STANDARD BIDDING DOCUMENT

GOVERNMENT OF SINDH

SHAHEED MOHTARMA BENAZIR BHUTTO INSTITUTE OF TRAUMA, KARACHI

TENDER NAME:

PROCUREMENT & ESTABLISHMENT OF HYBRID ENDOVASCULAR SURGERY MODULAR OPERATING ROOM FACILITY WITH COMPLETE CIVIL WORKS ON TURNKEY BASIS. SOME INTEGRATED MEDICAL EQUIPMENT'S WITH INSTALLATION, TESTING & COMMISSIONING COMPLETE JOB AT 6th FLOOR SMBBIT

TENDER REFERENCE#

PROC/SMBBIT/(ADP # 1242 /(2022-2023A)/2024-2025

NOTE:

1. **TENDER FEE: RS. 10,000/-(NON-REFUNDABLE) IN SHAPE OF PAY ORDER IN FAVOR OF SHAHEED MOHTARMA BENAZIR BHUTTO INSTITUTE OF TRAUMA, KARACHI.**

2. ALL THE PARTICIPANTS MUST BE SIGNED EACH & EVERY PAGE OF BID DOCUMENTS, ELSE OFFER WILL BEREJECTED.

3. NO TENDER WILL BE ACCEPTED AFTER CLOSING OF THE TENDER BOX, WHAT SO EVER REASON MAY BE.

TABLE OF CONTENT

BIDDING DATA SHEET

Procuring Agency	SMBB Institute of Trauma (SMBB-IT)
Address	Chand Bibi Road, Karachi
Name of Tender	Procurement & Establishment of Hybrid Endovascular Surgery Modular Operating Room Facility with Complete Civil Works on Turnkey Basis. Some Integrated Medical Equipment's with Installation, Testing & Commissioning Complete Job At 6th Floor SMBBIT.
Bid Validity	90 Days, as per SPPRA Rule 2010 (Amended till date)
Amount of Bid Security	**5% of Total Bid Quoted Price**
Amount of Performance Security	**10% of Total Contract Price**
Last date of Selling of Bid	As per Mentioned in NIT
Date of Submission of Bid	As per Mentioned in NIT
Place of Submission	13th Floor, Planning and Procurement Department, SMBB Institute of Trauma, Karachi
Venue of Opening of Bid	12th Floor Seminar Hall SMBB Institute of Trauma, Karachi
Language of Bid	English
Bidding Procedure	Single Stage Two Envelope Procedure 46(2)
Advance Payment	Not Allowed / As per case
Period of Completion	**As per ANNEX-C**
Liquidity Damages	0.5% of the bid price per month after the period of Completion up to 10% maximum.
Inspection Authority	Nominated Inspection Committee of SMBB Institute of Trauma, Karachi.
Required Item Quality	All items will be procured on approved Specification basis.
Place of Delivery	Store Department of SMBB Institute of Trauma, Karachi / Trauma Emergency Response Centre Larkana

INSTRUCTIONS TO BIDDERS (I.T.B)

1. **Shaheed Mohtarma Benazir Bhutto Institute of Trauma** invites sealed bids from Manufacturers/ Importers/ Sole Agents/ Contractors for **Procurement & Establishment of Hybrid Endovascular Surgery Modular Operating Room Facility with Complete Civil Works on Turnkey Basis. Some Integrated Medical Equipment's with Installation, Testing & Commissioning Complete Job At 6th floor at Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi Tender Reference No: PROC/SMBBIT/(ADP # 1242 /(2022-2023A)/2024-2025.**

2. **Bidding Procedure Single Stage - Two Envelope Procedure 46(2) as per SPPRA rule amended till date;**
   i. A Bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
   ii. Envelopes shall be marked as **—FINANCIAL PROPOSAL** and **TECHNICAL PROPOSAL** in bold and legible letters to avoid confusion;
   iii. Initially, only the envelope marked **—TECHNICAL PROPOSAL** shall be opened;
   iv. Envelope marked as **—FINANCIAL PROPOSAL** shall be retained in the custody of the procuring agency without being opened;
   v. Procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;
   vi. No amendments in the technical proposal shall be permitted during the technical evaluation;
   vii. Financial proposals of technically qualified bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
   viii. Financial proposal of bids found technically non-responsive shall be returned un- opened to the respective bidders; and Bid found to be the most advantageous bid shall be accepted.

3. Bidders are required to check that Tender Documents issued to them are complete in all respects as per table of content.

4. **LANGUAGE OF BID**: The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and the Procuring Agency 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.

5. Bidders should examine carefully the table of content. They should visit and inspect the site at their own expense and responsibility and obtain all necessary information prior to submitting the tender. Any detail / specification missing in the document should be obtained from Planning & Procurement Department before bidding. Once the tender is submitted, it will be assumed that no further clarification was required.

6. The original bid shall be typed or written in indelible ink by the bidder or person duly authorized. The person or persons signing the bid shall initial all pages of the bid. The name and designation of each person signing must be mentioned below the signature.

7. No bidder shall be allowed to alter or modify his bid after the bids have been opened. However, the procuring agency may seek and accept clarification to the bids that do not change substances of the bids.

8. The Procuring Agency may reject all bids or proposal at any time prior to the acceptance of a bid or proposal. The Procuring Agency upon request communicate to any supplier or contractor who submitted a bid or proposal, the grounds for its rejection of all bids or proposal, but is not required to justify those grounds.

