



Patients' Aid Foundation (PAF)

on premises at the Jinnah Postgraduate Medical Center (JPMC)

Karachi

Bidding Documents

**Provision of Supply, Installation and Commissioning of Equipment &
Civil work for 6th Floor Surgical Complex at JPMC Karachi.**

For The Financial Year 2023-2024

Due on 03rd January 2024

Issued By:

Chairman Patients' Aid Foundation & Supervisory Committee, Surgical Complex, JPMC
Cyberknife & Tomotherapy, Room 16, Jinnah Postgraduate Medical Center,
Rafiqi Shaheed Road, Karachi – Pakistan 75510
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Patients' Aid Foundation
Jinnah Postgraduate Medical Centre, Karachi
Government of Sindh

**SUPPLY, INSTALLATION & COMMISSIONING OF EQUIPMENT & CIVIL WORK FOR
6TH FLOOR SURGICAL COMPLEX
AT JINNAH POSTGRADUATE MEDICAL CENTRE-KARACHI**

1. The Office of the Chairman Patients' Aid Foundation & Supervisory Committee, Surgical Complex, JPMC, Karachi invites sealed tenders as per following details during financial year 2023 – 2024. The local/International manufacturer having local agent / sole distributor with established credentials in terms of technical, financial and managerial capabilities are eligible to participate.

S.No	Tender details	Tender Fee	Pre-bid Meeting	Tender Due date
I.	PACS Hardware	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
II.	PACS Software	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
III.	Networking Equipment	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
IV.	Network Deployment for PACS	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
V.	Equipment for Lecture Hall	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
VI.	Local Surgical Instruments	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
VII.	Vacuum Pumps for Central Suction System	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
VIII.	Equipment for Skills Lab	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
IX.	DVDs	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024
X.	CSSD	Rs. 2,000/-	26 th Dec 2023	03 rd Jan 2024

2. Interested bidders may obtain Tender Documents from the office of the Secretary Supervisory Committee, Surgical Complex, (Address: Room no 16 Cyberknife & Tomotherapy Building, Jinnah Postgraduate Medical Center, Rafiqi Shaheed Road, Karachi – Pakistan 75510) on payment of non-refundable fee in the form of Pay Order/CDR/Demand Draft in the name of “Patients' Aid Foundation” during office hours on or before **03rd January 2024**.
3. Tender documents can also be downloaded from the website of Patients Aid Foundation /JPMC.
4. Bidders are required to submit their written application for issuance of tender documents along with copy of CNIC, NTN & GST certificate. After purchasing the tender if any firm / bidder have any reservation or observations regarding specs are required to submit their queries in writing on or before **26th December 2023 at 11:00 am** at the Lecture Hall 2nd Floor Department of Radiology JPMC, Karachi.
5. Single stage / two envelopes bidding procedure shall be adopted. The envelope shall be marked as “TECHNICAL PROPOSAL” and “FINANCIAL PROPOSAL” (sealed) in bold and legible letters. The financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders.
6. The bidder shall ensure that their tenders are complete in all respects. The bidder should submit tender document on **03rd January 2024 before 11:00 am** as per schedule at Secretary Supervisory Committee, Surgical Complex (Address: Room no 16 Cyberknife & Tomotherapy Building, Jinnah Postgraduate Medical Center, Rafiqi Shaheed Road, Karachi – Pakistan 75510). Technical proposal will be opened on the **same day at 11:30 am** the Lecture Hall 2nd Floor Department of Radiology JPMC, Karachi. The incomplete tenders and tenders received after the closing date and time will not be considered.
7. In case the date of opening or last date of submission is declared as public holiday by the Government or non-working day due to any reason, the next official working day shall deemed to be the date of submission and opening of bids. The time and venue will remain the same.
8. Original bid security / earnest money 2% of total cost in the form of Pay Order/CDR/Demand Draft in favor of “Patients' Aid Foundation” should be attached with the financial bid and photocopy of the same without showing the value attached with the technical bid as demanded in the bidding documents.
9. The undersigned / tenderer reserve the rights to reject any or all the tenders without assigning any reason thereof.

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Instructions to Bidders (ITB)

INTRODUCTION:

Surgical & OPD complex of JPMC was an ECNEC approved project of Federal Government (Worth USD 60.000 million). The then PM Shoukat Aziz did its ground breaking in March 2007 at Governor House Karachi. It was announced that project will be completed in three years because of the poor condition of existing surgical block which had been declared unfit for use by Pak PWD in 2006. But till 2014, funds were not released and patients kept on suffering. Therefore, the then Executive Director Prof. Tasnim Ahsan requested PAF to arrange funds for this mega project.

Since NESPAK had already designed the project in consultation with a US based architect Cathryn Bang and partners so PAF requested the NESPAK for value engineering and agreed at a target of USD 35.000 million instead of USD 60.000 million for a nine story building having 550 beds, 18 Operation theaters and an OPD complex for 4000 patients daily.

PAF also agreed to arrange USD 21.000 million for building and USD 3.000 million for equipment. Government of Sindh pledged funding for equipment costing USD 11.000 million.

1. SOURCE OF FUND

- 1.1. The Government of Sindh has committed to provide funding Patients' Aid Foundation, Jinnah Postgraduate Medical Center-Karachi during the financial year 2022-2023, to equip the Surgical Complex of JPMC, Karachi. A Project of PAF & funded by Government of Sindh.

2. ELIGIBLE BIDDERS

- 2.1 This Invitation for Bids is open to all original Manufacturers, within Pakistan and abroad, and their Authorized Agents/Importers/Suppliers subject to the conditions that:
- 2.2 The Agents/Suppliers/Importers must possess valid sole authorization from the Manufacturer. In case of Manufacturers, they should have documentary proof to the effect that they are the original Manufacturers of the required specifications.
- 2.3 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by any Government (Federal or Provincial), a local body or a public sector organization.
- 2.4 The bidders should have operational office(s) in Pakistan and possess financial sustainability to meet timely supply.

3. ELIGIBLE GOODS

- 3.1 In the case of Goods offered from outside the Pakistan, Certified ISO, CE , FDA (whichever applicable) and respective quality certified products as required in the bidding document shall be considered as eligible goods by the bidder;
- 3.2 Goods should be packed and transported in a material that meets international standards;
- 3.3 Goods should meet required specification in the bidding document.

THE BIDDING PROCEDURE

4. SINGLE STAGE – TWO ENVELOPES BIDDING PROCEDURE

- 4.1 Single stage - two envelopes bidding procedure will be applied.
- 4.2 The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the technical proposal and the financial proposal;
- 4.3 The envelopes shall be marked as "TECHNICAL PROPOSAL" and "FINANCIAL PROPOSAL" in bold and legible letters to avoid confusion;
- 4.4 Initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened; **for technical bid each vendor is requested to fill up the Performa of technical specification with the desired information in the last column with verifiable references form the data sheets / technical brochures. Please fill up on the same MS Word format as per desired information saying YES/NO and if needed give proper pagination, paragraph & line description for easy assessment by technical committee.**
- 4.5 The envelope marked as “FINANCIAL PROPOSAL” shall be retained in the custody of the Patients’ Aid Foundation without being opened.
- 4.6 Patients’ Aid Foundation shall evaluate the technical proposal, without reference to the financial proposal and reject any proposal which does not conform to the specified requirements.
- 4.7 The financial proposal of bids shall be opened in the presence of bidders qualifying in technical evaluation at time, date and venue to be announced / communicated in advance by e-mail.
- 4.8 Financial proposal of the bids failing to qualify in the technical evaluation will be returned to the bidders unopened.
- 4.9 The bidder quoting the lowest price and qualifying as per technical evaluation criteria mentioned in the bidding document shall be declared Successful.

THE BIDDING DOCUMENTS

5. CONTENTS OF BIDDING DOCUMENTS

- 5.1 The Bidding Documents:
In addition to the Tender Notice, the bidding documents include:
 - i. Instructions to Bidders (ITB);
 - ii. General Conditions of Contract (GCC);
 - iii. Special Conditions of Contract (SCC);
 - iv. Schedule of Requirements;
 - v. Technical Specifications;
 - vi. Contract Form;
 - vii. Bid Form;
 - viii. Price Schedule;
 - ix. Integrity Pact
- 5.2 In case of discrepancies between the Tender Notice and the Bidding Documents listed in 5.1 above, the Bidding Documents shall take precedence.
- 5.3 The bidders are expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish complete information required in the bidding documents or to submit

a bid not substantially responsive to the bidding documents may result in rejection.

6. AMENDMENT OF BIDDING DOCUMENTS

- 6.1 At any time prior to the deadline for submission of bids, Patients' Aid Foundation may, for any reason, whether at its own initiative or in response to any query or clarification requested by a prospective Bidder, modify the bidding documents by amendment.
- 6.2 All prospective bidders that have received the bidding documents will be notified the amendment(s) in writing or by email which will be binding on them.
- 6.3 In order to allow prospective bidders reasonable time to take the amendment(s) into account in preparing their bids, Patients' Aid Foundation may, at its discretion, extend the deadline for submission of the bids.

PREPARATION OF BIDS

7. LANGUAGE OF BID

7.1 Preparation of Bids

The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and Patients' Aid Foundation shall be in English. Supporting documents and printed literature furnished by the bidder may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case for purposes of interpretation of the Bid, the translated version shall prevail.

8. DOCUMENTS COMPRISING THE BID

8.1 The bid prepared by the Bidder shall comprise the following:

- i. Bid Form and Price Schedule (to be submitted along with financial proposal);
- ii. Documentary evidence to the effect that the Bidder is eligible to bid and is qualified to perform the Contract if its bid is accepted;
- iii. Documentary evidence to the effect that the goods to be supplied by the Bidder are eligible goods as defined in clause-3 and conform to the bidding documents; and
- iv. Photo copy of Bid Security with hidden amount.

9. BID PRICES

- 9.1 The Bidder shall indicate in the Price Schedule, the unit prices and total bid price of the goods it proposes to supply under the Contract.
- 9.2 Prices indicated on the Price Schedule shall be on CIF basis except local items.
- 9.3 Price Schedule is to be filled in very carefully, preferably typed. Any alteration/correction must be initialed.
- 9.4 The Bidder should quote the price(s) of goods according to the technical specifications as provided in the Technical Specifications. The specifications of goods inferior from the ones required by the Patients' Aid Foundation shall straightway be rejected.
- 9.5 **The Bidder is required to offer competitive price(s). All price(s) must include the project management, drawing, transportation, loading/unloading/ installation/ commissioning/ up-to satisfaction of end user.**

10. BID CURRENCIES

- 10.1 Prices shall be quoted in respective foreign currency for goods offered.

11. DOCUMENTS ESTABLISHING GOODS' ELIGIBILITY

- 11.1 The Bidder shall furnish along with technical proposal, as part of its bid, documents establishing eligibility and conformity of the goods which it proposes to supply under the Contract.
- 11.2 Submission of documents of Goods offered as under:
 - i. Original Brochure
 - ii. Technical Datasheet/ specifications
 - iii. ISO, CE, FDA, 510(k) or whichever certification is required
 - iv. Customer List (Local & International)
- 11.3 No technical proposal / bid will be considered in the absence of mandatory document(s) or sample(s) as per ITB 12.2. The offer will be rejected / ignored for further evaluation in such absence.

12. BID SECURITY

- 12.1 The Bidder shall furnish, as part of its financial proposal, a Bid Security (earnest money) in the amount specified in Special Conditions of Contract (SCC). Unsuccessful bidders' Bid Security will be returned soon after approval of the successful Bidder. The successful Bidder's Bid Security will be discharged upon signing of contract and furnishing the Performance Security bond, duly guaranteed by a scheduled bank.
- 12.2 The Bid Security is required to protect Patients' Aid Foundation against the risk of Bidder's conduct, which would warrant the Security's forfeiture;
- 12.3 The Bid Security may be forfeited:
 - i. If a Bidder withdraws its bid during the period of bid validity; or
 - ii. In the case of a successful Bidder, if the Bidder fails:
 - a. To sign the Contract; or
 - b. To complete the supplies in accordance with the General Conditions of Contract.

13. BID VALIDITY

- 13.1 Bids shall remain valid for a period of 120 days. A bid valid for a shorter period shall be treated as non-responsive
- 13.2 Patients' Aid Foundation shall ordinarily be under an obligation to process and evaluate the bids within the stipulated bid validity period. However, for any reasons to be recorded in writing, if any extension is considered necessary, all those who have submitted their bids shall be asked to extend their respective bid validity period.

SUBMISSION OF BIDS

14. SEALING AND MARKING OF BIDS

- 14.1 The envelopes shall be marked separately as "TECHNICAL PROPOSAL" and "FINANCIAL PROPOSAL" in bold and legible letters to avoid confusion. The Bidder shall seal the proposals/bids in separate envelopes and put them in a relatively bigger envelope to be sealed.
- 14.2 The inner and outer envelopes shall:
 - i) Be addressed to Patients' Aid Foundation at the address given in the Tender Notice (Invitation of Bids); and
 - ii) Bear the Project name indicated in the [Invitation for Bids (IFB)] title and number indicated, and a statement: "DO NOT OPEN BEFORE," to be completed with the time and the date specified in the Tender Notice.
- 14.3 The inner envelopes shall also indicate the name and address of the Bidder to enable Patients' Aid Foundation to return the bid unopened in case it is declared as "non-responsive" or "late" as the case may be.
- 14.4 If the outer and the inner envelopes are not sealed and marked as required, Patients' Aid Foundation will assume no responsibility for the bid's misplacement or premature opening.

15. DEADLINE FOR SUBMISSION OF BIDS

- 15.1 Bids must be submitted by the bidders and received by Patients' Aid Foundation at the specified address not later than the time and date specified in the Tender Notice.
- 15.2 Patients' Aid Foundation may, at its convenience, extend this deadline for submission of bids by amending the bidding documents in which case all rights and obligations of Patients' Aid Foundation and the Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

16. LATE BID

- 16.1 Any bid received by Patients' Aid Foundation after the deadline for submission of bids prescribed by Patients' Aid Foundation shall not be entertained and returned unopened to the bidder.

17. WITHDRAWAL OF BIDS

- 17.1 The Bidder may after its submission withdraw prior to the expiry of the deadline prescribed for submission of bids.

OPENING AND EVALUATION OF BIDS

18. OPENING OF BIDS BY PATIENTS' AID FOUNDATION

- 18.1 The Procuring Agency will initially open only the envelopes marked "TECHNICAL PROPOSAL" in the presence of Bidders' or their representatives who choose to be present at the time of bid opening on the date, time and place specified in the Tender Notice. The bidders or their representatives who are present shall sign the Attendance Sheet evidencing their attendance. The envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of Procuring Agency without being opened till the completion of the evaluation process.

- 18.2 The bidders' names, item(s) for which they quoted their rate(s) and such other details as Patients' Aid Foundation may consider appropriate, will be announced at the time of opening of technical proposals. However, at the time of opening of Financial Proposals on a pre-indicated date, time and venue, the bid prices, discounts (if any), and the presence or absence of requisite Bid Security and such other details as Patients' Aid Foundation, may consider appropriate, will be announced.
- 18.3 Any financial bid found without the prescribed bid security (earnest money) shall be straightaway rejected even if it qualified in the process of technical evaluation.
- 18.4 Patients' Aid Foundation will prepare minutes of the technical and financial bids opening meetings and will get these minutes signed by the Chairman and members of the Supervisory Committee constituted by Health Department Government of Sindh vide reference no: NO.SO(B)1-45/ (PAF-JPMC)2020-21.

19. CLARIFICATION OF BIDS

- 19.1 During the process of evaluation of the bids, Patients' Aid Foundation may ask a Bidder for any clarifications of its bid. The request for such clarifications and the response shall be in writing. However, no change in the quoted price or substance of the bid shall be sought, offered, or permitted.

20. PRELIMINARY EXAMINATION

- 20.1 Patients' Aid Foundation will examine the bids to determine whether they are complete; whether any computational errors have been made; whether the required sureties have been furnished; whether the documents have been properly signed and linked, and whether the bids are generally in order.
- 20.2 Arithmetical errors in a financial bid will be rectified in the following manner:
 - i) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected.
 - ii) If there is a discrepancy between words and figures, the amount in words will prevail.
 - iii) If the Bidder/Supplier does not accept the correction of the errors, its bid will be rejected.
- 20.3 The Project & Procurement Committee may waive any minor infirmity, non-conformity, or discrepancy in a bid if in their view, it does not constitute some material deviation, provided that such waiver does not prejudice or affect the relative ranking of any Bidder.
- 20.4 If a bid is found substantially non-responsive, it will be rejected by Patients' Aid Foundation. It cannot subsequently be made responsive by the Bidder by correction of the nonconformity / discrepancy.

21. EVALUATION & COMPARISON OF BIDS

- 21.1 Patients' Aid Foundation will evaluate and compare the bids, which have been determined to be substantially responsive.
- 21.2 The technical proposals/bids will be evaluated on the basis of Technical Specification / rule, previous supply experience, financial soundness working period / backup service with part-without part and such other details as Patients' Aid Foundation may consider appropriate for making a sound judgment. However, the financial proposal will be evaluated on the basis of price and bid Security, being major factor, without ignoring the other relevant conditions as well.

22. EVALUATION CRITERIA

22.1 Technical Proposals

DOCUMENTS CHECKLIST

Please review the following list of **MANDATORY DOCUMENTS** to be enclosed with the Technical Proposal.

S.No.	Document Description	Yes / No	Page No.
1.	Tender Purchase Receipt (Original) / Tender Fee Pay Order		
2.	Bid Security [Copy with value hidden in Technical Proposal; Original in Financial Proposal]		
3.	Bidding Documents issued by Patients' Aid Foundation [Duly filled, Signed & Stamped by Bidder]		
4.	Item-wise/ Feature – wise product compliance/ deviation sheet/ statement on Bidder's Letterhead. [Duly filled, Signed & Stamped by Bidder]		
5.	Technical Proposal on bidder's letterhead [Duly filled, Signed & Stamped by Bidder]		
6.	Undertaking [as per attached Sample]		
7.	Certificates [as per attached Sample]		
8.	Income Tax & GST Registration Certificate with Active tax payer status on FBR.		
9.	Valid Professional Tax Certificate (Sindh)		
10.	DRAP Registration/License [For medical devices/equipment]		
11.	Income Tax Return (last 3 years)		
12.	Audited Financial Statement (last year)		
13.	Manufacturer's Authorization to Bidder		
14.	Brochure or Catalogue (Original) [Submission in form of photocopy, photographs or word document is not acceptable]		
15.	Technical Data Sheet		
16.	Quality Certificates such as ISO, CE, FDA and Origin etc. [Required certification mentioned in tender specification of each item]		

22.2 Financial Proposals:

- a) After technical evaluation is completed, Patients' Aid Foundation shall inform the disqualified bidders that their bid has been found non-responsive and that their financial proposal will be returned unopened after completing the process. Patients' Aid Foundation shall simultaneously inform in writing the qualified bidders date, time and place for opening the financial proposals. Bidder's attendance at the opening of financial proposal is optional.
- b) Financial proposals shall be opened publicly in the presence of the bidders or their representatives who choose to be present. Total prices quoted by each the financial proposal shall also be announced and recorded.

23. Contacting Patients' Aid Foundation

- 23.1 No bidder shall contact Patients' Aid Foundation on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded. If any bidder wishes to bring additional information to the notice of Patients' Aid Foundation, it may do so in writing.
- 23.2 Any direct or indirect effort by a bidding firm to influence Patients' Aid Foundation during the process of selection of a bidder or award of contract may besides rejection of its bid result into its disqualification from participation in Patients' Aid Foundation future tenders.

24. REJECTION OF BIDS

- 24.1 Notwithstanding anything stated here-before after Patients' Aid Foundation may reject any or all bids at any time prior to the acceptance of a bid. Patients' Aid Foundation may upon request communicate to a bidder (subjected to decision of procurement committee), regarding grounds for its rejection, but shall not be under obligation to justify those grounds.

25. RE-BIDDING

- 25.1 If Patients' Aid Foundation has rejected all bids, it may move for a re-bidding or may seek any alternative method of procurement.

26. ANNOUNCEMENT OF EVALUATION REPORT

- 26.1 Patients' Aid Foundation will announce the Evaluation Report and the resultant acceptance or rejection of bids at least 3 days prior to the award of procurement contract.

AWARD OF CONTRACT

27. ACCEPTANCE OF BID AND AWARD CRITERIA

- 27.1 The bidder with lowest evaluated bid under clause 22, if not in conflict with any other law, rules, regulations or policy of the Government, will be awarded the contract within the original or extended period of bid validity.

28. PROCURING AGENCY'S RIGHT TO VARY QUANTITIES

- 28.1 Patients' Aid Foundation reserves the right to increase or decrease the quantity of stores originally specified in the Price Schedule and Schedule of Requirements without any change in unit price or other terms and conditions.

29. LIMITATIONS ON NEGOTIATIONS

29.1 Negotiations only for delivery schedule or completion schedules will be conducted.

29.2 Negotiations will not be used to change substantially:

- i) The technical quality or details of the requirement, including the tasks or responsibilities of the bidder or the performance of the goods;
- ii) The terms and conditions of the Contract and;
- iii) Anything affecting the crucial or deciding factors in the evaluation of the proposals / tenders and / or selection of successful bidder.

30. NOTIFICATION OF AWARD

30.1 Prior to the expiry of the original or extended period of bid validity, the successful bidder will be informed in writing of acceptance of its bid by Patients' Aid Foundation

31. SIGNING OF CONTRACT

31.1 While conveying acceptance of bid to the successful bidder, Patients' Aid Foundation will send him / her Contract Form provided in the bidding documents, incorporating all points of agreement between the Parties.

31.2 Five days after the official announcement of the award, both the successful Bidder and Patients' Aid Foundation will sign and date the Contract on legal stamp paper valuing 0.35% of the value of contract (cost shall be borne by the bidder). In case the successful Bidder, after completion of all codal formalities, shows inability to sign the Contract, its Bid Security / Earnest Money shall be forfeited. The firm may also be blacklisted from taking part in any future bidding of Procuring Agency for a period up to five years. In such a situation, Patients' Aid Foundation may make the award to the next lowest evaluated bidder or move for re-tender.

32. PERFORMANCE GUARANTEE SECURITY

32.1 One day before the date of signing of the Contract, the successful Bidder shall furnish 5% Performance Guarantee/Security in line with the Performance Guarantee/Security Form provided with the bidding documents. Upon submission of Performance Guarantee the Bid Security (Earnest Money) will be returned to the Bidder

32.2 Failure of the successful Bidder to comply with any of the requirements specified in this document shall be considered as sufficient grounds for the annulment of the award and forfeiture of the Bid Security, in which event Patients' Aid Foundation may make the award to the next lowest evaluated Bidder at the risk and cost of the former.

33. CORRUPT OR FRAUDULENT PRACTICES

33.1 The Procuring Agency and the Bidders / Manufacturers / Suppliers / Contractors are expected to observe the highest standard of ethics during the procurement and execution of the Contract. In pursuance of this policy, the relevant terms / phrases as may apply are defined below:

- i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of Members in the procurement process or in Contract execution; and
- ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of Patients' Aid Foundation, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels

and to deprive Patients' Aid Foundation of the benefits of free and open competition;

- 33.2 Patients' Aid Foundation will take all possible administrative / legal measures if it is found that the Bidder recommended for award was / is engaged in corrupt or fraudulent practice(s) before or after signing of the contract resulting into the conviction of the proprietor under criminal case besides blacklisting of the firm either indefinitely or for such period of time as may be determined by Patients' Aid Foundation
- 33.3 Will declare a firm ineligible, either indefinitely or for a stated period of time, for the award of a Contract if it, at any time, determines that the firm has engaged in corrupt or fraudulent practices in competing for or in executing a Contract.

General Conditions of Contract (GCC)

1. DEFINITIONS

1.1. In this Contract, the following terms shall be interpreted as indicated:

- a) "The Contract" means the agreement entered into between Patients' Aid Foundation and the Supplier, as recorded in the Contract Form signed by the Parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its Contractual obligations.
- c) "The Goods" means Machinery/Equipment and Accessories which the Supplier is required to supply to Patients' Aid Foundation under the Contract.
- d) "The Services" means those services ancillary to the supply of the above goods, such as project management, drawing, and packing, transportation of goods up to the desired destinations and other such obligations of the Supplier covered under the Contract.
- e) "GCC" mean the General Conditions of Contract contained in this section.
- f) "SCC" means the Special Conditions of Contract.
- g) "Patients' Aid Foundation" means the Chairman Patient' Aid Foundation & Supervisory Committee, Surgical Complex, , Secretary Office, Room No 16 Cyberknife & Tomotherapy building, Jinnah Postgraduate Medical Centre, Karachi – 75510, Pakistan.
- h) "The Supplier" means the individual or firm supplying the goods under this Contract.
- i) "Day" means official working day excluding national holidays.

2. APPLICATION

2.1 These General Conditions shall apply to the extent that they are not inconsistent with provisions of other parts of the Contract.

3. STANDARDS

3.1 The goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications.

4. USE OF CONTRACT DOCUMENTS AND INFORMATION

4.1 The Supplier shall not without the Procuring Agency's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern; sample, or information

furnished by or on behalf of Patients' Aid Foundation in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to such employed person shall be made in confidence and shall extend only, as far as may be necessary, to such performance and not further or otherwise.

4.2 Any document, other than the Contract itself, shall remain the property of Patients' Aid Foundation and shall be returned (all copies) on completion of the Supplier's performance under the Contract.

