>Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required</p>
Item No. 4: Pen Interactive panel and Podium (8 Set)		
4.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <p>Interactive Whiteboard Writing school white board size 100 X 200 cm Technology: Infrared ray shading detection Type: Wall mount (Default) Aspect ratio: 4:3, Shortcut Key, Pen, Finger, pointer or other object can operate, 10 Touch Points, Surface: High density polyester, Low reflection, support mark pen, No need install extra drive, plug and play, Supports Win10/Win8/Win7/Vista/XP/Mac Resolution: 32767X32767 Interface to Computer: USB 1.1, USB 2.0 Gesture & Pen Recognition Technology. Power Supply: USB cable. Warranty: 01 Year Highly Appreciated Digital Podiums Material: Stainless steel, aluminum Dimension: 790 mm L x 620mm W x 1100-1300 mm H High quality load-bearing casters: Four wheels for easy movement, TOP SCREEN: All-in-one 23.6" multi-touch screen PC pre-installed, Electric lifting stand: Monitor angle can be adjusted electrically, preset with wireless voice transmitting system, gooseneck microphone, Electric power lifting (up to 250 mm) to adjust podium height, Ports for audio, USB, VGA, HDMI, volume adjusting, height adjusting, etc. Built-in cable management and rounded handrails The removable laptop computer tray x2 (at the left & right side) Suitable for use in conference rooms, lecture halls, hotels, meeting rooms, school and university classrooms, churches, and places of entertainment. Elegant design to add style to presentation spaces. Improve your presentation delivery with the ease and confidence that the comfortable design of this podium provides. l Integrates the technology of PC display, AV, and touch screen. This podium makes it easy to use and display AV files, images, and documents! Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required</p>
Item No. 5: Interior design in class room (4000 Square feet)		
5.1	Technical Specifications/Features	

	<i>Materials and elements - Interior design in class room</i>	<i>Interior design in class room will be carried out by veneer board, garjon wood, LED lighting and painting as required sufficient led lighting, painting etc. as per approval of interior design from consultant/client authority</i>
Item No. 6: Combined Table and chair as per sample (240 Set)		
	<i>Table and chair</i>	<ul style="list-style-type: none"> • <i>Should be made from the Mild Steel Structure & Treated & Seasoned (KILN Dried) Local Mahagony Wood with Natural Varnish.</i> • <i>2All surface of Mild Steel should be mig welded, chemically de-rusted and zinc phosphate coated with oven backed heated powder paint finish to confirm anti rust, shiny color and longevity.</i> • <i>PVC stopper should be used in bottom to prevents moisture content of the floor.</i> • <i>Size L 400 x W390 x SH420 x BH450 mm</i> 
Item No. 7: CCTV camera and accessories (1 Set)		
7.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <p><i>CCTV camera and accessories for full campus coverage.</i></p> <ul style="list-style-type: none"> - 64*4.0 MP IP Day & Night Vision Camera - 1*64Channel Network Video Readers (NVR) - 8*8HDD - RJ 45 Connector - 2*50" Smart TV - UTP Cable, 305m UTP CAT-6, - 7*08 Port POE Giga Network Switch - 1*16 Port POE Giga Network Switch - 1*24-Port Gigabit PoE+ SFP Managed Switch - Fiber Cable 04 Core - Media Converter - TJ+Patch Cord - Fiber Splicing - DB Box - 12U Server Rack - 06 KVA UPS - Power Cable 23/76 - Camera Stand with Housing - 48 port cable Manager (Panduit/equivalent) - 48 port patch panel (Panduit/equivalent) - Necessary faceplate with modular (Panduit/equivalent), - Others Accessories (Tape, Screw, Royal plug Etc.) - Piping, Channelling with PVC Pipe, Channel - Camera Supply Installing Warring, Fittings charge and support for one year <p><i>Original Manufacturer Warranty for camera and NVR: 2 years</i></p>

		Manufacturer Authorization Letter: Required for camera and NVR
Item No. 8: Tower Server (2 Set)		
8.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Features & Requirement (minimum or equivalent)	<p>Brand Name: To be specified by the tenderer Model: To be specified by the tenderer</p> <p>Dell EMC PowerEdge T150 server Dependable performance for file/print, email, web hosting, and collaboration applications. This tower server Must have Intel Xeon E-2314 processor, 16GB DDR4 RAM, and scalable storage with various accessories,</p> <ul style="list-style-type: none"> - Cable, - Switch, - Hub - Router, - Rack etc <p>Original Manufacturer Warranty: 2 years</p>
Item No. 9: Training and campus management software (1 Package)		
9.1	Technical Specifications/Features	
	<p>Deck Personnel & Engine Training Centre (DPETC) is planning to develop a system automation software so as to get the total integration of activities for all the departments of DEPTC and its training management system. This will enable DEPTC to efficiently manage its overall academic activities with its different wings and would enable DEPTC to make easy decisions and preserve records for future analysis/evaluation. Academic learning management system and all other related activities would also be made easy. Necessary features and additional modules will be added in the system. The system will be development latest architecture. Mentionable that the DEPTC system automation will be named as “DEPTC Training and Campus Management System”.</p> <p>Bidder is to submit full specification and relevant documents along with the offer. The information in the technical document needs to be self-explanatory and must support and validate the information mentioned in the specification. Deviation or variation of information between the provided documents and offered documents would be treated as non-compliance.</p> <p>The software will have the following modules to integrate and automate all management activities of DEPTC.</p> <p>User Privilege/Access Control & Activity Monitoring: User management and Access control will be managed through this feature. DEPTC policy Must be reflected. User and User role Must be able to be created, updated and deleted by the admin USET, Academic policy, required criteria Must be adopted in the module. Activity Monitor. All activity of any user must be logged and can be reviewed by the admin when it is necessary.</p> <p>Profile to be created in English and Bengali. Software must generate profile related various reports. There Must have provision for report generation using multiple filters (eg. branch/course wise Officer cadets' info, subject wise instructors' info, wing wise personnel info etc.)</p> <p>Academic calendar includes term/semester wise academic activates.</p> <p>Latest & Approved Syllabus</p> <p>Duty Assignment for Officers/instructor's</p> <p>Training Program</p> <p>Interview & Counseling of Cadets</p> <p>Exam & Result (Academic & Professional)</p> <p>Student's discipline and training performance assessment record of punishment</p> <p>Library management: Library Management Software (Automation)</p>	

	<p><i>Installation & Customization, Description: Mainly 2 portions of this software</i></p> <p><i>1. Library Admin Portion (This portion is for Librarian its include add or remove books English & Bengali, issuable/not issuable books, fine system etc.) &</i></p> <p><i>2. Library member/user portion (it includes-all kinds of searching item)</i></p> <p><i>Data entry about 2500 books & magazine, prepare of Barcode about 30,000 pcs.</i></p> <p><i>The software must be used in at least 10 reputed education institute covering at least 30,000 learners ensuring wide-spread acceptability and robustness of the system. Client reference must be provided.</i></p> <p><i>Theoretical and practical class management including attendance by finger print and facial recognition. Setup of 08 facial and finger recognition device for attendance management.</i></p> <p><i>IoT-based Smart Facial Attendance Management Device Requirements:</i></p> <ul style="list-style-type: none"> • <i>Each biometric device must contain an IoT-backed AI based facial recognition device with fingerprint recognition system as well.</i> • <i>The AI-based facial recognition devices will have to be capable of IoT connectivity that supports data connectivity.</i> • <i>The devices must communicate directly with the cloud server over the internet.</i> • <i>The devices must always be connected to the cloud-based software platform.</i> • <i>The devices must have face and fingerprint detection capabilities.</i> • <i>The devices must have minimum of 10,000 faces and card storage, along with 3000 fingerprint template storage (optional).</i> • <i>The devices must store the unrecognized/stranger log into its internal memory.</i> • <i>The devices must have minimum storage of 50,000 logs with face records and 200,000 logs without face records.</i> • <i>The AI-based facial recognition devices should have a minimum 5" sized all sight full view IPS touch display with minimum display resolution of 800 * 1080.</i> • <i>The AI-based facial recognition devices should be based on Linux Operating system with dual-core ARM Cortex A7 high speed processor at 900 MHz, 4GB ROM & 512MB RAM</i> • <i>The device should have external interfaces like Relay, Wiegand, RS232, and USB.</i> • <i>The communication protocol of the devices should support HTTPS (TLS encryption)</i> • <i>The AI-based facial recognition devices should have both IR & RGB dual lens camera</i> • <i>There should be a USB port for firmware update. Also, there should be OTA (over the air) firmware update facility.</i> • <i>Face Detection Algorithm: The devices should have built-in AI based dynamic face recognition algorithm, which ranks within top 3 in world famous face detection authoritative platforms like Fddb/NIST/LFW</i> • <i>The face recognition accuracy of the devices should be as follows:</i> <ul style="list-style-type: none"> • <i>Minimum 99.75% recognition rate at 1% false accept rate;</i> • <i>Minimum 99.25% recognition rate at 0.1% false accept rate.</i> • <i>There should be an anti-spoofing system for identifying any fraud/fake image, photo, 3D object, etc. (live face detection)</i> • <i>Anti-pass-back system should be built-in into the device.</i> • <i>The facial recognition should be done in less than 1 second with queue management</i> • <i>The device should be capable of identifying multiple users face getting in the display simultaneously (one by one)</i> • <i>The facial matching threshold, identification distance, etc must be configurable both from device and the connected centralized web software</i> • <i>The devices should show the number of users and the number of faces of the users in the display.</i> • <i>The device should have a device removal notification system once it is removed from its mount/carrier unit.</i> • <i>The device should have configurable functions, like</i> <ul style="list-style-type: none"> • <i>Stranger detection function, and the stranger level can be configured;</i> • <i>supports saving the on-site images of face recognition and stranger detection.</i> • <i>wifi credentials remote configuration (from central software) capability</i>
--	--

- The device should have a secured device admin access facility.
- The environmental protection of each component of the unit must be IP54 or above
- The system should have power input system of 12V/2A.
- Full operating manual for user enrollment and management system must be provided in Bengali and English.

API Details: The system should provide cloud API with following details:

- JSON data format (Lightweight rest API)
- Push/Pull dual data transfer Mechanism
- Customer platform database ID can be used as the Platform's User ID to map between two platforms
- Central/Single API for any number of devices and the devices or projects can be separated by API tokens.
- Chunk-wise data transfer facility for optimized user-end data processing.
- Enrollment, Revoke, push/pull both API, database entry API
- Data format to be matched/compatible with existing MIS/Software system
- Devices have a warranty up to the contract period.
- The devices should have all certificates as follows: ISO, FCC, and CE

Smart Attendance Device Management Software-

- The vendor must provide a central software system with the following capabilities -
 - The system must support batch user creation through an Excel file containing the user's name, pin/id, RFID card number, and other information.
 - The software should have a batch photo uploading facility for the existing user profile.
 - The system must have the functionality to control access (allow/revoke) of a user, multiple users, or all users on any device centrally, and the device must be updated instantly.
 - The system must have the functionality to revoke access for any user from any device instantly.
- API Details: The system should provide cloud API with following details:
 - JSON data format (Lightweight rest API)
 - Push/Pull dual data transfer Mechanism
 - Customer platform database ID can be used as Inovace Platform User ID to map between two platforms
 - Central/Single API for any number of devices and the devices or projects can be separated by API tokens.
 - chunk-wise data transfer facility for optimized user-end data processing.
 - Enrollment, Revoke, push/pull both API, database entry API
 - Data format to be matched/compatible with existing MIS/software system
- The system should have monitoring panel for all devices current status as follows:
 - Realtime Heartbeat
 - Last communication time
 - Disconnected devices, etc
- The system (software panel) should have following functions for device management:
 - Device clone function: copying the data of one device into another (even if the source device is in offline or damaged)
 - Device Refresh function: Removing all existing data and allocating the same again into the same device
 - Device Clear function: Removing all existing data from a device
 - Device Transfer function: Transferring a device from one office to another office in the software
- The enrollment of fingerprints or faces can be done from the central software.
- The system should have the feature of adding or removing any device to/from the central cloud software.