9. The quoted rates should include all costs of whatsoever description and expenses necessary for the whole work together with all risks, taxes, liabilities and obligations, specific or implied, in the Tender Documents. Arithmetical errors, if any shall be corrected and Tender price amended accordingly.

10. No unauthorized alteration may be made in the Tender documents. If any such alteration is made, tender may be liable for rejection.

11. Clarification, revision, addition or deletion, in the tender documents may be made by the authority before the submission and opening of Tender in the form of Addendum/ Corrigendum. This will be made only by formal Addendum/ Corrigendum issued by the concerned authority and will become part of the contract documents. Each Addendum shall be signed by the Vendor and returned with other Tender documents.

12. The entire Tender Documents, listed duly priced, signed & stamped on each page and completed must reach at designated place in due time and dates as defined in the Bidding Data of the Tender.

13. Contractor who will win the tender will be required to enter into a Contract Agreement as defined in the Form of Agreement.

14. All manufactured and other items should be used in the work in accordance with the instructions, specifications in the Tender Document and also in accordance with generally accepted norms of good workmanship.

15. For the purpose of comparison of bids quoted in different currencies, price shall be converted into Pakistani Rupees. The rate of exchange shall be the selling rate prevailing seven working days before the date of opening of the bids, as notified by the National Bank of Pakistan (NBP) / State Bank of Pakistan (SBP).

16. No bidder shall contact the Procuring agency on any matter relating to its bid, from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Procuring agency, it should do so in writing.

17. **PROCURING AGENCY'S RIGHT TO VERY QUANTITIES The Procuring Agency 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.**

18. The Procuring agency’s evaluation of a bid will take into account, in addition to the bid price

quoted, the following;

a) Incidental costs

b) Delivery schedule offered in the bid;

c) Deviations in payment schedule

d) The cost of components, mandatory spare parts, and service

e) The availability of spare parts and after-sales services for the equipment offered in the bid;

f) The projected operating and maintenance costs during the life of the equipment; the performance and productivity of the equipment offered; and / or other specific criteria indicated in the Bid Data Sheet and / or in the Technical Specifications.

19. CORRUPT OR FRAUDULENT PRACTICES

a) The Procuring Agency and the Bidders / Manufacturers / 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: **"corrupt practice"** means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution; and **"fraudulent practice"** means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of the Procuring Agency, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial noncompetitive levels and to deprive the Procuring Agency of the benefits of free and open competition;

b) The Procuring Agency 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 the Procuring Agency.

c) 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.

SALIENT FEATURES / TERMS & CONDITION OF THE TENDER

1.	**Name of Work & Address**	**:**	**Procurement & Establishment of Hybrid Endovascular Surgery Modular Operating Room Facility with Complete Civil Works on Turnkey Basis. Some Integrated Medical Equipment's with Installation, Testing & Commissioning Complete Job At 6th floor at Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi.** Tender Reference No: PROC/SMBBIT/(ADP # 1242 /(2022-2023A)/2024-2025
2.	**Place of Issuance of Tender**	**:**	**Planning & Procurement Department, 13th Floor SMBB Institute of Trauma, Karachi.** SPPRA & smbbit.gos.pk Website
3.	**Tender Reference #**	**:**	PROC/SMBBIT/(ADP # 1242 /(2022-2023A)/2024-2025
4.	**Method of opening of Tender**	**:**	It will be Single Stage Two Envelope 46(2) basis as per SPPRA Rules 2010 (Amended till date).
5.	**Venue of submission**	**:**	Planning & Procurement Department situated at 13th Floor of SMBB Institute of Trauma, Karachi.
a.	**Opening of Tenders**	**:**	Seminar Hall situated at 12th Floor of SMBB Institute of Trauma, Karachi.
6.	**Date of Opening of Financial Proposals**	**:**	As informed by Procurement Committee to all participants
7.	**Validity of Tenders**	**:**	90 days as per SPPRA Rules, 2010 (Amended till Date).
8.	**Amount of Bid Security**	**:**	5% of the Total Quoted amount in shape of pay-order / Demand draft from any schedule bank to be submitted along with Financial Proposal & a copy should be attached in Technical Proposal without showing the Amount (else the offer will be rejected).
9.	**Bid Currencies**	**:**	Prices shall be quoted in PKR on Deliver duty paid (D.D.P) basis.
10.	**Supply of Equipment**	**:**	As mentioned in Schedule of Requirement **Annex-C.**
11.	**Installation Period**	**:**	It will start after receiving of equipment at site.