4.3 The Supplier shall permit Patients' Aid Foundation to inspect the Supplier's accounts and records relating to the performance of the Supplies.

5. PATENT RIGHTS

5.1 The Supplier shall indemnify Patients' Aid Foundation against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the country.

6. ENSURING STORAGE ARRANGEMENTS

6.1 To ensure storage arrangements for the intended supplies, the Supplier shall inform Patients' Aid Foundation at least four weeks prior to the arrival of the consignments at its store/warehouse. However, in case no space is available at its store/warehouse of PAF/JPMC at the time of supply. Holding of equipment in a safe container at parking area of Surgical Complex will be responsibility of the Vendor.

7. INSPECTIONS

7.1 Patients' Aid Foundation or its representative shall have the right to inspect and/or test the goods to confirm their conformity to the Contract specifications.

7.2 Patients' Aid Foundation reserves the right to have third party inspection, test and, where necessary, reject the goods upon arrival at Procuring Agency's destinations.

8. DELIVERY AND DOCUMENTS

8.1 The Supplier shall in accordance with the terms specified in the Schedule of Requirements make delivery of the goods. Details of documents to be furnished by the Supplier are specified in SCC.

9. TRANSPORTATION

9.1 The Supplier shall arrange such transportation of the goods at respective Floor of Surgical Complex whatever safe mode is needed to prevent them from damage or deterioration during transit to their final destination as indicated in the Schedule of Requirements.

10. INCIDENTAL SERVICES

10.1 The Supplier will be required to provide to the Procuring Agency incidental services the cost of which should be included in the total bid price.

11. WARRANTY

11.1 Warranty mean the period of 3 years from the date on which the Stores have been put into operation and demonstrated to the Hospital staff. In any case this period shall not exceed 2½ years from the

date of taking-over certificate.

- 11.2 During the period of warranty, the Contractor shall remedy, at his / her expense, all defects in design, materials, and workmanship that may develop or are revealed under normal use of the goods.
- 11.3 The contractor shall provide guarantee for spare parts for at least 10 years (where applicable).
- 12.4 Patients' Aid Foundation shall promptly notify the Supplier in writing of any claims arising out of this warranty.

12. PAYMENT

- 12.1 The method and conditions of payment to be made to the Supplier under this Contract are specified in SCC.

13. ASSIGNMENT

- 13.1 The Supplier shall not assign, in whole or in part, its obligations to perform to another party under this Contract, except with Patients' Aid Foundation prior written consent.

14. DELAYS IN THE SUPPLIER'S PERFORMANCE

- 14.1 Delivery of the goods shall be made by the Supplier in accordance with the time schedule prescribed by Patients' Aid Foundation in the Schedule of Requirements.
- 14.2 If at any time in the course of performance of the Contract, the Supplier encounters anything impeding timely delivery of the goods, he shall promptly notify Patients' Aid Foundation in writing of the causes of delay and its likely duration. As soon as practicable, after receipt of the Supplier's notice, Patients' Aid Foundation shall evaluate the situation and may, depending on merits of the situation, extend the Supplier's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the Parties by a supplementary Contract to be treated as an addendum to the original contract.
- 14.3 Any undue delay by the Supplier in the performance of its delivery obligations shall render it liable to the imposition of liquidated damages.

15. TERMINATION FOR DEFAULT

- 15.1 Patients' Aid Foundation may, without prejudice to any other remedy for breach of Contract, by a written notice of default sent to the Supplier, terminate this Contract in whole or in part if:
 - a) The Supplier fails to deliver any or all installments of the goods within the period(s) specified in the Contract, or within any extension thereof granted by Patients' Aid Foundation
 - b) The Supplier fails to perform any other obligation(s) under the Contract to the satisfaction of Patients' Aid Foundation; and
 - c) The Supplier, in the judgment of Patients' Aid Foundation, has engaged itself in corrupt or fraudulent practices before or after executing the Contract.

16. FORCE MAJEURE

- 16.1 The Supplier shall not be liable for forfeiture of its Performance Guaranty/ Bid Security, or termination / blacklisting for default if and to the extent that this delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. For the

purposes of this Clause Force Majeure means an act of God or an event beyond the control of the Supplier and not involving the Supplier's fault or negligence directly or indirectly purporting to mal-planning, mismanagement and /or lack of foresight to handle the situation. Such events may include but are not restricted to acts of Patients' Aid Foundation in its sovereign capacity, wars or revolutions, fires, floods, earthquakes, strikes, epidemics, quarantine restrictions and freight embargoes. If a Force Majeure situation arises, the Supplier shall promptly notify Patients' Aid Foundation in writing with sufficient and valid evidence of such condition and the cause thereof. The Committee, constituted for redressing grievances, will examine the pros and cons of the case and all reasonable alternative means for completion of purchase order under the Contract and will submit its recommendations to the competent authority. However, unless otherwise directed by Patients' Aid Foundation in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek reasonable alternative means for performance not prevented by the Force Majeure event.

17. TERMINATION FOR INSOLVENCY

- 17.1 Patients' Aid Foundation may at any time terminate the Contract by giving written notice of one month time to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In that event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right or remedy which has accrued or will accrue thereafter to the Parties.

18. ARBITRATION AND RESOLUTION OF DISPUTES

- 18.1 Patients' Aid Foundation and the Supplier shall make every effort to resolve amicably by direct informal negotiations any disagreement or dispute arising between them under or in connection with the Contract.
- 18.2 If, after thirty (30) days from the commencement of such informal negotiations, the Patients' Aid Foundation and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred to the Arbitrator for resolution through arbitration.
- 18.3 In case of any dispute concerning the interpretation and/or application of this Contract is to be settled through arbitration, the National Centre for Dispute Resolution and an Arbitrator assigned by the Centre &/or his nominee shall act as a sole arbitrator. The decisions taken and/or award given by the sole arbitrator shall be final and binding on the Parties unless appealed in the High Court of Sindh.

19. GOVERNING LANGUAGE

- 19.1 The Contract shall be written in English language. All correspondence and other documents pertaining to the Contract, which are exchanged by the Parties, shall be written in English.

20. APPLICABLE LAW

- 20.1 This Contract shall be governed by the laws of Pakistan and the courts of Pakistan shall have exclusive jurisdiction.

Special Conditions of Contract (SCC)

21. DEFINITIONS (GCC CLAUSE 1)

GCC 1.1 (g) The Procuring Agency &/OR the Patients Aid Foundation is Chairman Patient' Aid Foundation & Supervisory Committee, Surgical Complex, Room no 16, Cyberknife & Tomotherapy, Jinnah Postgraduate Medical Center, Rafiqi Shaheed Road, Karachi – Pakistan 75510

GCC 1.1 (h) The Supplier is: _____

(Name and address of the successful bidder)

22. BID SECURITY (ITB CLAUSE 12)

ITB 12.1 The Bidder shall furnish, as part of its financial proposal/bid, refundable Valid Bid Security/Earnest Money in Pak Rupees @ 2% fixed In the shape of Bank Draft / Pay Order / Call Deposit / Bank Guarantee in the name of the Chairman Patient' Aid Foundation & Supervisory Committee, Surgical Complex, JPMC, Karachi. The financial bid found deficient of the Bid Security will be rejected. No personal cheque in lieu thereof will be acceptable at any cost. The previous Bid Security, if any, will not be considered or carried forward. However, the Bid Security of the successful Bidder will be returned upon submission of Performance Guarantee equal to 5% of the Contract amount that will remain with the **Chairman Patient' Aid Foundation & Supervisory Committee, Surgical Complex**, Room no 16, Cyberknife & Tomotherapy, Jinnah Postgraduate Medical Center, Rafiqi Shaheed Road, Karachi – Pakistan till satisfactory completion of the Contract period. In case of unsuccessful bidders, the Bid Security will be returned as soon as possible.

23. PERFORMANCE GUARANTEE/SECURITY (ITB CLAUSE 32)

ITB Clause 32.1 After signing of Contract, the successful Bidder shall furnish the Performance Guarantee/Security on legal stamp paper equivalent to 5% of the total Contract amount from any of the scheduled banks. The Performance Guarantee/Security Form is provided in the bidding documents. Upon submission of Performance Guarantee the Bid Security would be returned to the Bidder.

24. INSPECTIONS AND TESTS (GCC CLAUSE 7)

GCC 7.1 & 7.2 The goods received in the premises of JPMC from the Supplier will be thoroughly inspected and examine by a Committee to make sure that the goods received conform to the specifications laid down in the tender documents and which have been approved by the Procurement.

Committee for procurement. The Procurements Committee reserve the right for third party inspection for the quality of Modular Operation Theatre or any other equipment. Any deficiency pointed out by the Committee shall have to be rectified by the Supplier free of cost.

25. DELIVERY AND DOCUMENTS (GCC CLAUSE 8)

GCC Clause 8.1 For Goods from outside Patients' Aid Foundation country:

The Bidder shall provide the following documents at the time of delivery of goods to the Store / Warehouse of the Patients' Aid Foundation Jinnah Postgraduate Medical Center, for verification duly completed in all respects:

- i) Manufacturer's detailed packing list.

26. WARRANTY (GCC CLAUSE 11)

GCC 12.1 The goods shall be accompanied by manufacturer standard warranty / guarantee or 3 years, whichever is more.

GCC 12.2 Patients' Aid Foundation shall promptly notify the Bidder in writing of any claims arising out of this warranty.

27. PAYMENT (GCC CLAUSE 12)

GCC 13.1 The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:

- a) Payment shall be made through letter of credit at sight for the purchase order based on CPT/CFR basis
- b) Payment shall be made after delivery of goods for the purchase order based on DDP basis

28. PENALTIES/ LIQUIDATED DAMAGES (GCC CLAUSE 14)

GCC 14.1 In case deliveries are not completed within the time frame specified in the schedule of requirements, a Show Cause Notice will be served on the Supplier which will be following by cancellation of the Contract to the extent of non-delivered portion of installments. No supplies will be accepted and the amount of Performance Guarantee / Security to the extent of non-delivered portion of supplies of relevant installments will be forfeited. If the firm fails to supply the whole installments, the entire amount of Performance Guarantee/Security will be forfeited to the Patients' Aid Foundation Account and the firm will be blacklisted at least for two years for future participation in bids:

29. ARBITRATION AND RESOLUTION OF DISPUTES (GCC CLAUSE 18)

GCC 18.3 Dispute resolution mechanism to be applied shall be as follows:
In case of any dispute concerning the interpretation and/or application of the Contract, it shall be settled through arbitration. The National Centre for Dispute Resolution & their Arbitrator assigned there-in &/or his nominee shall act as sole arbitrator. The decisions taken and/or award given by the arbitrator shall be final and binding on the Parties unless appealed in the High Court of Sindh at Karachi

30. GOVERNING LANGUAGE (GCC CLAUSE 19)

GCC 19.1 The language of this Contract shall be English.

31. APPLICABLE LAWS (GCC CLAUSE 20)

GCC 20.1 The Contract shall be governed by the Laws of Pakistan and the Courts of Pakistan shall have exclusive jurisdiction.

32. TRAININGS

Vendors should provide International service and Application (if applicable) training to biomedical Engineer for smooth and proper working of equipment for long time of machinery and local trainings for end user for satisfactory operation of equipment.

33. NOTICES

Procuring Agency's address for notice purposes:

Chairman Patients' Aid Foundation & Supervisory Committee, Surgical Complex,
Cyberknife & Tomotherapy, Room 16, Jinnah Postgraduate Medical Center, Rafiqui
Shaheed Road, Karachi – Pakistan 75510
E-mail: chairman.paf@pafjpmc.org
Cell: +92306-2727913

Supplier's address for notice purposes:

Bidder: _____

Contact Person & Designation: _____

Phone: _____ Fax: _____

Mobile: _____

Email: _____

Schedule Of Requirement (s) Medical Equipment for Operation Theatres

Supply, installation and commissioning of Medical Equipment for Operation Theatres for the Financial Year 2023-2024

S. No	Name Of Item	Qty	Model	Brand	Country of Origin	Delivery
Tender I- PACS Hardware						
1	Production Server	02				
2	Production SAN Storage	01				
3	NAS Storage	01				
4	Rack Enclosure 24U	01				
5	UPS 5KVA	02				
6	MS SQL Server Standard 2019 or higher: (Qty: 1) MS Windows Server Standard 2019 or higher: (Qty: 10) Antivirus Server License: (Qty: 10) VMware vSphere 7.0 Essential Plus KIT: (Qty: 1)					
7	Gateway Server	02				
8	Diagnostic Workstation	30				
9	Medical Monitor	45				
10	Dictation Microphone	30				
Tender: II- PACS Software						
1	PACS & RIS Software	01				
Tender: III- Networking Equipment						
1	Firewall	02				
2	Access Switch	25				
3	Aggregation Switch	01				
4	Access Point with Controller	28				
5	9U Rack	10				
6	Power Distribution for 9U Rack:	10				
7	42U Rack	01				
8	Power Distribution for 42U Rack:	10				
9	SFP	50				
10	4- port Optical Distribution Frame	16				
11	24- port Optical Distribution Frame	01				
12	Cable Manager	50				
13	Patch Panel	15				
14	Pigtail Cable (3 meters each)	64				
15	Patch Cord Fiber	64				
16	Patch Cord Copper	500				
17	I/O for Ethernet including face plate	500				

18	Single Gang 1port, W/O shutter plate	250				
19	1 KVA UPS	55				
Tender No: IV- Network Deployment for PACS						
1	24F Multitude Armored Optical Fiber Cable	1,000 m				
2	6F Multitude Armored Optical Fiber Cable	2,500 m				
3	CAT 6A Cable	6,400 m				
4	CAT 6 Cable	14,000 m				
5	Cable Tray	2,000 ft				
Tender No: V- Furniture & Equipment for Lecture Hall						
1	Projector	02				
2	Projector Screen Wall Mounted	01				
3	Sound System	01				
4	Indoor SMD Display	20X15 ft				
5	Walky Talky	Set of 06				
6	LCD 55"	02				
7	LCD 55"	02				
8	Auxillary Speaker	04				
9	Main Speaker	02				
10	Cordless Microphone set Wireless Mic Kit	02				
11	Wireless Microphone System	08				
12	Conference Controller	01				
13	Conference Unit Mic	04				
14	2 Channel Feedback Suppressor	01				
15	Digital Audio Matrix Processor	01				
16	Digital Mixer	01				
17	6 Pin Conference Table	01				
18	RVVP 2*1.5 Audio Cable	500 m				
19	EVJV 2*2.5 Speaker Cable	1,000 m				
20	Lecture Hall Chairs	270				
21	Acoustic Panels	2,300 Sft				
Tender No: VI- Local Surgical Instruments						
1	Local Surgical Instruments Orthopedics (Set of 06)	10				
2	Local Surgical Instruments Plastic (Set of 06)	10				
3	Local Surgical Instruments Thoracic (Set of 06)	10				
Tender No: VII- Vacuum Pump for Central Suction						
1	Rotary Vane Vacuum pumps	08 Nos (4 pumps each system separate control panel)				
Tender No: VIII- Equipment for Skill Lab						
1	Mixed Reality Headset – Microsoft Hololens	02				
2	Hi-Fidelity Adult Patient Simulator	01				
3	Ear Exam Simulator	01				

4	Eye Examination Ophthalmology Trainer	01				
5	Hi-Fidelity Child Patient Simulator	01				
6	Hi-Fidelity Infant NRP Manikin	01				
7	Airway Management Trainer	01				
8	Birthing Simulator	01				
9	Suture Practice Arm	01				
10	Replacement Parts for Existing Manikin in	01				
11	Virtual Reality Laparoscopy Simulator	01				
12	CATH Lab – Virtual Reality Training	01				
13	Adult Quality CPR Mannequin	01				
14	Sim-Man 3G mannequin	01				
15	Slit Lamp	01				
16	Models Eyes, Ears with Pathology, including	01				
17	C-MAC Video Laryngoscope & Flexible	01				
18	Birthing mannequin	01				
19	Pediatric mannequin	01				
20	Nerve block simulators	01				
21	Suturing mannequins	01				
22	Replacement parts for mannequin	01				
23	Spot Light Presentation Remote	01				
24	Dell Alienware X16	01				
25	Dell Alienware m18	01				
26	Dell Alienware m18	01				
27	Apple MacBook Pro 16 inch (Space Black)	01				
28	Apple MacBook Pro 16 inch (Space Black)	01				
29	Samsung Galaxy Z Flip 5	01				
30	Samsung Galaxy Z Fold 5	01				
31	I Mac Desktop	02				
32	Samsung Freestyle portable Projector	01				
33	Basic Training Modules	01				
34	Essential Instruments	01				
Tender No: IX- DVDs						
1	DVD-R, DVD-RW, DVD+RW with plastic covers	20,000				
Tender No: X- CSSD						
1	450 Ltr Auto clave horizontal with auto sliding door	02				
2	Steam Sterilizer (6 STU) Double Door (Optional)	02				

Bidder Authorized Signature: _____

Bidder Name: _____

Contact Person: _____

Contact No: _____

Bid Form

Date:

To: [Name and address of Procuring Agency] Dear Sir,

Having examined the Bidding Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver the goods specified in the said Bidding Documents for the sum of [Total Bid Amount], [Bid Amount in words] or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this bid.

We undertake, if our bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

If our bid is accepted, we shall obtain an unconditional guarantee of a bank in the sum of 5% of the Contract Price for the due performance of the Contract, in the form prescribed by Patients' Aid Foundation.

We agree to the validity of this bid till 30th June 2024 from the date fixed for financial bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this bid, together with the written acceptance thereof and notification of award, by Patients' Aid Foundation, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive. Dated this _____

day of _____ 2023.

Signature
(In the capacity of)

Duly authorized to sign bid for and on behalf of _____

Price Schedule

Supply, installation and commissioning of Medical Equipment for Operation Theatres for the Financial Year
2023-2024

S. No	Name Of Item	Qty	Unit Price	Total Price
Tender I- PACS Hardware				
1	Production Server	02		
2	Production SAN Storage	01		
3	NAS Storage	01		
4	Rack Enclosure 24U	01		
5	UPS 5KVA	02		
6	MS SQL Server Standard 2019 or higher: (Qty: 1) MS Windows Server Standard 2019 or higher: (Qty: 10) Antivirus Server License: (Qty: 10) Vmware vSphere 7.0 Essential Plus KIT: (Qty: 1) Backup Software: (Qty: 1)			
7	Gateway Server	02		
8	Diagnostic Workstation	30		
9	Medical Monitor	45		
10	Dictation Microphone	30		
Tender: II- PACS Software				
1	PACS & RIS Software	01		
Tender: III- Networking Equipment				
1	Firewall	02		
2	Access Switch	25		
3	Aggregation Switch	01		
4	Access Point with Controller	28		
5	9U Rack	10		
6	Power Distribution for 9U Rack:	10		
7	42U Rack	01		
8	Power Distribution for 42U Rack:	10		
9	SFP	50		
10	4- port Optical Distribution Frame	16		
11	24- port Optical Distribution Frame	01		
12	Cable Manager	50		
13	Patch Panel	15		
14	Pigtail Cable (3 meters each)	64		
15	Patch Cord Fiber	64		
16	Patch Cord Copper	500		
17	I/O for Ethernet including face plate	500		
18	Single Gang 1port, W/O shutter plate	250		
19	1 KVA UPS	55		
Tender No: IV- Network Deployment for PACS				

1	24F Multitude Armored Optical Fiber Cable	1,000 m		
2	6F Multitude Armored Optical Fiber Cable	2,500 m		
3	CAT 6A Cable	6,400 m		
4	CAT 6 Cable	14,000 m		
5	Cable Tray	2,000 ft		
Tender No: V- Furniture & Equipment for Lecture Hall				
1	Projector	02		
2	Projector Screen Wall Mounted	01		
3	Sound System	01		
4	Indoor SMD Display	20X15 ft		
5	Walky Talky	Set of 06		
6	LCD 55"	02		
7	LCD 55"	02		
8	Auxillary Speaker	04		
9	Main Speaker	02		
10	Cordless Microphone set Wireless Mic Kit with Headset	02		
11	Wireless Microphone System	08		
12	Conference Controller	01		
13	Conference Unit Mic	04		
14	2 Channel Feedback Suppressor	01		
15	Digital Audio Matrix Processor	01		
16	Digital Mixer	01		
17	6 Pin Conference Table	01		
18	RVVP 2*1.5 Audio Cable	500 m		
19	EVJV 2*2.5 Speaker Cable	1,000 m		
20	Lecture Hall Chairs	270		
21	Acoustic Panels	2,300 Sft		
Tender No: VI- Local Surgical Instruments				
1	Local Surgical Instruments Orthopedics (Set of 06)	10		
2	Local Surgical Instruments Plastic (Set of 06)	10		
3	Local Surgical Instruments Thoracic (Set of 06)	10		
Tender No: VII- Vacuum Pump for Central Suction				
1	Rotary Vane Vacuum pumps	08 Nos (4 pumps each system separate control panel)		
Tender No: VIII- Equipment for Skill Lab				
1	Mixed Reality Headset – Microsoft Hololens 2	02		
2	Hi-Fidelity Adult Patient Simulator	01		
3	Ear Exam Simulator	01		
4	Eye Examination Ophthalmology Trainer	01		
5	Hi-Fidelity Child Patient Simulator	01		
6	Hi-Fidelity Infant NRP Manikin	01		
7	Airway Management Trainer	01		
8	Birthing Simulator	01		
9	Suture Practice Arm	01		
10	Replacement Parts for Existing Manikin in Skills Lab	01		
11	Virtual Reality Laparoscopy Simulator	01		

12	CATH Lab – Virtual Reality Training Simulator	01		
13	Adult Quality CPR Mannequin	01		
14	Sim-Man 3G mannequin	01		
15	Slit Lamp	01		
16	Models Eyes, Ears with Pathology, including 3B smart	01		
17	C-MAC Video Laryngoscope & Flexible Intubation.	01		
18	Birthing mannequin	01		
19	Pediatric mannequin	01		
20	Nerve block simulators	01		
21	Suturing mannequins	01		
22	Replacement parts for mannequin	01		
23	Spot Light Presentation Remote	01		
24	Dell Alienware X16	01		
25	Dell Alienware m18	01		
26	Dell Alienware m18	01		
27	Apple MacBook Pro 16 inch (Space Black)	01		
28	Apple MacBook Pro 16 inch (Space Black)	01		
29	Samsung Galaxy Z Flip 5	01		
30	Samsung Galaxy Z Fold 5	01		
31	I Mac Desktop	02		
32	Samsung Freestyle portable Projector	01		
33	Basic Training Modules	01		
34	Essential Instruments	01		
Tender No: IX- DVDs				
1	DVD-R, DVD-RW, DVD+RW with plastic covers.	20,000		
Tender No: X- CSSD				
1	450 Ltr Auto clave horizontal with auto sliding door	02		
2	Steam Sterilizer (6 STU) Double Door (Optional)	02		

Undertaking

WHEREAS [Bidder Name] hereby undertake against the Tender Enquiry No. __ to abide by the following clauses.

- 17) Whether our tender accepted for total, partial or enhanced quantity for all or any single item. I/We agreed to supply and accept the said item(s) at the rates for the supply of contracted quantity within the stipulated period shown in the contract.
- 17) If placed order, Equipment/Machinery to be supplied will be original, brand new product / latest model and none of the part is refurbished, replace or old.
- c) We understand and confirm the refund of cost difference if the same goods is/was supplied at lower rates to any other Govt. /Semi Govt. institution in the province in the same fiscal year.
- D) If any of the information submitted in accordance to this tender Enquiry found incorrect, our contract may be cancelled at any stage on our cost and risk.

[Signature for and on behalf of Bidder]

[Date]

Note: This undertaking should be on a stamp paper of Rs. 100/- arranged by the Bidder. It should be enclosed inside the Technical Proposal by the Bidder.

[SAMPLE FORM: B]

Certificate

To

[Name & Address of Patients' Aid Foundation

WHEREAS [Bidder Name] hereby certify against the Tender Enquiry No. Abide by the following clauses.

- 17) We guarantee to supply the stores exactly in accordance with the requirement specified in the tender documents.
- b) We guarantee **letter** that the supplied item(s) is original / brand new product.
- c) Our firm is not black listed in any **Government** Department.

Authorized Sign & Stamp

[Bidder Name]

Note: This certificate should be on the letterhead of the Bidder and should be signed by a person competent and having the power of attorney to bind the Bidder. It should be enclosed inside the Technical Proposal by the Bidder.

[SAMPLE FORM: C]

Contract

THIS AGREEMENT made the _____ day of _____ 20_____ between [name of Procuring Agency] of [country of Procuring agency] (hereinafter called “Patients’ Aid Foundation”) of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called “the Supplier”) of the other part:

WHEREAS Patients’ Aid Foundation invited bids for certain goods and ancillary services, viz., [brief description of goods and services] and has accepted a bid by the Supplier for the supply of those goods and services in the sum of [contract price in words and figures]

(Hereinafter called “the Contract Price”) as follows.

S. No.	Item Description	Model	Brand	Qty	Unit Price	Total Price
1	2	3	4	5	6	7

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

17. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) The Bid Form and the Price Schedule submitted by the Bidder;
 - (b) The Schedule of Requirements;
 - I The Technical Specifications;
 - (d) The General Conditions of Contract;
 - I The Special Conditions of Contract; and
 - (f) Patients’ Aid Foundation Notification of Award.
3. In consideration of the payments to be made by Patients’ Aid Foundation to the Supplier as hereinafter mentioned, the Supplier hereby covenants with Patients’ Aid Foundation to

provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. Patients' Aid Foundation hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS where of the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Patients' Aid Foundation

Supplier

Authorized Signature & Official Stamp

Authorized Signature & Official Stamp

Patients' Aid Foundation

Bidder Name

Address

Address

Contact No.