	<ul style="list-style-type: none"> • <i>The enrollment flow should be as follows:</i> <ul style="list-style-type: none"> • <i>User Creation (profile)</i> • <i>Photo upload by App</i> • <i>Allocate/revoke a device by app</i> • <i>Enroll once, allocate it to multiple devices from the same app</i> • <i>Showing error notifications if enrollment failed, with reason</i> • <i>Dataflow Management Capability: The system should have following data management capability:</i> <ul style="list-style-type: none"> • <i>System infrastructure and backend management contain</i> • <i>a fault-tolerant data streaming platform</i> • <i>a unified background data extraction, transformation, and load system for faster report generation on a large scale</i> • <i>an in-memory database, to process real-time device data with sub-millisecond latency</i> • <i>appropriate web server to handle high volume requests simultaneously and securely</i> • <i>The system should be hosted within a Linux operating system</i> • <i>Hardware - Software Connectivity & Integration: Configuration from central software panel - wifi credential, face identification distance, face matching threshold and other parameters, etc.</i> • <i>Bidders must submit the working principle and schematics of the proposed system that can ensure real-time connectivity across all devices nationwide.</i> <p>Other Requirements</p> <ul style="list-style-type: none"> • <i>The tenderer must provide evidence of the proposed smart attendance solution being used in projects where at least 500 IoT biometric attendance are connected in parallel to a single central server in real-time, without use of an intermediate computer in a single project to make sure the solution is scalable to other training centers. The vendor must provide evidence of prior experience delivering biometric attendance centralization projects concurrently in all upazilas of Bangladesh in a single project.</i> • <i>The vendor must provide an OEM Declaration or Manufacturer Authorization Certificate/Letter (MAL) for all devices, equipment, and software that will be used in the proposed solution</i> 		
Item No. 10: Interior of the Command-and-Control Center training unit. (SFT 6,000)			
10.1	Technical Specifications/Features		
	<table border="1"> <tr> <td> <i>Other Features & Requirement (minimum or equivalent)</i> </td><td> <i>Interior of the Command-and-Control Training Unit</i> <ul style="list-style-type: none"> • <i>The main Command and Control Training area should be around 4000 SFT and Server room, and other area should be comprised of 2000 SFT.</i> • <i>The training area can be raised above the floor to facilitate all the cabling to be freely running under the deck.</i> • <i>The main training area should have an unobstructed view to the main training video wall.</i> • <i>There should be a provision of a conferencing table, preferably in C or U Shape, facing the video training wall with a provision of 15 seats.</i> • <i>The room should have a well designed ceiling along with the optimum but attractive illumination.</i> • <i>The interior materials should be carefully considered to be contemporary looking, durable, with an accepted level of fire proofing</i> • <i>The interior of this training room should consider the acoustic environment of the room too</i> • <i>The rack room should have computer raised floor, matching the same height of the raised floor of the training room.</i> </td></tr> </table>	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Interior of the Command-and-Control Training Unit</i> <ul style="list-style-type: none"> • <i>The main Command and Control Training area should be around 4000 SFT and Server room, and other area should be comprised of 2000 SFT.</i> • <i>The training area can be raised above the floor to facilitate all the cabling to be freely running under the deck.</i> • <i>The main training area should have an unobstructed view to the main training video wall.</i> • <i>There should be a provision of a conferencing table, preferably in C or U Shape, facing the video training wall with a provision of 15 seats.</i> • <i>The room should have a well designed ceiling along with the optimum but attractive illumination.</i> • <i>The interior materials should be carefully considered to be contemporary looking, durable, with an accepted level of fire proofing</i> • <i>The interior of this training room should consider the acoustic environment of the room too</i> • <i>The rack room should have computer raised floor, matching the same height of the raised floor of the training room.</i>
<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Interior of the Command-and-Control Training Unit</i> <ul style="list-style-type: none"> • <i>The main Command and Control Training area should be around 4000 SFT and Server room, and other area should be comprised of 2000 SFT.</i> • <i>The training area can be raised above the floor to facilitate all the cabling to be freely running under the deck.</i> • <i>The main training area should have an unobstructed view to the main training video wall.</i> • <i>There should be a provision of a conferencing table, preferably in C or U Shape, facing the video training wall with a provision of 15 seats.</i> • <i>The room should have a well designed ceiling along with the optimum but attractive illumination.</i> • <i>The interior materials should be carefully considered to be contemporary looking, durable, with an accepted level of fire proofing</i> • <i>The interior of this training room should consider the acoustic environment of the room too</i> • <i>The rack room should have computer raised floor, matching the same height of the raised floor of the training room.</i> 		

		<ul style="list-style-type: none"> • The overall colour scheme and illumination should be of high standard considering the training room to be a 24/7 operational space. • The entrance area should have adequate signage and visual notion to establish the importance and functionality of this space. • The vendor must provide a 3D design and layout of the Command-and-Control Training Unit Interior following the state-of-the-art command area design area.
Item No. 11: Installation, Commissioning and Support (1 Job)		
11.1	Technical Specifications/Features	
	Country of Origin:	N/A
	Other Features & Requirement (minimum or equivalent)	Complete installation of all the equipment, testing, commissioning and support for one-year.

Package: Conference System

Item No. 1: PA Network Conference Main Unit (1 Nos)		
1.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <p>Supports ring backup connections. Equipped with built-in environmental noise canceller, digital equalization circuits, preventing feedback. CAT 6-core DIN cables for microphone connections, effectively preventing electromagnetic interference on the lines. Dual-machine hot backup mode functionality, allowing system backup. Equipped with a 4.3-inch true color touchscreen and an embedded Linux system with a Chinese operating interface. Allows touchscreen settings for conference modes, system volume adjustment, microphone management, unit numbering, camera parameters, video tracking settings, and ring light settings, among other functions. Conference modes include free mode, rotation mode, restriction mode, application mode, voice control mode, PTT mode, VIP mode, and timing mode. Supports 5V-24V fire linkage alarm interfaces for expanded functionality, such as connecting to fire alarm ports. USB recording function for conferences. Offers 1-way expansion RS232 port support for our hybrid switching matrix Supports control of up to 512 camera positions for automatic tracking. Supports two camera protocols: Pelco-D/P and VISCA Supports three camera control interfaces: RS232, RS422, and Rs485. The main unit can centrally adjust the output gain of attendance units and set audio adjustment locks. Features DATA network control interface, extending network cables up to 1000 meters for conference management. Offers live "hot-swappable" functionality for enhanced system safety. Includes request</p>

		<p>service feature for flexible and convenient conferencing. Provides two sets of audio input interfaces for connecting other audio devices, offering users more options. Support 120 pcs microphone with one CCU with extend CCU unit support up to 4096 pcs microphone units. Features "hand-in-hand" and loop connections for easy installation and maintenance. Support PC control commands for management software and central control devices. When paired with a telephone coupler, enables remote telephone conferences. When paired with network conferencing software and video conferencing terminals, it Must enable remote video conferencing.</p> <p>Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>
Item No. 2: PA Conference Chairman Unit (1 Nos)		
2.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <p><i>Chairman Microphone:</i></p> <ul style="list-style-type: none"> Chairman Unit can turn down all the delegate by Priority Key Microphone On/Off Key with Indicator Light YC838D Ant interference Network The indicator light and microphone tube indicator light will be on constantly when the microphone is turned on. Detachable Microphone Tube Interface (Some microphones have built-in tubes and do not have this interface). CAT 6-core Connection Network Cable Connection Port Camera The network cable version of the microphone has two network cable interfaces, allowing for daisy-chain connections. Include free mode, rotation mode, restriction mode, application mode, voice control mode, PTT mode, VIP mode, and timing mode. Built in speaker <p>Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>
Item No. 3: PA Conference Delegate Unit (20 Nos)		
3.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <p><i>Delegate Unit Microphone:</i></p> <ul style="list-style-type: none"> Chairman Unit can turn down all the delegate by Priority Key Microphone On/Off Key with Indicator Light YC838D Ant interference

		<ul style="list-style-type: none"> • Network The indicator light and microphone tube indicator light will be on constantly when the microphone is turned on. Detachable • Microphone Tube Interface (Some microphones have built-in tubes and do not have this interface). CAT 6-core Connection Network Cable Connection Port Camera The network cable version of the microphone has two network cable interfaces, allowing for daisy-chain connections. Include free mode, rotation mode, restriction mode, application mode, voice control mode, PTT mode, VIP mode, and timing mode. Built in speaker <p>Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>
Item No. 4: Full Range Speaker (4 Nos)		
4.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <p>2-way bass reflex speaker Cost-effective high power PA box speaker Various installation options Low impedance (8Ω) or high impedance (100V) selectable by rotary switch Splashproof construction in compliance with IPX4 Rated Input 30W Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>
Item No. 5: Professional Speaker Bracket (4 Nos)		
5.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p>
Item No. 6: Power Amplifier (2 Nos)		
6.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <p>Professional Stereo Digital Power Amplifier</p>

		<p><i>The A-2120 is a high-cost-performance mixer power amplifier suited for broadcasting paging or background music in schools, offices, shops, factories, mosques, churches, and large rooms, Easy to handle, High cost-performance, Both AC and DC operation possible, and Suitable for commercial audio systems, Scratch- and fingerprint-resistant front panel, A wide range of power outputs from 120W, A-2120 is a high cost-performance mixer power amplifier, equipped with balanced mic inputs for better isolation from external noise / compared to unbalanced inputs, improved durability compared with conventional, suited for broadcasting paging or background music in schools/offices/shops/factories /mosques /churches and large rooms. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</i></p>
Item No. 7: HD Conference Camera (1 Nos)		
7.1	Technical Specifications/Features	
	Country of Origin:	<i>To be specified by the tenderer</i>
	Other Features & Requirement (minimum or equivalent)	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <p>HD Conference Camera: 4K Ultra HD Resolution: Utilizing a SONY 1/2.8-inch 8.5-megapixel high-quality image sensor, with an effective pixel count of 8.29 million, capable of delivering premium-quality images at a maximum resolution of 3840x2160. 20x Optical Zoom Lens: Equipped with a high-quality telephoto lens, with a 58.7° field of view, offering 20x optical zoom and supporting 16x digital zoom. USB3.0+HDMI+LAN+3G-SDI Full Interface: Default Version: Supports HDMI and USB3.0 for 4K Ultra HD synchronous output, and LAN for high-definition 1080 output. Optional Version: Supports HDMI and LAN for 4K Ultra HD synchronous output, and USB3.0 for high-definition 1080 output. Low Illumination: Utilizes a new CMOS image sensor with ultra-high signal-to-noise ratio to effectively reduce image noise in low-light conditions. Applies 2D and 3D noise reduction algorithms to significantly reduce image noise, maintaining clean and clear images even in extremely low-light conditions, with an image signal-to-noise ratio of over 50dB. Infrared Passthrough: Aside from receiving its own dedicated remote-control signals, it can also receive user infrared remote-control signals and transmit them to video conferencing terminals via the VISCA IN port. Multiple Video Compression Standards: Supports various video compression formats including YUY2, H265, MJPG, and H264 across different interfaces. Multiple Network Protocols: Supports ONVIF, SRT, RTSP, RTMP, RTMPS, and optional NDIHX2 network protocols. Multiple Control Protocols: Supports VISCA (including VISCA Over IP), PELCO P/D, and NDI protocols, with automatic protocol recognition. Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Required</p>
Item No. 8: Audio Rack (1 Nos)		

8.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>20U 19" Floor Stand Audio Rack with Electric Fan.</i>
Item No. 9: Display (1 Nos)		
9.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> <i>Samsung Smart TV 75" Inch or similar.</i> <i>Original Manufacturer Warranty: 1 year</i>
Item No. 10: Accessories (1 Nos)		
10.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Extension Cord, Audio Cable</i>
Item No. 11: Installation Testing and Commissioning (1 Job)		
11.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Complete installation of all the equipment, testing, commissioning and support for one-year.</i>

Package: Command Center

Item No. 1: Video wall matrix mainframe Controller box (01 Nos)		
1.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> <ul style="list-style-type: none"> • <i>19" standard 4U ATCA industry box</i> • <i>Easy and flexible configuration with pluggable card module design</i>

		<ul style="list-style-type: none"> • 40ch@1080P signal encoding (full configured) • 20ch@32MP or 80ch@8MP or 320ch@1080P or 720ch@720P or 1280ch@D1 signal decoding (full configured) • Support 240@D1 nonstandard stream signal decoding(full configured) • Support 240@D1 nonstandard stream signal decoding(full configured) • Support max 60 screens splicing • Support analog/digital video signals input and matrix output • Support SD/HD video signal matrix switch and output • Support non-compressed digital signal encoding output • 6 RJ-45 gigabit network ports for matrix control, preview and online central storage • Support TCP/IP/RTP/RTSP/RTCP/TCP/UDP/DHCP/PPPoE and etc. network protocols <p>Original Manufacturer Warranty: 2 years Manufacturer Authorization Letter: Required Manufacturer Authorization Letter: Required</p>
Item No. 2: 4CH HDMI encoding card (02 Nos)		
2.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <ul style="list-style-type: none"> • 4 HDMI input module for M70-4U and M70-4U-E • H264 /MPEG4 encoding format • Interface 4 HDMI inputs • Encoding capacity 4 channels @1080P • Supported resolutions 1080P, 720P, UXGA, SXGA+, SXGA, XGA, SVGA, VGA
Item No. 3: 6CH HDMI decoding card (04 Nos)		
3.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer Model Number: To be specified by the tenderer</p> <ul style="list-style-type: none"> • From reputed brand • HDMI graphics card • 6 HDMI channels • Screen divisions: 1/4/6/8/9/16/25/36 • Resolution 12MP@15fps / 4K@30fps / 2MP, 1,3MP, 1MP, 720p@60fps • Decoding capacity 2CH@32MP, 8CH@12MP, 8CH@4K, 32CH@1080p, 72CH@720p • Compatible with M70-4U-E
Item No. 4: 1 CH Ultra HD Encoder (09 Nos)		