12.	**Warranty & Maintenance Period**	**:**	Warranty & Maintenance period should be start from the date of Installation report which satisfactorily signed by end user / Biomedical engineer. **(This period will remain functional till (mentioned in items individually).**
13. (a)	**Contract Agreement**	**:**	The Bidder / Contractor shall enter & execute a formal Agreement as per the "Form" annexed with such modification as may be necessary.
(b)	**Stamp Paper / duty requirement for Agreement.**	**:**	Rs. @0.35% of the Contract Value or as prescribed by Government Laws.
14.	**Terms of Payment to Contractors.**		**Goods supplied on D.D.P:** i. Payment shall be made in Pak Rupees. ii. The payment will be made to the Bidder within 30 days of the receipt of original delivery challan(s) and invoice(s) in duplicate duly completed in all respect and signed and stamped by the Chairman of the Inspection Committee. The Inspection Committee will prepare and submit a report of physical inspection with a certificate to the effect that the goods conform to the specifications laid down in the bidding documents.
15.	**Insurance**	**:**	The goods supplied under the Contract shall be delivered to the Procuring Agency after the payment of all taxes and customs duty, CESS, Octroi charges etc. Risk will be transferred to the Procuring Agency only After the delivery of these goods has been made to the Procuring Agency. Hence, payment of insurance premium, if any, shall be the responsibility of the Bidder.
16.	**Release of Bid Security of 5%**	**:**	To un-successful bidders, after work is awarded. Bid Security will be released to successful bidder after purchase order is released but after Security Deposit is deposited **as per salient feature Sr.#18.**
17.	**Security Deposit / Performance Security**	**:**	The successful bidder will have to deposit the requisite Performance security Bond in shape of Bank Guarantee **(as per amount mentioned in bidding data sheet)** This will be released **as per salient feature Sr.#18.**
18.	**Release of Performance / Security Deposit of 10%**	**:**	• **5%** of Partial Bank Guarantee will be released after the satisfactory supply and installation of the equipment. (Bidder will furnish Installation Certificate dully signed by authorized representative at the time of release of Bank Guarantee). • **5%** of Partial Bank Guarantee will be released after satisfactory completion of warranty / maintenance Period **(mentioned in Items individually).**

19.	**Variation in Contract Price**	**:**	Amount mention in Contract Agreement will prevail till execution and no variation in price shall be allowed on any ground including Currency Fluctuation/ Variation / Devaluation or whatsoever.
20.	**Taxes**	**:**	All taxes will be deducted as per prevalent laws of Country.
21.	**Approved makes.**	**:**	**As mentioned in items individually.**
22.	**Special Note Regarding Equipment's**	**:**	Technical offers / Commercial offers failing to demonstrate below details would be rejected: **a.** Quoted system must be of advanced & latest version. **b.** Tender must cover complete equipment. **c.** Tender must cover complete range of disposables/ kits **d.** Tender must provide all technical details up to the satisfaction of the end user. **e.** Items should be quality approved from the concerned international body of the respective industry.
23. (a)	**Inspection of Imported equipment manufacturing site by the client.**	**:**	After the Award of Tender / Contract, Supplier shall take two persons to the manufacturing site and bear all expenses of visit in case the cost of Award of Tender / Contract is above **50Million.**
(b)	**Training**		Supplier will provide on-site successful training to all the personnel working on / operating the said Equipment / Machine as long as the need prevail.
24.	**Maintenance.**	**:**	Maintenance cost for all items for Period **(mentioned in items individually)** from the date of successful Installation shall be undertaken by the Contractor (Maintenance includes all Parts & Labor, etc. with Sufficient staff, during maintenance period).
25.	**Default in Preventive Maintenance, Breakdown and Emergency Calls.**	**:**	• In case of default by the Contractor with respect to maintenance, break down and emergency calls, the same will be carried out within 24 hours by the Procuring Agency and the cost so incurred will be paid from the Retention Money. • Moreover, an additional 10% of the amount spent would be charged from the concerned contractor being defaulter.
26.	**Cost To Be Quoted In B.O.Q.**	**:**	• The Contractors shall quote **DDP** price of the Equipment's including custom clearance etc. and delivering of Equipment at site with Installation & Commissioning cost. • It should also include cost during maintenance period including the parts and maintenance staff.

27.	**Tax Exemption.**	**:**	Incase Purchase on C&F basis, the required Certificate will be issued by this office that the import has been made for this Institute, so as to avail the facility of exemption of duties / taxes, as per Government Rules / Policy according to the Sindh Public Procurement Rules, 2010 (Amended till date).
28.	**Transportation**	**:**	The Bidder shall arrange such transportation of the goods as is required to prevent them from damage or deterioration during transit to their final destination as indicated in the Schedule of Requirements. The goods shall be supplied on "D.D.P." Basis at the SMBB Institute of Trauma, Karachi. Miscellaneous charges on logistics, transportation, Insurance, clearing from sea port / airport will also be paid / bear by the contractor(s).
29.	**Supply, Installation, Testing & Commissioning**	**:**	Means all types works related to civil, furniture, plumbing, electrical, HVAC, UPS or etc. any type of work which is needed related to proper functioning of supplied equipment will completely responsibility of bidder / contractor. Bidder / Contractor shall visit & inspect the site at their own expense and obtain all necessary information prior to submitting the tender. Any detail or information required should be obtained from Planning & Procurement Department before bidding. Once the tender is submitted, it will be assumed that no further clarification was required.