Contact No.

Witness

Witness

Name, Sign & CNIC No

Name, Sign & CNIC No

[SAMPLE FORM: D]

Performance Guarantee/Security Form

To:

[Name & Address of Patients' Aid Foundation]

Whereas [**Name of Bidder**] (hereinafter called "the Bidder") has undertaken, in pursuance of Contract No. [**Number**] dated [**date**] to supply [**description of goods**] (hereinafter called "the Contract").

And whereas it has been stipulated in the said Contract that the Bidder shall furnish to Patients' Aid Foundation with a Bank Guarantee by a scheduled bank for the sum of 5% of the total Contract amount as Security for compliance with the Bidder's performance obligations in accordance with the Contract.

And whereas we have agreed to provide a Guarantee: for the said Bidder

Therefore, we hereby unconditionally and irrevocably guarantee, on behalf of the Bidder, up to a total of [**Amount of the Guarantee in Words and Figures**] and we undertake to pay you, upon your first written demand declaring the Bidder to be in default under the Contract and without requiring Patients' Aid Foundation to initiate action against the Bidder and without cavil or argument any sum or sums within the limits of [**Amount of Guarantee**] as aforesaid. The amount stated in the demand made under this guarantee shall be conclusive proof of the amount payable by the Guarantor under this guarantee.

The obligations of the Guarantor under this guarantee shall be valid for one year after the completion of delivery of supplies by the Bidder to Patients' Aid Foundation of the full quantity of the goods for which this Guarantee is being given, and until all and any obligations and sums due have been paid in full.

[Signature and Seal of the Guarantors / Bank]

Address

Date

Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC PAYABLE BY THE SUPPLIERS/CONTRACTORS/CONSULTANTS.

Contract Number: _____

Dated: _____

Contract Value: _____

Contract Title: _____

[Name of Supplier/Contractor/Consultant] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Sindh (GoS) or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoS) through any corrupt business practice.

Without limiting the generality of the foregoing, [Name of Supplier/Contractor/Consultant] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit, in whatsoever form, from Procuring Agency (PA), (Patients' Aid Foundation, JPMC) except that which has been expressly declared pursuant hereto.

[Name of Supplier/Contractor/Consultant] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with PA and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[Name of Supplier/Contractor/Consultant] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to PA under any law, contract or other instrument, be voidable at the option of PA.

Notwithstanding any rights and remedies exercised by PA in this regard, [Name of Supplier/Contractor/Consultant] agrees to indemnify PA for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to PA in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier/Contractor/Consultant] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit, in whatsoever form, from PA.

[Procuring Agency]

[Supplier/Contractor/Consultant]

Note

17. All the above said instructions, terms and conditions in this bidding document must be read carefully for compliance; else the offer will be ignored.
2. In case of discrepancy between the unit price and total, the unit price shall prevail
3. Institute reserves the right to ask and verify any document from the participants related with Manufacturer / Importer of item, to assess the quality.
4. All the Bid documents should be submitted page wise, any missing of papers will not be responsible of procurement authority
5. The quantity of items will be increased or decreased subject to the release of funds
6. Shortfall of any document given under evaluation criteria shall render the Bidding firm ineligible for competition

Chairman Patients' Aid Foundation & Supervisory Committee, Surgical Complex,
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Tender No: I PACS Hardware	
S.No	Description
1.0	Production Server. (3 Years replacement Warranty) Qty: 02
1.1	Main Processors: Intel Xeon 3G, 3G, 12C/24T, 11.2GT/s 18M Cache, Turbo, HT (150W) DDR4-2933
1.2	Additional Processors: Intel Xeon 3G, 3G, 12C/24T, 11.2GT/s 18M Cache, Turbo, HT (150W) DDR4-2933
1.3	Memory Capacity: 4x 64GB RDIMM, 3200MT/s, Dual Rank
1.4	Hard Drives: 2x 960GB SSD SATA Read Intensive 6Gbps (RAID 1) or 2x 32GB SD CARD with ISDM Card Reader
1.5	Power Supply: Dual, Hot-plug, Power Supply Fully Redundant
1.6	Rack Enclosure: Compatible Rack Enclosure
1.7	Network Adapter: Quad Port 10GbE Base-T Adapter, OCP NIC 3.0
1.8	Additional Adapters: Quad Port 1GbE BASE-T Adapter
1.9	HBA: SAS 12GB
2.0	Production SAN Storage (3 Years replacement Warranty) (Qty. 01)
2.1	Controller Card: SAS 12GB HBA
2.2	Tier 1 (VMs): 1x 1.92TB (RAID1) 1x 1.92TB – Hot spare Drive
2.3	Tier 2 – Current Images (Total 25 Hard Disks): 10x 16 TB SATA (RAID 5) 2x 16 TB SATA – Hot spare Drives 11x 16TB SATA (RAID 5) 2x 16TB SATA – Hot spare Drives
2.4	Power: Dual, Hot-plug, Redundant Power Supply
2.5	Power Cords: 2x (2) NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m)
2.6	Storage Design Assumption: 827,000 studies for 3 years period
	OR EQUIVALENT
	Country of Origin: UK/USA/Europe/Japan/Malaysia/Singapore
3.0	NAS Storage: (3 Years replacement Warranty) (Qty. 01)
3.1	NAS Storage – Total 38 Hard Disks
3.2	11x 22 TB (RAID 5) 2x 22 TB – Hotspare Drives 10x 22 TB (RAID 5) 2x 22 TB – Hotspare Drives 11x 22 TB (RAID 5) 2x 22 TB – Hotspare Drives
3.3	Power: Dual, Hot-plug, Redundant Power Supply.
3.4	Power Cords: 2x (2) NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m).
3.5	Storage Design Assumption: 1,545,000 studies from year 4 to year 7.
	OR EQUIVALENT
	Country of Origin: UK/USA/Europe/Japan/Malaysia/Singapore
4.0	Rack Enclosure (Qty. 1)
4.1	24U 600mm Wide x 1070mm Deep Rack Enclosure with PDU.

4.2	UPS (Qty. 2) 5 KVA or higher as per power requirements.	
4.3	ToR Switch 24 Ports: 24 x 10/100/1000 (PoE+) KVM: 8 Ports KVM Physical Layer7 Load Balancer: (Qty: 1)	
4.4	MS SQL Server Standard 2019 or higher: (Qty: 1) MS Windows Server Standard 2019 or higher: (Qty: 10) Antivirus Server License: (Qty: 10) Vmware vSphere 7.0 Essential Plus KIT: (Qty: 1) Speech Recognition Software: (Qty: 30 users / workstation) Backup Software: (Qty: 1)	
5.0	Gateway Servers (3 Years replacement Warranty) (Qty: 02)	
5.1	Main Processors: Intel Xeon, 3.2G, 8C/16T, 11.2GT/s, 12M Cache, Turbo, HT (140W) DDR4-2933	
5.2	Additional Processors: Intel Xeon, 3.2G, 8C/16T, 11.2GT/s, 12M Cache, Turbo, HT (140W) DDR4-2933	
5.3	Memory Capacity: 2x 16GB RDIMM, 3200MT/s, Dual Rank	
5.4	Hard Drives: 2x 960GB SSD SATA Read Intensive 6Gbps (RAID 1)	
5.5	Power Supply: Dual, Hot-plug, Power Supply Fully Redundant	
5.6	Rack Enclosure: Compatible Rack Enclosure	
5.7	Network Adapter: Quad Port Network Adapter	
5.8	3 rd Party Licenses: Microsoft Windows Server 2019 or Higher Antivirus Software License	
6.0	Diagnostic Workstation	Qty: 30
6.1	Processor: Intel Core™ i7 12 th Generation	
6.2	RAM: 16GB (2x8GB)	
6.3	Hard Drive: 512GB PCIe NVMe SSD	
6.4	Video Card: Graphics Card 4GB	
6.5	Operating System: Windows 11 Pro	
6.6	Additional Items: Microsoft Office Home & Business, Antivirus, PDF Viewer	
6.7	Monitor: Business monitor 22-24"	
6.8	Warranty: 3 years	
7.0	Medical Monitor	Qty: 45
7.1	3MP Dual Head Medical Monitor (for all digital images, except digital mammography)	
7.2	5MP Dual Head Medical Monitor (for digital mammography)	
7.3	Warranty: 3 years	
8.0	Dictation Microphone	Qty: 30
8.1.	Unique single ear-hook and flexible frame headset	
8.2.	Most portable, smallest and lightest (approx. 5 g) titanium made headset	
8.3.	Unidirectional polar pattern for high background noise rejection	
8.4.	Standard 3.5 mm golden plated audio connector	
8.5.	2 m - 79" cable extension	
8.6.	Bundle cable tie-clip	
8.7.	Convenient case with zipper for easy transportation and storage.	
8.8.	Standard Brand Warranty	
Note: Offer should include post warranty 03 year SLA as well.		
Tender No: II PACS Software		
1.0	PACS & RIS Software	

1.1	Initial Sizing: The sizing of licensing and hardware should accommodate a minimum of 280,000 studies per year. (note point below on Scalability)
1.2	Modalities: The solution should be able to accommodate multiple modalities.
1.3	VNA: The solution should have provisions for Vendor Neutral Archives such that all format (non-DICOM) medical images can be saved.
1.4	Viewing Stations: The suggested software and Hardware should support a minimum of 30 diagnostic view stations and 100 Zero Foot Print viewing capability.
1.5	Technical Specifications: All submitted PACS solutions must meet or exceed the technical specifications as outlined in the tender document. Any deviations or compromises on hardware and software specifications will disqualify the bid.
1.6	Scalability: The PACS solution should be highly scalable to accommodate future growth in medical imaging data and the number of users. The bidder must provide evidence of the system's scalability capabilities.
1.7	Artificial Intelligence based diagnostic Capabilities: The solution should have a module that can provide AI based imaging diagnostic capabilities.
1.8	Radiology Information System: The solution should have the capability of having an integrated Radiology Information System.
1.9	Redundancy and High Availability: The solution should offer robust redundancy and high availability features to ensure minimal downtime and data loss. Bidders must provide details on the redundancy and failover mechanisms in place.
1.10	Data Security and Compliance: The PACS solution must comply with all relevant data security and healthcare industry regulations, including HIPAA or equivalent local regulations. The bidder should demonstrate their commitment to data security and compliance.
1.11	Interoperability: The PACS system should seamlessly integrate with the existing hospital information systems, electronic health records, and other healthcare applications. The bidder must provide information on interoperability standards supported.
1.12	Disaster Recovery and Backup: The bidder should outline their disaster recovery and backup solutions, including off-site backup facilities and recovery time objectives.
1.13	User Training and Support: The bidder must include provisions for comprehensive user training and ongoing technical support services, with defined service level agreements.
1.14	Software Updates and Maintenance: The solution should receive regular software updates and maintenance to ensure it stays up-to-date with industry standards and security best practices.
1.15	User Experience and Performance: The PACS system should provide a user-friendly interface and responsive performance, even with large datasets. The bidder should offer performance benchmarks or references from similar installations.
1.16	Vendor Experience and Reputation: Bidders should have a proven track record of successfully implementing PACS solutions in healthcare environments in at least two continents. References and case studies should be provided.
1.17	Service and Maintenance Costs: Include the total cost of ownership, including any ongoing service, maintenance, and licensing costs. Ensure that the costs are competitive and transparent.
1.18	Customization and Tailoring: The bidder should detail their ability to customize the solution to specific hospital needs while maintaining the high-quality standard of the product.
1.19	Warranty and Guarantees: The bidder should provide clear warranty terms and guarantees regarding the performance and reliability of the PACS solution.
1.20	Acceptance Testing: Outline the process for acceptance testing to ensure that the delivered PACS solution meets all specified requirements before final acceptance and payment.
1.21	Compliance with International Standards: The PACS solution should comply with international standards for medical imaging and data exchange, such as DICOM and HL7.
1.22	Upgradability: The bidder should demonstrate the solution's ability to support future technological advancements and be easily upgradable.
1.23	Financial Stability: The bidder should provide evidence of their financial stability and sustainability as a company to ensure long-term support and maintenance.

1.24	Penalty Clauses: Include penalty clauses for delays in implementation, non-compliance with agreed-upon specifications, or failure to provide satisfactory support services.	
Note 1: Vendors interested in bidding for the equipment should provide detailed quotations that meet or exceed the specified hardware and software requirements. The hospital is particularly interested in reliability, redundancy, and the ability to handle the expected volume of medical studies as described in the storage design assumptions. The tender document is issued for the purpose of receiving competitive bids for the RIS/PACS hardware solution.		
Note 2: The suggested hardware will be procured via a separate tender.		
Tender No: III		
Networking Equipment		
1	Firewall (03 year replacement warranty)	Qty : 02
1.1.	Suite of AI-powered Security Services—natively integrated with your NGFW—secures web, content, and devices and protects networks from ransomware and sophisticated cyberattacks and provide updates of fresh attacks.	
1.2.	System Performance — Enterprise Traffic Mix	
1.3.	IPS Throughput 1 Gbps	
1.4.	NGFW Throughput 2, 4 3.5 Gbps	
1.5.	Threat Protection Throughput 1 Gbps	
1.6.	System Performance and Capacity	
1.7.	Ipv4 Firewall Throughput (1518 / 512 / 64 byte, UDP) 20 / 20 / 5 Gbps	
1.8.	Firewall Latency (64 byte, UDP) 5.18 μ s	
1.9.	Firewall Throughput (Packet per Second) 10.5 Mpps	
1.10.	Concurrent Sessions (TCP) 1 Million	
1.11.	New Sessions/Second (TCP) 1000 000	
1.12.	Firewall Policies 1000	
1.13.	Ipssec VPN Throughput (512 byte)	
1.14.	Gateway-to-Gateway Ipssec VPN Tunnels	
1.15.	Client-to-Gateway Ipssec VPN Tunnels	
1.16.	SSL-VPN Throughput 2 Gbps	
1.17.	Concurrent SSL-VPN Users (Recommended Maximum, Tunnel Mode)	
1.18.	SSL Inspection Throughput (IPS, avg. HTTPS) 2 Gbps	
1.19.	SSL Inspection CPS (IPS, avg. HTTPS) 3500	
1.20.	Unicast Routing Support(BGP,OSPF, RIP)	
1.21.	Cloud Platform Support Require	
1.22.	Firewall Mode (L2,L3)	
1.23.	300 Users Supported	
1.24.	Application Control Throughput (HTTP 64K) 3 Gbps	
1.25.	CAPWAP Throughput (HTTP 64K) 5 Gbps	
1.26.	Virtual Domains (Default / Maximum) 10 /10	
1.27.	Maximum Number of Tokens 1000	
1.28.	High Availability Configurations Active-Active, Active-Passive	
1.29.	Operating Environment and Certifications	
1.30.	Operating Temperature 32°–103°F (0°–40°C)	
1.31.	Storage Temperature -31°–158°F (-35°–50°C)	
1.32.	Humidity 20%–90% non-condensing	
1.33.	Operating Altitude Up to 1000 ft	
1.34.	Compliance FCC	
1.35.	IPS Throughput 1 Gbps	

1.36.	NGFW Throughput 2, 4 3.5 Gbps	
1.37.	Threat Protection Throughput 1 Gbps	
1.38.	System Performance and Capacity	
1.39.	Ipv4 Firewall Throughput (1518 / 512 / 64 byte, UDP) 20 / 20 / 5 Gbps	
1.40.	Firewall Latency (64 byte, UDP) 5.18 µs	
1.41.	Firewall Throughput (Packet per Second) 10.5 Mpps	
1.42.	Concurrent Sessions (TCP) 1 Million	
1.43.	New Sessions/Second (TCP) 1000 000	
1.44.	Firewall Policies 1000	
1.45.	Ipssec VPN Throughput (512 byte)	
1.46.	Gateway-to-Gateway Ipssec VPN Tunnels	
1.47.	Client-to-Gateway Ipssec VPN Tunnels	
1.48.	SSL-VPN Throughput 2 Gbps	
1.49.	Concurrent SSL-VPN Users (Recommended Maximum, Tunnel Mode)	
1.50.	SSL Inspection Throughput (IPS, avg. HTTPS) 2 Gbps	
1.51.	SSL Inspection CPS (IPS, avg. HTTPS) 3500	
1.52.	Unicast Routing Support(BGP,OSPF, RIP)	
1.53.	Cloud Platform Support Require	
1.54.	Firewall Mode (L2,L3)	
1.55.	300 Users Supported	
1.56.	Application Control Throughput (HTTP 64K) 3 Gbps	
1.57.	CAPWAP Throughput (HTTP 64K) 5 Gbps	
1.58.	Virtual Domains (Default / Maximum) 10 /10	
1.59.	Maximum Number of Tokens 1000	
1.60.	High Availability Configurations Active-Active, Active-Passive	
1.61.	Operating Environment and Certifications:	
1.62.	Operating Temperature 32°–103°F (0°–40°C)	
1.63.	Storage Temperature -31°–158°F (-35°–50°C)	
1.64.	Humidity 20%–90% non-condensing	
1.65.	Operating Altitude Up to 1000 ft	
1.66.	Compliance FCC	
2	Access Switch (03 years Warranty)	Qty: 25
2.1.	Layer2/Layer3 Supported	
2.2.	24 ports full PoE+	
2.3.	4 x 10 GE SFP ports	
2.4.	Power 220 Volt	
3	Aggregation Switch (03 years Warranty)	Qty: 01
3.1.	Layer2/Layer3 Supported	
3.2.	24 ports 1GE SFP+	
3.3.	4 ports 10GE SFP	
3.4.	Power 220 Volt	
4	Access Point with Controller (03 years Warranty)	Qty: 48
4.1.	Standards: IEEE 802.11 a/b/g/n/ac/ax	
4.2.	Wifi Data Rates: 5G: IEEE 802.11ax: 8 Mbps to 2402 Mbps IEEE 802.11ac: 6.5 Mbps to 1733 Mbps IEEE 802.11n: 6.5Mbps to 600Mbps IEEE 802.11a: 12, 24, 36, 48, 54 Mbps	

4.3.	2.4G: IEEE 802.11ax: 8 Mbps to 1147 Mbps IEEE 802.11n: 6.5Mbps to 600Mbps IEEE 802.11b: 1, 2, 5.5, 11 Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps	
4.4.	Encryption: WEP, WPA/WPA2-PSK, WPA/WPA2 Enterprise (TKIP/AES); WPA3, digital signatures support	
4.5.	Frequency: 2.4GHz Radio: 2412 – 2484 MHz 5GHz Radio: 5180 – 5825 MHz	
4.6.	Mounting: Indoor wall mount or ceiling mount, kits included	
4.7.	PoE: Yes	
4.8.	SSID: 32 SSIDs total, 16 per radio (2.4GHz & 5GHz)	
4.9.	QoS:802.11e/WMM, VLAN, TOS	
4.10.	Controller: Embedded controller can manage up to 100 local Aps	
4.11.	Environment Operation: 0°C to 50°C Storage: -10°C to 60°C Humidity: 10% to 90% Non-condensing	
4.12.	Compliance: FCC	
5	9U Rack	Qty: 10
5.1.	Size and Form Factor: Standard 19-inch width with a height of 9 rack units (9U, 15.75inches).	
5.2.	No. of Rack Spaces: 9	
5.3.	Dimensions (HxWxD): 19.7”x23.6”x23.6” (501x600x600mm)	
5.4.	Available Depth: Up to 21.65” (550 mm)	
5.5.	Load Capacity: 60kg (132lbs)	
5.6.	Front Door: Glass	
5.7.	Rear Door: Solid	
5.8.	Material: SPCC cold roll steel	
5.9.	Color: Black	
5.10.	Finish/Coating: Powder coated	
5.11.	Included Accessories: 1 bag of nuts and bolts, 1 T-Shaped Lever	
5.12.	Aluminum alloy shell material	
5.13.	Power Distribution for 9U Rack:	Qty: 10
5.14.	6-way UK outlet, with on/off switch	
5.15.	2m cable with UK plug	
5.16.	Rated current 13A max	
5.17.	Rated load 2500W	
5.18.	Rated voltage 220~250V	
5.19.	Household voltage 230V	
5.20.	Number of sockets 6 ways	
5.21.	Size 19” 1U Horizontal	
5.22.	Shell material Aluminum alloy shell	
5.23.	Type of cable H05VV-F3G*1.5mm ² *2M length	
5.24.	Type of plug BS1363 plug	
5.25.	Provision for earthing With earthing contact	
5.26.	Type of connections Welded-solder	
5.27.	Existence of shutters: with shutters.	
6	42U Rack	Qty: 01
6.1.	Product Type: Multi-Use Cabinet	
6.2.	Number of Rack Spaces: 42U	
6.3.	Maximum Height: 80.19” (2036.94mm)	
6.4.	Maximum Width: 31.50” (800.00mm)	

6.5.	Maximum Depth: 43.31'' (1100.00mm)	
6.6.	Maximum Device Depth (with PDU Bracket): 33.46'' (850.00mm)	
6.7.	Minimum Device Depth: 7.48'' (190.00mm)	
6.8.	Rack-Mount Width: 19.02'' (483.00mm)	
6.9.	Color: Black	
6.10.	Front Door: Perforated	
6.11.	Rear Door: Split Perforated	
6.12.	Static Load on Leveling Feet: 3307lbs (1500kg)	
6.13.	Rolling Load on Casters: 2205lbs (1000kg)	
6.14.	PDU Bracket: 2pcs	
6.15.	Vertical Cable Manager: 1 Set (2pcs)	
6.16.	19'' EIA Square Mounting Holes required	
6.17.	Adjustable Mounting Depth required	
6.18.	Grounding Wire: Front and back door frames, top panel and side panels	
6.19.	Product Type: Multi-Use Cabinet	
6.20.	KVM switch console with display 08 port combo.	
7	Power Distribution for 42U Rack:	Qty: 10
7.1.	Installation: Compatible with a 42U rack setup	
7.2.	Shell Material: Constructed using aluminum alloy	
7.3.	Outlets: Equipped with twenty-four outlets for power distribution	
7.4.	Cable: Features a specified length of cable with the suitable plug type for the region	
7.5.	Rated Current: Maximum current capacity, often 13A or in compliance with electrical standards	
7.6.	Rated Load: The maximum load capacity the PDU can handle, usually up to 2500W or as per requirements	
7.7.	Rated Voltage: Designed for specific voltage ranges, such as 220V to 250V	
7.8.	Household Voltage: Suitable for the standard household voltage, for instance, 230V	
7.9.	Number of Sockets: Twenty-four outlets available for power connections	
7.10.	Size: Appropriate dimensions to fit within a 42U rack space	
7.11.	Shell Material: Utilizes aluminum alloy for durability and safety	
7.12.	Cable Type: Specified cable type with appropriate length and plug suitable for the PDU	
7.13.	Plug Type: Adheres to regional plug standards	
7.14.	Earthing Provision: Equipped with suitable grounding features for safety	
7.15.	Connection Type: Utilizes reliable and secure connections	
7.16.	Shutters: May include safety shutters or protective features for the outlets	
8	SFP	Qty: 50
8.1.	Compatibility: Works with devices supporting SFP+ modules.	
8.2.	Data Transfer Rate: Up to 10Gbps.	
8.3.	Connectivity: Uses LC connectors for optical connections.	
8.4.	Range: Supports single-mode fiber for distances up to 10km (6.2 miles).	
8.5.	Wavelength: Operates at 1310nm.	
8.6.	Protocol: Compliant with 10G Ethernet and 10G Fiber Channel standards.	
9	4- port Optical Distribution Frame	Qty: 16
9.1.	Port Configuration: The ODF must include four adapter ports designed to accommodate optical fiber connectors. Common connector types include SC, LC, or MTP/MPO.	

9.2.	Material and Durability: Ensure the ODF is constructed using durable materials suitable for the intended environment and installation requirements.	
9.3.	Mounting: The ODF should be designed for easy rack-mounting and compatibility with standard rack enclosures or installations.	
9.4.	Splice Trays: Provide provisions for splice trays to organize and protect fiber splices, accommodating both fusion and mechanical splicing methods.	
9.5.	Pigtail Management: Allocate space within the ODF to effectively manage fiber optic pigtails—short fiber lengths with connectors spliced onto the main fiber.	
9.6.	Cable Management: Implement adequate cable management features within the ODF to organize incoming and outgoing fiber optic cables systematically.	
9.7.	Labeling: Support labeling options for ports, fibers, or specific connections within the ODF for easy identification during maintenance or troubleshooting.	
9.8.	Compatibility: Ensure the ODF is compatible with the specific type of fiber optic connectors utilized in the network infrastructure for seamless integration and functionality.	
10	24- port Optical Distribution Frame	Qty: 01
10.1.	Port Configuration: The ODF should include 24 adapter ports designed to accommodate optical fiber connectors. Common connector types include SC, LC, or MTP/MPO.	
10.2.	Material and Durability: Construct the ODF using durable materials suitable for the environment and installation requirements.	
10.3.	Mounting: Ensure the ODF is rack-mountable and compatible with standard rack enclosures for convenient installation.	
10.4.	Splice Trays: Include splice trays to facilitate the organization and protection of fiber splices, supporting both fusion and mechanical splicing methods.	
10.5.	Pigtail Management: Allocate space within the ODF for efficient management of fiber optic pigtails, essential for connecting to the main fiber.	
10.6.	Cable Management: Implement effective cable management features within the ODF to organize incoming and outgoing fiber optic cables systematically.	
10.7.	Labeling: Provide labeling options for ports, fibers, or connections within the ODF to facilitate easy identification during maintenance and troubleshooting.	
10.8.	Compatibility: Ensure the ODF is compatible with the specific type of fiber optic connectors used in the network infrastructure for seamless integration and functionality.	
11	Cable Manager	Qty: 50
11.1.	Size and Mounting: Fit standard rack units (e.g., 1U, 2U) with versatile mounting options (front or rear).	
11.2.	Material and Durability: Durable metal/plastic build to withstand wear and tear.	
11.3.	Capacity and Routing: Manage specified cable quantity for both horizontal and vertical routing.	
11.4.	Features: Organized cable routing (pass-through, loops, guides) and optional accessories for bundling.	
11.5.	Installation and Accessibility: Tool-friendly installation, easy cable access for maintenance without disruption.	
11.6.	Labeling and Compatibility: Support labeling, compatible with standard rack sizes and cable types (copper, fiber optic).	
11.7.	Ventilation and Safety: Consider ventilation for airflow, safety features like rounded edges.	
11.8.	Documentation and Color Options: Include manufacturer documentation; optional color variations for organization.	
12	Patch Panel	Qty: 15
12.1.	Ports: 24 ports available for network connections.	
12.2.	Type: Could be a switch or patch panel designed for networking.	
12.3.	Connectivity: Enables multiple devices to connect within a network.	
12.4.	Standard: Likely follows industry standards for Ethernet or networking protocols.	
12.5.	Mounting: May support rack-mounted or desktop installation.	