4.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <ul style="list-style-type: none"> • The system reorganization is flexible, convenient and stable, and the equipment can be flexibly configured according to customer needs • Support DP/HDMI interface video and audio acquisition, automatically switch signal source, and insert the default acquisition HDMI IN at the same time • Support 1 HDMI loop output and 1 local HDMI output • Supports up to 4K@30 resolution capture and encoding • The encoding resolution is adaptive to the computer resolution, without manual switching • Support H.264/H.265 encoding, default H.264 • Support audio format encoding G.711a • Support Dahua/RTSP and other protocol access • Support POE or DC 12V dual power supply • Supports multiple devices to achieve ultra-high resolution acquisition synchronization only through the network • Support image cropping to only display the area selected by the user • Support network photoelectric hot standby and automatic switching • Fanless design, silent, high reliability, low failure rate • Ultra-low latency, smooth mouse operation • Embedded design, ultra-low power consumption: ≤10W • Product size: 42mm×150mm×100mm (height x width x depth)
Item No. 5: 1 CH Ultra HD Decoder (01 Nos)		
5.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <ul style="list-style-type: none"> • The system reorganization is flexible, convenient and stable, and the equipment can be flexibly configured according to customer needs • One person at multiple levels, one machine with multiple screens, separation of man and machine, flexible signal takeover and push • Support multi-node seat splicing and mouse cross-screen roaming • Visual menu, real-time preview of signal source • The display screen displays the device name and IP in real time, making operation and maintenance more convenient • Support remote power on/off (need to be equipped with central control) • Support 1 HDMI 2.0, maximum support 4K@60 resolution output display • A single node supports up to 8K@30 resolution decoding

		<ul style="list-style-type: none"> • Support H.264/H.265 and other stream decoding • Support private/RTSP/Onvif and other protocol access • Support network photoelectric hot standby and automatic switching • Fanless design, silent, high reliability, low failure rate • Ultra-low latency, smooth mouse operation • Product size: 44mm×220mm×170mm (height×width×depth)
Item No. 6: 64 Ch Standalone NVR (01 Nos)		
6.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <ul style="list-style-type: none"> • Supports Smart H.265+, H.265, Smart H.264+, H.264 and MJPEG decoding formats • Max. decoding capability: 32 × 1080p@30 fps or 32 × 2MP@30 fps • Max. 384/384/384 Mbps incoming/recording/outgoing bandwidth • Supports IP cameras with a resolution up to 32 MP • Supports AcuPick with up to 32 channels • Supports N+M cluster, iSCSI • Supports Raid0/1/5/6/10 • AI by Recorder: 2-channel face detection and recognition, up to 20 face databases and 20,000 face images; 4-channel perimeter protection; 8-channel SMD Plus • AI by Camera: face detection and recognition, perimeter protection, SMD Plus, metadata, ANPR, stereo analysis, heat map, and people counting • Supports EPTZ, and one-click arming and disarming <p>Original Manufacturer Warranty: 2 years</p> <p>Manufacturer Authorization Letter: Required</p>
Item No. 7: 8 TB Surveillance HDD (16 Nos)		
7.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <ul style="list-style-type: none"> • Cost-effective reliability • Robust 24×7 performance • Easy integration, optimal TCO • Advanced security features • Trusted expertise
Item No. 8: R450 Server (1 Nos)		
8.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>

	<p><i>Other Features & Requirement (minimum or equivalent)</i></p>	<p>Product Specification: 2U Rack Mountable Server</p> <ul style="list-style-type: none"> • Brand Name: To be mentioned by bidder • Model: To be mentioned by bidder <p>Technical Specifications:</p> <ul style="list-style-type: none"> • Form Factor: 2U Rack Mountable • Processor: 2 x Intel Xeon-Gold, Minimum 28 Cores, 28MB Cache per processor • Memory: <ul style="list-style-type: none"> ○ Minimum 32 GB DDR4 RAM ○ Scalable up to 1TB in the future <p>Internal Storage:</p> <ul style="list-style-type: none"> • Minimum 4 x 1.2 TB SATA disks from Day 1 • Server should support at least 8 hot-swappable 12Gbps SAS HDD and SSD drives <p>Storage Array Controller:</p> <ul style="list-style-type: none"> • Configured with an array controller with a minimum of 2GB flash cache memory • Supports RAID 0, 1, 5, and 10 • Should include a Smart Storage Battery with cable <p>Expansion Slots and I/O:</p> <ul style="list-style-type: none"> • Five (5) x PCIe 3.0 slots • Serial port, VGA Port, Display Port, USB 3.0 <p>Network Interface Controller:</p> <ul style="list-style-type: none"> • 1 x mLOM Ethernet adapter with 4x 1GE copper ports • 1 x PCIe Ethernet adapter for future expansion <p>Management Port & Features:</p> <ul style="list-style-type: none"> • Supports industry-standard management protocols like IPMI v2 and SNMP v3 • One 1-Gbps RJ-45 management port <p>Power Supply & Cooling:</p> <ul style="list-style-type: none"> • Minimum 1000W AC Platinum class redundant power supply • Hot plug fans in full redundancy <p>OS Support:</p> <ul style="list-style-type: none"> • Windows Server Most Recent Version • Microsoft Hyper-V Server (Latest version) • VMware vSphere (Latest version) • Red Hat Enterprise Linux (Latest version) • CentOS <p>Certification:</p> <ul style="list-style-type: none"> • Manufacturer Authorization Certificate must be included during submission <p>Warranty & Services:</p> <ul style="list-style-type: none"> • 3 years (three) OEM warranty & support
--	--	---

Item No. 9: 55” FHD Industrial-scale Brightness LCD Display Unit with DP Daisy Chain Function (0.88mm) (16 Nos)

9.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <ul style="list-style-type: none"> - Industrial level IPS LCD panel, suitable for continuous 24h/7 operation - Ultra-narrow 1.74mm B-to-B (Panel Bezel to Panel Bezel) design - Anti-glare and high brightness panel, vivid and memorable image quality - Factory calibration technology for high color uniformity - Built-in 3D noise reduction system and picture splicing function - Abundant interfaces: HDMI, DVI, VGA, DP (UHD daisy chain), RS232, Audio - Up to 4K@60Hz signal input by DP IN or HDMI 1 interface, up to 4K@30Hz signal output by DP OUT interface - Infrared, RS232 dual mode, supporting remote control by computer - Professional thermal design to extend device lifespan - Built-in power, low energy consumption, ultra-quiet - Modular structure design, multiple installation modes - Widely used in surveillance centers, command centers, meeting rooms, commercial display scenes, etc. <p><i>Original Manufacturer Warranty: 2 years</i></p> <p><i>Manufacturer Authorization Letter: Required</i></p>

Item No. 10: 55" Bracket of Front Maintenance (15 Nos)

10.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p>

Item No. 11: HDMI 15m Male-Male/1080P with Buckle (18 Nos)

11.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: <i>To be specified by the tenderer</i></p> <p>Model Number: <i>To be specified by the tenderer</i></p> <ul style="list-style-type: none"> - HDMI cable - Length: 15 meters

		- Suitable for video wall line and monitors - Controller type: Modular series
Item No. 12: Project Accessory Kit (01 Nos)		
12.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer <ul style="list-style-type: none"> • ES & EG Series, extra order of IR-3.5MM-3M extended cable for EF Series • Weight: 1 kg • Inclusions: <ul style="list-style-type: none"> - Remote control board - Remote control - IR Extended cable
Item No. 13: Wooden case for 55" front-maintenance bracket (08 Nos)		
13.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Description: Wall mount for 55" 2 rows x 2 columns videowall (2 in 1; 1250×675×135)</i>
Item No. 14: Wooden case for 55" display unit (08 Nos)		
14.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Wooden case for 55" display unit (2 in 1; external dimension: 1403*583*1088)</i>
Item No. 15: IR to RS232 Controller (01 Nos)		
15.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer <i>Signal Interface: IR(3.5mm)×1, RS232 in×1, RS232 out×1</i> <i>Accessory: IR cable×1, power adapter×1</i> <i>Power Supply: DC 12V</i> <i>Power Consumption: ≤5W</i> <i>Gross Weight: 0.37kg(0.82lb)</i> <i>Net Weight: 0.42kg(0.93lb)</i>

		<i>Dimension (W×D×H): 126.4mm×69.3mm×31.0mm(5.0"×2.7"×1.2")</i> <i>Package (W×D×H): 170mm×166mm×65mm(6.7"×6.5"×2.6")</i> <i>Work Environment:</i> <i>Temperature 0°C~+50°C</i> <i>Humidity 10%RH~90%RH</i>
Item No. 16: Multi Socket for Power Source (20 Nos)		
16.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> - Durable / Long Life - High-Quality ABS Plastic - Fire Retardant High-Quality ABS Plastic Body - High Moisture Resistance - Pure Copper Made Metal Parts (High Resistance to Corrosion)
Item No. 17: MK Box (20 Nos)		
17.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<ul style="list-style-type: none"> • Anti Corrosive & Anti Rust Metal • Silver Tip Contact for proper conductivity • 100% Pure Copper Connecting Plate • SS Spring ensures strong contact strength • High-Quality PC & PA Plastic: Fire retardant • Highly Resistant to Moisture, Heat & Fire • Extinguishes Flames & Glowing at the specimen within 30s • Switching compatibility more than 5,000 cycles • Applicable for AC & DC
Item No. 18: Port Multi Plug for Power Source: (05 Nos)		
18.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> <ul style="list-style-type: none"> • Durable / Long Life • High-Quality ABS Plastic • Fire Retardant High-Quality ABS Plastic Body • High Moisture Resistance • Pure Copper Made Metal Parts (High Resistant to Corrosion) • Meter Flexible Cable • 3Pin plug with Earthing

Item No. 19: 1M HDMI Cable (20 Nos)		
19.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>1M HDMI Cable</i>
Item No. 20: Accessories (01 Nos)		
20.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>N/A</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Other Necessary Accessories</i>
Item No. 21: DTH-Setup box (15 Nos)		
21.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>DTH-Setup box</i>
Item No. 22: Video Wall installation and testing (01 job)		
22.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>N/A</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Video Wall installation and testing</i>
Item No. 23: Video wall matrix - maintenance (1 Job)		
23.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>N/A</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Video wall matrix - maintenance. Provide at least one person on round the clock to ensure proper maintenance and support for two-years</i>
Item No. 24: Video wall-matrix operational and training software for Decision support system including 100 user license compatible with the video wall matrix (01 Nos)		
24.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>N/A</i>

	<p>Other Features & Requirement (minimum or equivalent)</p>	<p>Video wall-matrix controller software including 100 user license compatible with the video wall matrix.</p> <p>The software Must have following modules and features.</p> <p>Video Wall:</p> <p>Display/Hide screen ID.</p> <p>Display alarm output channels.</p> <p>List and locate alarm sources by clicking on the alarms.</p> <p>Must support screen combinations.</p> <p>Bind decode channels to the corresponding screens.</p> <p>Control Client:</p> <p>Display device tree with options to show/hide offline devices.</p> <p>Display device IP address or name in the device tree.</p> <p>View real-time video with various layout options (1, 4, 6, 8, 9, 13, 16, 20, 25, 36, 64).</p> <p>Control PTZ cameras, set manual recording, take snapshots, perform instant playback, and digital zoom.</p> <p>Apply fisheye dewarping and smart tracking for fisheye, speed dome, and panoramic cameras.</p> <p>Audio talk, decode to a video wall, and turn on/off audio in live view.</p> <p>Set Region of Interest (ROI) and display maps in Live View.</p> <p>Supports NKB1000 keyboard for camera control in Live View.</p> <p>Adjust video image and display mode (full screen or original).</p> <p>Perform electronic focus adjustments.</p> <p>Playback:</p> <p>Playback recordings from front-end devices or central storage.</p> <p>Apply video filters: normal, motion, alarm, video loss, video tampering.</p> <p>Sync play, reverse playback, and support for up to 64x fast play and 1/64x slow play.</p> <p>Frame-by-frame playback, lock or mark important recording segments.</p> <p>Must support .avi, .dav, .flv, .mp4, and .asf video output.</p> <p>Decode to a video wall, apply fisheye dewarping, and take snapshots.</p> <p>Switch between Live View and Playback mode.</p> <p>Adjust video image and display mode (full screen or original).</p> <p>Event Management:</p> <p>View real-time and historical alarm information with detailed details (live video, records, pictures, alarm source location on the map).</p> <p>Acknowledge alarms, arm control for alarm sources, forward alarms to relevant users.</p> <p>Manually send alarm emails, search by alarm source, time, status, handle user, and priority.</p> <p>Search alarm events and export alarm lists.</p> <p>Video Wall Management:</p> <p>Manually/Automatically decode real-time video to a video wall.</p> <p>Manage video wall splits, change video channel stream types.</p> <p>Add boxes, turn screens on/off, deliver video streams to control clients.</p> <p>Tour video channels on one screen, set running tasks on the timeline for schedule plans.</p> <p>Loop different tasks and set duration times for tour plans.</p>
--	--	--