TERMS & CONDITIONS OF TENDER

a) **Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi** invites sealed bids on **Single Stage Two Envelope Procedure** as per clause 46(2) of Sindh Public Procurement Rules 2010 (Amended till date) from Interested Bidders for **Procurement & Establishment of Hybrid Endovascular Surgery Modular Operating Room Facility with Complete Civil Works on Turnkey Basis. Some Integrated Medical Equipment's with Installation, Testing & Commissioning Complete Job At 6th floor at Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi** Tender Reference No: PROC/SMBBIT/(ADP # 1242 /(2022-2023A)/2024-2025

b) Tender Fee in shape of pay order in favor of **SMBB Institute of Trauma, Karachi** must be attached; else the offer will be rejected.

c) The registered Contractors / Suppliers / Manufacturers / Authorized Distributors should attach **BID SECURITY (as per amount mentioned under Bidding Data)** in shape of Bank Draft / Pay order issued from any scheduled Bank of Pakistan in favor of **SMBB Institute of Trauma, Karachi** in the financial proposal. However, copy of same should be attached in technical proposal without showing the amount failing so the offer will be rejected.

d) **PERFORMANCE SECURITY:** The successful bidders will have to deposit the requisite Performance Security Bond in the shape of a Bank Guarantee in favor of **SMBB Institute of Trauma, Karachi (as per mentioned in salient features of this bidding document point # 17)**. The same will be released after successful completion of contract period **as per point# 18 of salient features**.

e) Bid should be dropped at Planning & Procurement Office,**13th Floor, SMBB Institute of Trauma,** Karachi by hand in due course of time and the same will be opened at Seminar Hall, **12th Floor, SMBB Institute of Trauma, Karachi**.

f) Bid / offer will be evaluated as per (**Technical Evaluation Criteria** Mandatory as **Annex-A** and (**Technical Evaluation Criteria** Marking as **Annex-B**) and also the bid's Terms & Conditions.

g) Bid should be inclusive of all Government taxes (if applicable) and the same will be paid by the Contractor except withholding tax.

h) The firm will be responsible for all supply of all awarded items to Store Department of SMBB Institute of Trauma, Karachi / Trauma Emergency Response Centre Larkana / As per supply order. If it fails, the Security Deposit will be forfeited.

i) Procuring Agency shall disqualify a contractor, whether pre-qualified or not, if it finds at any

time, that the information submitted by him concerning his qualification and professional, technical, financial, legal, or managerial competence as contractor was false and materially inaccurate or incomplete at any stage.

j) The bid security will be forfeited to the Government, if the bidder withdraws his bid after opening and before the expiry of the bid validity period or fails to sign the contract in stipulated time if the bid is accepted.

k) Arithmetical errors will be rectified on the following basis. 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. If the Supplier does not accept the correction of the errors, its bid will be rejected, and its bid security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail.

l) If bidder elects to submit alternate bid / proposal(s), the Bid Security shall be attached for higher bid amount; otherwise, both proposals / bids will be rejected.

m) The Procuring Agency may reject all or any bid at any time prior to the acceptance of a bid or proposals, subject to the relevant provision of SPP Rules, 2010 (Amended till date).

n) Bids shall remain valid for 90 days after the date of bid opening and same may be extended in terms of Rule 38 (2) (3) (4) of SPPRA Rules.

o) No tender will be entertained without Security deposit. The Security deposit will be forfeited, in case of non-submission of Performance security within seven (7) days of receipt of letter of Acceptance.

p) Bids submitted late due to any reason what so ever, shall not be considered and returned unopened to the bidder or his authorized representative.

q) If the supplier fails to give supply and install within the stipulated period, liquidity charges will be imposed **(as per amount mentioned in bidding data sheet).**

r) If the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Procuring agency shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in Bidding Data of the delivered price of the delayed Goods or unperformed Services for each week or part thereof delay until actual delivery or performance, up to a maximum deduction of the percentage specified in Bidding Data. Once the maximum is reached, the Procuring agency may consider termination of the Contract.

s) The quoted rates should be valid till **30th June 2024;** Orders will be placed as per requirement on receiving demand from the concern department of Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi.

t) The bidders shall quote their full and final price both in figure and in words on free delivery basis to Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi.

u) Distributor once nominated by the manufacturer / importer will be for the whole contract period and manufacturer / importer cannot change its distributor during the contract period in any case.

v) The Procuring agency reserves the right at the time of contract award to increases / decrease & delete, the items / quantities of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

w) Quantities of tender items are on estimated basis and could vary according to the amount sanctioned, released and as per discretion of Procurement Committee.

I / We agree to above mentioned Terms & Conditions:

Name of Contractor: _____Signature: _____

CNIC#. (Copy must be attached): _____

Full Address: _____

Company Stamp: _____

GENERAL CONDITIONS OF CONTRACT (G.C.C)

1. **Definition:** In this Contract, the following terms shall be interpreted as indicated:
   a) **"The Contract"** means the agreement entered into between the Procuring Agency and the Bidder, 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 Bidder under the Contract for the full and proper performance of its Contractual obligations.
   c) **Goods** means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Procuring Agency under the Contract.
   d) Related Services means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance, printing of special instructions on the label and packing, design and logo of the Procuring Agency, transportation of goods up to the desired destinations and other such obligations of the Bidder 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) **"The Procuring Agency"** means the Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi.
   h) **"The Bidder"** means the individual or firm supplying the goods under this Contract.
   i) **"Day"** means official working day excluding national holidays.
2. **APPLICATION:** These General Conditions shall apply to the extent that they are not inconsistent with provisions of other parts of the Contract.
3. **STANDARDS:** The goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications goods eligibility criteria.
4. **USE OF CONTRACT DOCUMENTS AND INFORMATION:**
   a) The Bidder 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 the Procuring Agency in connection there with, to any person other than a person employed by the Bidder 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.
   b) Any document, other than the Contract itself, shall remain the property of the Procuring Agency and shall be returned (all copies) on completion of the Bidder's performance under the Contract.
   c) The Bidder shall permit the Procuring Agency to inspect the Bidder's accounts and records relating to the performance of the Supplies.
5. **PATENT RIGHTS:** The Bidder shall indemnify the Procuring Agency 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:** To ensure storage arrangements for the