12.6.	Features: Specific functionalities depending on the device type (switch or patch panel).
12.7.	Compatibility: Works with Ethernet cables and network devices.
12.8.	Power Requirements: May require a standard power source.
12.9.	Dimensions: Size and form factor for placement considerations.
12.10.	Additional Features: Any unique functionalities or specifications specific to the device.
13	Pigtail Cable (3 meters each) Qty: 64
13.1.	Fiber Type Requirement: Multimode (OM3 / OM4 / OM5) fiber options.
13.2.	Connector Type Requirement: Provide SC, LC, ST, MTP/MPO, etc., connectors suitable for varied connections.
13.3.	Connector Polish Type Requirement: Available in UPC (Ultra Physical Contact) or APC (Angled Physical Contact) for optimal connections.
13.4.	Fiber Length Requirement: Precisely 3 meters in length to fulfill specific connectivity needs.
13.5.	Buffer Type Requirement: Choice between tight-buffered or loose-buffered designs for customizable installations.
13.6.	Color Coding Requirement: Offer various colors for easy fiber identification and organization.
13.7.	Jacket Material Requirement: Available in PVC, LSZH (Low Smoke Zero Halogen), or OFNP (Optical Fiber Nonconductive Plenum) jacket materials suitable for different environments.
13.8.	Temperature Range Requirement: Operating within specified temperature ranges for reliable performance.
13.9.	Application Suitability Requirement: Suitable for indoor, outdoor, or both indoor/outdoor installations as specified.
13.10.	Compliance Requirement: Meets relevant industry standards and regulations for quality assurance and safety.
13.11.	Tensile Strength Requirement: Capable of withstanding specified force levels to ensure durability.
13.12.	Bend Radius Requirement: Maintains signal integrity with a specified minimum bend radius to prevent signal loss.
14	Patch Cord Fiber Qty: 64
14.1.	Fiber Type: Multimode (OM3 / OM4 / OM5).
14.2.	Connector Types: Common connectors include SC, LC, ST, MTP/MPO, etc.
14.3.	Connector Polish Type: UPC (Ultra Physical Contact) or APC (Angled Physical Contact).
14.4.	Fiber Diameter: Standard diameter: 9/125 microns for single-mode, 50/125 or 62.5/125 microns for multimode.
14.5.	Jacket Material: PVC, LSZH (Low Smoke Zero Halogen), or OFNP (Optical Fiber Nonconductive Plenum).
14.6.	Length: 3 meters.
14.7.	Color: Various color options for cable and connector identification.
14.8.	Temperature Range: Suitable operating temperature range.
14.9.	Application: Indoor, outdoor, or both.
14.10.	Tensile Strength: Withstands specified force before breaking.
14.11.	Bend Radius: Maintains signal integrity with a specified minimum bend radius.
14.12.	Pulling Eye: Optional pulling eye for easy installation in conduits.
15	Patch Cord Copper Qty: 500
15.1.	Cable Type: Twisted pair copper cable, Cat 6.
15.2.	Connector Types: RJ45 connectors on both ends.
15.3.	Conductor Type: Solid or stranded copper conductors.
15.4.	Jacket Material: PVC or LSZH (Low Smoke Zero Halogen).
15.5.	Length: 3 meters.
15.6.	Color: Various color options for cable and connector identification.

15.7.	Termination: T568A or T568B wiring scheme.
15.8.	Transmission Speed: Supports specified data rates (e.g., 1Gbps, 10Gbps).
15.9.	Shielding: U/FTP (unshielded twisted pair) or F/UTP (foiled twisted pair) for enhanced performance.
16	I/O for Ethernet including face plate Qty: 500
16.1.	Hardware performance: ANSI/TIA/568-C.2 ISO/IEC 11801 Edition 2, Am 1-2, ISO/IEC 60603-7-5 EN 501731
16.2.	Compliance: PoE+ IEEE 802.3at
16.3.	Operating voltage: < 75 VDC
16.4.	Lead through resistance: < 200 MΩ
16.5.	Insulation resistance: > 500 MΩ
16.6.	Flame rating: UL 94 V-0
16.7.	Operating temperature: -10° C to +60° C (+14° F to +140° F)
16.8.	Conductor diameter: Solid wires 0.50 to 0.65 mm (26-22 AWG), Stranded wires 7.0x 0.15 to 0.20 mm
16.9.	Protection contacts: 1.6 mm, 1.27 μm
17	Single Gang 1port, W/O shutter plate Qty: 250
18	1 KVA UPS Qty: 55
18.1.	Output Power Capacity: 670 Watts / 1000 VA
18.2.	Max Configurable Power: 670 Watts / 1000 VA
18.3.	Nominal Output Voltage: 120V
18.4.	Output Voltage Distortion: Less than 5% at full load
18.5.	Output Frequency: (sync to mains) 47 – 53 Hz for 50 Hz nominal, 57 – 63 Hz for 60 Hz nominal
18.6.	Waveform Type: Sine wave
18.7.	Output Connections: (8) NEMA 5-15R
18.8.	Nominal Input Voltage: 120V
18.9.	Input Frequency: 50/60 Hz +/- 3 Hz (auto sensing)
18.10.	Input Connections: NEMA 5-15P
18.11.	Cord Length: 1.83 meters
18.12.	Input voltage range for main operations: 82 – 144V
18.13.	Input voltage adjustable range for mains operation: 75 – 154V
18.14.	Battery Type: Maintenance-free sealed Lead-Acid battery with suspended electrolyte, leakproof
18.15.	Typical recharge time: 3 hour(s)
18.16.	Warranty: 01 year
	Tender No: IV Network Deployment for PACS
1	24F Multitude Armored Optical Fiber Cable
1.1.	Quantity: 1,000 meters
1.2.	TYPE OF CABLE: 24F MULTITUBE ARMOURED OPTICAL FIBER CABLE
1.3.	ANSI/TIA-568-C.3: YES
1.4.	EN 50173; ISO/IEC 11801: YES
1.5.	FIBER: Single Mode Fiber
1.6.	FIBER SIZE: um 9/125/250 (OS2)
1.7.	No. OF FIBERS / LOOSE TUBE: 30F
1.8.	24F Color: Various Colors
1.9.	ATTENUATION @ 1310nm: dB/Km < 0.34 (MAX)
1.10.	ATTENUATION @ 1550nm: dB/Km < 0.22 (MAX)

1.11.	ATTENUATION @ 1380 – 1386nm: dB/Km < 0.31 (MAX)
1.12.	POINT DISCONTINUITY: dB < 0.1
1.13.	CUT-OFF WAVELENGTH: nm < 1260
1.14.	CHROMATIC DISPERSION @ 1310 nm: ps/nm x km < 3.5
1.15.	CHROMATIC DISPERSION @ 1550 nm: ps/nm x km < 18
1.16.	CORE/MODE-FIELD: um 9
1.17.	CLADDING: um 125
1.18.	COATING: um 250
1.19.	LOOSE TUBE / TIGHT BUFFER: LOOSE TUBE
1.20.	MATERIAL: PBTP
1.21.	No. OF LOOSE TUBES: 5
1.22.	DIAMETER: mm 3+0.2
1.23.	OPERATING TEMPERATURE: deg C -20 to +70
1.24.	COLOUR: BLACK
2.0	6F Multitude Armored Optical Fiber Cable
2.1.	Quantity: 2,500 meters
2.2.	TYPE OF CABLE: 6F MULTITUBE ARMOURED OPTICAL FIBER CABLE
2.3.	ANSI/TIA-568-C.3: YES
2.4.	EN 50173; ISO/IEC 11801: YES
2.5.	FIBER: Single Mode Fiber
2.6.	FIBER SIZE: um 9/125/250 (OS2)
2.7.	No. OF FIBERS / LOOSE TUBE: 6F
2.8.	30F Color: Blue, Orange, Green, Brown, Grey & White
2.9.	ATTENUATION @ 1310nm: dB/Km < 0.34 (MAX)
2.10.	ATTENUATION @ 1550nm: dB/Km < 0.22 (MAX)
2.11.	ATTENUATION @ 1380 – 1386nm: dB/Km < 0.31 (MAX)
2.12.	POINT DISCONTINUITY: dB < 0.1
2.13.	CUT-OFF WAVELENGTH: nm < 1260
2.14.	CHROMATIC DISPERSION @ 1310 nm: ps/nm x km < 3.5
2.15.	CHROMATIC DISPERSION @ 1550 nm: ps/nm x km < 18
2.16.	CORE/MODE-FIELD: um 9
2.17.	CLADDING: um 125
2.18.	COATING: um 250
2.19.	LOOSE TUBE / TIGHT BUFFER: LOOSE TUBE
2.20.	MATERIAL: PBTP
2.21.	No. OF LOOSE TUBES: 1
2.22.	DIAMETER: mm 3+0.2
2.23.	OPERATING TEMPERATURE: deg C -20 to +70
2.24.	COLOUR: BLACK
3	CAT 6A Cable
3.1.	Quantity: 6,400 meters
3.2.	Type: Cat 6A Ethernet Cable
3.3.	Standards: ANSI/TIA-568-C.2: YES
3.4.	ISO/IEC 11801: YES
3.5.	IEEE 802.3an: YES

3.6.	Insulation Diameter: 1.0 ± 0.03 mm
3.7.	Number of Pairs: 4
3.8.	Pair Shielding: Foil Shielding
3.9.	Pair Twist Rate: ≥ 6.8 turns per inch
3.10.	Jacket Material: PVC
3.11.	Jacket Thickness: 0.6 ± 0.05 mm
3.12.	Jacket Color: Blue
3.13.	Frequency: Up to 500 MHz
3.14.	Impedance: 100 ± 15 ohms
3.15.	Maximum Attenuation: 20 dB/100m @ 500 MHz
3.16.	Conductor Material: Solid Bare Copper
3.17.	Gauge: 23 AWG
3.18.	Insulation Material: High-Density Polyethylene
3.19.	Total Length: 6400 meters
3.20.	Operating Temperature: -20°C to +75°C
3.21.	- Supports Gigabit Ethernet, 10 Gigabit Ethernet
3.22.	- Flame Retardant
3.23.	- RoHS Compliant
4	CAT 6 Cable
4.1.	Quantity: 14,000 meters
4.2.	Cat 6 Ethernet Cable
4.3.	ANSI/TIA-568-C.2: YES
4.4.	ISO/IEC 11801: YES
4.5.	Conductor Material: Solid Bare Copper
4.6.	Gauge: 24 AWG
4.7.	Insulation Material: Polyethylene
4.8.	Insulation Diameter: 1.0 ± 0.05 mm
4.9.	Number of Pairs: 4
4.10.	Pair Shielding: Unshielded
4.11.	Pair Twist Rate: ≥ 5.8 turns per inch
4.12.	Jacket Material: PVC
4.13.	Jacket Thickness: 0.5 ± 0.1 mm
4.14.	Jacket Color: Gray
4.15.	Frequency: Up to 250 MHz
4.16.	Impedance: 100 ± 20 ohms
4.17.	Maximum Attenuation: 23.6 dB/100m @ 250 MHz
4.18.	Total Length: 14000 meters
4.19.	Operating Temperature: -10°C to +60°C
4.20.	- Supports Gigabit Ethernet
4.21.	- Suitable for general indoor use
4.22.	- RoHS Compliant
5	Cable Tray
5.1.	Quantity: 2,000 Feet
5.2.	4 inches by 2 inches (Width by Height)
5.3.	Material: Steel

5.4.	Finish: Electro-galvanized or Powder-coated	
5.5.	Width: 4 inches	
5.6.	Height: 2 inches (Specify if available)	
5.7.	Load Capacity: Dependent on tray dimensions	
5.8.	Installation: Wall-mounted or Ceiling-mounted	
5.9.	Used for managing and supporting cables	
5.10.	Indoor use	
5.11.	Compatible with various cable types and sizes	
5.12.	Complies with industry standards for cable management systems	
5.13.	- Corrosion-resistant	
5.14.	- Durable and sturdy	
5.15.	- Easy installation and maintenance	
5.16.	- Allows proper cable organization and routing	
Tender No: V Furniture & Equipment for Lecture Hall		
1	Projector (standard Warranty)	Qty: 02
1.1.	Resolution: Native 4K resolution, providing a sharp and detailed image with a pixel count of 3840 x 2160.	
1.2.	Brightness: High brightness, measured in lumens, to ensure a clear and vibrant image, even in well-lit environments. Look for a specific lumen rating, such as 2500 ANSI lumens.	
1.3.	Contrast Ratio: A high contrast ratio, for example, 1,000,000:1, indicating a significant difference between the darkest and brightest parts of the image for better visual clarity.	
1.4.	Projection Technology: Utilizes laser technology as the light source, offering advantages such as improved color reproduction and a longer lifespan between 2,000 to 5,000 hours, compared to traditional lamp-based projectors.	
1.5.	Color Reproduction: Enhanced color gamut and accuracy for vivid and true-to-life color representation.	
1.6.	Lens Features: Adjustable lens settings, Lens shift, and zoom capabilities for precise control over the projected image size and position.	
1.7.	Connectivity: Multiple input ports, including HDMI and USB, ensuring compatibility with various devices such as Blu-ray players, gaming consoles, and streaming devices.	
1.8.	Dimensions and Weight: Consider the physical size and weight of the projector, important for installation and portability.	
1.9.	Additional Features: May include extra features such as 3D capability, built-in speakers, smart functionalities, and support for High Dynamic Range (HDR) content	
2	Projector Screen Wall Mounted	Qty: 01
2.1.	Type: Motorized projector screen	
2.2.	Fabric Type: Lucky Fine Fabric	
2.3.	Dimensions: 20 feet width by 15 feet height	
2.4.	Aspect Ratio Compatibility: Includes 4:3 for standard formats and 16:9 for widescreen content, providing versatility in content projection.	
2.5.	Motorized Mechanism: Equipped with a reliable motor for smooth and quiet operation, featuring remote control and wall switch for convenience.	
2.6.	Viewing Angle: Offers a wide viewing angle range for clear image quality from various seating positions.	
2.7.	Installation: Designed for wall-mounted installation, ensuring stability and ease of setup.	
2.8.	Borders: Designed with borders for visual enhancement and effective framing of projected content.	
2.9.	Control Options: Includes remote control functionality and a wall-mounted switch for ease of use.	
3	Sound System (Standard Warranty)	Qty: 01

3.1.	Maximum power: 75 W	
3.2.	Power tapping: 50 / 25 / 12.5 / 6.25 W	
3.3.	Sound pressure level at rated power / 1 W (1 kHz, 1 m): 108 dB / 91 dB (SPL)	
3.4.	Sound pressure level at rated power / 1 W (1 kHz, 4 m): 94 dB / 79 dB (SPL)	
3.5.	Effective frequency range: 90 Hz to 20 kHz	
3.6.	Opening angle at 1 kHz / 4 kHz (-6 dB): horizontal 186° / 126°, vertical 84° / 62°	
3.7.	Dimensions (W x D): 405x160x180mm 15.94x6.29x7.08in	
3.8.	Woofers: 134.5 mm (5 in)	
3.9.	Dome tweeter: 25.4 mm (1 in)	
3.10.	Cabinet: Aluminum	
3.11.	Front grille: Aluminum	
3.12.	Color: White (RAL 9010) (L) or Charcoal (RAL 7021) (D)	
3.13.	Operating temperature: -25 °C to +55 °C (-13 °F to +131 °F)	
3.14.	Storage and transport temperature: -40 °C to +70 °C (-40 °F to +158 °F)	
3.15.	Relative humidity: <95%	
3.16.	Loudspeaker floor stand: Universal floor stand lightweight aluminum construction, foldable, M10 x 12 reducer flange.	
3.17.	Water and dust protection: according to EN 60529 IP 65	
3.18.	Note: aluminum extruded enclosure, two-way system, including wall bracket, EN54-24 certified.	
4	Indoor SMD Display (Standard Warranty)	
4.1.	Area: 20 feet X 15 feet	
4.2.	Main Specification	
4.3.	Pixel Pitch: 2.5 mm	
4.4.	Module Size: 320*160 mm	
4.5.	Resolution: 128*64 dots	
4.6.	LED: SMD1515	
4.7.	Brightness: 800 – 1,200nits (Adjustable)	
4.8.	Max Current: ≤5.2 A	
4.9.	Pixel Density: 160000 dots/m ²	
4.10.	Refresh Rate: ≥1920 Hz	
4.11.	Port: HUB75E	
4.12.	Standard Panel:	
4.13.	Storage temperature range: -10°C to 50°C.	
4.14.	Lamp surface temperature : ≤ 60°C	
4.15.	Storage humidity range: 10%RH-80%RH	
5	Walky Talky (Standard Warranty)	Set of 06
5.1.	Frequency Range: FRS frequency band.	
5.2.	Channels: 16 channels available.	
5.3.	Voltage: Operates on DC 3.7V.	
5.4.	Temperature Range: -10°C to +50°C.	
5.5.	Antenna: High-gain antenna (50Ω impedance).	
5.6.	Mode: Operates in simplex mode.	
5.7.	Sensitivity: < 0.2 μV.	
5.8.	Occupied Bandwidth: ≤16KHz.	
5.9.	Audio Power: 1W.	

5.10.	Audio Distortion: ≤5%.	
5.11.	Current: 80mA (standby), 200mA (active).	
5.12.	Output Power: US: 0.5/2W.	
5.13.	Modulation Mode: 16KF3E.	
5.14.	Frequency Stability: 5ppm.	
5.15.	Spurious Radiation: 7.5uW.	
5.16.	Modulation Noise: <-40dB.	
5.17.	Maximum Deviation: < ±5KHz.	
5.18.	Audio Response: +6.5 ~-14dB (300-3000Hz).	
5.19.	Adjacent Channel Power: >65dB.	
5.20.	Intermediation Sensitivity: 8 ~12mv.	
6	LCD 55" (Standard Warranty)	Qty: 02
6.1.	Screen Size: 95 inches (measured diagonally).	
6.2.	Resolution: Must be 4K Ultra HD (3840 x 2160 pixels).	
6.3.	Display Technology: LED (Light Emitting Diode) for bright and vibrant colors.	
6.4.	HDR (High Dynamic Range): Some models support HDR for improved contrast and color range.	
6.5.	Smart TV Features: Built-in smart features for streaming apps, web browsing, and connectivity.	
6.6.	Refresh Rate: Higher refresh rates (e.g., 60Hz, 120Hz) for smoother motion.	
6.7.	Connectivity: Multiple HDMI and USB ports, Wi-Fi, Bluetooth, etc.	
6.8.	Sound: Audio features such as Dolby Digital, DTS, and built-in speakers.	
6.9.	Dimensions and Weight: Physical dimensions and weight of the TV.	
6.10.	Additional Features: Smart remote control, voice control, ambient mode, and various picture and sound settings.	
7	LCD 55" (Standard Warranty)	Qty: 02
7.1.	Active Display Area: 1209.6 (H) mm × 680.4 (V) mm	
7.2.	Resolution: 3840 × 2160@60 Hz	
7.3.	Backlight: LED	
7.4.	Pixel Pitch: 0.315 (H) mm × 0.315 (V) mm	
7.5.	Brightness: 350 cd/m ²	
7.6.	Viewing Angle: 178° (H)/178° (V)	
7.7.	Color Depth: 8 bit	
7.8.	Contrast Ratio: 1200:1	
7.9.	Response Time: 8 ms	
7.10.	Refresh Rate: 60 Hz	
7.11.	Haze: 1%	
7.12.	Reliability: 7 × 18 H	
7.13.	Color Gamut: 72% NTSC	
7.14.	Video & Audio Output: Speaker (8 Ω 5 W) × 2, Audio-Out × 1	
7.15.	Data Transmission Interface: USB 2.0 × 1	
7.16.	Power Supply: 100 to 240 VAC, 50/60 Hz	
7.17.	Power Consumption: ≤ 145 W Product Dimensions (W × H × D): Without stand: 1230.08 mm × 713.39 mm × 85.55 mm (48.43" × 28.09" × 3.37")	
7.18.	With stand: 1230.08 mm × 786.86 mm × 267.87 mm (48.43" × 30.98" × 10.55") Net Weight: 16.2 ± 0.5 kg (35.7 ± 1.1 lb.)	
7.19.	Gross Weight: 21.4 ± 0.5 kg (47.2 ± 1.1 lb.)	