		<p><i>Must support NKB1000 keyboard to control the video wall.</i></p> <p>Map:</p> <p><i>View live video or playback video on the map.</i></p> <p><i>Calculate areas or lengths on a GIS map.</i></p> <p><i>Must support visible range and initial angle for PTZ cameras.</i></p> <p><i>Displays visible alarm triggers on the map.</i></p> <p><i>Must support Google online/offline maps and raster maps.</i></p> <p><i>Offers 8-level sub-map support.</i></p> <p><i>Configure camera, alarm input, intelligent channels, and sub-map hotspots.</i></p> <p>Storage:</p> <p><i>Set edge storage and central storage.</i></p> <p><i>Extend central storage via iSCSI.</i></p> <p><i>Create recording plans using time templates: all day, weekday, weekend, and custom templates.</i></p> <p><i>Schedule backups from edge storage devices (EVS, NVR, DVR, etc.).</i></p> <p><i>Backup videos from MDVR, NVR, EVS, DVR via Wi-Fi.</i></p> <p><i>Allocate disks and cameras to different groups to maintain disk quotas.</i></p> <p>Scalability:</p> <p><i>Software Must supports up to 2,000 cameras per server.</i></p> <p><i>Must manage up to 256 video recorders per server.</i></p> <p><i>Expandable to accommodate up to 20,000 cameras by adding multiple servers.</i></p> <p><i>Storage capacity up to 2PB (petabytes).</i></p> <p>System Performance:</p> <p><i>Must support up to 300 concurrent users.</i></p> <p><i>Must support up to 256 client connections simultaneously.</i></p> <p><i>Must support Live view capacity of up to 1,000 channels per server.</i></p> <p>High Availability and Reliability:</p> <p><i>Features system failover and redundant power supplies.</i></p> <p><i>Must support RAID configurations (RAID 0/1/5/6/10/50) for data redundancy and protection. Guarantees server uptime at 99.99% availability.</i></p> <p>Video Storage and Management:</p> <p><i>Centralized storage management with multiple storage options.</i></p> <p><i>Edge storage, central storage, and cloud storage capabilities.</i></p> <p><i>Video retention supported for up to 365 days.</i></p> <p>Advanced Video Analytics:</p> <p><i>Intelligent features such as face recognition with up to 98% accuracy, people counting, and perimeter protection.</i></p> <p><i>Business intelligence analysis for enhanced situational awareness.</i></p> <p><i>Metadata search capabilities for quick retrieval of specific events.</i></p> <p>Integration and Interoperability:</p> <p><i>Compliant with ONVIF standards for seamless third-party device integration.</i></p> <p><i>Open APIs and SDKs for custom integrations.</i></p> <p><i>Must support integration with up to 128 access control devices.</i></p> <p>User Interface and Experience:</p> <p><i>User-friendly interface with customizable layouts and multi-screen support.</i></p> <p><i>Interactive maps and real-time monitoring tools.</i></p> <p><i>Must support up to 64 video tiles per monitor for live viewing.</i></p> <p>Security and Access Control:</p>
--	--	--

		<p><i>Role-based access control for secure user management.</i></p> <p><i>Encryption protocols (HTTPS, SSL/TLS) for data transmission and storage protection.</i></p> <p><i>Audit trails and activity logs maintained for up to 1 year for compliance and security review.</i></p> <p><i>Must have companion mobile app.</i></p> <p><i>Manufacturer authorization required.</i></p> <p><i>Support for 2 years.</i></p> <p><i>Must be used by international clients for decision support context.</i></p>
Item No. 25: Video-wall matrix integration with all the BIWTA river port with real-time software uplink (01 Job)		
25.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p><i>Video-wall matrix integration with all the BIWTA river port with real-time software uplink.</i></p> <p><i>Integrate the video-wall matrix with all the CCTV camera exists in various BIWTA port, dredging base and other installation in at least 20 facilities. Conduct necessary wiring, networking, technical work to integrate feed from the existing BIWTA facilities to the DSS software.</i></p> <p><i>Make provision of integrating video-feed from all the CCTV to be setup in future BIWTA facilities.</i></p>
Item No. 26: Smart Port management software (01 Nos)		
26.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p><i>Smart Port management software training module for BIWTA officials with integration with the Video-wall matrix.</i></p>
Item No. 27: Satellite-image based river encroachment and simulation software component (01 Nos)		
27.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p><i>High-level software specification for a satellite-image based river encroachment monitoring component are as follows:</i></p> <p><i>1. Satellite Image Acquisition and Processing:</i></p> <ul style="list-style-type: none"> <i>- Integrate with satellite data providers (e.g., NASA, ESA) to acquire high-resolution imagery.</i> <i>- Implement image preprocessing techniques (e.g., noise reduction, cloud masking) to enhance image quality.</i> <p><i>2. River Boundary Detection and Monitoring:</i></p> <ul style="list-style-type: none"> <i>- Develop algorithms to detect and delineate river boundaries using satellite imagery.</i>

		<ul style="list-style-type: none"> - Implement periodic monitoring to track changes in river boundaries over time. <p>3. Encroachment Detection:</p> <ul style="list-style-type: none"> - Create a module to identify and classify encroachments based on changes in river boundaries. - Use machine learning techniques to improve accuracy and automate detection. <p>4. Simulation Engine:</p> <ul style="list-style-type: none"> - Build a simulation engine to model past changes of river encroachment. <p>5. Data Integration and Management:</p> <ul style="list-style-type: none"> - Integrate with existing GIS databases, Google Earth engine for comprehensive data analysis. - Implement a robust data management system to store, retrieve, and manage satellite images and simulation results. <p>6. User Interface and Visualization:</p> <ul style="list-style-type: none"> - Develop an intuitive user interface for easy access to satellite images, monitoring data, and modeling results. - Implement visualization tools (e.g., interactive maps, time-lapse animations) to display river encroachment trends and simulation outcomes. <p>7. Alert and Reporting System:</p> <ul style="list-style-type: none"> - Implement an automated alert system to notify stakeholders of significant encroachment events. - Generate comprehensive reports summarizing monitoring and simulation findings, customizable for different user needs. <p>8. Scalability and Performance:</p> <ul style="list-style-type: none"> - Design the software to handle large datasets and support concurrent processing for real-time monitoring. - Optimize performance for efficient image processing and simulation execution.
--	--	---

Item No. 28: IP PABX Server (1 Nos)

28.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>500 Line IP PABX Main Unit Model: UCM6301, User: 500 Concurrent Calls Max: 45, IP Number Support: 50 Analogue Telephone: 02 You Can use 500 IP Set or 500 analogue Phone set, For Analogue Phone Set you have to use FXS GW Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes</p>

Item No. 29: FXO GW (2 Nos)

29.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>

	<i>Other Features & Requirement (minimum or equivalent)</i>	08 Ports Analog VOIP Gateway, Model: GXW4108/ HT881, T&T Line: 08 Port, You Can Add 08 T&T line to Existing UCM6301 Server Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes
Item No. 30: Video IP Telephone Set POE (16 Nos)		
30.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer 16 lines with up to 16 SIP accounts Built-in 1 mega-pixel camera for video calling Runs on the Android 7.0 operating system Integrated dual band Wi-Fi (2.4GHz & 5GHz) 5.0" (1280×720) capacitive 5-point touch screen HD TFT LCD 6-way audio conferencing & 3-way 720p HD video conferencing capability Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes"
Item No. 31: Extension Module (16 Nos)		
31.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer 4.3 inch (272x480) TFT color LCD 20 per page (each module contains 2 pages, for up to 40 lines per module) Combine up 4 daisy-chained modules for 160 contacts/extensions BLF, call park /pick-up, speed-dial, presence, intercom, voice conferencing transfer/forward and more.
Item No. 32: IP Phone (16 Nos)		
32.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer IP Telephone Set POE ** 02 SIP A/C, 02 Line Original Manufacturer Warranty: 1 year Manufacturer Authorization Letter: Yes

Item No. 33: SIP Number (16 Nos)		
33.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: <i>To be specified by the tenderer</i> Model Number: <i>To be specified by the tenderer</i> <i>IP Number Premium</i> <i>e.g. 096XX 11 22 33 (in subject of availability) One time number cost</i> <i>Rent per Month, Any IPTSP @ No Charge</i> <i>Call Any BD Number @ BDT 0.45 (1 Sec pulse) ISD Rate @ Govt Rate Chart.</i>
Item No. 34: Installation (01 Job)		
34.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>N/A</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Installation of IP Telephony system with one year support.</i>
Item No. 35: PoE switch 24 port (04 Nos)		
35.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	Product Specification: 24-Port PoE Switch <ul style="list-style-type: none"> Brand Name: <i>To be mentioned by bidder</i> Model: <i>To be mentioned by bidder</i> Physical Characteristics: <ul style="list-style-type: none"> Form Factor: <i>19-inch rack mountable chassis</i> Ports: <ul style="list-style-type: none"> <i>Minimum 24 x 1G Copper PoE Ports</i> <i>4 x 1G SFP Fiber Ports</i> <i>Includes 1x 1G Short Range (up to 0.5KM) optical transceiver (same brand as switch)</i> Performance Specifications: <ul style="list-style-type: none"> Switching Capacity: <i>Minimum 55 Gbps</i> Packet Forwarding Rate: <i>Minimum 41 Mpps</i> System Memory: <i>Minimum 512 MB</i> System Storage: <i>Minimum 256 MB</i> Capacity: <ul style="list-style-type: none"> MAC Address Entries: <i>Minimum 16K</i> VLAN Table: <i>Minimum 4K</i> VLAN Interfaces: <i>Minimum 32</i> IPv4 Routing Entries: <i>Minimum 1K</i>

		<ul style="list-style-type: none"> • IPv4 ARP Entries: Minimum 1K • IPv4 Multicast L2 Entries: Minimum 1K • IPv4 ACL Entries: Minimum 500 • IPv6 Unicast Routing Entries: Minimum 240 • Jumbo Frame Length: Minimum 9K <p>Network Protocols and Features:</p> <ul style="list-style-type: none"> • Max Stacking Devices: 9 • Max Stacking Bandwidth: 16 Gbps • Port Aggregation: <ul style="list-style-type: none"> ○ Dynamic aggregation ○ Static aggregation ○ LACP (Link Aggregation Control Protocol) <p>Port Characteristics:</p> <ul style="list-style-type: none"> • Supports IEEE 802.3x flow control (full duplex) • Supports storm suppression based on port rate percentage • Supports PPS-based and bps-based storm suppression <p>VLAN Capabilities:</p> <ul style="list-style-type: none"> • Port-based VLAN • MAC-based VLAN • Protocol-based VLAN • VLAN mapping • Voice VLAN • Private VLAN • QinQ (802.1Q-in-802.1Q) • Access/Trunk/Hybrid VLAN <p>DHCP Features:</p> <ul style="list-style-type: none"> • DHCP Client • DHCP Snooping • DHCP Snooping option82 • DHCP Relay • DHCP Server • DHCP auto-config <p>IP Routing:</p> <ul style="list-style-type: none"> • Static routing, RIP, OSPF • IPv6 static routing, RIPng, OSPFv3 • IPv4/IPv6 dual stack • Supports various IPv6 capabilities <p>Multicast:</p> <ul style="list-style-type: none"> • PIM snooping • IGMP Snooping • Multicast VLAN • IPv6 PIM snooping • MLD Snooping • IPv6 Multicast VLAN
--	--	---

		<p>Layer 2 Network Protocols:</p> <ul style="list-style-type: none"> • STP, RSTP, MSTP • PVST (Compatible with PVST+/RPVST+) • LLDP/LLDP-MED <p>Security Features:</p> <ul style="list-style-type: none"> • AAA authentication support • RADIUS and TACACS authentication • SSH2.0 • 802.1X authentication • Centralized MAC authentication • Port security • IP Source Guard • Support for BPDU guard and Root guard • Dynamic ARP inspection <p>Management and Maintenance:</p> <ul style="list-style-type: none"> • Zero Touch Provisioning • Configuration through CLI, Telnet, and console port • SNMPv1/v2c/v3 and Web-based NMS • Supports Restful API • RMON and system logging <p>Certifications:</p> <ul style="list-style-type: none"> • EMC: FCC Part 15 Subpart B CLASS A, EN 55032 CLASS A, AS/NZS CISPR32 CLASS A, EN 55024, EN 61000-3-2 • Safety: CAN/CSA C22.2 No 60950-1, IEC 60950-1, EN 60950-1, AS/NZS 60950-1 <p>Operating Conditions:</p> <ul style="list-style-type: none"> • Temperature: Min. -5°C to 45°C (23°F to 113°F) • Humidity: Min. 5% RH to 95% RH, non-condensing <p>Manufacturer Authorization:</p> <ul style="list-style-type: none"> • Manufacturer Authorization Certificate must be included during submission <p>Warranty:</p> <ul style="list-style-type: none"> • 3 years OEM warranty from Day 1
Item No. 36: Network switch 24 port (06 Nos)		
36.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>Product Specification: 19-Inch Rack Mountable Switch</p> <ul style="list-style-type: none"> • Brand Name: To be mentioned by bidder • Model: To be mentioned by bidder • Country of Origin: To be mentioned by bidder