intended supplies, the Bidder shall inform the Procuring Agency at least two weeks prior to the arrival of the consignments at its store/warehouse. However, in case no space is available at its store/warehouse at the time of supply, the Procuring Agency shall, seven days prior to such a situation, inform the Bidder, in writing, of the possible time-frame of availability of space by which the supplies could be made. In case the Bidder abides by the given time frame, he will not be penalized for delay.

7. **INSPECTIONS, TESTS AND TRAINING:**
   a) The Procuring Agency or its representative shall have the right to inspect and/or test the goods to confirm their conformity to the Contract specifications at the cost payable by the Bidder.
   b) The Procuring Agency's right to inspect, test and, where necessary, reject the goods either at Bidder's premises or upon arrival at Procuring Agency's destinations shall in no way be limited or waived by reasons of the goods having previously been inspected, tested, and approved by the Procuring Agency or its representative prior to the goods shipment from the manufacturing point.
   c) Bidder shall provide the training to the designated staff of the SMBB Institute of Trauma, Karachi for the smooth operation of the equipment / instruments. Training plan should be attached with the offer.
8. **DELIVERY AND DOCUMENTS:** The Bidder shall in accordance with the terms specified in the Schedule of Requirements make delivery of the goods.
9. **INSURANCE:** The goods supplied under the Contract shall be delivered to the Procuring Agency after the payment of all taxes and customs duty, cess, octroi charges etc. Risk will be transferred to the Procuring Agency only after the delivery of these goods has been made to the Procuring Agency. Hence, payment of insurance premium, if any, shall be the responsibility of the Bidder.
10. **TRANSPORTATION:**
    a) The Bidder shall arrange such transportation of the goods as is required to prevent them from damage or deterioration during transit to their final destination as indicated in the Schedule of Requirements.
    b) The goods shall be supplied on **"D.D.P"** Basis at SMBB Institute of Trauma, Karachi / Trauma Emergency Response Centre Larkana / As per Supply order Store Department as per Schedule of Requirements on the risk and cost of the Bidder. Transportation including loading / unloading of goods shall be the responsibility of Bidder.
11. **INCIDENTAL SERVICES:** The Bidder will be required to provide to the Procuring Agency incidental services the cost of which should be included in the total bid price.
12. **WARRANTY / GUARANTEE:**
    a) **The term period of warranty / guarantee (mentioned in items specification individually)** from the date on which the Stores have been put into operation and demonstrated to the Institute staff. In any case this period shall not exceed six months beyond the warranty expiration period from the date of taking-over of goods.
    b) During the period of warranty / guarantee, 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 upon receiving written notice from the Institute; the notice shall

indicate in what respect the goods are faulty.

c) The previsions of this Clause include all the expenses that the Contractor may have to incur for delivery and installation of such replacement parts, material and equipment as are needed for satisfactory operation of the goods at the SMBB Institute of Trauma, Karachi premises.

d) The contactor shall provide warranty / guarantee for supply of Machinery / Equipment etc. for at least 05 years (where applicable).

e) The bidder shall separately quote the price of service contract inclusive of parts as well as excluding the parts for 5 years (post warranty / guarantee period) in term of %age for total contract value.

f) In case of consumable items, kits, chemicals, films etc. the contractor shall remain responsible for specificity, efficacy & sensitivity with maximum period of expiry as much allowed by manufacturer.

g) The Procuring Agency shall promptly notify the Bidder in writing of any claims arising out of this warranty.

13. PAYMENT: The method and conditions of payment to be made to the Bidder under the Contract are specified in **Salient Feature point # 14.**

14. ASSIGNMENT: The Bidder shall not assign, in whole or in part, its obligations to perform to another party under this Contract, except with the Procuring Agency's prior written consent.

15. DELAYS IN THE BIDDER'S PERFORMANCE: Delivery of the goods shall be made by the Bidder in accordance with the time schedule prescribed by the Procuring Agency in the Schedule of Requirements

a) If at any time in the course of performance of the Contract, the Bidder encounters anything impeding timely delivery of the goods, he shall promptly notify the Procuring Agency in writing of the causes of delay and its likely duration. As soon as practicable, after receipt of the Bidder's notice, the Procuring Agency shall evaluate the situation and may, depending on merits of the situation, extend the Bidder'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.

b) Any undue delay by the Bidder in the performance of its delivery obligations shall render it liable to the imposition of liquidated damages.

16. PENALTIES / LIQUIDATED DAMAGES: In case deliveries are not completed within the time frame specified in the schedule of requirements / contract, a Show Cause Notice will be served on the Bidder 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 Government Account and the firm will be blacklisted at least for two years for future participation in bids: The liquidated damage shall be 0.5 % per month or part thereof. The maximum amount of liquidated damages shall be 10% of the amount of contract. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of the contract, the Procuring Agency shall rescind the contract, without

prejudice to other courses of action and remedies open to it.