7.20.	Packing List: Monitor × 1, Remote control × 1, Quick start guide (multilingual) × 1, EU energy	
7.21.	efficiency label × 1, 1.5-meter power cable × 1, Screw pack × 1	
7.22.	Active Display Area: 1209.6 (H) mm × 680.4 (V) mm	
7.23.	Resolution: 3840 × 2160@60 Hz	
8	Auxillary Speaker (Standard Warranty)	Qty: 04
8.1.	Maximum power: 45 W	
8.2.	Rated power: 30 W (30 / 15 / 7.5 / 3.75 W)	
8.3.	Sound pressure level at rated / 1 W (1 kHz, 1 m): 105 / 90 dB (SPL)	
8.4.	Effective frequency range (-10 dB): 100 Hz to 18.5 kHz	
8.5.	Opening angle 1 kHz / 4 kHz (-6 dB): 160° / 81° (horizontal) / 150° / 90° (vertical)	
8.6.	Rated input voltage: 15.5/70/100 V	
8.7.	Rated impedance: 8 / 163 / 333 ohm	
8.8.	Transducers: 127 mm (5") woofer, 13 mm (0.51 ") dome tweeter	
8.9.	Dimensions (H x W x D): 250 x 160 x 140 mm, (9.84 x 6.30 x 5.51 in)	
8.10.	Weight: 2.4 kg (5.29 lb)	
8.11.	Supplied with adjustable mounting bracket	
8.12.	Complies with international installation and safety regulations	
8.13.	Water resistant: IP65 rated.	
9	Main Speaker (Standard Warranty)	Qty: 02
9.1.	Cabinet loudspeaker 50 W, aluminum extruded enclosure, two-way system, including wall-mounted bracket,	
9.2.	Provision for internal mounting of the optional line / loudspeaker supervision board	
9.3.	EN 54-24 certified	
9.4.	Water and dust protection: according to EN 60529 IP 65	
9.5.	Sound pressure level at rated power / 1 W (1 kHz, 1 m): 108 dB / 91 dB (SPL)	
9.6.	Effective frequency range (-10 dB): 90 Hz to 20 kHz	
9.7.	Rated input voltage: 20 / 70 / 100 V	
9.8.	Rated impedance: 8 / 100 / 200 ohm	
9.9.	Connector: 3-pole screw block	
9.10.	Dimensions: 48nterfa 405x160x180mm 15.94x6.29x7.08in	
9.11.	Woofer: 134.5 mm (5 in)	
9.12.	Dome tweeter: 25.4 mm (1 in)	
9.13.	Cabinet Aluminum	
9.14.	Front grille: Aluminum	
9.15.	Top and bottom: ABS	
9.16.	Color White (RAL 9010) (L) or Charcoal (RAL 7021) (D)	
9.17.	Weight: 48nterfa 5.58 kg (12.30 lb)	
9.18.	Operating temperature: -25 °C to +55 °C (-13 °F to +131 °F)	
9.19.	Storage and transport temperature: -40 °C to +70 °C (-40 °F to +158 °F)	
9.20.	Relative humidity <95%	
9.21.	Maximum power:75 W	
9.22.	Rated power (PHC): 50 W	
10	Cordless Microphone set Wireless Mic Kit with Headset (Standard Warranty)	Qty: 02
10.1.	Wireless Technology	Analog UHF
10.2.	Number of RF Channel Frequencies 8	

10.3.	Included Transmitters 2 x Bodypack	
10.4.	Diversity Non-Diversity	
10.5.	RF Channel Scanning Auto-Scan	
10.6.	Max Operating Range 160' / 48.8 m	
10.7.	Max Transmitters per Band 1	
10.8.	Built-In Recorder No	
10.9.	Encryption No	
10.10.	Deviation ± 40 kHz	
10.11.	Modulation FM	
10.12.	SNR 105 dB	
10.13.	THD < 1 %	
10.14.	Receiver Type Plug-In / Portable	
10.15.	Antenna 1 x Flexible Whip, Fixed	
10.16.	Number of Audio Channels 2	
10.17.	Audio I/O 1 x 1/4" TS Female Unbalanced Output	
10.18.	Network I/O No	
10.19.	Word Clock I/O No	
10.20.	USB/Lightning Connectivity No	
10.21.	Standalone Audio Interface Capable No	
10.22.	Power Requirements AC/DC Power Adapter	
10.23.	AC/DC Power Adapter 12 to 15 VDC (Included)	
10.24.	AC Input Power 120 to 220 VAC, 50 / 60 Hz	
10.25.	Dimensions 5.3 x 6.8 x 1.7" / 13.5 x 17.3 x 4.3 cm	
10.26.	Transmitter Type Bodypack	
10.27.	RF Output Power > 10 mW	
10.28.	Audio I/O 1 x 1/8" / 3.5 mm TS Female	
10.29.	Muting Off/On Switch	
10.30.	Auto-Level Control No	
10.31.	Sync Method Proprietary	
10.32.	Power Requirements Battery	
10.33.	Battery Type 2 x AA	
10.34.	Display & Indicators 1 x LED (Channel, Power, Sync)	
10.35.	Microphone Type Headset	
10.36.	Sound Field Mono	
10.37.	Output Connector 1 x 1/8" / 3.5 mm TS Male Unbalanced	
10.38.	Microphone2 Type Lavalier	
10.39.	Color Black	
10.40.	Sound Field Mono	
10.41.	Outputs 1 x 1/8" / 3.5 mm TS Male Unbalanced	
11	Wireless Microphone System (Standard Warranty)	Qty: 08
11.1.	Wireless Audio Control for up to (4) Microphones & (4) Transmitters	
11.2.	UHF System for Wide Area Signal Range Coverage	
11.3.	Simple & Hassle-Free Operation	
11.4.	Independent & Adjustable Channel Volume Controls	
11.5.	Digital LCD Display with Channel & Frequency Readout	

11.6.	Wireless Operation Range: Up to 164 ft.
11.7.	LED Audio Signal Indicator Lights
11.8.	RF (Radio Frequency) & AF (Audio Frequency)
11.9.	(8) XLR Balanced Output Jacks
11.10.	(2) ¼” Mixed Outputs
11.11.	Rack Mountable
11.12.	Digital LCD Display Channel Readout
11.13.	Image & Spurious Rejection: >70 dB
11.14.	Receiving Sensitivity: -105 dB
11.15.	Signal / Noise Ratio: -105dB
11.16.	Border Upon Channel Rejection: > 70 dB
11.17.	Audio Output Level: 0-300 mV
11.18.	Power Requirements: 13-15V DC nominal 1500 mA
11.19.	T.H.D.: < 1%
11.20.	Power Supply: 110/220V (13-15V Power Adapter)
11.21.	Receiver Dimensions (L x W x H): 18.9” x 7.8” x 3.9”
11.22.	Handheld Mic / Body-Pack Transmitter Specifications:
11.23.	Includes (4) Microphones & (4) Bodypacks
11.24.	Digital LCD Display Channel Readout
11.25.	RF Output: >10 dBm
11.26.	Modulation Type: FM
11.27.	Max Deviation: ± 40 kHz
11.28.	Spurious Emission: > 55 dBc
11.29.	Nominal Current Drain: < 100mA
11.30.	Battery Operated, Requires (2) x ‘AA’ Batteries
11.31.	Mic Dimensions (L x W x H): 9.8” x 2.0” x 2.0”
11.32.	Body-Pack Dimensions (L x W x H): 4.1” x 2.5” x 1.2”
12	Conference Controller (Standard Warranty) Qty: 01
12.1.	Microphone capacity
12.2.	Simultaneous interpretation channel
12.3.	Frequency Response: Covers 80Hz to 16KHz.
12.4.	Signal-to-Noise Ratio (SNR): Exceeds 78dB(A).
12.5.	Dynamic Range: Greater than 80dB.
12.6.	Total Harmonic Distortion (THD): Less than 0.05%.
12.7.	Main Power Input: Compatible with 100-120VAC/200-240VAC (switchable).
12.8.	Audio Input: LINEIN1: 775mVrms balanced; Output: Phoenix terminals 775mVrms balanced.
12.9.	Audio Output: LINEOUT1: 1Vrms balanced; 16 multi-function output Phoenix terminals: 1Vrms balanced.
12.10.	Output Load: Supports loads greater than 1KΩ.
12.11.	Extension Port: 1 port available for connecting conference system extension equipment.
12.12.	DANTE/NC Port: 1 port for connecting external devices with DANTE protocol.
12.13.	WIFI Network Port: 1 port for connecting to a wireless AP (Access Point).
12.14.	PC Network Port: 1 port for connection to a computer.
12.15.	Delegates Output Interface: 4 interfaces for connecting conference speaking units.
12.16.	RS-232 Interface: 2 channels, one for camera tracking, another for docking external equipment.

12.17.	RS-485 Interface: 1 interface for camera tracking.	
12.18.	Static Power Consumption: 30W.	
12.19.	Output Power Consumption: 320W.	
12.20.	Wired Microphone Connection: Utilizes a special cable with 6 pins.	
12.21.	Touch Screen: Equipped with a 4.3-inch full-color touch screen.	
12.22.	Color: Black.	
12.23.	Dimensions: 484×303×88mm (Length × Width × Height).	
13	Conference Unit Mic (Standard Warranty)	Qty: 04
13.1.	Type: Back Electret Condenser	
13.2.	Polar Pattern: Cardioid	
13.3.	Sensitivity: -40 dB ± 2 dB	
13.4.	Frequency Response: 40 Hz – 20kHz	
13.5.	Power Supply: Phantom 48V DC or 3V (2 x 1.5V AAA type batteries)	
13.6.	Controls: ON/OFF switch	
13.7.	Output connector: XLR Male	
13.8.	Output Impedance: 75 Ω	
13.9.	Gooseneck Length: 445 mm	
13.10.	Dimensions: 115 x 30 x 140 mm	
13.11.	Net Weight: 0.50 Kg	
14	2 Channel Feedback Suppressor (Standard Warranty)	Qty: 01
14.1.	Input Channels and Plugs: 2 XLR and TRS multi-use plug analog inputs	
14.2.	Output Channels and Plugs: 2 XLR male plug + 2 TRS male plug analog outputs	
14.3.	Input Impedance: Balanced: 20KΩ	
14.4.	Output Impedance: Balanced: 100Ω	
14.5.	Input Range: ≤+20dBu	
14.6.	Frequency Response: 20 Hz – 20kHz (±0.5dB)	
14.7.	Signal-to-Noise Ratio (SNR): ≥103dB @ 1kHz 20dBu (A-weighted)	
14.8.	Total Harmonic Distortion (THD): <0.012% OUTPUT=0dBu/1kHz	
14.9.	Channel Separation: 82dB (1kHz)	
14.10.	Howling Search and Suppression: Fully automatic notch filter	
14.11.	Filter: 24/CH	
14.12.	Q Value Range: 10-50	
14.13.	Frequency Resolution: 1Hz	
14.14.	Howling Search Time: 0.1~0.5S	
14.15.	FFT Length: 1024	
14.16.	Acoustic Gain: 4~8dB	
14.17.	System Gain: 0dB	
14.18.	Notch Filter: Dual channel, 12 static + 12 dynamic points for each	
14.19.	Crossover: Three high and low pass filters: Butterworth, Bessel, Linkwitz-Rayleigh	
14.20.	Equalizer: 31-band graphic equalizer + 8-band parametric equalizer	
14.21.	Display: 2-inch IPS true color screen, resolution 320*240; 48 LED indicators for notch filter status	
14.22.	Processor: 48kHz sampling frequency, 40-bit DSP processor; 32-bit A/D and D/A conversion	
14.23.	Dimensions: 484×206×45mm (L×D×H)	
14.24.	Net Weight: 2.4kg	
15	Digital Audio Matrix Processor (Standard Warranty)	Qty: 01

15.1.	Input Channel: Pre-amplifier, Delayer, Extender, Compressor, 31-band graphic equalizer, 4 Dnate inputs
15.2.	Output Channel: 15-band parametric equalizer, Delayer, CROSSOVER, FIR filter, High and low pass filter, Limiter
15.3.	Dnate Interface: 2
15.4.	Sampling Rate: 48K
15.5.	Frequency Response: 20Hz-20kHz ± 0.5 dB
15.6.	THD + Noise: $< 0.002\%$ @1kHz, 4dBu
15.7.	D/A Dynamic Range (A-weighted): 120dB
15.8.	A/D Dynamic Range (A-weighted): 120dB
15.9.	Input Impedance (Balanced): 20K Ω
15.10.	Maximum Output Impedance (Balanced): 100 Ω
15.11.	Channel Separation: 1kHz, 100dB
15.12.	Input KCMR: 60Hz, 80dB
15.13.	Maximum Output Level: +20dBu, balanced
15.14.	Maximum Input Level: +20dBu, balanced
15.15.	Working Temperature: 0 $^{\circ}$ C-40 $^{\circ}$ C
15.16.	Power Supply: AC110V-220V, 50Hz/60Hz
15.17.	Power Consumption: < 40 W
15.18.	Size (Width x Depth x Height): 482 \times 258 \times 45(mm)
15.19.	Net Weight: 2.56kg
15.20.	Gross Weight: 3.56kg
16	Digital Mixer (Standard Warranty) Qty: 01
16.1.	Mic input: 24 channels of XLR
16.2.	Line input: 24 channels of stereo/single-plug interface
16.3.	Intelligent output: 2 sets of stereo main outputs, 8 marshalling and auxiliary outputs, 1 set of stereo monitoring output, 1 headphone monitoring output
16.4.	USB interface: 2 USB ports for stereo recording/playback/system update
16.5.	Screen: A 7-inch HD IPS touch screen, resolution: 1024 \times 600
16.6.	Phantom power: +48VDC
16.7.	AD/DA: Support 24bit/48Khz
16.8.	DSP processor: 32-bit floating point
16.9.	Frequency response: 22Hz~22KHz at 0dBu ± 1.5 dB
16.10.	Distortion: $< 0.01\%$ at 0dBu 1KHz
16.11.	Maximum input level: +20dBu ± 0.5 dBu
16.12.	Microphone input gain: 0dBu-50dBu
16.13.	Microphone input SNR: 111dB
16.14.	Line input gain: -20dBu-+30dBu
16.15.	Noise (bus noise): -91dB
16.16.	Audio processor: 12 effects: Hall, Room, Plate, Delay, Stdelay, Tremolo, Flanger, Chorus, DelayRev, StdelayRev, FlangerRev, ChorusRev
16.17.	Noise gate: Threshold range: -84dBu-20dB; entry time: 0.5ms-200ms; release time: 10ms-1000ms
16.18.	Compressor: Threshold range: -30dBu-+20dB; entry time: 10ms-150ms; release time: 10ms-1000ms; ratio: 1:1toLimit; gain: 0dBu-+24dB
16.19.	Equalizer: 21Hz-19.2KHz ± 24 dB
16.20.	ADC, DAC dynamic range: 114dB

16.21.	Internet: Network port, with external router, can connect to iPad for remote control	
16.22.	Power voltage: AC 90-240V 50/60Hz power supply	
16.23.	Working temperature: Working temperature 0-40°C; storage temperature -20-45°C	
16.24.	Size: 530×540×210mm	
16.25.	Weight: 12Kg	
17	6 Pin Conference Table	Qty: 01
17.1.	Must comprise six pins suitable for audio, video, or data transmission during conferences.	
17.2.	Durable and reliable construction for uninterrupted transmission.	
17.3.	Connector compatibility and reliability for various conference systems.	
18	RVVP 2*1.5 Audio Cable	Qty: 500m
18.1.	Two conductors with a diameter of 1.5 square millimeters each.	
18.2.	RVVP (Reinforced PVC Insulation) for enhanced durability and signal integrity.	
18.3.	Suitable for audio transmission with low interference and high-quality sound output.	
19	EVJV 2*2.5 Speaker Cable	Qty: 1,000m
19.1.	Two conductors, each sized at 2.5 square millimeters.	
19.2.	Designed specifically for speaker connections with robust insulation.	
19.3.	Ensures clear and reliable audio signal transmission to speakers.	
20	Lecture Hall Chairs	Qty: 270
1.1.	Seat centers 55 cm Overall height 95 ± 1 cm	
1.2.	Seat height 44 ± 1 cm	
1.3.	Seat width 48 ± 1 cm Armrest Width 6 cm	
1.4.	The back and seat foams are produced as molded foam in aluminum molds.	
1.5.	(Foam Standard MVSS 302)	
1.6.	Back foam molded on the metal frame (EN 12727 / 3.1)	
1.7.	Seat foam molded on the metal frame (EN 12727/3.1)	
1.8.	The PU Ladder /Scotchguard Fabric has a flammability property (B1, DIN EN 1021)	
1.9.	Seat has a durable metal feet(EN 12727 / 3.1)	
1.10.	Seat cushion has a shutdown feature with the weight system	
1.11.	Writing table has ant panic system and the table is covered with membranes.	
1.12.	Metal parts are painted with epoxy polyester based powder paint. (60 mic.)	
1.13.	Note (SCOTCHGUARD Fabric)	
1.14.	Or Equivalent	
21	Acoustic Panels	2,300 Sft
21.1.	Acoustic Panels Including wood framing of MDF 12mm and acoustic insulation with imported soft finish fabric	
Tender No: VI Local Surgical Instruments Country of Origin: Locally Made Certification: ISO, CE/FDA or better		
1	Surgical Instruments	
1.1.	Orthopedics Instruments (set of 06) Each set should comprise of:	
1.2.	B.P. Handle No. 3	1
1.3.	B.P. Handle No. 4	1
1.4.	Ramplery Sponge Holding Forceps 9.5”	2
1.5.	Backhaus Towel Clamps 5 ¼”.	5

1.6.	Stille Bone Chisels (Four Sizes).	4
1.7.	Stille Bone Osteotomes (Four Sizes).	4
1.8.	Stille Bone Gouge (Four Sizes).	4
1.9.	Farabeus Periosteal Elevator Curved.	1
1.10.	Hohman Bone Retractors.	6
1.11.	Plate Holding Forceps 6 ½”.	1
1.12.	Plate Holding Forceps 7 ½”.	1
1.13.	Plate Holding Forceps 9 ½”.	1
1.14.	Plate Holding Forceps 10 ½”.	1
1.15.	Reduction Forceps Pointed 8”.	1
1.16.	Reduction Forceps Pointed 6”.	1
1.17.	Reduction Forceps with Speed Screw Large.	1
1.18.	Reduction Forceps with Speed Screw Small.	1
1.19.	N.N Self-Retaining Retractor with long blades.	1
1.20.	Weitlaner Self-Retaining Retractor Small.	1
1.21.	Volkman Bone Curette (Three Sizes)	3
1.22.	Weitlaner Self-Retaining Retractor Medium.	1
1.23.	Wire Twister.	2
1.24.	Wire Cutter with TC tips Curved 8 ½”.	1
1.25.	Bristow Periosteal Elevator.	1
1.26.	Langenbeck Retractor Medium.	2
1.27.	Langenbeck Retractor Large.	2
1.28.	Lanes Bone Holding Forceps Medium 9”.	1
1.29.	Lanes Bone Holding Forceps Large 13”.	1
1.30.	Settler Bone Saw.	1
1.31.	Stille Bone Nibbler Straight 9 ½”.	1
1.32.	Stille Bone Nibbler Curved 9 ½”.	1
1.33.	Stille Bone Nibbler Side Curved 9 ½”.	1
1.34.	Bone File Straight and Bayonet shape.	2
1.35.	Cairn Bone Bone Rongeurs Cvd 6.5”	1
1.36.	Mayo Hegar Needle Holder TC Tips 6”.	1
1.37.	Mayo Hegar Needle Holder TC Tips 7”.	1
1.38.	Mayo hegar Needle Holder TC Tips 8”.	1
1.39.	Metzenbaum Scissors Straight and Curved TC Tips 6 ½”.	2
1.40.	Met. Scissors Straight and Curved TC Tips 7 ½”.	2
1.41.	Mayo Scissors Straight and Curved TC tips 6 ¾”.	2
1.42.	Dissecting Forceps Plain and Tooth 6”.	2
1.43.	Dissecting Forceps Plain and Tooth 7”.	2
1.44.	Dissecting Forceps Plain and Tooth 8”.	2
1.45.	Liston Bone Cutter Straight 8 ½”.	1
1.46.	Screw Drivers (Two Sizes)	2
1.47.	Horsley Liston Bone Cutter Heavy.	1
1.48.	Hammer Medium Size.	1
1.49.	Hammer Large Size.	1
1.50.	Ruskin Bone Rongeurs Cvd. 7”.	1

1.51.	Kidney Tray Large 10".	1
1.52.	S.S. Bowls 4".	2
2	Plastic Surgery (Set of 06) Each set should comprise of:	
2.1.	Mitchelles dissector	4
2.2.	Freer dissector	4
2.3.	Periosteum Elevator (Small)	5
2.4.	Satinsky clamp	5
2.5.	Humbys grafting knife	5
2.6.	Bone Bibbler Size: Small	5
2.7.	Bone Cutter Size: Medium	5
2.8.	Plier	5
2.9.	Rasp Size: Small	5
2.10.	Microsurgery Instrument Set (Complete set)	
2.11.	Bull dog clamps (Pair)	5
2.12.	Micro forceps	5
2.13.	Micro Vessel dilator	5
2.14.	Micro needle holder (Fine tip)	5
2.15.	Micro Scissor Strenght	5
2.16.	Micro Scissor curved	5
2.17.	Micro Scissor for adventisia	5
2.18.	Plastic Surgery Bone Set	5
2.19.	Ferris Smith Kerrison Punch up 3mm, 18cm	5
2.20.	Volkman Bone Curette 17cm, Fig.0	3
2.21.	Charnley Suture Fcps w/1x2T, 14.5cm	3
2.22.	Tray Kidney British patt. 200x95x35mm	5
2.23.	McINDOE Preparation Scissors cvd 19cm	5
2.24.	West Retractor blunt 13cm	5
2.25.	Bonney Disecting Fcps serr 18cm	5
2.26.	Lexer Bone Gouge F/handle str 15mm 22cm	2
2.27.	Mayo Hegar Ndle Holder 16cm	0
2.28.	Foerster Sponge Holding Fcps serr str 25cm	5
2.29.	Bristow Bone Lever 23cm	0
2.30.	Travers Ret. 4x5pr. 19x25 & 25x25mm, bl. 20cm	3
2.31.	Ferris Smith Kerrison Punch up 3mm 18cm 40°	5
2.32.	Czerny Retractor, 32x22mm, 20cm	5
2.33.	Spencer Stitch Scissors 13cm	5
2.34.	Plastic Surgery Dressing Set (Forward & OPD)	
2.35.	Instrument Tray (Small)	5
2.36.	Galipot (Small)	5
2.37.	Kidney Tray 10"	3
2.38.	Mosquito Astery Forcep 5" (Cvd)	6
2.39.	Irris Scissor (Straight) 5"	6
2.40.	Irris Scissor (Cvd) 5"	6
2.41.	Plain Forcep 5"	5

2.42.	Tooth Forcep 5''	5
2.43.	Metz Scissor (Cvd) 6''	6
2.44.	Mayo Scissor (Straight) 6''	6
2.45.	Plastic Surgery Set (Complete)	
2.46.	Scalpel Handle #3	6
2.47.	Scalpel Handle #4	3
2.48.	Deaver Scissors str sh/bl 14.0cm	2
2.49.	Metzenbaum Scissors cvd 15cm	3
2.50.	Metzenbaum Scissors sh/sh cvd 14.5cm	2
2.51.	Metzenbaum Scissors cvd 18cm	2
2.52.	Stevens Tenotomy Scissors cvd bl/bl 11cm	5
2.53.	USA Model Dressing Fcps fine 12cm	3
2.54.	Adson Dressing Fcps serr 12cm	3
2.55.	Tissue Fcps USA model 1x2T 12cm	3
2.56.	Adson Tissue Fcps 1x2T 12cm	3
2.57.	Adson Brown Tissue Fcps 7x7T 12cm	3
2.58.	Carrel Hemostatic Fcps 8.5cm	3
2.59.	Halstead Mosquito Fcps str 12.5cm	3
2.60.	Halstead Mosquito Fcps cvd 12.5cm	3
2.61.	Kelly Rankin Hemostatic Fcps str 16cm	3
2.62.	Kelly Rankin Hemostatic Fcps cvd 16cm	3
2.63.	Foerster Sponge Holding Fcps serr str 18	3
2.64.	Farabeuf Retractor set of pair 12cm	3
2.65.	Graefe Hook single sharp 16cm	3
2.66.	Skin Hook sharp 16cm	6
2.67.	Guthrie double hook sharp Large 16cm	6
2.68.	Senn Mueller Retractor D/E sharp 17cm	8
2.69.	Crile Wood Needle Holder 15cm	3
2.70.	Frazier Aspirating Cannula 6Fg 19cm	4
2.71.	Frazier Aspirating Cannula 8FG 19cm	4
2.72.	Allis Baby Tissue Fcps 4x5T 12cm	6
2.73.	Plastic Surgery Hand Set	
2.74.	Ruler Metal 30cm	4
2.75.	Metzenbaum Scissors cvd 15cm TC	4
2.76.	Metzenbaum Fino Scissors blunt cvd 15cm	4
2.77.	Kilner/Barsky Scissors cvd 15cm	4
2.78.	Reynolds Op-Scissors cvd 15cm	4
2.79.	Universal Wire Scissors Serr 12cm	4
2.80.	Adson Micro Fcps serr 12cm	6
2.81.	Adson Tissue Fcps 1x2T 12cm	6
2.82.	Semken Dressing Fcps serr str 12.5cm	3
2.83.	Halstead Micro Mosquito Fcps cvd 12cm	4
2.84.	Halstead Micro Mosquito Fcps 1x2T cvd 12	4
2.85.	Kocher Fcps Delicate str 14cm	4
2.86.	Backhaus Towel Fcps 9cm	10

2.87.	Foerster Sponge Holding Fcps serr str 18	8
2.88.	Senn Mueller (Kilner) Retractor D/E sh.	6
2.89.	Joseph Skin Hook single 16cm	4
2.90.	Retractor Tracheal sharp 2pr.	4
2.91.	Retractor Tracheal sharp 3pr.	3
2.92.	Desmarres Retractor Eyelid 10x160mm	6
2.93.	Mini Langenbeck Retractor 20x6mm, 16cm	6
2.94.	Weitlaner Retractor sharp 11.5cm	4
2.95.	Probe Buttoned D/E 1mm, 14cm	4
2.96.	Probe Buttoned D/E 1.5mm, 16cm	4
2.97.	Brand Tendon Seizing Fcps 1x2T, 15cm	4
2.98.	Carroll Tendon Seizing Fcps cvd shaft 11	4
2.99.	Krayenbuhl Nerve & Vessel Hook 19cm, Fig	4
2.100.	Krayenbuhl Nerve & Vessel Hook 19cm, Fig	6
2.101.	Halsey Ndle Holder smooth 13cm TC	3
2.102.	Crile-Wood Ndle Holder 15cm TC	3
2.103.	Ruskin Bone Rongeur str 18cm	5
2.104.	Liston Bone Cutting Fcps str 17cm	2
2.105.	Langenbeck Bone Holding Fcps 21cm	3
2.106.	Dingmann Bone Holding Fcps 19cm	3
2.107.	Spratt Bone Curette 16cm, Fig.000	3
2.108.	Spratt Bone Curette 16cm, Fig.00	3
2.109.	Alexander Bone Chisel 8mm 17cm	2
2.110.	Partsch Bone Gouge 3mm 17cm	2
2.111.	Lambotte Mini Bone Osteotome str 4mm 12.	2
2.112.	Lambotte Mini Bone Osteotome str 6mm 12.	2
2.113.	Lambotte Mini Bone Osteotome str 8mm 12.	2
2.114.	Williger Periosteal Elevator 16cm	3
2.115.	Hohmann Mini Bone Lever 6x160mm	3
2.116.	Kirschner Wire Trocar Point Pin 1.0x310m	3
2.117.	Kirschner Wire Trocar Point Pin 1.2x310m	3
2.118.	Kirschner Wire Trocar Point Pin 1.8x310m	3
2.119.	Bowman Lachrymal Probe butt. Fig.5/6 SP	3
2.120.	Freer Septum Elevator sh/bl 18cm	4
2.121.	Fomon Rhinology Chisel 5mm, 17cm	4
2.122.	Joseph Nasal Rasps 16cm	4
2.123.	Gillies Hooklet Delic Fig.2, 18cm	2
2.124.	Hajek Bone Mallet 140g 22cm	2
3	Thoracic Surgery (set of 06) Each set should comprise of:	
3.1.	Right Angled Clamps Lahey's 9"	2
3.2.	Metzenbaum Scissor Cuverd TC 6"	1
3.3.	Metzenbaum Scissor Cuverd TC 7"	1
3.4.	Metzenbaum Scissor Stright / Cuverd TC 8"	2
3.5.	Nelson Scissors Straight / Curved TC 9"	2