		<p>Physical Characteristics:</p> <ul style="list-style-type: none"> • Form Factor: 19 inch Rack mountable chassis • Ports: <ul style="list-style-type: none"> ○ Minimum 24 x 1G Copper Ports ○ 4 x 1/10G SFP Fiber Ports ○ Includes 2 x 1G and 2 x 10G Short Range (up to 0.5KM) optical transceivers (same brand as switch) <p>Performance Specifications:</p> <ul style="list-style-type: none"> • Switching Capacity: Minimum 126 Gbps • Packet Forwarding Rate: Minimum 94 Mpps • System Memory: Minimum 1 GB • System Storage: Minimum 512 MB <p>Capacity:</p> <ul style="list-style-type: none"> • MAC Address Entries: Minimum 32K • VLAN Table: Minimum 4K • VLAN Interfaces: Minimum 32 • IPv4 Routing Entries: Minimum 6K • IPv4 ARP Entries: Minimum 4K • IPv4 Multicast L3 Entries: Minimum 2K • IPv4 Multicast L2 Entries: Minimum 2K • IPv4 ACL Entries: Minimum 500 • IPv6 Unicast Routing Entries: Minimum 240 • Jumbo Frame Length: Minimum 9K <p>Network Protocols and Features:</p> <ul style="list-style-type: none"> • Max Stacking Devices: 9 • Max Stacking Bandwidth: 80 Gbps • Port Aggregation: <ul style="list-style-type: none"> ○ Dynamic aggregation ○ Static aggregation ○ LACP (Link Aggregation Control Protocol) <p>Port Characteristics:</p> <ul style="list-style-type: none"> • Support IEEE 802.3x flow control (full duplex) • Supports storm suppression based on port rate percentage • Supports PPS-based and bps-based storm suppression <p>VLAN Capabilities:</p> <ul style="list-style-type: none"> • Port-based VLAN • MAC-based VLAN • Protocol-based VLAN • VLAN mapping • Voice VLAN • Private VLAN • QinQ (802.1Q-in-802.1Q) • Access/Trunk/Hybrid VLAN <p>DHCP Features:</p>
--	--	---

		<ul style="list-style-type: none"> • <i>DHCP Client</i> • <i>DHCP Snooping</i> • <i>DHCP Snooping option82</i> • <i>DHCP Relay</i> • <i>DHCP Server</i> • <i>DHCP auto-config</i> <p>IP Routing:</p> <ul style="list-style-type: none"> • <i>Static routing, RIP, OSPF</i> • <i>IPv6 static routing, RIPng, OSPFv3</i> • <i>IPv4/IPv6 dual stack</i> • <i>Pingv6, Telnetv6, FTPv6, TFTPv6, DNSv6, ICMPv6</i> <p>Multicast:</p> <ul style="list-style-type: none"> • <i>PIM snooping</i> • <i>IGMP Snooping</i> • <i>Multicast VLAN</i> • <i>IPv6 PIM snooping</i> • <i>MLD Snooping</i> • <i>IPv6 Multicast VLAN</i> <p>Layer 2 Network Protocols:</p> <ul style="list-style-type: none"> • <i>STP, RSTP, MSTP</i> • <i>PVST (Compatible with PVST+/RPVST+)</i> • <i>LLDP/LLDP-MED</i> <p>ACL Features:</p> <ul style="list-style-type: none"> • <i>Packet filtering from Layer 2 to Layer 4</i> • <i>Traffic classification based on multiple criteria</i> • <i>Time range-based, VLAN-based, and Bidirectional ACL</i> <p>Security Features:</p> <ul style="list-style-type: none"> • <i>AAA authentication support</i> • <i>RADIUS authentication</i> • <i>TACACS</i> • <i>SSH2.0</i> • <i>802.1X authentication</i> • <i>Centralized MAC authentication</i> • <i>Port security</i> • <i>IP Source Guard</i> • <i>Support for BPDU guard, Root guard</i> • <i>Dynamic ARP inspection</i> <p>Management and Maintenance:</p> <ul style="list-style-type: none"> • <i>Zero Touch Provisioning</i> • <i>Configuration through CLI, Telnet, and console port</i> • <i>SNMPv1/v2c/v3 and Web-based NMS</i> • <i>Restful API support</i> • <i>RMON and system logging</i> <p>Certifications:</p>
--	--	---

		<ul style="list-style-type: none"> • Electromagnetic Compatibility (EMC) Certification: <ul style="list-style-type: none"> ○ FCC Part 15 Subpart B CLASS A ○ EN 55032 CLASS A ○ AS/NZS CISPR32 CLASS A ○ EN 55024 ○ EN 61000-3-2 • Safety: <ul style="list-style-type: none"> ○ CAN/CSA C22.2 No 60950-1 ○ IEC 60950-1 ○ EN 60950-1 ○ AS/NZS 60950-1 <p>Operating Conditions:</p> <ul style="list-style-type: none"> • Temperature: Min. -5°C to 45°C (23°F to 113°F) • Humidity: Min. 5% RH to 95% RH, non-condensing <p>Manufacturer Authorization:</p> <ul style="list-style-type: none"> • Manufacturer Authorization Certificate must be included during submission <p>Warranty:</p> <ul style="list-style-type: none"> • 3 years OEM warranty should be included from Day 1
Item No. 37: UTP Cat6 Cable (20 Roll/Box)		
37.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>Type - Network Cable, Length - 305 Meter</p> <p>Cable Shielding - UTP (Unshielded Twisted Pair) Conductor Material - Solid-Bare Copper (99.95%), Jacket Material - PVC</p>
Item No. 38: Power Cable (20 Coil)		
38.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	BRB 14/76
Item No. 39: UPS 6KVA (03 Nos)		
39.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>

	<p><i>Other Features & Requirement (minimum or equivalent)</i></p>	<p>Product Specification: 6KVA UPS System</p> <ul style="list-style-type: none"> • Brand: To be mentioned by the Tenderer • Model Number: To be mentioned by the Tenderer <p>Specifications:</p> <ul style="list-style-type: none"> • Capacity: 6KVA • Input Voltage: 300 – 480V • Frequency: 30-70 Hz • Input Total Harmonic Distortion: <ul style="list-style-type: none"> ○ $\leq 3\%$ @ 100% load ○ $< 5\%$ Non-linear load • Output Voltage: 380V/400V/415VAC • Output Voltage Distortion: Less than 3% • Output Frequency (Sync to Mains): <ul style="list-style-type: none"> ○ 50 Hz Sync to mains ○ 60 Hz Sync to mains • Efficiency: <ul style="list-style-type: none"> ○ Double Conversion Mode: Up to 96% ○ EcoMode: 96% • Overload Capacity in Utility Operation: <ul style="list-style-type: none"> ○ 125% for 10 minutes ○ 150% for 60 seconds • Output Voltage Tolerance: $\pm 1.5\%$ static <p>Battery and Backup:</p> <ul style="list-style-type: none"> • Battery Type: VRLA • Battery Configuration: 16X40AH • Backup Time: 30min <p>Communication and Interface:</p> <ul style="list-style-type: none"> • Communication Interface: SNMP card • Control Panel: 3" User Graphical LCD Interface <p>Environmental and Safety:</p> <ul style="list-style-type: none"> • Protection Class: IP20 • Operating Temperature: <ul style="list-style-type: none"> ○ Standard: 0 - 40° C ○ With internal batteries: 20 – 25°C • Relative Air Humidity: 95% non-condensing <p>Certifications:</p> <ul style="list-style-type: none"> • Safety: IEC 60950-1 / EN 62040-1 • EMC: IEC 62040-2 • Performance: IEC 62040-3, CE <p>Additional Requirements:</p> <ul style="list-style-type: none"> • Manufacturer Authorization: Certificate must be included during submission • Warranty: 1 Year
--	--	---

Item No. 40: Server rack (03 Nos)		
40.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Product Specification: High-Density Vented Server Rack</p> <ul style="list-style-type: none"> • Brand: To be mentioned by the Tenderer • Model: To be mentioned by the Tenderer <p>Environmental Compliance:</p> <ul style="list-style-type: none"> ○ Maintains international quality and environmental safety standards <p>Rack Specifications:</p> <ul style="list-style-type: none"> • Type: High Density Vented; Floor Standing • Dimensions: 42U x 1000mm (Depth) x 600mm (Width) • Color: Black • Static Loading: 1000Kgs or above <p>Doors:</p> <ul style="list-style-type: none"> • Front Door: Single panel front door, perforated, lockable, and removable • Rear Door: Double section vertically split rear door, perforated, lockable, and removable <p>Side Panels:</p> <ul style="list-style-type: none"> • Double section horizontal split solid panels • Two security key locks and quick release latches on each panel <p>Rack PDU:</p> <ul style="list-style-type: none"> • 2 x Basicrack PDU, Basic, 32A, 230V • At least 8 nos C13 power outlets <p>Integrated Electrical Grounding:</p> <ul style="list-style-type: none"> • The roof, side panels, and front and rear doors should be provisioned to be grounded to the frame of the enclosure. <p>Enclosure Adjustment Tools and Hardware:</p> <ul style="list-style-type: none"> • Enclosures are provided standard with a hardware bag that includes hardware for mounting IT equipment and tools for simple enclosure adjustment. <p>Warranty:</p> <ul style="list-style-type: none"> • 1 Year
Item No. 41: PDU (02 Nos)		
41.1	Technical Specifications/Features	
	Country of Origin:	
	Other Features & Requirement (minimum or equivalent)	6 Port PDU

Item No. 42: Patch panel 24 port (02 Nos)		
42.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>CommScope 24 Port Patch Panel Loaded</i>
Item No. 43: Cable Manager (02 Nos)		
43.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>CommScope Wire Manager</i>
Item No. 44: Modular (20 Nos)		
44.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>CommScope -6A-F180B CAT6A Keystone Jack/Modular Jack</i>
Item No. 45: RJ-45 Cat-6 (100 Nos)		
45.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>RJ45 CAT-6 Connector.</i>
Item No. 46: Faceplate with Modular (20 Nos)		
46.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>wall mount custom sizing</i>
Item No. 47: Patch Cord (40 Nos)		
47.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>

	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Patch Cord 1.5 Mtr</i>
Item No. 48: Patch Cord (10 Nos)		
48.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Patch Cord 3.0 Mtr</i>
Item No. 49: HDMI Amplifier Splitter (3 Nos)		
49.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>1×8 HDMI Amplifier Splitter</i>
Item No. 50: HDMI Cable (1000 Mtr)		
50.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>HDMI Cable.</i>
Item No. 51: Firewall (1 Nos)		
51.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>USA/EU/UK</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<ul style="list-style-type: none"> • Brand: To be mentioned by the bidder • Model: To be mentioned by the bidder • Country of Manufacture: USA/EU/UK/Taiwan <p>Certifications (Safety, EMC, Quality):</p> <ul style="list-style-type: none"> • CB, CE, UL, FCC, ISSED, VCCI, KC, RCM, NOM, Anatel, CCC, BSMI, Checkmark, ICSA Labs, EAL4+, ISO 9000. <p>Environmental Conditions:</p> <ul style="list-style-type: none"> • "Operating Temperature: 0°C to 40°C • Humidity (non-condensing): 10% to 90%" <p>Part No</p> <ul style="list-style-type: none"> • Bidder should submit BOQ of proposed device including the detailed part numbers.

		<p>Hardware Architecture:</p> <ul style="list-style-type: none"> • Should have multicore architecture and should not be any proprietary ASIC-based in nature • Should have at least 4GB system memory • Should have dedicated Network Processor (NPU) with 3GB NPU Memory for hardware acceleration • Should have 64GB SSD from day 1 • Should have Dual Internal redundant auto-ranging AC-DC 100-240VAC, 3.7-7.4A@50-60Hz power supply from day 1. <p>"Power consumption:</p> <ul style="list-style-type: none"> • 30 W/100 BTU/hr (idle) • 59 W/202 BTU/hr (max.)" <p>Interface Requirement (minimum):</p> <ul style="list-style-type: none"> • "Should have the following fixed ethernet ports from day 1: • 12 x 1GbE, • 2 x 1G SFP" • Should have 1 x Expansion Slot • All interfaces should be freely configurable as LAN, WAN & DMZ ports without any limitation. • Should not be any fixed WAN ports so that any port can be configured as WAN for multiple WAN load balancing. • "Management I/O Ports: • 1 x COM RJ45 • 1 x COM Micro-USB (w/cable) <p>Security Performance (minimum):</p> <ul style="list-style-type: none"> • Firewall throughput – 10 Gbps • Firewall IMIX throughput – 5 Gbps • NGFW throughput – 2 Gbps • Firewall Latency (64 byte UDP): 8μs • IPS throughput – 3 Gbps • Threat Protection (combined FW, IPS, App Ctrl, & malware prevention enabled using HTTP 200 KB packet size) throughput – 850 Mbps • IPsec VPN throughput – 5 Gbps • Xstream SSL/TLS Inspection throughput – 750 Mbps • Xstream SSL/TLS concurrent connections – 12K • Concurrent connections – 4.5M • New connections/sec – 68K • Wireless Access Point Supported - 12 • Maximum licensed users – unrestricted/unlimited <p>General Management:</p> <ul style="list-style-type: none"> • Purpose-built, streamlined user interface and firewall rule management for large rule sets with grouping with at-a-glance rule feature and enforcement indicators
--	--	---