17. **TERMINATION FOR DEFAULT:** The Procuring Agency may, without prejudice to any other remedy for breach of Contract, by a written notice of default sent to the Bidder, terminate this Contract in whole or in part if:
    a) the Bidder 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 the Procuring Agency;
    b) the Bidder fails to perform any other obligation(s) under the Contract to the satisfaction of the Procuring Agency; and
    c) The Bidder, in the judgment of the Procuring Agency, has engaged itself in corrupt or fraudulent practices before or after executing the Contract.
18. **FORCE MAJEURE:** The Bidder 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 Bidder and not involving the Bidder'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 the Procuring Agency in its sovereign capacity, wars or revolutions, fires, floods, earthquakes, strikes, epidemics, quarantine restrictions and freight embargoes. If a Force Majeure situation arises, the Bidder shall promptly notify the Procuring Agency 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 the Procuring Agency in writing, the Bidder 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.
19. **TERMINATION FOR INSOLVENCY:** The Procuring Agency may at any time terminate the Contract by giving written notice of one-month time to the Bidder if the Bidder becomes bankrupt or otherwise insolvent. In that event, termination will be without compensation to the Bidder, provided that such termination will not prejudice or affect any right or remedy which has accrued or will accrue thereafter to the Parties.
20. **ARBITRATION AND RESOLUTION OF DISPUTES:**
    a) The Procuring Agency and the Bidder 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.
    b) If, after thirty (30) days from the commencement of such informal negotiations, the Procuring Agency and the Bidder 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.
    c) In case of any dispute concerning the interpretation and/or application of this Contract is to be settled through arbitration, the arbitrator to be appointed with the approval of the Institute’s BOG. The decisions taken and/or award given by the sole arbitrator shall

be final and binding on the Parties.

21. PACKING:

a) The Bidder shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

b) The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements.

22. GOVERNING LANGUAGE: 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.

23. APPLICABLE LAW: This Contract shall be governed by the laws of Pakistan and the courts of Karachi - Pakistan shall have exclusive jurisdiction.

24. Bidder offering radiology equipment failing under compliance with Pakistan Nuclear Regulatory Authority **(PNRA)** should be registered with the authority to install and commission. All expense / fees for **PNRA** for clearance of X-ray based equipment shall be borne by the supplier (where applicable).

I / We agree to above mentioned General condition of Contract (GCC):

Name of Contractor: _____Signature: _____

CNIC#. (Copy must be attached): _____

Full Address: _____

Company Stamp: _____

(ANNEX-A)

TECHNICAL EVALUATION CRITERIA (MANDATORY)

(Bidders are required to submit following documents in mentioned sequence with Proper Tagging)

S.#	MANDATORY REQUIREMENTS	YES	NO
1.	Compliance of Terms & Conditions / Instructions mentioned in the SBD, must submit the entire **STANDARD BIDDING DOCUMENTS**, duly signed & stamped on each page with Technical Proposal. 1. Attached authorized person CNIC copy. 2. Signed & stamped each and every page of Terms & Condition & all bidding documents. (**If above points compliance not found offer will be rejected**).		
2.	Should be registered with Income Tax Department **(Valid / Active NTN Certificate** must be attached).		
3.	**DRAP license** showing importer of medical devices. (Where applicable)		
4.	Copy of Professional Tax 2023-24 (**Attach Copy of Valid Certificate**)		
5.	Copy of Registration Certificate of General Sales Tax. (**Attach Copy of Valid Certificate**).		
6.	PNRA Registration Certificate (Where Applicable)		
7.	Valid Copy of 2022-23 / 2023-24 **Financial year paid Income tax and return**		
8.	Audited Financial Statement (**Last 3 Years**)		
9.	Recent Bank Account Maintenance Certificate.		
10.	Submission of undertaking on legal valid and attested stamp paper that the firm is not blacklisted and litigated by any institute of Federal, Provincial Government or any Department / Agency / Organization / Autonomous body or Private Sector Organization anywhere in Pakistan **(Undertaking should be as attached sample as per Table of Content Point # 18) (ANNEX-F)**		
11.	Bidder already providing services at **SMBB-IT, Karachi** should obtain & attach a satisfactory performance certificate from competent authority of **SMBB Institute of Trauma, Karachi** (for the financial year in which the bidder last provided its services).		
12.	Copy of Pay order / Bank Draft of Bid security should be attached along With bidding document in Technical Proposal without showing the amount.		
13.	Soft Copy **(USB)** containing all documents and forms (**In Excel / DOC format Only**) **(Soft copy in a CD or DVD is not acceptable.)**		

Note:

Bidders NOT complying with any of the above eligibility mandatory requirement would be disqualified. All documentary evidence must be submitted along with the bids; no document will be acceptable after bid submission.