3.6.	Rib Approximator	1
3.7.	Mayo Hegar Needle Holder TC Tip 7"	1
3.8.	Mayo Hegar Needle Holder TC Tip 8"	1
3.9.	Mayo Hegar Needle Holder TC Tip 10"	2
3.10.	Dissecting Forceps Plain 6", 7", 8", 9"	4
3.11.	Dissecting Forceps Tooth 6", 7", 8", 9"	4
3.12.	Dissecting Forceps Plain Long 10"	3
3.13.	Dissecting Forceps Tooth Long 10"	1
3.14.	Mosquito Artery Forceps Straight 5"	12
3.15.	Mosquito Artery Forceps Curved 5"	12
3.16.	Artery Forceps Medium Curved	12
3.17.	Artery Forceps Long Straight/Curved 8"	8
3.18.	Artery Forceps Long Fine Curved 8"	6
3.19.	Rib Retractor Set Complete with 4blades	1
3.20.	Lungs Retractor	2
3.21.	Duval Lung Holding Forceps	6
3.22.	Doyens Rib Raspatory Right/Left Adult	2
3.23.	Bulldog Clamps Straight / Curved	8
3.24.	Lahey Right Angled Forceps 8" and 9"	4
3.25.	Long Blades Self-Retaining Retractor	1
3.26.	Self-Retaining Retractor Medium	1
3.27.	Self-Retaining Retractor Straight 8"	1
3.28.	Wire Cutter w/Tongston Carbide Tips Large	1
3.29.	Bone Cutter Medium	1
3.30.	Fine Bone Nibbler Double Action Straight	1
3.31.	Suction Nozzle Frazier	2
3.32.	Yankeur Suction Nozzle	1
3.33.	Bebcock Tissue Forceps 8"	4
3.34.	Aliis Tissue Forceps 8"	4
3.35.	Rampley Sponge Holding Forcps 9.5"	2
3.36.	Rib Spreader Medium	1
3.37.	Gritz Rib Cutter / Shear	2
3.38.	Periosteal Elevator	2
3.39.	Towel Clip	6
3.40.	B.P Handle no. 3,4 and 7	3
3.41.	Monihans Forceps Curved 8.5"	2
3.42.	Monihans Forceps Curved 7"	2
3.43.	Cooley Retractor Right and Left	2
3.44.	Vascular Clamps Different Types	4
3.45.	Russion Tissue Forceps 6", 8"	2
3.46.	SS Bowls 4"	2
3.47.	Kidney Tray Large 10"	1
3.48.	Debakey Forccepts 7", 8", 9"	3
3.49.	Instruments Trat Extra-Large Size	1
3.50.	Bronchial Clamp	4

3.51.	Kocker	10
3.52.	Twister	2
3.53.	Wire Holder	2
Tender No: VII		
Vacuum Pump for Central Suction		
1	Type: Rotary Vane Vacuum pumps	
1.1.	Rotary Vane Vacuum Pumps 08 Nos (4 pumps each system separate control panel)	
1.2.	HTM 02-01/ISO7396-1	
1.3.	Net Flow Rate: 15360 L/PM	
1.4.	50 Hz, 7.5 Kw each pump	
1.5.	Vertical Vacuum Receivers-4x2000 liter	
1.6.	Plant Control Panel (Digital) duplex	
1.7.	Installation of Copper piping, G.I pipe for covering	
1.8.	Complete with Material and accessories	
1.9.	To connect with Trauma ICU, Trauma O.T, OT Complex	
1.10.	2 Years critical spares with lubricants etc	
1.11.	Duplex Bacterial filter	
1.12.	Plant internal valves and connections	
1.13.	Certifications: ISO 9001:2008, EN ISO 13485:2012	
1.14.	EC Certificate: 1984-MDD-15-363	
1.15.	ORIGIN: UK, USA, TURKEY, EEC	

Tender No: VIII		
Equipment for Skill Lab		
1	Mixed Reality Headset – Microsoft Hololens 2	Qty: 02
1.1.	Microphone array: 5 channels	
1.2.	Speakers: Built-in spatial sound	
1.3.	Processor: Qualcomm Snapdragon 850	
1.4.	Storage: 64 GB UFS 2.1	
1.5.	Memory: 4 GB LPDDR4x system DRAM	
1.6.	Connection: USB Type-C	
1.7.	Weight: 566g	
1.8.	Battery life: 2-3 hours	
2	Hi-Fidelity Adult Patient Simulator Country of Manufacturer: Europe / UK / USA / Japan	Qty: 01
2.1.	<i>The human patient simulator should comprise of a life like mannequin, Touch Patient Monitor (Simulated) and Instructor's Tablet / PC. Simulator should be integrating with CPR analysis, which must compliant with the American Heart Association's current guidelines with correct hand placement, depth, and rate of compressions being captured</i>	
2.2.	Quality CPR Feedback: The quality of CPR performance is measured, and real-time feedback provided, on compression rate, depth, release, and hands-off time. Palpable pulses, blood pressure wave forms and ECG artifacts are also generated.	
2.3.	Convulsions: Seizures and convulsions can be created, at various degrees, from minor effects through to full convulsions with the Instructor Mode.	

2.4.	Bleeding and Wounds Wound models can be connected to an internal blood reservoir which will bleed both from arterial and venous vessels. Connected to the simulator's physiological modeling, Simulator will react appropriately according to treatment.
2.5.	Wireless Monitor Wireless Patient monitor enables vital signs to be observed whilst moving around freely during training.
2.6.	Secretions Eye secretions feature can simulate responsive reactions to chemical, biological, radiological and nuclear agents.
2.7.	Eye Signs Pupillary responses can simulate a wide range of neurological symptoms. Responses include; to light, blinking (at slow, normal and fast rates) winking as well as open, partially open and closed reactions.
2.8.	Vascular Access Standard vascular access in the left leg, the new intraosseous access via the tibia and sternum allows for procedure accuracy.
2.9.	Chest Decompression & Chest Drain Trainee can perform a needle thoracentesis and insert a chest drain bi-laterally.
2.10.	System should be Wireless & Mobile with both battery & AC power option
2.11.	Simulator Operation should not rely on Anesthesia Gases.
2.12.	Completely wireless and self-contained
2.13.	Internal electrical and pneumatic power
2.14.	Supplemental wired connectivity and power
2.15.	Articulating Arms
2.16.	Wirelessly integrates with existing computer networks
2.17.	Swappable, rechargeable batteries
2.18.	Approximately 4 hours continuous operation in wireless mode
2.19.	Rugged and reliable for use in multiple environments
2.20.	Urine output (variable)
2.21.	Foley catheterization
2.22.	Bowel Sounds – four quadrants
2.23.	Digitally Driven Impulses (total 12)
2.24.	Modifiable Amplitudes and Intensities
2.25.	Speaker for History-taking
2.26.	Interactive Computer Link to saves Instructor time
2.27.	Completely wireless and self-contained
2.28.	Patient Voice Includes: - Pre-recorded sounds - Custom sounds - Instructor can simulate patient's voice wirelessly
2.29.	Instructor Communication - Multiple instructors communicate using integrated voice over IP
2.30.	Completely wireless and self-contained
2.31.	Internal electrical and pneumatic power
2.32.	Supplemental wired connectivity and power
2.33.	Wirelessly integrates with existing computer networks
2.34.	Swappable, rechargeable batteries
2.35.	Approximately 4 hours continuous operation in wireless mode

2.36.	Rugged and reliable for use in multiple environments
2.37.	<p><u>Multiple Airway Skills/Features:</u> Controllable open/closed airway; automatically or manually controlled Head tilt/Chin lift Jaw thrust w/articulated jaw Suctioning (Oral & Nasopharyngeal) Bag-mask ventilation Orotracheal intubation Nasotracheal intubation Combitube, LMA, and other airway placement Endotracheal tube intubation Retrograde intubation Fiberoptic intubation Transtracheal jet ventilation Needle cricothyrotomy Surgical cricothyrotomy Variable lung compliance (4 settings) Variable airway resistance (4 settings) Right main stem intubation Stomach distention</p>
2.38.	<p><u>Airway Complications:</u> Detection of proper head position Can't intubate/Can ventilate Can't intubate/Can't ventilate Tongue edema Pharyngeal swelling Laryngospasm Decreased cervical range of motion Trismus</p>
2.39.	<p><u>Breathing Features:</u> Simulated spontaneous breathing Bilateral and unilateral chest rise and fall CO2 exhalation Normal and abnormal breath sounds (5 anterior auscultation sites, 6 posterior auscultation sites) Oxygen saturation and waveform.</p>
2.40.	<p><u>Breathing Complications:</u> Cyanosis Needle thoracentesis – bi-lateral Unilateral & Bilateral chest movement Unilateral, Bilateral & lobar breath sounds Chest tube insertion – bilateral</p>
2.41.	<p><u>Cardiac Features:</u> Extensive ECG library Heart sounds – four anterior locations ECG rhythm monitoring (4 wire) 12 lead ECG display Defibrillation and cardioversion Pacing</p>
2.42.	<p><u>Circulation Features:</u> Oscillometric BP measurement Carotid, femoral, brachial, radial, dorsalis pedis, popliteal and posterior tibialis pulses synchronized with ECG</p>

	Pulse strength variable with BP Pulse Palpation is detected & logged
2.43.	<u>Vascular Access:</u> Bilateral IV access Bilateral humeral IO access Intraosseous access (tibia) Bilateral deltoid IM
2.44.	<u>CPR:</u> Compliant with Current Guidelines CPR compressions generate palpable pulses, blood pressure wave form, and ECG artefacts Realistic compression depth and resistance Detection of depth, release and frequency of compressions Real time feedback on quality of CPR
2.45.	<u>Eyes:</u> Blinking – slow, normal, fast and winks Open, closed and partially open Pupillary accommodation: Synchrony/ asynchrony Normal and sluggish speed of response
2.46.	<u>Other Features:</u> Seizure/Fasciculation <u>Bleeding</u> Simulation of bleeding at multiple sites Arterial and venous Vital signs automatically respond to blood loss & therapy Works with various wound modules & moulage kits Urine output (variable) Foley catheterization Secretions Eyes, Ears Blood, Mucous, CSF, etc. Diaphoresis Bowel Sounds – four quadrants Patient Voice Pre-recorded sounds Custom sounds Instructor can simulate patient’s voice wirelessly Instructor Communication Multiple instructors communicate using integrated voice over IP Articulating arms SpO2 measurement bilateral (With Pulse Oximeter) Interchangeable head skins
2.47.	<u>Pharmacology:</u> Extensive drug formulary Automatic or programmable physiological responses
2.48.	<u>System Features:</u> Control multiple manikins from one interface Control simulations from anywhere on your network Multiple interfaces can control/observe a single simulation Manual Mode Precise control “on the fly” Design & program custom scenarios Create custom events Run pre-packaged scenarios

2.49.	<p><u>Automatic Mode</u> Physiological & pharmacological models run pre-packaged simulations Unique, simple controls increase/decrease difficulty & pace</p>
2.50.	<p><u>Simulation controls:</u> Fast forward Pause Rewind Save/Restore Profile Editor Future prediction & patient outcome display Integrated video debriefing Data logging Instructor comments</p> <p><u>Patient Monitor:</u> Wireless Highly configurable</p> <p><u>Includes:</u> ECG (2 traces) SpO2 CO2 ABP CVP ICP Anesthetic Agent PH PTC PAP PCWP NIBP TOF Cardiac Output Temperature (core & peripheral) Additional and programmable parameters X-Ray Display 12 Lead ECG Display Custom Image Display Custom Video Display</p> <p><u>Certifications:</u> UL, CE, FCC, CSA</p>
2.51.	<p><u>Tablet features</u> Handheld, intuitive touch screen remote for easy ‘pick up and play experience Operate on-the-fly or utilize Scenarios and Themes for consistent simulation training Optimal data capture for quality debriefing Mobile – teach anywhere Optional patient monitor provides clinical realism</p>
2.52.	<p><u>Amputated Leg:</u> Above simulator must connected with trauma leg with excessive bleeding to replicate the real scenarios. Amputated trauma leg in medium skin tone provides realistic bleeding control that responds to techniques performed during pre-hospital trauma life support training programs.</p> <p><u>Size & Weight:</u> Length: 49 cm / 19.3 in or more Width: 19.4 cm / 7.6 in or more Height: 20.5 cm / 8.07 in or more Weight: 3 kg / 6.6 lbs or more</p>

3	Ear Exam Simulator Country of Manufacturer : USA/UK/Europe/Japan	Qty:01
3.1.	Ear examination simulator must allow the practice in the examination of the ear	
3.2.	The ear examination simulator should consist of a head with 6 interchangeable flexible ears with lifelike external and internal structures of the ear.	
3.3.	Embedded colored prints in 5 out of the 6 ears must allow the diagnosis from ear examination of various pathologies.	
3.4.	It should be used for earwax removal exercises	
3.5.	The ear examination simulator must be supplied with 2 tubes of synthetic earwax, nine 35mm slides.	
3.6.	The following normal conditions and pathologies can be observed:	
3.7.	Normal tympanic membrane	
3.8.	Muroid otitis media	
3.9.	Serous otitis media with fluid level	
3.10.	Chronic otitis media with perforation	
4	Eye Examination Ophthalmology Trainer Country of Manufacturer: USA/UK/Europe/Japan	Qty:01
4.1.	Half Size Torso with casing box for fundus examination with direct ophthalmoscope	
4.2.	Pupil diameter must have the variations of 2.0mm, 3.5mm, 5.0mm	
4.3.	Simulator must have different views such as hyperopic, normal and myopic views	
4.4.	There should possibility of red reflex detection There should be at least findings of 10 common diseases:	
4.5.	Normal eye ground	
4.6.	Hypertensive retinopathy	
4.7.	Simple/background diabetic retinopathy	
4.8.	Papilledema (chronic phase)	
4.9.	Papilledema (acute phase)	
4.10.	Glaucomatous optic atrophyRetinal vein occlusion (acute phase)	
4.11.	Retinal vein occlusion (after retinal laser photocoagulation)	
4.12.	Toxoplasmosis	
4.13.	Age-related macular degeneration: macular exudates and subretinal hemorrhage	
5	Hi-Fidelity Child Patient Simulator Country of Manufacturer: Europe / UK / USA / Japan	Qty:01
5.1.	Specifications Advanced Child patient simulator should be ideal for training in all aspects of pediatric care with realistic anatomy & clinical functionality. Should have a realistic airway, extensive ECG library, defibrillation and pacing capabilities, allows drug administration and intraosseous infusion to help teach the critical skills of managing pediatric emergencies.	
5.2.	Following should be the Main Features of Pediatric Patient Simulator	
5.3.	Completely Wireless Operations	
5.4.	Should replicate 8-12 Year child kid	
5.5.	Many scenarios are mapped directly to standards such as Pediatric Advanced Life Support (PALS) & American Heart Association (AHA)	
5.6.	Suitable for all types of training – from routine care to critical emergencies.	
5.7.	Completely Wireless Operations	
5.8.	Airway features	

5.9.	Auscultation of lung sounds
5.10.	Endotracheal tubes – insertion, securing and care
5.11.	Individual lung or bilateral sound selection
5.12.	Intubation
5.13.	Lung sounds, synchronized with breathing rate
5.14.	Oxygen delivery procedures
5.15.	Right mainstem intubation
5.16.	Sellick maneuver
5.17.	Suctioning techniques
5.18.	NPA/OPA insertion
5.19.	CPR
5.20.	Anatomical Landmarks
5.21.	Abdominal thrust (Heimlich maneuver)
5.22.	Chest compression
5.23.	Bag Valve Mask Ventilations Available
5.24.	Circulation
5.25.	Auscultation of Heart Sounds
5.26.	Auto conversion of ECG w/defibrillation
5.27.	Defibrillation (manual/automatic)
5.28.	Defibrillation sensors
5.29.	ECG monitoring
5.30.	Instructor controlled ECG rhythm
5.31.	Pacing
5.32.	Blood Pressure/ Pulses
5.33.	Adjustable Heart Rate
5.34.	Carotid Pulse Available
5.35.	Gastrointestinal
5.36.	Auscultation of bowel sounds normal/ abnormal available.
5.37.	Circulatory skills and IV drug administration
5.38.	IM Injections
5.39.	Available
5.40.	Realistic Flashback
5.41.	Available
5.42.	Volume Infusion
5.43.	Simulation administration
5.44.	Create and edit Scenarios
5.45.	Event logging
5.46.	Remote Control
5.47.	Debriefing
5.48.	Debriefing through recorded events
5.49.	Extrication / Immobilization
5.50.	Victim handling
5.51.	Preventive maintenance
5.52.	Vocal sounds
5.53.	Live Vocal Sounds (wireless or wired mic)

5.54.	Vocal sounds	
5.55.	Instructor PC/Tablet Features:	
5.56.	Handheld, intuitive touchscreen remote for easy ‘pick up and play’ experience	
5.57.	Operate on-the-fly or utilize Scenarios and Themes for consistent simulation training	
5.58.	Optimal data capture for quality debriefing	
5.59.	Mobile – teach anywhere	
5.60.	Optional patient monitor provides clinical realism	
6	Hi-Fidelity Infant NRP Manikin Country of Manufacturer: Europe / UK / USA / Japan	Qty:01
6.1.	An anatomically correct manikin of a baby born at 25 weeks – Premature that should help healthcare professionals to:	
6.2.	Refine standard practices for various challenges presented in premature newborns	
6.3.	Integrate the latest technologies into preterm infant training programs	
6.4.	Master the skills needed to care for preterm infants, improving patient outcomes	
6.5.	Airway Features	
6.6.	Anatomically accurate, realistic airway	
6.7.	ET tube insertion	
6.8.	Sellick Maneuver	
6.9.	Positive Pressure Ventilation	
6.10.	Right mainstem intubation	
6.11.	Suctioning	
6.12.	OG/NG tube insertion	
6.13.	Breathing Features	
6.14.	Bilateral and unilateral chest rise and fall with mechanical ventilation	
6.15.	Cyanosis	
6.16.	Breathing Complications	
6.17.	Unilateral chest movement (right mainstem intubation) with mechanical ventilation	
6.18.	Cardiac	
6.19.	Realistic Compressions	
6.20.	Vascular Access	
6.21.	Patent, cuttable umbilicus with venous and arterial access for bolus or infusion	
6.22.	Simulated blood flashback upon cannulation of umbilical vein	
6.23.	Peripheral IV access (dry ports only)	
6.24.	Sounds	
6.25.	Auscultation of lung sounds during ventilation	
6.26.	Heart sounds	
6.27.	Vocal sounds	
6.28.	Manikin Should Deliver With:	
6.29.	Premature Manikin, Tablet, NRP Scenarios (8 pre-loaded), Premature Software for tablet (pre-loaded), Hat/Blanket, Umbilical Cords (3), Birthing Lubricant, Airway Lubricant, 3M Tape, 42mm Facemask, 10ml Syringe, Umbilical Blood Concentrate IPI and User Guide.	
7	Airway Management Trainer Country of Manufacturer: Europe / UK / USA / Japan	Qty:01
7.1.	It should contain following features:	
7.2.	Realistic representation of human anatomy, tissue, and skin	

7.3.	It must allow students to undertake training that is directly transferable to the clinical setting	
7.4.	Procedure for clearing an obstructed airway and suctioning of liquid foreign matter	
7.5.	Minimal maintenance and robust design deliver cost effective training	
7.6.	Base plate mount allows stable practicing conditions	
7.7.	A hard carry case provides easy transportation and safe storage Product features:	
7.8.	Practicing of oral and nasal intubation	
7.9.	Practicing use of LMA (Laryngeal Mask Airway) and Combitube	
7.10.	Correct tube placement can be checked by practical inflation test	
7.11.	Realistic anatomical features allow demonstration of Sellick Maneuver and laryngospasm	
7.12.	Bag-Valve-Mask ventilation can be practiced	
7.13.	Stomach inflation and vomiting situation can be simulated	
7.14.	Provides visual inspection of lung expansion	
7.15.	Provides auscultation of breath sounds	
8	Birthing Simulator Country of Manufacturer: Europe / UK / USA / Japan	Qty:01
8.1.	Birthing Simulator should have anatomically correct representation of a mother and baby. Its modular design allows for multiple training scenarios, and it forms the base for the complete range of birthing modules.	
8.2.	The birthing trainer offers a hybrid solution to your training needs. Quick and easy to set up straight from the box you are able to:	
8.3.	-Use as a stand-alone model for group learning -Secure to a bench top or bed for a more realistic bedside scenario to improve professional-patient communications	
8.4.	In addition to the functionality of the version of the manikin has a Bluetooth enabled Force Monitoring baby.	
8.5.	During labor there is a threshold of force that can result in brachial plexus injury during shoulder dystocia. The Force Monitoring Baby measures the force applied by trainees during drills. In conjunction with the Birthing Simulator Software, instructors have the ability to record actions and interventions made, and the time to deliver the baby.	
8.6.	A simple meter mode in the software allows trainees valuable practice in applying force to the baby outside of the context of a scenario – enabling them to become familiar with the feel of both safe and excessive force before encountering a real obstetric emergency.	
8.7.	REALISM	
8.8.	Suitable for use with Simulated/Standardized Patient	
8.9.	Realistic pelvic floor	
8.10.	Articulating thighs for McRobert’s procedure	
8.11.	Stretchable perineum	
8.12.	Soft, flexible birthing canal	
8.13.	VERSATILITY	
8.14.	Additional modules available to extend training:	
8.15.	Post-Partum Hemorrhage management	
8.16.	C-section	
8.17.	Cervical Dilatation and Effacement	
8.18.	Optional lower legs for all fours position	
8.19.	Supports bench top training or hybrid simulation	
8.20.	ANATOMY	

8.21.	Birth canal and cervix	
8.22.	Ischial spines and pubic bone	
8.23.	Gynaecoid pelvis	
8.24.	Articulating thighs	
8.25.	Fully articulated baby with clavicles, fontanelles, flexible head, detachable umbilical cord and placenta	
8.26.	Birth canal and cervix	
8.27.	Mandatory Features	
8.28.	Training and practice in the following types of birth:	
8.29.	Normal	
8.30.	Vaginal breech	
8.31.	Shoulder dystocia with *force feedback*	
8.32.	Vaginal assisted (forceps and vacuum devices)	
8.33.	Third stage of labor	
8.34.	Cord prolapse	
8.35.	Urinary catheter placement	
8.36.	IM injection	
8.37.	Communication and teamwork skills	
9	Suture Practice Arm Country of Manufacturer: USA/UK/Europe/ Japan	Qty:01
9.1.	Suture Training Arm should offer the possibility for suture training that more complex than with regular suture pads.	
9.2.	It should be movable hand and fingers, even challenging sutures in hard-to-reach places like between the fingers can be practiced. Both the skin and the subcutaneous tissue are represented for a life-like suturing experience.	
9.3.	The instructor can inflict wounds independently wherever needed on the arm. Their size and form can be customized, leaving room for a large variety of training possibilities. Additionally, each wound can be sutured several times, making the trainer very economic and suitable even for larger skill training classes	
9.4.	Movable fingers for suture training of challenging wounds between fingers	
9.5.	Skin and subcutaneous tissue differentiated for realistic suture experience	
9.6.	Wounds can be inflicted by instructor anywhere on the training arm	
9.7.	Each cut can be sutured several times	
9.8.	Surgical staples procedure possible	
9.9.	Suture Training Arm should offer the possibility for suture training that more complex than with regular suture pads.	
10	Replacement Parts for Existing Manikin in Skills Lab Country of Manufacturer: Europe / UK / USA / Japan / Canada.	Qty:01 Each
10.1.	Specifications:	
10.2.	Replacement part for Chest Drain & needle decompression trainer (Limbs & Things)	
10.3.	Needle decompression Pads (pack of 2)	
10.4.	Advanced chest drain pads (pack of 2)	
10.5.	Standard chest drain pads (pack of 2)	
10.6.	Replacement part for CVC Insertion Simulator II (Kyoto Kagaku)	
10.7.	2 Ultrasound Puncture Pads for CVC Simulator	
10.8.	Replacement part for MegaCode Kelly Manikin (Laerdal Medical)	
10.9.	Skin & Vein set.	

10.10.	Modules Chest Tubes, Replacement chest tube insertion modules in tan skin tone	
11	Virtual Reality Laparoscopy Simulator Country of Manufacturer: Europe / UK / USA / Japan / Canada	Qty:01
11.1.	The Simulator should consist of following features:	
11.2.	HARDWARE SPECIFICATIONS	
11.3.	HAPTIC FEEDBACK ENABLED SYSTEM	
11.4.	Two working instruments.	
11.5.	Monitor (Min 24 Inches).	
11.6.	Simulator has a camera head with full functionality: zoom, focus, and light intensity.	
11.7.	The Simulator has a haptic system with an intuitive touchpad control.	
11.8.	System has the option of video recording for training session inside the system.	
11.9.	FURTHER HARDWARE SPECIFICATIONS	
11.10.	The Simulator must allow for height adjustability of simulator cart	
11.11.	The system should be fully computerized and interactive.	
11.12.	The system should run on a PC.	
11.13.	The system should be CE certified.	
11.14.	Foot pedals should be used for electrosurgical coagulation and cutting.	
11.15.	The system should consist of motion detection with 5 degrees of freedom: insertion (front/back), pitch (up/down), yaw (left/right), handle twist and opening/closing the handle.	
11.16.	The system should offer haptic (force) feedback with 3 degrees of freedom: insertion, pitch, and yaw.	
11.17.	The simulator cart should run on wheels for easy movability.	
11.18.	The system should have a designated side touch panel for easy-access exercise management.	
11.19.	The system should consist of a minimum 27" main monitor.	
11.20.	The simulator height should be able to adjust electrically.	
11.21.	The system should be able to provide comprehensive training in the field of laparoscopic surgery.	
11.22.	The system should allow for a team of surgeon + assistant to handle instruments and camera individually but simultaneously on the same screen.	
11.23.	The camera should allow for adjustments of:	
11.24.	Angled optics	
11.25.	Zoom	
11.26.	ADDITIONAL SPECIFICATIONS	
11.27.	Instructions including videos should be part of exercise packages.	
11.28.	Configuration possibilities of all exercises should be included to be able to adjust difficulty levels and challenges.	
11.29.	A preset default library of courses should be included upon delivery.	
11.30.	Performance feedback should be available for exercise debriefing and course management: learning curves, errors, suggestions for improvement, and video recording of each session.	
11.31.	Pass/fail values for each exercise should be configurable, and should be able to import directly from experts/instructor's own performance.	
11.32.	Extended statistics on trainee/group performance should be available for instructor in admin mode.	
11.33.	The admin mode should be able to sort courses per instructor.	
11.34.	An on-screen survey function should be available with the system: possibility to tailor questions to the trainees as part of a training session.	