		<ul style="list-style-type: none"> • <i>Two-factor authentication (One-time-password) support for administrator access, user portal, IPsec and SSL VPN</i> • <i>Advanced troubleshooting tools in GUI (e.g., Packet Capture)</i> • <i>High Availability (HA) support clustering two devices in active-active or active-passive mode with plug-and-play Quick HA setup</i> • <i>Full command line interface (CLI) accessible from GUI</i> • <i>Role-based administration</i> • <i>Automated firmware update notification with easy automated update process and roll-back features</i> • <i>Reusable system object definitions for networks, services, hosts, time periods, users and groups, clients, and servers</i> • <i>Self-service user portal</i> • <i>Configuration change tracking</i> • <i>Flexible device access control for services by zones</i> • <i>Email or SNMP trap notification options</i> • <i>SNMP v3 and NetFlow support</i> • <i>Backup and restore configurations: locally, via FTP or email; on-demand, daily, weekly or monthly</i> • <i>API for third-party integration</i> • <i>Interface renaming</i> • <i>Remote access option for OEM Support</i> • <i>Cloud-based license management via portal</i> <p>Central Management:</p> <ul style="list-style-type: none"> • <i>Central cloud-based management and reporting for multiple firewalls provides group policy management and a single console</i> • <i>Group policy management allows objects, settings, and policies to be modified once and automatically synchronized to all firewalls in the group</i> • <i>Task Manager provides a full historical audit trail and status monitoring of group policy changes</i> • <i>Backup firmware management in web-based Central Console stores the last five configuration backup files for each firewall with one that can be pinned for permanent storage and easy access</i> • <i>Firmware updates from web-based Central console offer one-click firmware updates to be applied to any device</i> • <i>Zero-touch deployment enables the initial configuration to be performed in web-based Central Console and then exported for loading onto the device from a flash drive at startup, automatically connecting the device back to Central Console</i> <p>Firewall, Networking, and Routing:</p> <ul style="list-style-type: none"> • <i>Stateful deep packet inspection firewall</i>
--	--	---

		<ul style="list-style-type: none"> • <i>Xstream Architecture to provide extreme levels of visibility, protection, and performance through stream-based packet processing</i> • <i>Xstream TLS inspection with high performance, support for TLS 1.3 with no downgrading, port agnostic, enterprise-grade policies, unique dashboard visibility, and compatibility troubleshooting</i> • <i>Xstream DPI Engine to provide stream scanning protection for IPS, AV, Web, App Control, and TLS Inspection in a single-high performance engine</i> • <i>XStream Network Flow FastPath to deliver policy-driven and intelligent acceleration of trusted traffic automatically</i> • <i>User, group, time, or network-based policies, Access time policies per user/group</i> • <i>Enforce policy across zones, networks, or by service type</i> • <i>Zone isolation and zone-based policy support</i> • <i>Default zones for LAN, WAN, DMZ, LOCAL, VPN, and WiFi. Custom zones on LAN or DMZ</i> • <i>Customizable NAT policies with IP masquerading and full object support to redirect or forward multiple services in a single rule with a convenient NAT rule wizard to quickly and easily create complex NAT rules in just a few clicks</i> • <i>Upstream proxy support</i> • <i>Protocol-independent multicast routing with IGMP snooping</i> • <i>Bridging with STP support and ARP broadcast forwarding</i> • <i>VLAN DHCP support and tagging,</i> • <i>VLAN bridge support, Jumbo frame support</i> • <i>WAN link balancing: multiple Internet connections, auto-link health check, automatic failover, automatic and weighted balancing, and granular multipath rules</i> • <i>Wireless WAN support</i> • <i>802.3ad interface link aggregation</i> • <i>Full configuration of DNS, DHCP, and NTP</i> • <i>Dynamic DNS (DDNS)</i> • <i>IPv6 Ready Logo Program Approval Certification</i> <p><i>IPv6 tunneling support including 6in4, 6to4, 4in6, and IPv6 rapid deployment (6rd) through IPsec</i></p> <p>SD-WAN:</p> <ul style="list-style-type: none"> • <i>Support for multiple WAN link options including VDSL, DSL, cable, and 3G/4G/LTE cellular with essential monitoring, balancing, and failover</i> • <i>Application path selection and routing, used to ensure quality and minimize latency for mission-critical applications such as VoIP</i>
--	--	---

		<ul style="list-style-type: none"> • <i>Synchronized SD-WAN Security feature to leverage the added clarity and reliability of application identification that comes with the sharing of synchronized app control information between managed endpoints and firewall</i> • <i>Application routing over preferred links via firewall rules or policy-based routing</i> • <i>Affordable, flexible, and zero-touch or low-touch deployment</i> • <i>Robust VPN support including IPsec and SSL VPN</i> • <i>Encrypted HTML5 self-service portal with support for RDP, HTTP, HTTPS, SSH, Telnet, and VNC</i> • <i>Centralized VPN orchestration</i> • <i>Unique RED Layer 2 tunnel with routing</i> <p>Base Traffic Shaping and Quotas:</p> <ul style="list-style-type: none"> • <i>Flexible network or user-based traffic shaping (QoS)</i> • <i>Set user-based traffic quotas on upload/download or total traffic and cyclical or non-cyclical</i> • <i>Real-time VoIP optimization</i> • <i>DSCP marking</i> <p>Secure Wireless:</p> <ul style="list-style-type: none"> • <i>Central monitoring and management of APs and wireless clients through the built-in wireless controller</i> • <i>Bridge APs to LAN, VLAN, or a separate zone with client isolation options</i> • <i>Multiple SSID support per radio including hidden SSIDs</i> • <i>Support for diverse security and encryption standards including WPA2 Personal and Enterprise</i> • <i>Channel width selection option</i> • <i>Support for HTTPS login</i> • <i>Support for 802.11r (fast transition)</i> • <i>Hotspot support for (custom) vouchers, password of the day, or T&C acceptance</i> • <i>Wireless guest Internet access with walled garden options</i> • <i>Wireless repeating and bridging meshed network mode with supported APs</i> • <i>Support for the latest security and encryption standards including WPA2 Personal and Enterprise</i> • <i>Time-based wireless network access</i> • <i>Support for IEEE 802.1X (RADIUS authentication) with primary and secondary server support</i> <p>Authentication:</p> <ul style="list-style-type: none"> • <i>Synchronized User ID utilizes Synchronized Security to share currently logged in Active Directory user ID between endpoints and the firewall without an agent on the AD server or client</i>
--	--	--

		<ul style="list-style-type: none"> • <i>Single sign-on: Active directory, eDirectory, RADIUS Accounting</i> • <i>Authentication via: Active Directory, eDirectory, RADIUS, LDAP and TACACS+</i> • <i>Server authentication agents for Active Directory SSO, STAS, SATC</i> • <i>Client authentication agents for Windows, Mac OS X, Linux 32/64</i> • <i>Authentication certificates for iOS and Android</i> • <i>Browser SSO authentication: Transparent, proxy authentication (NTLM) and Kerberos</i> • <i>Authentication services for IPsec, SSL, L2TP, PPTP</i> • <i>Google Chromebook authentication support for environments with Active Directory and Google G Suite</i> • <i>API-based authentication</i> • <i>Browser Captive Portal</i> <p>User Self-Service Portal:</p> <ul style="list-style-type: none"> • <i>Download the Authentication Client</i> • <i>Hotspot access information</i> • <i>Change username and password</i> • <i>View personal Internet usage</i> • <i>Access quarantined messages and manage user-based block/allow sender lists</i> • <i>Download SSL remote access client (Windows) and configuration files (other OS)</i> <p>Base VPN options:</p> <ul style="list-style-type: none"> • <i>Site-to-site VPN: SSL, IPsec, 256-bit AES/3DES, PFS, RSA, X.509 certificates, pre-shared key</i> • <i>Robust and lightweight RED site-to-site VPN tunnel</i> • <i>L2TP and PPTP</i> • <i>Route-based VPN</i> • <i>Remote access: SSL, IPsec, iPhone/iPad/Cisco /Android VPN client support</i> • <i>IKEv2 Support</i> • <i>SSL client for Windows and configuration download via user portal</i> <p>VPN Client:</p> <ul style="list-style-type: none"> • <i>Authentication: Pre-Shared Key (PSK),</i> • <i>PKI (X.509), Token and XAUTH</i> • <i>Intelligent split-tunneling for optimum traffic routing</i> • <i>NAT-traversal support</i> • <i>Client-monitor for graphical overview of connection status</i> • <i>Mac and Windows Support</i>
--	--	---

		<ul style="list-style-type: none"> • <i>Enables Synchronized Security and Security Heartbeat for remote connected users</i> <p>SD-RED VPN Device Management:</p> <ul style="list-style-type: none"> • <i>Central management of all SD-RED (Remote Ethernet) VPN Device Management</i> • <i>No configuration: Automatically connects through a cloud-based provisioning service</i> • <i>Secure encrypted tunnel using digital X.509 certificates and AES 256-bit encryption</i> • <i>Virtual Ethernet for reliable transfer of all traffic between locations</i> • <i>IP address management with centrally defined DHCP and DNS Server configuration</i> • <i>Remotely de-authorize SD-RED devices after a select period of inactivity</i> • <i>Compression of tunnel traffic</i> • <i>VLAN port configuration options</i> <p>Clientless VPN:</p> <ul style="list-style-type: none"> • <i>Encrypted HTML5 self-service portal with support for RDP, HTTP, HTTPS, SSH, Telnet, and VNC</i> <p>ATP and Security Heartbeat:</p> <ul style="list-style-type: none"> • <i>Advanced Threat Protection (detect and block network traffic attempting to contact command and control servers using multi-layered DNS, AFC, and firewall)</i> • <i>Security Heartbeat instantly identifies compromised endpoints including the host, user, process, incident count, and time of compromise</i> • <i>Security Heartbeat policies can limit access to network resources or completely isolate compromised systems until they are cleaned</i> • <i>Lateral Movement Protection further isolates compromised systems by having healthy managed endpoints reject all traffic from unhealthy endpoints preventing the movement of threats even on the same broadcast domain</i> <p>Intrusion Prevention (IPS):</p> <ul style="list-style-type: none"> • <i>High-performance, next-gen IPS deep packet inspection engine with selective IPS patterns that can be applied on a firewall rule basis for maximum performance and protection</i> • <i>Top rated by NSS Labs</i> • <i>Support for custom IPS signatures</i> • <i>IPS Policy Smart Filters enable dynamic policies that automatically update as new patterns are added</i> • <i>Granular category selection</i> • <i>Thousands of signatures</i>
--	--	---

		<p>Web Protection and Control:</p> <ul style="list-style-type: none"> • Fully transparent proxy for anti-malware and web filtering • Enhanced Advanced Threat Protection • URL Filter database with millions of sites across 92 web categories, backed by OEM Labs • Surfing quota time policies per user/group • Access time policies per user/group • Malware scanning: block all forms of viruses, web malware, trojans, and spyware on HTTP/S, FTP and web-based email • Advanced web malware protection with JavaScript emulation • Live Protection real-time, in-the-cloud lookups for the latest threat intelligence • Dual malware detection engine for dual scanning (At least one AV vendor should be Gartner Leader) • Real-time or batch mode scanning • Pharming protection • HTTP and HTTPS scanning and enforcement on any network and user policy with fully customizable rules and exceptions • SSL protocol tunneling detection and enforcement • Certificate validation • High performance web content caching • Forced caching for Endpoint updates • File type filtering by mime-type, extension, and active content types (e.g. ActiveX, applets, cookies, etc.) • YouTube for Schools enforcement per policy (user/group) • SafeSearch enforcement (DNS-based) for major search engines per policy (user/group) • Web keyword monitoring and enforcement to log, report, or block web content matching keyword lists with the option to upload custom lists • Block Potentially Unwanted Applications (PUAs) • Web policy override option for teachers or staff to temporarily allow access to blocked sites or categories that are fully customizable and manageable by select users • User/Group policy enforcement on Google Chromebooks <p>Cloud Application Visibility:</p> <ul style="list-style-type: none"> • Control Center widget displays amount of data uploaded and downloaded to cloud applications categorized as new, sanctioned, unsanctioned or tolerated • Discover Shadow IT at a glance • Drill down to obtain details on users, traffic, and data • One-click access to traffic shaping policies • Filter cloud application usage by category or volume
--	--	--

		<ul style="list-style-type: none"> • Detailed customizable cloud application usage report for full historical reporting <p>Application Protection and Control:</p> <ul style="list-style-type: none"> • Synchronized App Control to automatically, identify, classify, and control all unknown Windows and Mac applications on the network by sharing information between managed endpoints and the firewall • Signature-based application control with patterns for thousands of applications • Cloud Application Visibility and Control to discover Shadow IT • App Control Smart Filters that enable dynamic policies which automatically update as new patterns are added • Micro app discovery and control • Application control based on category, characteristics (e.g., bandwidth and productivity consuming), technology (e.g. P2P), and risk level <p>Per-user or network rule application control policy enforcement</p> <p>Web and App Traffic Shaping:</p> <ul style="list-style-type: none"> • Enhanced traffic shaping (QoS) options by web category or application to limit or guarantee upload/download or total traffic priority and bitrate individually or shared <p>Zero-day Protection (Dynamic Sandbox Analysis):</p> <ul style="list-style-type: none"> • Full integration into the security solution dashboard • Inspects executables and documents containing executable content (including .exe, .com, and .dll, .doc, .docx, docm, and .rtf and PDF) and archives containing any of the file types listed above (including ZIP, BZIP, GZIP, RAR, TAR, LHA/LZH, 7Z, Microsoft Cabinet) • Aggressive behavioral, network, and memory analysis • Detects sandbox evasion behavior • Machine Learning technology with Deep Learning scans all dropped executable files • In-depth malicious file reports with screen shots and dashboard file release capability • Includes exploit prevention and Cryptoguard Protection technology • Optional data center selection and flexible user and group policy options on file type, exclusions, and actions on analysis • Supports one-time download links <p>Zero-day Protection (Static Threat Intelligence Analysis):</p> <ul style="list-style-type: none"> • All files containing active code downloaded via the web or coming into the firewall as email attachments such as executables and documents containing executable content (including .exe, .com, and .dll, .doc, .docx, docm, and .rtf and
--	--	--