(ANNEX-B)

BID EVALUATION CRITERIA

a. **THE BIDS SHALL BE EVALUATED ON MOST ADVANTAGEOUS BID BASIS** SPPRA Rule-2(x) amended till date.

b. The bids which are not responsive to the **MANDATORY QUALIFICATION CRITERIA** provided at **Annexure-A** shall not be eligible for further Technical Evaluation.

c. If a bidder elects to submit alternative bid without enclosing a separate tender purchased slip / pay order and Bid security of requisite amount in shape of pay order, bid form and valid Manufacturer Authorization, all such alternative bids will be rejected as non-responsive.

d. The bids shall be evaluated and compared on **ITEMIZED BASIS** exclusively. Technical evaluation of the products will be assessed on the standards / specifications given at **ANNEXURE - E**.

e. **Bids are invited as per Single Stage – Two Envelope Procedure** in accordance with sub rule 2 of rule 46 of the Sindh Public Procurement Rules, 2010 (Amended till Date). In case, any bidder encloses the financial bid within the technical bid, the same shall be rejected summarily.

f. The following merit point system for weighing evaluation factors / criteria will be applied for technical bids / proposals. Bidders achieving **minimum 70% marks** will be qualified and considered only for further process / evaluation besides compliance of all mandatory clauses. Documentary evidence must be attached in support of your claim.

g. Technically qualified/successful bidder(s) shall be eligible for Financial Proposal(s). The Financial bids shall be opened in the presence of the Bidders at the scheduled date, time and venue communicated in advance.

h. Financial Bids of Proposals of Technically disqualified / rejected bidders will not be opened for financial bid and sealed envelope shall be returned to the bidder.

i. Bids not accompanied by the Bid Security of required amount in the form of pay order shall be rejected.

j. The technical evaluation carried out by the Procurement Committee, SMBB Institute of Trauma, Karachi will be final, which will be assessed on experience basis of the Consultant(s) in the relevant specialty.

k. Procuring Agency shall not be responsible for any erroneous calculation of taxes and all differences arising out shall be fully borne by the Successful Bidder.

l. Marks obtained in the detailed technical evaluation will be carried forward band prorated. Tender will be awarded to the Responding Organization with maximum accumulative points (**Technical Score + Financial Score**).

m. The formula for technical scoring is "**Technical Marks / Score = Total Technical Marks of the respective bidder x 0.7"**.

n. The formula for financial scoring is that the lowest bidder gets 30% Marks and the other bidders score 30 multiplied by the ratio of the lowest bid divided by the quoted price.

Total Allocable marks for Technical Proposal = 70
Total Allocable marks in Financial Proposal = 30

Total Combined Allocable Score for individual bids = Marks obtained in Technical Evaluation + Marks obtained in Financial Evaluation = 100

EXAMPLE:

TECHNICAL EVALUATION

The formula to calculate the technical points / marks / score of the bidder is given below:
Technical Marks / Score = Total Technical Marks of respective bidder x 0.7

- **Solved Example of Financial Scoring:**

Technical scoring out of 100 = 85
Carried Forward & Prorated Technical scoring = 85 x 0.70

FINANCIAL EVALUATION

The formula to calculate the Marks for the price by the bidders other than lowest bidder is given below:

- **Financial Evaluation Score of individual quoted Product:**

= [Lowest quoted price of the item ÷ Next higher proposed price of the competing item] x Total Allocable financial score

- **Solved Example of Financial Scoring**:

If the lowest quoted price of an item is Rs. 86/- the same lowest will obtain score as below:
= [86 ÷ 86] x 30 = 30
= 30 marks being the lowest bidder for the quoted item

If the next higher quoted price of the same item is Rs. 105/- the marks obtained will be:
= [86 ÷ 105] x 30 = 24.57

If the next higher quoted price of the same items is Rs. 130/- the marks obtained will be:
= [86 ÷ 130] x 30 = 19.84 Marks and so on

TECHNICAL EVALUATION CRITERIA (MARKING)

Quality and the following evaluation factors/ criteria will be employed on technical proposals. The number of points allocated to each factor shall be specified in the Evaluation Report. **Only bids securing minimum of 70% marks would be considered for further process.**

S#	PARAMETERS / SUB-PARAMETERS	Marks for Evaluation	Total Marks
1	**Conformity to the Purchaser's Specifications (Mandatory)**		**40**
1.1	Fully compliant with the required tender specifications (Product demonstration, previous technical / support experience of the product / firm may also be considered for technical evaluation)	40	
1.2	Compliant with minor deviation (up to 10 % subject to main function is not affected)	30	
1.3	Above 10% / Non-compliant to required specifications.	Disqualify	
2	**Trained Product specialist**		**10**
2.1	**Three marks** for each Foreign Trained Graduate Engineer with PEC Registration in Sindh for the quoted product (Factory / OEM level service training) (Attached Proof of travel document and training certificate, online training is not acceptable)	6	
2.2	**Two marks** for each Foreign Trained Science Graduate in Sindh for the quoted product (OEM level Service training) (Attached Proof of travel document and training certificate, online training is not acceptable)	4	
3	**Manufacturer's Authorization**		**10**
3.1	Participating Firm is OEM direct representative (not agent / distributor) and has registered branch / Liaison office in Pakistan. (Authorization certificate attested by embassy must be provided)	10	
3.2	Sole Authorized Distributor in Pakistan for more than 5 Years (Authorization certificate attested by embassy must be provided)	8	
3.3	Sole Authorized Distributor in Pakistan for more than 3 Years (Authorization certificate attested by embassy must be provided)	5	
3.4	Sole Authorized Distributor for limited product in Sindh / Pakistan for below 3 Years or the validity of authorization since issuance is of below 3 years.	0	
4	**Human Resource (Technical Staff)**		**6**
4.1	Graduate Engineer with PEC Registration in biomedical, electronics, and mechatronics, mechanical, industrial. PEC registration card of the engineer must be submitted. (**1 mark for each Engineer**)	4	
4.2	Diploma of Associate Engineer (DAE) in electrical / electronic / biomedical / mechatronics / mechanical / industrial. DAE certificate must be submitted. (**0.5 mark for each certificate**)	2	