11.35.	A certification print-out function should be available: possibility to configure a certificate pdf file including any preferred imported logo, and auto-import trainee names and results from course management system.
11.36.	The system should not be dependent on online services, but should be able to run alone (within firewalls).
11.37.	THE SYSTEM SHOULD ALLOW FOR TRAINING ON FUNDAMENTAL DEXTERITY (BASIC SKILLS) SUCH AS
11.38.	Camera Navigation
11.39.	Coordination
11.40.	Lifting & Grasping
11.41.	Clip Applying
11.42.	Instrument Navigation
11.43.	Grasping
11.44.	Cutting
11.45.	Fine Dissection
11.46.	Bowel Handling
11.47.	Precision & Speed
11.48.	Suturing
11.49.	Seal & Cut
11.50.	Catheter Insertion
11.51.	Task Training
11.52.	Camera Anatomy Training
11.53.	MODULES INCLUSIVE (Any Four Modules)
11.54.	CHOLECYSTECTOMY From clipping the cystic duct to removing the gall bladder, the Cholecystectomy Module simulates each critical step in this frequently performed laparoscopic procedure. With this scenario and skills-based customization, instructors can introduce complications and target specific skill development while driving procedural excellence. When removing the gallbladder, system allows for measuring that trainee systematically works clockwise/anti-clockwise when retracting the bladder in different directions to present it to the dissecting instrument.
11.55.	Key Training Simulations: Clipping the cystic duct Dissection of the hepatocytes triangle Dissection and freeing of gallbladder from the cystic plate Removing the gallbladder
11.56.	The Cholecystectomy Module should also feature the interactive software, designed to advance trainees' cognitive proficiency and decision-making abilities as tactile skills are honed.
11.57.	APPENDECTOMY The Appendectomy Module is designed to introduce residents to one of the most frequently performed surgeries in hospital Ors. This scenario-based simulation module will continually challenge trainees' procedural knowledge and decision-making skills with extensive pathology variations and complications. The full procedure can now be made completely by free-hand, an unguided approach to the appendix, with both subcecal and retrocecal anatomy.
11.58.	Key Training Simulations: Dissect and free the base of the appendix Divide the appendix transversally at the base

	Removal of the appendix
11.59.	<p>NEPHRECTOMY</p> <p>The Nephrectomy Module features procedural deconstruction capabilities simulating the surgical removal of the kidney.</p> <p>The Nephrectomy Module includes three training tasks:</p> <ul style="list-style-type: none"> Kidney clips Kidney dissection Camera Management Exercise
11.60.	<p>Key Training Simulations:</p> <ul style="list-style-type: none"> Kidney clips Kidney dissection
11.61.	<p>Following Software modules are available for future upgradation of the simulator & these are quoted separately in financial bid.</p>
11.62.	<p>VIDEO-ASSISTED THORACOSCOPIC SURGERY (VATS) LOBECTOMY</p> <p>The VATS module offers training on key steps in the removal of the selected lung lobe, utilizing a three-port anterior approach. All 5 lobes are represented. Key training elements are dissection of the hilum/vessels, identification of the vessels, use of the elastic vessel rubber loop, sequential stapling of the veins, arteries, bronchus and fissure , bleeding control and avoid critical structures, ex. The Phrenic nerve. Bipolar vessel sealer/divider is available, in addition to the various stapler instruments.</p>
11.63.	<p>GYNECOLOGY – CORE PROCEDURES</p> <p>Gynecology Module has been proven to provide significant improvement in trainees’ skills before they step foot in an operating room. Now available on the latest technology platform together with new graphics and fresh visual look. Together with amended tactile feedback and improved feeling of tissue handling the experience is improved. Including cutting edge simulations of four procedures: Tubal occlusion, Salpingectomy, Salpingectomy and Myoma suturing.</p>
11.64.	<p>HYSTERECTOMY</p> <p>Simulating the critical steps of a laparoscopic hysterectomy procedure, the Hysterectomy Module offers a comprehensive and customizable virtual training experience. With the integrated component, trainees must demonstrate both critical knowledge and hands-on proficiency.</p> <p>Should be designed for the Hysterectomy module that includes right and left uterine artery dissection, creation of bladder flap, vaginal cuff opening, & suturing of the cuff after removal of the uterus.</p>
11.65.	<p>SUTURING & ANASTOMOSIS</p> <p>Building on the foundational elements of Basic Skills, the Suturing & Anastomosis Module challenges learners with a progressively complex, stepwise approach to suturing and knot tying techniques. Fully customizable to meet individual trainee’s skills and training needs, the Suturing & Anastomosis Module includes ten successive exercises.</p>
11.66.	<p>BARIATICS</p> <p>The Bariatrics Module features procedural deconstruction capabilities simulating various bariatric training tasks. Includes simulations of four training tasks: lap-band suturing, jejunal suturing, inspect and measure the bowel.</p>
11.67.	<p>Key Training Simulations:</p> <ul style="list-style-type: none"> Lap-band suturing Jejunal suturing Inspect the bowel Measure the bowel

11.68.	<p>INGUINAL HERNIA Inguinal Hernia you are able to train on the key steps of the procedure using the Totally Extra peritoneal (TEP) approach, where the hernia sac is returned into the abdominal cavity. The key steps are identification of different structures, dissection of adhesions, relating to the critical structures, as well as mobilization and reduction of the hernia sac and fixation of the mesh with a correct use of sealant. The anatomical landmarks included in the Inguinal Hernia procedure are epigastric vessels, triangle of doom, triangle of pain, vas deferens, gonadal vessels and Cooper’s ligament</p>
11.69.	<p>Key Training Simulations: Understanding how a dissection and division of the Ileocolic Vein and Artery is performed in a laparoscopic environment performing a right-sided hemicolectomy, using a medial-to-lateral approach, and a selection of instruments. Careful creation of window inferior to pedicle, using “Purple Down” technique, for safe exposure of the Ileocolic vessels. Relating to the duodenum and Superior Mesenteric Artery and other critical tissues.</p>
12	<p>CATH Lab – Virtual Reality Training Simulator Country of Manufacturer: Sweden – Port of Shipment: Any Airport of Sweden Quantity: 01</p> <p>Technical Specifications: This simulator gives a true-to-life Cath Lab/ Hybrid Operating Room clinical environment, ergonomically designed and optimized for training of interventional teams.</p> <ul style="list-style-type: none"> • Simulator works on haptic mechanism. • Stationary simulation solution, combining realism, ergonomics and ultimate flexibility. • Life-size patient mannequin provides a realistic team training experience • Real time fluoroscopy, cineangiography, DSA and road mapping • Real Time Ultrasound (IVUS, ICE, TEE) • Ability to connect to a real c-arm • A wide selection of interventional devices • Simulated deployment systems are based on actual devices • Responsive vital signs monitor • Extensive medication panel • Complex scenarios with real time complications • Comprehensive performance metrics • Unique basic skills modules • Self-guided tutorial cases and ready-made curricula • A variety of educational features to establish anatomical and procedural knowledge • Actual C-arm and TEE probe integration (<i>possibility</i>) • Life-size patient mannequin with 05 access sites • Adjustable table height and control panel position • Radiation awareness training using AR application (<i>Optional</i>) • Following Mandatory Software Modules are a part of package (Endovascular Basic Skills – EP Basic Skills – Cardio Basic Skills – C-arm Basic Skills)
12.1.	<p>Following software modules are quoted with Angio Mentor Suite II. AORTIC INTERVENTIONS 1. EVAR 2. TEVAR</p>

	<p>3. Advanced TEVAR</p> <p>PERIPHERAL INTERVENTIONS</p> <p>4. Renal</p> <p>5. SFA</p> <p>6. Iliac</p> <p>7. BTK</p> <p>8. Peripheral Embolization AR</p> <p>9. Lower Extremities CTO</p> <p>10. Atherectomy</p> <p>11. Embolotherapy</p> <p>12. Venous Intervention</p> <p>13. Iliofemoral Obstruction</p> <p>14. Advanced Embolization</p> <p>15. Trauma Management</p> <p>16. Prostatic Artery Embolization</p> <p>17. Renal Denervation</p> <p>Neurovascular Intervention Modules</p> <p>18. Carotid Intervention</p> <p>19. Cerebral Intervention</p> <p>20. Acute Ischemic Stroke AR</p> <p>21. Transradial Cerebral Intervention</p> <p>Interventional Cardiology Modules</p> <p>22. Coronary Intervention AR</p> <p>23. Transradial Coronary Intervention</p> <p>24. Coronary Bifurcation</p> <p>25. Coronary CTO</p> <p>Structural Heart Modules</p> <p>26. ASD/PFO Closure</p> <p>27. LAA Closure</p> <p>28. Aortic Valve Replacement (TAVI)</p> <p>29. TEE</p> <p>Electrophysiology Modules</p> <p>30. Cardiac Rhythm Management (CRM)</p> <p>31. Transseptal Puncture Live TEE</p> <p>32. AF Ablation AR</p> <p>33. ICE Trainer</p> <p>34. EP Mapping</p>
13	<p>Adult Quality CPR Mannequin</p> <p>Quantity: 01</p> <p>Country of Manufacturer: Europe / UK / USA / Japan</p> <p>Technical Features</p> <p>Manikin should be Standardized Adult sized CPR Torso, providing feedback based on just watching students perform can be challenging for instructors. QCPR measurement and feedback technology that takes the guesswork out of instruction – all from the palm of your hand. Manikin should work with an QCPR Training app that allows to monitor and connects up to six Manikins at once, students can monitor their own performance on their own feedback device (iOS / Android)</p> <ul style="list-style-type: none"> • Airway Feature <ul style="list-style-type: none"> • Realistic chest rises and fall • Jaw thrust maneuver (movable jaw)

	<ul style="list-style-type: none"> • Airway closes when neck is under-extended • Nasal passages open for nose pinch <ul style="list-style-type: none"> • CPR <ul style="list-style-type: none"> • Correct Anatomical Landmarks • Compression feedback from clicker device • Compression measurement feedback on any iOS / Android device • Ventilation measurement feedback on any iOS / Android device • Mouth-to-Mouth ventilations • Chest compression • Head tilt/Chin lift maneuver • Ventilations with visible chest rise • Bag Valve Mask ventilations • Simulation Administration <ul style="list-style-type: none"> • Software application connectivity for feedback through any iOS / Android device • Real-time feedback on compressions and ventilations A performance summary with an overall score and improvement suggestion • Details on compression release, depth and rate, ventilation volume, and number of compressions/ventilations/cycles 	
14	Sim-Man 3G mannequin	Qty: 01
14.1.	Completely wireless and self-contained.	
14.2.	Internal electrical and pneumatic power.	
14.3.	Supplemental wired connectivity and power.	
14.4.	Wirelessly integrates with existing computer networks.	
14.5.	Swappable, rechargeable batteries.	
14.6.	Approximately 4 hour's continuous operation in wireless mode.	
14.7.	<i>Sim-Man 3G</i> is an adult life-size wireless <i>manikin</i> , with internal battery power, internal air compressor and fluid reservoirs.	
14.8.	Extensive ECG library · Heart sounds – 4 anterior locations · Simulated ECG rhythm monitoring (4 lead) · ECG Monitoring 3 and 5 lead · 12-Lead ECG ...	
15	Slit Lamp	Qty: 01
15.1.	Galilean type converging binocular microscope type.	
15.2.	At least 2/3/5 step magnification.	
15.3.	Should have real fields of view of 23mm to 5.6 mm dia.	
15.4.	Interpupillary adjustment of at least 55 to 75 mm.	
15.5.	Slit width from at least 0 to 14mm continuously variable.	
15.6.	Slit inclination from 0 to 200.	
15.7.	Heat absorbing, red free, cobalt blue filters.	
15.8.	Should operate from 200 to 240 Vac, 50 HZ in input supply.	
15.9.	Should be supplied with motorized table.	
15.10.	Should have a longitudinal movement of at least 90 mm.	
15.11.	Should have a lateral movement of at least 95 mm.	
15.12.	Should have a vertical movement of at least 30mm.	
15.13.	Should have a chin rest vertical movement of at least 55 mm.	
15.14.	Should have good illumination using Halogen /xenon lamps.	
15.15.	Should have a slit length 0 to 14 mm continuously variable.	

16	Models Eyes, Ears with Pathology, including 3B smart Anatomy	Qty: 01
16.1.	Color: White, Red	
16.2.	Height (Metric): 21 cm	
16.3.	Length (Metric): 26 cm	
16.4.	Weight (Metric): 0.99 kg	
16.5.	Product Type: Anatomical Model	
16.6.	Includes: Model, Stand	
16.7.	Material: Plastic	
16.8.	Size: 5x Life-size	
16.9.	Width (Metric): 26 cm	
16.10.	Complex hand painted reproduction of a human eye in about 4 times life size. The model includes two halves of sclera with retina and eye muscle attachments as well as vitreous humour, lens, cornea and iris. The model has 6 parts in total. It can be removed from the stand. Size of Eye: 10 x 10 x 12 cm, model size with stand: 12 x 12 x 15 cm, weight: 0.4 kg Augmented- Anatomy- App The new Augmented Anatomy App in combination with this high quality anatomical model makes learning.	
16.11.	Ears Model: This model shows the details of the external, middle and inner ear in three times life size. The eardrum with malleus, incus and stapes can be removed. Additional removable part is the cochlea and labyrinth with vestibular and cochlear nerves, one half of the cochlea can be removed. Mounted on baseboard. Size: 36 x 16 x 20 cm, weight: 75nterfa. 1 kg Augmented- Anatomy- App The new Augmented Anatomy App in combination with this high quality anatomical model makes learning now even easier and more efficient!	
17	C-MAC Video Laryngoscope & Flexible Intubation.	Qty: 01
17.1.	Airway management training manikin Keys features & Equipments: The C-MAC® FIVE S Single-use Scope Solutions in the ED FOR U.S. USE ONLY The C-MAC® FIVE S Single-use Flexible Intubation Video Endoscope and Rhinolaryngoscope FIVE 3.5 mm x 65 cm	
17.2.	The C-MAC S single-use video laryngoscope is available in several blade styles and sizes. The one-piece blade and handle is disposable, while the reusable imager is easy to disinfect	
17.3.	Laryngoscope shape MACINTOSH	
17.4.	Direction of view0°	
17.5.	Working length104 mm	
17.6.	Width of handle25 mm	
17.7.	Width at distal end18 mm	
17.8.	Length146 mmHeight136 mm	
17.9.	Field of applicationadultsTechnology / visualization typeCMOS	
17.10.	System 75nterface-MAC®	
17.11.	Recommended min. catheter introduction size14 Fr.	
17.12.	Recommended max. catheter introduction size16 Fr.	
17.13.	Resolution1280 x 800 px	
17.14.	Illumination2x LED, white,	
17.15.	1 WIP protection classIPX8	
17.16.	Documentation option yes	
17.17.	Angle of view70°Blade size3BrandC-MAC®	

17.18.	<ul style="list-style-type: none"> The ergonomic benefits and functional advantages of the C-MAC® Video Laryngoscope, part of the C-MAC® Premium Class products, are outlined in this presentation. C-MAC® Video Laryngoscopes offer a number of preferred blade options, including dBLADE and Pediatric blades for handling difficult intubations. The video also describes the design features that help facilitate processing, as well as the video laryngoscope's plug-and-play functionality. The C-MAC® Pocket Monitor is also described, which offers a small LCD monitor that provides bright, high contrast images, as well as the convenience of an exchangeable battery. 	
17.19.	<ul style="list-style-type: none"> Monitor, battery, reusable blade or single-use imager, all wrapped up in a compact package: the C-MAC PM. Flip open the screen to turn the unit on, and push a single button to operate. This quick video shows you how. 	
18	Birthing mannequin	Qty: 01
18.1.	<ul style="list-style-type: none"> Postpartum Hemorrhage (PPH) 	
18.2.	<ul style="list-style-type: none"> Enhanced C-Section 	
18.3.	<ul style="list-style-type: none"> Cervical Dilatation & Effacement (CD&E) 	
18.4.	<ul style="list-style-type: none"> Cervical Cerclage 	
18.5.	<ul style="list-style-type: none"> Lower Legs 	
18.6.	<ul style="list-style-type: none"> Maternal Hemorrhage Simulator 	
18.7.	<ul style="list-style-type: none"> Improved shoulder and hip joints 	
18.8.	<ul style="list-style-type: none"> Realistic pelvic floor 	
19	Pediatric mannequin	Qty: 01
19.1.	<ul style="list-style-type: none"> The material of the mannequin should be of polyvinyl and silicone rubber, free from any carcinogenic agents. 	
19.2.	<ul style="list-style-type: none"> The texture of mannequin should be soft and smooth and close to the feel of baby/adult skin as relevant. The texture must be friction free to demonstrate the desired procedure. 	
19.3.	<ul style="list-style-type: none"> The internal part of mannequin must be realistically sculpted, anatomically accurate and feel must be smooth/resilient bony as relevant and suitable for simulation. 	
20	Nerve block simulators	Qty: 01
20.1	<p>Absolute must for anyone wanting to start utilizing point of care ultrasound Facilitates acquisition of essential skills of using ultrasound Allows needle-target practice in plane and out of plane Artery; Vein; Nerve NYSORA SIMULATORS™ facilitate ultrasound skill acquisition and retention. Each simulator includes relevant anatomy, allows for needle insertion and injection, thus providing a complete educational experience. NYSORA's Ultrasound Simulators also facilitate the learning of anatomy and they can be used for testing knowledge acquisition and certification. NYSORA SIMULATORS™ are designed for durability, ease of transportation and storage. All simulators feature accurate essential anatomy, small footprint, and replaceable inserts, as well as actual ultrasound images with labeled structures for practice. Each simulator utilizes TISSUE SIMULATOR™ Technology and optimizes the development of specific knowledge and skills using landmark and ultrasound-guided procedural techniques.</p>	
21	Suturing mannequins	Qty: 01
21.1.	Material: PVC	
21.2.	Surgical suture dressing display model Can be used to practice and improve the care of various wounds, surgical Stitching and dressing display.	
21.3.	<ul style="list-style-type: none"> Thyroidectomy 	
21.4.	<ul style="list-style-type: none"> Sternotomy 	
21.5.	<ul style="list-style-type: none"> Mastectomy 	

21.6.	• Cholecystectomy	
21.7.	• Abdominal exploration	
21.8.	• Appendectomy	
21.9.	• Colostomy	
21.10.	• Ileostomy	
21.11.	• Compound hysterectomy	
21.12.	• Thoracotomy	
21.13.	• Nephrectomy	
21.14.	• Laminectomy	
21.15.	• Second-stage bedsore	
21.16.	• Amputation	
22	Replacement parts for mannequin	Qty: 01
22.1.	Male Torso 15 Parts Mannequin 28cm Human Body Model Human torso Anatomy Model Human.	
22.2.	• Spot Light Presentation Remote	Qty: 01
22.3.	• (Logitech) An Advanced digital pointer that works in-person virtually, or a hybrid of both.	
23	Dell Alienware X16	Qty: 01
23.1.	• Processor: 13 th Gen Intel Core i9-13900HX (24 MB cache, 14 cores, 20 threads, up to 5.40 GHz Turbo)	
23.2.	• Operating System: Windows 11 Pro, English, French, Spanish	
23.3.	• Graphics Card: NVIDIA GeForce RTX™ 4090, 16 GB GDDR6	
23.4.	• Display: 16" QHD+ (2560 x 1600) 240Hz, 3ms, Non-Touch, 100% DCI-P3, 3ms, Advanced Optimus, CV Plus, NVIDIA G-SYNC	
23.5.	• Memory: 32 GB: LPDDR5, 6000 MT/s (Onboard)	
23.6.	• Storage: 2 TB RAID 0 (2 x 1 TB), M.2, PCIe NVMe, SSD	
24	Dell Alienware m18	Qty: 01
24.1.	• Processor: 13 th Gen Intel Core i9-13900HX (36 MB cache, 24 cores, 32 threads, up to 5.40 GHz Turbo)	
24.2.	• Operating System: Windows 11 Home, English, French, Spanish	
24.3.	• Graphics Card: NVIDIA GeForce RTX™ 4090, 16 GB GDDR6	
24.4.	• Display: 16" QHD+ (2560 x 1600) 240Hz, 3ms, Comfort View Plus, NVIDIA G-SYNC + DDS. 100% DCI-P3, FHD IR Camera.	
24.5.	• Memory: 64 GB: 2 x 32 GB, DDR5, 4800 MT/s	
24.6.	• Storage: 2 TB, M.2, PCIe NVMe, SSD	
24.7.	• Case: Dark Metallic Moon	
25	Dell Alienware m18	Qty: 01
25.1.	• Processor: 13 th Gen Intel Core i9-13900HX (36 MB cache, 24 cores, 32 threads, up to 5.40 GHz Turbo)	
25.2.	• Operating System: Windows 11 Home, English, French, Spanish	
25.3.	• Graphics Card: NVIDIA GeForce RTX™ 4090, 16 GB GDDR6	
25.4.	• Display: 18" FHD+ (1920 x 1200) 480Hz, 3ms, Comfort View Plus, NVIDIA G-SYNC + DDS. 100% DCI-P3, FHD IR Camera.	
25.5.	• Memory: 64 GB: 2 x 32 GB, DDR5, 4800 MT/s	
25.6.	• Storage: 4 TB, M.2, PCIe NVMe, SSD	
25.7.	• Case: Dark Metallic Moon	
26	Apple MacBook Pro 16 inch (Space Black)	Qty: 01

26.1.	Apple M3 chip with 8-core CPU with 4 performance cores and 4 efficiency core, 10-core GPU, and 16-core Neural Engine.	
26.2.	<ul style="list-style-type: none"> • 2TB SSD Storage 	
26.3.	<ul style="list-style-type: none"> • 16GB unified memory 	
26.4.	<ul style="list-style-type: none"> • Two Thunderbolt / USB 4 ports 	
26.5.	<ul style="list-style-type: none"> • Two USB 3 ports 	
26.6.	<ul style="list-style-type: none"> • Gigabit Ethernet 	
26.7.	<ul style="list-style-type: none"> • Magic Mouse 	
26.8.	<ul style="list-style-type: none"> • Magic Keyboard with Touch ID – US English 	
26.9.	<ul style="list-style-type: none"> • Accessory Kit 	
27	Apple MacBook Pro 16 inch (Space Black)	Qty: 01
27.1.	<ul style="list-style-type: none"> • Apple M3 Max chip with 14-core CPU, 30 – Core GPU, 16 – Core Neural Engine. 	
27.2.	<ul style="list-style-type: none"> • 1TB SSD Storage 	
27.3.	36GB unified memory	
27.4.	16 – Inch Liquid Retina XDR Display ²	
27.5.	140W USB-C Power Adapter	
27.6.	<ul style="list-style-type: none"> • Three Thunderbolt 4 ports, HDMI port, SDXC card slot, Headphone Jack, MagSafe 3 port. 	
27.7.	<ul style="list-style-type: none"> • Black Magic Keyboard with Touch ID – US English 	
27.8.	<ul style="list-style-type: none"> • Accessory Kit 	
28	Samsung Galaxy Z Flip 5	Qty: 01
28.1.	<ul style="list-style-type: none"> • Processor: CPU Speed: 3.36GHz, 2.8GHz, 2GHz, CPU Type: Octa-Core 	
28.2.	<ul style="list-style-type: none"> • Display: Size (Main Display): 170.3mm (6.7"), Resolution (Main Display): 2640 x 1080 (FHD+), Technology (Main Display: Dynamic AMOLED 2X, Color Depth (Main Display: 16M, Max Refresh Rate (Main Display: 120 Hz, Size (Sub Display): 86.1mm (3.4", Resolution (Sub Display): 720 x 748, Technology (Sub Display): Super AMOLED, Color Depth (Sub Display): 16M 	
28.3.	<ul style="list-style-type: none"> • Camera: Rear Camera - Resolution (Multiple): 12.0 MP + 12.0 MP, Rear Camera - F Number (Multiple): F1.8 , F2.2, Rear Camera - Auto Focus: Yes, Rear Camera – OIS: Yes, Rear Camera – Zoom: Digital Zoom up to 10x, Front Camera – Resolution: 10.0 MP, Front Camera - F Number: F2.2, Front Camera - Auto Focus: No, Rear Camera – Flash: Yes, Video Recording Resolution: UHD 4K (3840 x 2160) @60fps, Slow Motion: 960fps @FHD, 240fps @FHD 	
28.4.	<ul style="list-style-type: none"> • Storage/Memory: Memory_(GB):8, Storage (GB):512, Available Storage (GB):453.7 	
28.5.	<ul style="list-style-type: none"> • Network/Bearer: Number of SIM:Dual-SIM, SIM Slot Type: SIM 1 + Embedded SIM, Infra: 2G GSM, 3G WCDMA, 4G LTE FDD, 4G LTE TDD, 5G Sub6 FDD, 5G Sub6 TDD, 2G GSM: GSM850, GSM900, DCS1800, PCS1900, 3G UMTS: B1(2100), B2(1900), B4(AWS), B5(850), B8(900), 4G FDD LTE: B1(2100), B2(1900), B3(1800), B4(AWS), B5(850), B7(2600), B8(900), B12(700), B13(700), B17(700), B18(800), B19(800), B20(800), B25(1900), B26(850), B28(700), B66(AWS-3), 4G TDD LTE: B38(2600), B39(1900), B40(2300), B41(2500), 5G FDD Sub6: N1(2100), N2(1900), N3(1800), N5(850), N7(2600), N8(900), N12(700), N20(800), N25(1900), N28(700), N66(AWS-3), 5G TDD Sub6: N38(2600), N40(2300), N41(2500), N77(3700), N78(3500) 	