		<p><i>PDF) and archives containing any of the file types listed above (including ZIP, BZIP, GZIP, RAR, TAR, LHA/LZH, 7Z, Microsoft Cabinet) are automatically sent for Threat Intelligence Analysis</i></p> <ul style="list-style-type: none"> <i>Files are checked against OEM Labs' massive threat intelligence database and subjected to multiple machine learning models to identify new and unknown malware</i> <i>Extensive reporting includes a dashboard widget for analyzed files, a detailed list of the files that have been analyzed and the analysis results, and a detailed report outlining the outcome of each machine learning model.</i> <p><i>SD-WAN Orchestration:</i></p> <ul style="list-style-type: none"> <i>SD-WAN and VPN orchestration with easy and automated wizard-based creation of site-to-site VPN tunnels between network locations using an optimal architecture (hub-and-spoke, full mesh, or some combination).</i> <i>Supports IPsec, SSL or RED VPN tunnels.</i> <i>Integrates seamlessly with SD-WAN features for application prioritization, routing optimization, and leveraging multiple WAN links for resiliency and performance.</i> <p><i>Advanced Firewall Reporting Storage:</i></p> <ul style="list-style-type: none"> <i>30-days of cloud data storage for historical firewall reporting with advanced features to save, schedule and export custom reports.</i> <p><i>XDR & MTR Connector:</i></p> <ul style="list-style-type: none"> <i>Ready to integrate with Extended Threat Detection and Response (XDR) for cross-product threat hunting and analysis</i> <i>Support for 24/7 Managed Threat Response (MTR) service</i> <p><i>Reporting (Central cloud):</i></p> <ul style="list-style-type: none"> <i>Central cloud-based Firewall Reporting should be included at no additional cost</i> <i>Reporting features should be accessed from anywhere by Admin without direct access to the device</i> <i>Administrators should drill down into the syslog data for a granular view that is presented in a visual format for easy understanding</i> <i>Pre-defined reports with flexible customization options</i> <i>Ability to configure flexible reports with a high degree of customization - each report table, containing dozens of column choices, allows administrators to add or remove columns of data, to make report more granular, compressed, or enriched as desired</i> <i>Application bandwidth report that shows bandwidth usage by application and risk. The application and risk columns can be</i>
--	--	---

		<p><i>removed and replaced with source IP to provide a bandwidth usage report broken out by IP address</i></p> <ul style="list-style-type: none"> • <i>Reporting for NG Firewalls - hardware, software, virtual, and cloud</i> • <i>Intuitive user interface provides graphical representation of data</i> • <i>Report dashboard provides an at-a-glance view of events over the past 24 hours</i> • <i>Customizable chart options - can select between a bar, pie, stacked area, and line chart for any report</i> • <i>Easily identify network activities, trends, and potential attacks</i> • <i>Deep insight into user activity, application usage, and security threats on the network</i> • <i>Easy backup of logs with quick retrieval for audit needs</i> • <i>Simplified deployment without the need for technical expertise</i> • <i>Managed Threat Response (MTR) Connector enables analysts to receive alerts from Firewall</i> <p>Reporting (On-appliance):</p> <ul style="list-style-type: none"> • <i>Firewall reporting should be included at no extra cost (on-box reports) with custom report options</i> • <i>Dashboards (Traffic, Security, and User Threat Quotient)</i> • <i>Applications reports (App Risk, Blocked Apps, Synchronized Apps, Search Engines, Web Servers, Web Keyword Match, FTP)</i> • <i>Network and Threats reports (IPS, ATP, Wireless, Security Heartbeat, Sandstorm)</i> • <i>User Threat Quotient (UTQ) reports to identify risky users based on recent browsing behavior and ATP triggers</i> • <i>VPN reports</i> • <i>Email reports</i> • <i>Compliance reports (HIPAA, GLBA, SOX, FISMA, PCI, NERC CIP v3, CIPA)</i> • <i>Current Activity Monitoring: system health, live users, IPsec connections, remote users, live connections, wireless clients, quarantine, and DoS attacks</i> • <i>Report anonymization</i> • <i>Report scheduling to multiple recipients by report group with flexible frequency options</i> • <i>Export reports as HTML, PDF, Excel (XLS)</i> • <i>Report bookmarks</i> • <i>Log retention customization by category</i> • <i>Full-featured log viewer with column view and detailed view with powerful filter and search options, hyperlinked rule ID, and data view customization</i> <p>Next-Gen Xstream Protection from day 1:</p>
--	--	---

		<p><i>Base Firewall Protection includes:</i></p> <ul style="list-style-type: none"> - <i>Networking and SD-WAN: Wireless, SD-WAN, Application Aware Routing, Traffic Shaping.</i> - <i>Protection and Performance: Xstream Architecture with Network Flow FastPath, TLS 1.3 Inspection, Deep-Packet Inspection.</i> - <i>VPN: IPsec/SSL Site-to-Site and Remote Access VPN (unlimited), SD-RED Site-to-Site VPN.</i> - <i>Central Management: Group firewall management, backup management, firmware update scheduling.</i> - <i>Reporting: Historical on-box logging and reporting.</i> - <i>Central Firewall Reporting: Prepackaged and custom report tools with seven days cloud storage for no extra charge.</i> <p>Network Protection includes:</p> <ul style="list-style-type: none"> - <i>Xstream TLS Inspection: TLS 1.3 inspection with pre-packaged exceptions.</i> - <i>Xstream DPI engine: streaming deep-packet inspection.</i> - <i>IPS: Next-gen Intrusion Prevention.</i> - <i>ATP: Advanced Threat Protection.</i> - <i>Synchronized Security Heartbeat: Integration with Endpoints to identify and isolate threats.</i> - <i>Clientless VPN: HTML5.</i> - <i>SD-RED VPN: Manage SD-RED devices.</i> - <i>Reporting: Extensive network and threat reporting.</i> <p>Web Protection includes:</p> <ul style="list-style-type: none"> - <i>Xstream TLS Inspection: TLS 1.3 inspection with pre-packaged exceptions.</i> - <i>Xstream DPI engine: Streaming deep-packet inspection.</i> - <i>Web Control: By user, group, category, URL, keyword.</i> - <i>Web Threat Protection: Malware, PUA, malicious JavaScript, Pharming.</i> - <i>App Control: By user, group, category, risk, and more.</i> - <i>Synchronized App Control: Integration with endpoints to identify unknown apps.</i> - <i>Synchronized SD-WAN: Utilizing Synchronized App Control to route unknown apps.</i> - <i>Reporting: Extensive web and app reporting.</i> <p>Zero-day Protection includes:</p> <ul style="list-style-type: none"> - <i>Xstream TLS Inspection: TLS 1.3 inspection with pre-packaged exceptions.</i> - <i>Xstream DPI engine: Streaming deep-packet inspection.</i> - <i>Zero-Day Threat Protection: Analyze all unknown files using AI, ML, and sandboxing.</i> - <i>Threat Labs Intelix: Cloud-based intelligence and analysis.</i>
--	--	--

		<ul style="list-style-type: none"> - <i>Machine Learning: Using multiple deep learning models.</i> - <i>Cloud Sandboxing: Dynamic run-time analysis of unknown files.</i> - <i>Reporting: Extensive threat intelligence analysis reporting.</i> <p>Central Management includes:</p> <ul style="list-style-type: none"> - <i>Group Firewall Management: Synchronized policy across firewall groups.</i> - <i>Backup and firmware updates: Storage and scheduling.</i> - <i>Zero-touch deployment: For new firewalls from the cloud.</i> <p>Central Orchestration includes:</p> <ul style="list-style-type: none"> - <i>SD-WAN Orchestration: Point and click Site-to-Site VPN Orchestration.</i> - <i>Cloud Firewall Reporting: Multi-firewall reporting with save, schedule and export reports (30-day data retention).</i> - <i>XDR and MDR Connector: Support for XDR and MTR services</i> <p>Enhanced Support includes:</p> <ul style="list-style-type: none"> - <i>24x7x365 support,</i> - <i>Advance replacement hardware warranty,</i> - <i>Direct OEM technical support via portal /telephone/remote access,</i> - <i>Free security updates and patches,</i> - <i>Free Software features updates & upgrades.</i> <p>Manufacturer Authorization:</p> <ul style="list-style-type: none"> • <i>Manufacturer Authorization Certificate must be included during submission</i> <p>Warranty:</p> <ul style="list-style-type: none"> • <i>36 months from the date of activation of the subscriptions/device registration</i>
Item No. 52: Necessary Power Accessories (01 lot)		
52.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Multiplug, Power cable, Power socket, others Accessories</i>
Item No. 53: Installation of all networking (01 Job)		
53.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>N/A</i>

	<p><i>Other Features & Requirement (minimum or equivalent)</i></p>	<p><i>This item involves the comprehensive installation and commissioning of specified systems or equipment as detailed in the project scope. The objective is to ensure that all components are installed accurately, fully integrated with existing systems, and operational to meet the project's technical requirements.</i></p> <p><i>The tenderer must submit detailed plans and documents illustrating a thorough approach to installation and commissioning, including critical activities such as wiring, networking, and system configuration:</i></p> <p>3D Render: <i>Must provide a 3D rendering that visually represents the system in its operational environment, showing all components in their final installed state.</i></p> <p>Floor Layout: <i>Must submit a detailed floor layout plan that includes the placement of all system components, equipment paths, and connectivity points.</i></p> <p>Architectural Design: <i>Architectural design documents must integrate the new systems into the existing infrastructure, showing any necessary structural adaptations and system supports.</i></p> <p>Associated Technical Diagrams: <i>Must include a comprehensive technical diagram that cover electrical schematics, mechanical systems, and network cabling layouts.</i></p> <p>Installation Details: <i>Wiring and Cable Laying: Detailed plans for wiring paths, types of cables used, and cable laying methodologies.</i> <i>Networking: Network design including routers, switches, and hubs placement along with backbone connections and network topology.</i> <i>Face Plates and Modular Connections: Placement of face plates and modular connectors including details on types and standards used.</i> <i>Rack Dressing: Plans for rack arrangement, cable management, equipment mounting, and dressing.</i> <i>Testing and Validation: Procedures for network testing, signal integrity checks, and functionality tests to ensure full system operation.</i> <i>Labelling: Labelling scheme for all equipment, cables, and termination points to facilitate maintenance and future upgrades.</i></p> <p>Submission Specifications: <i>Documents should be provided in high-resolution format and should not be generic internet images.</i></p>
--	--	--

		Ensure that all designs comply with local codes and industry standards. Diagrams should be annotated and include legends to clarify elements within the design and layouts.
<u>Package: Conference Unit</u>		
Item No. 54: PA Conference Main Unit (1 Nos)		
54.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p><i>Designed in accordance with ISO and IEC914 standards.</i></p> <p><i>Built-in power supply device and signal amplifier, which can support more than 70 groups of speech equipment.</i></p> <p><i>Four groups of 9p-DIN plugs for several systems join.</i></p> <p><i>Can offer the power and data communication socket for video central processor.</i></p> <p><i>Possess the output socket of audio frequency equipment.</i></p> <p><i>Equipped with BAL socket for connection kinds of result device.</i></p> <p><i>Built-in volume processor for volume regulating.</i></p> <p><i>Built-in monitor loudspeaker (1w) for volume regulating.</i></p>
Item No. 55: PA Conference Chairman Unit (01 Nos)		
55.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p><i>Brand:</i> <i>To be specified by the tenderer</i></p> <p><i>Model Number:</i> <i>To be specified by the tenderer</i></p> <p><i>Frequency Response: 40-16000Hz.</i></p> <p><i>Sensitivity: -42±2dB.</i></p> <p><i>Reference sound “receiving distance: 20-120cm.</i></p> <p><i>Built-in monitor loudspeaker (1w) for volume regulating.</i></p> <p><i>Chairman unit could control the whole process of the conference. Red indicator light on the MIC.</i></p> <p><i>Electric capacity type microphone, equipped with windshield cover, extension pipe optional.</i></p> <p><i>The chairman unit in the systems is unrestricted, can join with any position in the circuit</i></p>
Item No. 56: PA Conference Delegate Unit (16 Nos)		
56.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<p><i>Brand:</i> <i>To be specified by the tenderer</i></p> <p><i>Model Number:</i> <i>To be specified by the tenderer</i></p> <p><i>Frequency response: 40-16000Hz.</i></p>

		<p>Sensitivity: -42±2dB.</p> <p>Reference: sound “receiving distance: 20-120cm.</p> <p>Built-in monitor loudspeaker (1w) for volume regulating.</p> <p>Red indicator light on the MIC.</p> <p>Electric capacity type microphone, equipped with windshield cover, extension pipe optional.</p> <p>Warranty: One Year.</p>
Item No. 57: PA conference Audio Amplifier (01 Nos)		
57.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>80 WATTS AC & 12V DC OPERATING 80 Watts RMS at 10% THD 100 Watts Max. MIC: 4 mic 0.65 mV/4.7KΩ. AUX: 1 x AUX 100mV / 470kΩ. 50 - 15k Hz ± 3dB Bass: ±10dB at 100Hz Treble: ± 10dB at 10K Hz 40, 80, 160, 70V & 100V IV/1kΩ AC: 220 - 240 V 50/60 Hz DC: 12V (12V Car Battery) MP3 Player / Recorder with Bluetooth / USB / MMC / SD With Remote Control 88 - 108 MHz Tuning range 60ms to 300ms, 300ms to 500ms, 500 ms to 650ms Delay Time: 20ms to 600ms L 440 xW 360 xH 160mm GW-7.200</p> <p>Warranty: One Year.</p>
Item No. 58: PA Conference Sound Box Ceiling Type (04 Nos)		
58.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>Ceiling Speaker, for Better Sound</p> <p>Input Power: 20W RMS, Power Taps on 100v 20/10/5W</p> <p>Impedance: 1.6l/3.3k/6.6k, Frequency response 70-15, 000Hz</p> <p>SPL at 1kHz(1W/1m) 85dB, Dimensions w105x h80 mm</p> <p>Weight 0.47kg, Material ABS (UV Protected)</p> <p>Warranty: One Year.</p>
Item No. 59: Wireless Microphone (03 Nos)		
59.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	<p>Brand: To be specified by the tenderer</p> <p>Model Number: To be specified by the tenderer</p> <p>UHF RECEIVER</p>

		<p><i>Carrier Wave Frequency Range: UHF 610-815 Mhz Oscillation Mode: Quartz Controlled Fixed Frequency Carrier Wave Stability: 10PPM Sensitivity:-105 dB@ sinad 12dB SINRatio:> 105 dB T.H.D: <0.5%@1KHz Image Rejection:85 dB Typical Spurious Rejection:75dB TYPICAL Frequency Responses:40Hz - 18KHz Working distance:100M Squelch Control: Dual-squelch Circuit AF Output Impedance:2.2K ohm Max. Output Level Balance:0-400mv; Unbalance:0-200mv; Display: LED Power Supply: ExternalDC Power Supply,0.35A , 12-18VDC Output Connector:2XLR Balanced Socket, Unbalance TRS 6.35mm Socket</i></p> <p><i>TRANSMITTER</i></p> <p><i>Transmitter Power:30mW Spurious Emission: < 40dB(with Carrier) Display: LED Battery Voltage:1.5v x2 Battery Life: 10Hrs Warranty: One Year. "</i></p>
Item No. 60: Accessories (1 Nos)		
60.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Extension Cord, Audio Cable</i>
Item No. 61: Monitor (17 Nos)		
61.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>16" Portable Multi-Touch IPS FHD Monitor</i>
Item No. 62: Installation (01 Job)		
62.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>N/A</i>
	<i>Other Features & Requirement (minimum or equivalent)</i>	<i>Full PA system installation, programming, testing & Commissioning Charge Warranty: One Year.</i>
Item No. 63: Video Conference Camera (1 Nos)		
63.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	<i>To be specified by the tenderer</i>

	Other Features & Requirement (minimum or equivalent)	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer 1080p Full-HD video, up to 3-way video conferences, support for 2 monitor outputs through 2 HDMI outputs 3-way hybrid-protocol conferencing with no external MCUs/servers or extra software licenses PTZ Camera with 9x optical zoom Based on Android Integrated Bluetooth, Gigabit ports, video recording, Screen sharing through HDMI/VGA input Installed in just 3 simple steps (connect to network, TV monitors and speaker/mic) Built-in Meeting scheduler Plug and Play connection to IP. Video Talk video conferencing service Supports third party SIP video conferencing platforms Original Manufacturer warranty: 1 year Manufacturer Authorization Letter: Yes
Item No. 64: Video Conference Camera stand (01 Nos)		
64.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	Video Conference Camera stand Brand: To be specified by the tenderer Model Number: To be specified by the tenderer
Item No. 65: Smart TV 75" 4K (01 Nos)		
65.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer
	Other Features & Requirement (minimum or equivalent)	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer 75" UHD 4K (3840 x 2160) Display Dynamic Crystal Color, Crystal Processor 4K Motion Xcelerator, Auto Game Mode Connectors (channels): USB 2, HDMI 3
Item No. 66: Multi-Function Duplex Copier (01 Nos)		
66.1	Technical Specifications/Features	
	Country of Origin:	To be specified by the tenderer

	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer Toshiba e-Studio 2323AM Multi-Function Duplex Copier <ul style="list-style-type: none"> • Functions: Print, Scan, Copy • Copy / Print Speed (ppm): 23 • Zoom: 25 - 400% • Warm-up Time: 15 sec.
Item No. 67: Printer (02 Nos)		
67.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	To be specified by the tenderer
	<i>Other Features & Requirement (minimum or equivalent)</i>	Brand: To be specified by the tenderer Model Number: To be specified by the tenderer Multi-Function laser printer
Item No. 68: Control Station (02 Nos)		
68.1	Technical Specifications/Features	
	<i>Country of Origin:</i>	
	<i>Other Features & Requirement (minimum or equivalent)</i>	Control station for Command Center Training Unit <ul style="list-style-type: none"> - Control workstation with size to accommodate at least 4 monitors - Desk Mount Quad Monitor Arm - VESA 4 Monitor 2 x 2 - 2 x i7 12th Gen 16 GB DDR4, 512 GB SSD, 2 TB HDD Tower Desktop PC - 4 x 27-inch 4K UHD IPS Dual HDMI DP USB Monitor compatible with VESA mount - Steel frame ergonomic chair
Item No. 69: Customizable Network Management Software (NMS) (1 Package)		
69.1	Technical Specifications/Features	
	<i>Country of Origin</i>	To be mentioned by bidder
	<i>Other Specification (Minimum or equivalent)</i>	Tailored Network Monitoring: <ul style="list-style-type: none"> o Real-time monitoring of all network devices, including routers, switches, firewalls, and servers. o Customized alerts for device failures, bandwidth anomalies, and critical performance issues. o Personalized dashboard showing network health metrics specific to the organization's needs. Performance and Traffic Analysis: <ul style="list-style-type: none"> o Customized performance tracking with configurable KPIs (CPU, memory, traffic throughput). o Advanced traffic analysis and detailed reporting of bandwidth utilization by device, user, or application.

		<ul style="list-style-type: none"> <i>o Custom thresholds for monitoring performance degradation and network bottlenecks.</i> <p>Custom Fault Management:</p> <ul style="list-style-type: none"> <i>o Automated detection of faults with customized alert thresholds.</i> <i>o Configurable alert escalation protocols with notification options such as SMS, email, and app integration.</i> <p>Enhanced Security Monitoring:</p> <ul style="list-style-type: none"> <i>o Integration with existing security systems for real-time monitoring of firewalls, intrusion detection systems (IDS), and anti-malware solutions.</i> <i>o Customizable security alerts for unauthorized access attempts, traffic anomalies, and potential breaches.</i> <i>o Automated vulnerability scans and compliance monitoring based on regulatory standards.</i> <p>Custom Reporting and Analytics:</p> <ul style="list-style-type: none"> <i>o Tailored reporting features based on business-critical metrics, with custom formats for executive or technical reporting.</i> <i>o Real-time analytics with historical data comparisons for trend analysis and capacity planning.</i> <i>o Custom scheduling for automated reports and alerts delivered to predefined stakeholders.</i> <p>Scalability and High Availability:</p> <ul style="list-style-type: none"> <i>o Customized architecture for scalability based on current and future network growth.</i> <i>o High-availability configuration with redundancy and failover solutions designed to meet business continuity requirements.</i> <i>o Custom resilience measures for critical services and systems.</i> <p>Integration with Existing Systems:</p> <ul style="list-style-type: none"> <i>o Seamless integration with third-party tools like ticketing systems, e-Traffic management, and custom-built internal tools.</i> <i>o API support for interconnecting with business systems, ensuring a holistic view of network and business operations.</i> <p>Role-Based Access Control (RBAC):</p> <ul style="list-style-type: none"> <i>o Custom role-based access for various user levels, from administrators to technicians, tailored to internal organizational hierarchy.</i> <i>o Multi-layered security with configurable access permissions and custom activity logs for auditing.</i> <p>User Interface Customization:</p> <ul style="list-style-type: none"> <i>o Fully customizable user interface (UI) with personalized dashboards for BIWTA with their own branding, widgets, and reports.</i> <i>o Custom layouts and visualizations to highlight mission-critical components based on organizational priorities.</i> <p>Warranty and Licensing</p>
--	--	---

		<ul style="list-style-type: none"> o 36-month support and warranty to be provided o 50 license <p>Product details should be provided. Should be used by reputed clients in Bangladesh. Must provide a client list.</p>
Item No. 70: Core Switch (1 Nos)		
70.1	Technical Specifications/Features	
	<i>Country of Origin</i>	<i>To be specified by the tenderer</i>
	<i>Other Specification (Minimum or equivalent)</i>	<p>Product Specification: Core Switch</p> <ul style="list-style-type: none"> • Brand: To be mentioned by the tenderer • Model: To be mentioned by the tenderer <p>Physical Characteristics:</p> <ul style="list-style-type: none"> • Enclosure Type: 19-inch Rack-mountable modular chassis with a minimum of 5 slots available from Day 1 <p>Environmental Standards:</p> <ul style="list-style-type: none"> • Must maintain International Quality Environmental Safety standards <p>Detailed Specifications:</p> <ul style="list-style-type: none"> • Part Number and BOQ: Tenderer must submit a Bill of Quantities (BOQ) of the proposed device including the details part numbers and required performance documentation. <p>Switch Architecture:</p> <ul style="list-style-type: none"> • Port Configuration: At least 24 x 10G SFP+ fiber ports and 48 x 10/100/1000Gbps Copper ports from Day 1. • Optical Transceivers: Must provide 12 x 10G short-range optical transceivers, same brand as the switch, from Day 1. • Power and Cooling: <ul style="list-style-type: none"> o Support for Redundant Power Supplies o Redundant Fan modules • Memory and Storage: <ul style="list-style-type: none"> o Minimum 4GB Memory and 2GB Flash • Processing and Management: <ul style="list-style-type: none"> o At least one separate central processing engine o RJ45-based Console Ports and at least one 1Gbps dedicated Ethernet Management Port <p>Switch Performance:</p> <ul style="list-style-type: none"> • Switching Bandwidth: At least 15 Tbps • Forwarding Rate: At least 3000 Mpps <p>Layer 3 Features:</p> <ul style="list-style-type: none"> • Routing Protocols: Support for RIP, OSPF, BGPv4, IS-IS, VRRP

		<ul style="list-style-type: none"> • IPv6 Support: Routing capable protocols such as OSPFv3 in hardware. • Advanced Routing: <ul style="list-style-type: none"> ○ Policy Based Routing (PBR) or similar technology ○ IP Multicast, PIM Sparse Mode, PIM Dense Mode ○ Basic IP Unicast routing protocols (static, RIP & RIPng) <p>Layer 2 Features:</p> <ul style="list-style-type: none"> • VLAN: 802.1q VLAN encapsulation • Spanning Tree: 802.1d, 802.1s, 802.1w • Link Aggregation: 802.3ad (dynamic link aggregation) • MAC Configuration: Static MAC configuration • VXLAN: L2 switching and VTEP <p>MPLS Features:</p> <ul style="list-style-type: none"> • L3 VPN • L2 VPN • MPLS OAM • Hierarchy VPLS <p>Security Features:</p> <ul style="list-style-type: none"> • Port Security • IEEE 802.1x • AAA/Radius authentication • Standard and extended ACLs • Ingress and egress ACLs • Traffic shaping, priority marking, and remarking • Congestion avoidance • uRPF (Unicast Reverse Path Forwarding) <p>Switch Management:</p> <ul style="list-style-type: none"> • SNMP v1/v2/v3 • NetFlow / sFlow • SSHv2 • OpenFlow 1.3 <p>Certifications:</p> <ul style="list-style-type: none"> • Manufacturer Authorization Certificate must be included during submission <p>Warranty:</p> <ul style="list-style-type: none"> • Three (3) years
Item No. 71: Installation and commissioning (01 Job)		
71.1	Technical Specifications/Features	
	<i>Country of Origin</i>	N/A

	<i>Other specification</i>	<i>Cable laying, rack dressing, punching, crimping, testing, labelling, camera mounting and other necessary work.</i>
--	----------------------------	---

3.4. Installation and Functioning Trial

The Supplier shall deliver all the above items of Goods in a new and unused condition; and shall have them assembled, installed, mounted, fitted, adjusted, configured and put into operation by expert technical personnel, as would be required; and subsequently shall carry out and complete trial operation with rectification if any defect or deficiency (including those notified by the Purchaser) until the functioning status of each item has achieved satisfactorily level of commissioning. The costs related to assembly /installation/mounting/fitting/adjustment /configuring /rectifying defects or deficiencies of any item of supply shall be included in the Bid/Contract Price.

Services shall be provided for the Goods supplied and installation against all items.