28.6.	<ul style="list-style-type: none"> • Connectivity: USB Interface: USB Type-C, USB Version: USB 3.2 Gen 1, Location Technology: GPS, Glonass, Beidou, Galileo, QZSS, Earjack: USB Type-C, MHL: No, Wi-Fi: 802.11 a/b/g/n/ac/ax 2.4G+5GHz+6GHz, HE160, MIMO, 1024-QAM, Wi-Fi Direct: Yes, Bluetooth Version: Bluetooth v5.3, NFC: Yes, PC Sync.: Smart Switch (PC version). 	
28.7.	<ul style="list-style-type: none"> • OS: Android 	
28.8.	<ul style="list-style-type: none"> • General Information: Form Factor: Flip 	
28.9.	<ul style="list-style-type: none"> • Sensors: Accelerometer, Barometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, Light Sensor, Proximity Sensor 	
28.10.	<ul style="list-style-type: none"> • Physical specification: Dimension (HxWxD, mm): 165.1 x 71.9 x 6.9, Dimension when folded (HxWxD, mm): 85.1 x 71.9 x 15.1--, Weight (g): 187 	
28.11.	<ul style="list-style-type: none"> • Battery: Internet Usage Time(LTE) (Hours): Up to 17, Internet Usage Time(Wi-Fi) (Hours): Up to 17, Video Playback Time (Hours, Wireless): Up to 20, Battery Capacity (mAh, Typical): 3700, Removable: No, Audio Playback Time (Hours, Wireless): Up to 57, Talk Time (4G LTE) (Hours): Up to 35 	
28.12.	<ul style="list-style-type: none"> • Audio and Video: Stereo Support: Yes, Video Playing Format: MP4, M4V, 3GP, 3G2, AVI, FLV, MKV, WEBM, Video Playing Resolution: UHD 8K (7680 x 4320) @60fps, Audio Playing Format: MP3, M4A, 3GA, AAC, OGG, OGA, WAV, AMR, AWB, FLAC, MID, MIDI, XMF, MXMF, IMY, RTTTL, RTX, OTA, DFF, DSF, APE 	
28.13.	<ul style="list-style-type: none"> • PTA Approved with Samsung official warranty. 	
29	Samsung Galaxy Z Fold 5	Qty: 01
29.1.	<ul style="list-style-type: none"> • Processor: CPU Speed: 3.36GHz, 2.8GHz, 2GHz, CPU Type: Octa-Core 	
29.2.	<ul style="list-style-type: none"> • Display: Size (Main Display): 192.1mm (7.6"), Resolution (Main Display): 2176 x 1812 (QXGA+), Technology (Main Display): Dynamic AMOLED 2X, Color Depth (Main Display): 16M, Max Refresh Rate (Main Display): 120 Hz, Size (Sub Display): 157.3mm (6.2"), Resolution (Sub Display): 2316 x 904 (HD+), Technology (Sub Display): Dynamic AMOLED 2X, Color Depth (Sub Display): 16M. 	
29.3.	<ul style="list-style-type: none"> • S Pen Support: Yes. 	
29.4.	<ul style="list-style-type: none"> • Camera: Rear Camera - Resolution (Multiple): 50.0 MP + 12.0 MP + 10.0 MP, Rear Camera - F Number (Multiple): F1.8 , F2.2 , F2.4, Rear Camera - Auto Focus: Yes, Rear Camera – OIS: Yes, Rear Camera – Zoom: Optical Zoom at 3x , Digital Zoom up to 30x, Under Display Camera – Resolution: 4.0 MP, Under Display Camera - F Number: F1.8, Under Display Camera - Auto Focus: No, Under Display Camera – OIS: No, Rear Camera – Flash: Yes, Cover Camera – Resolution: 10.0 MP, Cover Camera - F Number: F2.2, Cover Camera - Auto : Focus: No, Video Recording Resolution: UHD 8K (7680 x 4320) @30fps, Slow Motion: 960fps @FHD, 240fps @FHD. 	
29.5.	<ul style="list-style-type: none"> • Storage/Memory: Memory_ (GB): 12, Storage (GB): 512, Available Storage (GB): 453.3. 	
29.6.	<ul style="list-style-type: none"> • Network/Bearer: Number of SIM: Dual-SIM, SIM size: Nano-SIM (4FF), Embedded-SIM, SIM Slot Type: SIM 1 + SIM 2 or Embedded SIM, Infra: 2G GSM, 3G WCDMA, 4G LTE FDD, 4G LTE TDD, 5G Sub6 FDD, 5G Sub6 TDD, 2G GSM: GSM850, GSM900, DCS1800, PCS1900, 3G UMTS: B1(2100), B2(1900), B4(AWS), B5(850), B8(900), 4G FDD LTE: B1(2100), B2(1900), B3(1800), B4(AWS), B5(850), B7(2600), B8(900), B12(700), B13(700), B17(700), B18(800), B19(800), B20(800), B25(1900), B26(850), B28(700), B66(AWS-3), 4G TDD LTE: B38(2600), B39(1900), B40(2300), B41(2500), 5G FDD Sub6: N1(2100), 	

	N2(1900), N3(1800), N5(850), N7(2600), N8(900), N12(700), N20(800), N25(1900), N28(700), N66(AWS-3), 5G TDD Sub6: N38(2600), N40(2300), N41(2500), N77(3700), N78(3500).	
29.7.	<ul style="list-style-type: none"> Connectivity: USB Interface: USB Type-C, USB Version: USB 3.2 Gen 1, Location Technology: GPS, Glonass, Beidou, Galileo, QZSS, Ear jack: USB Type-C, MHL: No, Wi-Fi: 802.11 a/b/g/n/ac/ax 2.4G+5GHz+6GHz, HE160, MIMO, 1024-QAM, Wi-Fi Direct: Yes, Bluetooth Version: Bluetooth v5.3, NFC: Yes, UWB (Ultra-Wideband): Yes, PC Sync.: Smart Switch (PC version). 	
29.8.	<ul style="list-style-type: none"> OS: Android. 	
29.9.	<ul style="list-style-type: none"> General Information: Form Factor: Folder 	
29.10.	<ul style="list-style-type: none"> Sensors: Accelerometer, Barometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, Light Sensor, Proximity Sensor. 	
29.11.	<ul style="list-style-type: none"> Physical specification: Dimension (HxWxD, mm): 154.9 x 129.9 x 6.1, Dimension when folded (HxWxD, mm): 154.9 x 67.1 x 13.4, Weight (g): 253. 	
29.12.	<ul style="list-style-type: none"> Battery: Internet Usage Time (LTE) (Hours): Up to 17, Internet Usage Time (Wi-Fi) (Hours): Up to 18, Video Playback Time (Hours, Wireless): Up to 21, Battery Capacity (mAh, Typical): 4400, Removable: Yes, Audio Playback Time (Hours, Wireless): Up to 73, Talk Time (4G LTE) (Hours): Up to 40. 	
29.13.	<ul style="list-style-type: none"> Audio and Video: Stereo Support: Yes, Video Playing Format: MP4, M4V, 3GP, 3G2, AVI, FLV, MKV, WEBM, Video Playing Resolution: UHD 8K (7680 x 4320) @60fps, Audio Playing Format: MP3, M4A, 3GA, AAC, OGG, OGA, WAV, AMR, AWB, FLAC, MID, MIDI, XMF, MXMF, IMY, RTTTL, RTX, OTA, DFF, DSF, APE. 	
29.14.	<ul style="list-style-type: none"> PTA approved with Samsung Official Warranty. 	
30	I Mac Desktop	Qty: 02
30.1.	<ul style="list-style-type: none"> Display: 24" Inch 4.5K Retina display, Actual Diagonal Size is 23.5 in. 	
30.2.	<ul style="list-style-type: none"> Processor: M3 Chip, 8 core CPU and up to 10-core GPU. 	
30.3.	24GB unified memory	
30.4.	<ul style="list-style-type: none"> 1080p FaceTime HD Camera, Advance image signal processor with computational video. 	
30.5.	<ul style="list-style-type: none"> Magic Keyboard with Touch ID' 	
30.6.	<ul style="list-style-type: none"> 2TB Storage 	
30.7.	<ul style="list-style-type: none"> Color: Silver 	
31	Samsung Freestyle portable Projector	
31.1.	Attribute: Value Product: Projector Series: 3	
31.2.	Projection System Resolution 1920 x 1080 Light Source Type LED Light Source Life 20,000hrs Throw Ratio 1.2 Screen Size 30~100" Projectile Distance for 100" 2654mm Digital Keystone Correction Yes Eye Protection Mode N/A Display Type DLP Brightness (LED Lumen) 550 Noise (dB) 30dB(A)	

31.3.	<p>Video Picture Engine Hyper Real HDR (High Dynamic Range) HDR HLG (Hybrid Log Gamma) Yes Contrast 100,000 : 1 Colour Pur Color Contrast Enhancer Yes Auto Motion Plus Yes Film Mode Yes</p>
31.4.	<p>Audio Dolby Digital Plus Yes Sound Output (RMS) 5W Speaker Type 360 Degrees Woofer N/A Multi-room Link Yes Bluetooth Audio Yes</p>
31.5.	<p>Smart Service Samsung SMART TV Smart Operating System Tizen™ Bixby AU English, Korean, UK English, French, German, Italian, Spain Spanish, Brazil Portuguese, India English (features vary by language) Alexa Built-in Yes Google Assistant Built-in N/A Works with Google Assistant N/A Works With Alexa N/A TV Plus Yes Web Browser Yes SmartThings App Support Yes (requires Android 6.0↑ or iPhone iOS 10.0↑) SmartThings Dashboard N/A Samsung Health N/A Universal Guide N/A</p>
31.6.	<p>Convergence TV to Mobile -Mirroring N/A Mobile to TV -Mirroring, DLNA Yes (requires Android 6.0↑ with Screen Cast capabilities or iPhone iOS 11.4↑ with AirPlay2 support) Tap View Yes (requires Android 8.1↑ with Screen Cast capabilities) Multi-View N/A Music Wall Yes (Lite) Remote Access Yes (support and stability may vary by PC) Camera Support N/A 360 Video Player N/A Bluetooth Low Energy Yes WiFiDirect Yes Sound Mirroring Yes</p>
31.7.	<p>Tuner/Broadcasting Digital Broadcasting N/A Analog Tuner N/A</p>
31.8.	<p>Connectivity HDMI 1 (Micro) USB N/A Component In (Y/Pb/Pr) N/A Composite In (AV) N/A Ethernet (LAN) N/A Digital Audio Out (Optical) N/A RF In (Terrestrial / Cable input / Satellite input) N/A Ex-Link (RS-232C) N/A HDMI Quick Switch N/A</p>

	Wi-Fi Yes (WiFi5) Bluetooth Yes (BT5.2)
31.9.	Design Design Lifestyle
31.10.	Additional Features Adaptive Picture N/A Active Voice Amplifier N/A Adaptive Sound Adaptive Sound AI Upscale N/A Brightness/Color Detection N/A Instant On Yes Accessibility -Voice Guide AU English Accessibility -Learn TV Remote / Learn Menu Screen AU English
31.11.	Screen Accessibility -Others Enlarge / High Contrast / Multi-output Audio / Caption Moving / Separate Closed Caption Digital Clean View Yes Auto Channel Search N/A Auto Power Off Yes Caption (Subtitle) Yes Connect Share™ (HDD) N/A ConnectShare™ (USB 2.0) N/A EPG N/A Extended PVR N/A Freesync N/A G-SYNC N/A Filmmaker Mode (FMM) N/A OSD Language English, Spanish, French BT HID Built-in Yes USB HID Support N/A IPv6 Support Yes
31.12.	Eco Feature Eco Sensor N/A
31.13.	Power Power Supply AC110-120V 50/60Hz Power Consumption (Max) 50W W Power Consumption (Stand-by) 0.5W W
31.14.	Dimensions Set Size (WxHxD) 95.2 x 171.4 x 95.2 mm Package Size (WxHxD) 155 x 252 x 138 mm
31.15.	Weight Set Weight 0.8 kg Package Weight 1.5 kg
31.16.	Accessories Remote Controller Model TM2261S Batteries (for Remote Control) N/A Samsung Smart Control (Included) Yes User Manual Yes E-Manual Yes Power Cable Included Yes (1x USB-C cable, 1x USB-C wall plug) HDMI Cable N/A
32	Clarius C3 HD3 Portable Ultrasound
32.1.	<ul style="list-style-type: none"> • Overview: Frequency: 1 – 15 MHz, Max Depth: 40 cm
32.2.	<ul style="list-style-type: none"> • Standard Clinical Presets / Applications: Abdomen, Bladder, Breast, Cardiac, Lung Shallow, Lung Deep, MSK, Nerve/Pain, Obstetrics, Ocular, Small Organs, Vascular.
32.3.	<ul style="list-style-type: none"> • Mobile Platforms: • iOS: iOS 14 or later

	<ul style="list-style-type: none"> • Android: Android 11 or later • W-Fi 802.11n (5GHz) • Bluetooth Low Energy 4.0+
32.4.	<ul style="list-style-type: none"> • Security & Encryption: • Wi-Fi data channel: TLS 1.2 • Bluetooth: AES128 and RSA4096 • Local Storage: Yes (with Membership) • Cloud Storage: Yes (with Membership) • DICOM: Yes (with Membership) • PHI Removal: Yes • PHI Storage: HIPAA compliant
32.5.	<ul style="list-style-type: none"> • Charging and Boot up: • Scan Time: ~60 min • Charge Time: ~90 min • Standby: ~7 days • Boot up: Platform dependent, generally < 30 seconds
32.6.	<ul style="list-style-type: none"> • Physical Characteristics: • Dimensions: 148 x 76 x 32mm (5.83 x 3.0 x 1.3in) • Field of View: 90° • Weight: 307 g (0.68lb) • Programmable Button: 2
32.7.	<ul style="list-style-type: none"> • Operating Range: • Ambient temperatures: between 0°C / 32°F and 40°C / 104°F • Relative Humidity: between 15% and 90% • Recommended maximum exam time: 20 minutes
32.8.	<ul style="list-style-type: none"> • Connectivity: • Data Export Methods: Wireless 802.11abgn, Bluetooth, DICOM, Cloud • Exported Still Image Formats: JPEG, PNG, BMP, DICOM • Exported Video Clip Formats: DICOM, MP4
32.9.	<ul style="list-style-type: none"> • Digital Image Storage: • Cine loop playback 30 seconds
33	Basic Training Modules
33.1.	Disc Transfer Module : This exercise will expert you in handling instruments, hand-eye coordination, bimanual and crossing instrument to use.
33.2.	Weaving Module: It is an exercise to develop hand-eye coordination with use of two-handed instruments by passing thread.
33.3.	Rope Module: Rope Module is designed to threading the rope through eyelids in various angles.
33.4.	Pick and Place Module: Pick and Place exercise is an important task that enables you to hold and place the object using two hands.
33.5.	Suturing Module: This exercise will give you an idea how to drive surgical needle in different positions, penetration of surgical needle, dragging the thread with instruments and appropriate knotting whether intra-corporeal or extra corporeal.
33.6.	Cutting Module: This exercise will expert you in cutting with clock wise positions.
34	Essential Instruments
34.1.	Disposable Laparoscopic Grasper
34.2.	Disposable Laparoscopic Curved Metzenbaum Scissor
34.3.	Disposable Laparoscopic Maryland Forceps

34.4.	Reusable Laparoscopic Needle Holder	
Tender No: IX DVDs		
1	DVDs with plastic covers	Qty: 20,000
1.1.	DVD-R	
1.2.	DVD-RW	
1.3.	DVD+RW	
Tender No: X CSSD		
1.	450 LTR AUTO CLAVE HORIZONTAL WITH AUTO SLIDING DOOR	Qty: 02
1.1.	<u>TOUCH SCREEN PLC SYSTEM.</u> Falcon VAS Series Autoclave Control System is user friendly, easy to operate and quickly Set able Sterilization Parameters for any Operator without any deep knowledge and experience in Autoclave Operating. The Intelligent System can handle Autoclave process and inform the operator step by step process on Display	
1.2.	PROGRAMS: TEXTILE / SURGICAL / LIQUID / SILICONE / FLASH / PRION / RUBBER / BOWIE DICK	
1.3.	FATAK Touch Screen Color Display PLC System, Vacuum Based, Built on Electric Steam Generator	
1.4.	<u>CONSTRUCTION:-</u> <ul style="list-style-type: none"> ○ Inner Chamber made of 5mm 316 Stainless Steel. ○ Outer Chamber Jacket Made of 5mm 304 Stainless Steel. ○ Outer body Mild Steel & front Stainless Steel 304 ○ All fittings & piping 304 stainless steel & copper. ○ High temperature resistant glass wool insulated. ○ Door made of 316L inner & 304L outer. 	
1.5.	<u>STERILIZER FEATURES:-</u> <ul style="list-style-type: none"> ○ Pressure & Temperature control, digital indication of temperature & analog indication of pressure. ○ Automatic cycle function. Auto release of steam & pressure & buzzer sound on completion of cycle. ○ Air removal in chamber before sterilization cycle start. ○ Insulated with imported high temperature resistant glass wool. ○ Auto Sliding Door sealed with high temperature resistant silicon gas kit. ○ Water Feeding Pump with EOGR. ○ Solenoid valves. ○ Autoclave stand with casters & leveling bolts. ○ Safety door lock ○ All imported Electrical fittings. ○ Phase sequencer. 	
1.6.	<u>TECHNICAL SPECIFICATION:-</u> <ul style="list-style-type: none"> ○ Temperature range & control from 121 C – 134 C ○ Working Pressure, 1.2-2.5 Kg/cm², 15-35 Psi. ○ Pressure Safety valve, Steam exhaust valve, Pressure switch ○ Steam Condenser through heat Exchanger. <u>SAFETY DEVICES:-</u> <ul style="list-style-type: none"> ○ Temperature controlled safety ○ Pressure Safety valve, (Jacket and Chamber) ○ Heat Exchanger ○ Pressure switch ○ Phase reverse ○ Phase failure 	

	<ul style="list-style-type: none"> ○ Voltage up/down monitoring CERTIFICATION: ISO-9001-2015 / ISO-13485 / CE	
1.7.	WASHING SINK Double bowl Size: 27" X 72" X 35", Stainless Steel 304, structure made by 16 SWG 1 ¼" square pipe with 16 SWG Stainless Steel 304 sheet grand finish with 6" back panel, two bowls with faucets, 4 rubber legs for stability CERTIFICATION: ISO-9001-2015 / ISO-13485	Qty: 01
1.8.	SEALER MACHINE IMPORTED	Qty: 01
1.9.	WORKING TABLE Stainless Steel 304, Size: 60" X 22" X 34", 16 SWG 1 ¼" square pipe structure, Stainless Steel 304, 20 SWG top sheet Stainless Steel 304 grand finish, Argon welding for finishing, rubber legs for stability CERTIFICATION: ISO-9001-2015 / ISO-13485	Qty: 01
1.10.	PAPER DISPENSING TROLLEY STAINLESS STEEL 304 16 SWG Stainless Steel 304 Grand finish pipe structure, four pipes for holding packing papers, easy to move anywhere in CSSD, imported casters (2 with Lock) CERTIFICATION: ISO-9001-2015 / ISO-13485	Qty: 01
1.11.	CSSD PACKING TABLE STAINLESS STEEL 304 16 SWG 1 ¼" STAINLESS STEEL 304 GRAND FINISH PIPE STRUCTURE, 2 RACKS FOR PACKING ACCESSORIES 20 SWG TOP SHEET, RUBBER LEGS FOR STABILITY CERTIFICATION: ISO-9001-2015 / ISO-13485	Qty: 01
1.12.	CLOSED TRANSPORT TROLLEY STAINLESS STEEL 304 16 SWG Stainless Steel 304 Pipe structure, 4 side safety bumpers, Stainless Steel 304 handle for transportation, 3 sides pack with Stainless Steel 304, 20 SWG sheet, double door with handle locking system, Imported Casters CERTIFICATION: ISO-9001-2015 / ISO-13485	Qty: 01
1.13.	STORAGE RACK SS304 Stainless Steel 304 frame structure, wire mesh shelves for drying sterilize items, 16 SWG pipe structure, heavy duty imported casters CERTIFICATION: ISO-9001-2015 / ISO-13485	Qty: 01
1.14.	STORAGE RACK WIRE MASH STAINLESS STEEL 304 3 STORAGE DETACHABLE BUCKETS STAINLESS STEEL 304 IMPORTED CASTERS CERTIFICATION: ISO-9001-2015 / ISO-13485 Country of Origin: Locally Made but shall meet international recommendations and testing requirements.	Qty: 01
2	Steam Sterilizer (6 STU) Double Door Should be Quoted as Optional	Qty: 02
2.1.	The sterilizer should be built in accordance with standards: ISO 13445 current edition, EN ISO 9001, EN ISO 13485, UNI EN 285:2009, UNI EN ISO 17665-1:2007, EN ISO 15883-1,-2,-6, EN 61010-1, EN 61010-2-040, EN 60204-1 and with European Directives: Low Voltage 2014/35/EU, Electromagnetic Compatibility 2014/30/EU, Machinery Directive 2006/42/EC, Pressure Equipment Directive 2014/68/EU	
2.2.	Chamber volume: 434 liter (6 STU) or equivalent	
2.3.	Chamber Dimensions: 660x660x1000mm or equivalent	

2.4.	Overall Dimensions: 1200x1850x1308mm or equivalent
2.5.	Standard voltage: 400VAC ±10% 3L+N+PE
2.6.	Pressure vessel should consist of a round-edges quadrangular section sterilization chamber, made of stainless steel AISI 316L 8.0 mm thick, for the max operating pressure (-1 / 3.5 bar) and temperatures (up to 148°C), resistant to corrosion and to thermo-mechanical stress
2.7.	Steam jacket should consist of stainless steel AISI 316L 5.0 mm thick
2.8.	Doors should be constructed from stainless steel AISI 316L 10.0 mm thick
2.9.	Should have vertical sliding double door to prevent the cross contamination
2.10.	Interlock safety device to prevent the opening of both doors simultaneously
2.11.	The air-tight sealing of the chamber from external environment is guaranteed by introducing steam in the gasket seat and inflating the gasket toward the door
2.12.	Built-in Energy saving system
2.13.	During the sterilization stage, surface temperature of the sterilizer should be under 45°C
2.14.	Built-in electrically-operated steam generator AISI 316L
2.15.	Hydraulic system should be made of stainless steel AISI 316L
2.16.	Built-in electric steam generator 36KW with steam production of 61 Kg/h
2.17.	All the pipes carrying hot fluids should be insulated
2.18.	Vacuum system of a high-efficiency single-stage liquid-ring vacuum pump
2.19.	The sterilizer should be equipped with a HEPA filter 0.2µm
2.20.	All the electric and electronic components should be enclosed in industrial box IP55 protection rate (water-proof), except for the user interfaces
2.21.	The sterilizer should be having control system of a microprocessor-based PLC industrial grade.
2.22.	High-visibility color TFT touch-screen with 7" diagonal dimension
2.23.	The main control panel on the front side should consist of: Touch-screen interface, alphanumeric dot-matrix panel printer, emergency cut-off button with key-lock activation, on/off button, door closing button (secondary button on touch-screen), chamber pressure-vacuum gauge, jacket pressure gauge
2.24.	Backup UPS for the control system should be installed in the sterilizer.
2.25.	All signals of alarm, independently from their nature, are signaled in audible and visible mode in order to attract attention of the user: by means of a buzzer integrated in the touch-screen, and through clear messages flashing on the video.
2.26.	The sterilizer should be capable to store the last 80 cycles processed inside its internal memory.
2.27.	The sterilizer should have following validated sterilization cycles programmed by default
2.28.	Sterilization cycle at 134°C (Textile)
2.29.	Sterilization cycle at 134°C (Instruments)
2.30.	Sterilization cycle at 121°C (Plastic)
2.31.	Sterilization cycle at 134°C (Prions)
2.32.	Sterilization cycle at 134°C (Flash)
2.33.	Vacuum leak test cycle (Vacuum Test)
2.34.	Steam penetration test cycle (Bowie & Dick)
2.35.	Open cycles (from 01 up to 60)
2.36.	OR equivalent
2.37.	<u>Accessories:</u>
2.38.	Internal Trolley (Quantity: 1)
2.39.	Entirely made in stainless steel AISI 304L

2.40.	Should be from autoclave manufacturer
2.41.	External Trolley (Quantity: 2)
2.42.	Entirely made in stainless steel AISI 304L
2.43.	Should be from autoclave manufacturer
2.44.	Country of Origin: USA/UK/Europe/ Japan.

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