S#	PARAMETERS / SUB-PARAMETERS	Marks for Evaluation	Total Marks
5	**Networking**		**4**
5.1	Networking setup across Pakistan (**1 mark for each setup**) (Proof of Registered office must be provided)	4	
6	**Experience/ Performance**		**10**
6.1	Product Relevant Experience / Product Previous Satisfactory Performance certificate of at least 03 public hospitals having minimum 5 years' Experience along with Installation Report and Supply order / Purchase Order of the firm in last 5 years, on letter head, signed and stamped by the Head of institution / Concern Officer of public sector. **One mark for each after sale satisfactory performance certificate.**	5	
6.2	Product Relevant Experience / Product Previous Satisfactory Performance certificate of at least 03 reputable private tertiary care level hospitals having minimum 5 years' Experience along with Installation Report and Supply order/ Purchase Order of the firm in last 5 years, on letter head, signed and stamped by the Head of institution / Concern Officer of private sector. **One mark for each after sale satisfactory performance certificate.**	5	
7	**Annual Turnover during last three (03) financial years** **(Audited Statements of Accounts and Income Tax Return Forms must be attached as supporting documents)**		**10**
7.1	Turn over above PKR 1 Billion	10	
7.2	Turn over above PKR 500 million	7	
7.3	Turn over above PKR 150 million	5	
7.4	Turn over above PKR 50 million	3	
7.5	Turn over below PKR 50 million	0	
8	**Bonus points (Free of Cost Extended Warranty)** **(In accordance with the comprehensive warranty period including all parts).**		**10**
8.1	Free of Cost Extended Warranty for Two Years.	10	
8.2	Free of Cost Extended Warranty Period for One year	5	
	GRAND TOTAL		**100**

(ANNEX-C)

SCHEDULE OF REQUIREMENT

PROCUREMENT OF PLANT &MACHINERY (SUPPLY, INSTALLATION, TESTING &COMMISSIONING OF PLANT & MACHINERY)

A. GOODS SUPPLIED ON (DDP BASIS)

The entire quantity of the ordered goods shall be delivered within **12 Weeks** or earlier from the date of issuance of supply order / contract award. **(16 weeks above period supply not acceptable and the offer will be rejected).**

i. The delivery period shall start from the date of Award of Contract / Contract Agreement.

(ANNEX-D)

SPECIAL NOTE

1. Offered product's specifications sheet on company's letter head must be attached.
2. Item-wise / Feature-wise product compliance / deviation statement must be attached.
3. **Confirm delivery period must be specified.**
4. Port of Shipment and Country of origin of **"MAJOR PART(S) OF THE EQUIPMENT"** must be clearly reflected separately in the Technical and Financial bids. The Origin means the place where the ―goods are mined, grown, or produced.
5. Product specifications are only for widest possible competition and not to favor any single contractor or supplier nor put others at a disadvantage. However, the brand name, catalogue # / Name etc., if any, have only been used for the reference purpose. Equipment offered **"ATLEAST EQUIVALENT OR HAVING BETTER SPECIFICATIONS"** shall also be considered.
6. Equipment must be quoted with all the standard accessories, required for the operation of the equipment.
7. Quoted equipment should be of latest Model.
8. **UPS / Power protection for the equipment shall be incorporated in the systems and also included in bid amount (where applicable).**
9. **All the civil works and allied services will be carried-out by the bidder with the consultation of the Procuring Agency (if required) cost of all types of works included in bid amount.**
10. **All site-specific work to be required in the system viz. Lead Glass / special antistatic flooring, environment control / radiation protection must be included bidder quote (where applicable).**
11. The bidder shall separately quote the price of service contract inclusive of parts as well as excluding the parts for 5 years (post warranty / guarantee period) in term of %age for total contract value (mandatory).

I / We agree to above mentioned all clauses;

Name of Contractor: _____Signature: _____

CNIC#. (Copy must be attached): _____

Full Address: _____

Company Stamp: _____

(ANNEX-E)

PROCUREMENT OF PLANT &MACHINERY (SUPPLY, INSTALLATION, TESTING & COMMISSIONING) PRICE SCHEDULE FOR SMBB INSTITUTE OF TRAUMA, KARACHI. DURING THE FINANCIAL YEAR 2023-24

S.#	Item	Req. Qty	U.O.M	Unit Price	Total Amount
Item # 01 to 28 and optional items all are turnkey basis and mandatory to quote					
1	Powder Coated SS304 Modular Wall Panel System with Lead Lining for Hybrid OT	Operation Rooms (quantity as per the drawing)			
2	Decorative Glass Wall Panels with Picture for Hybrid Operation Theaters **(1 Wall Of OT)**	Operation Rooms (quantity as per the drawing)			
3	Surgeon Control Panel with Touch Screen	01			
4	Stainless Steel Medical Cabinet for Storage	02			
5	Clean Room Metal Ceiling System for Operation Theaters	Operation Rooms (quantity as per the drawing)			
6	Automatic Sliding Door for Operation Theater with Lead Shielding in Door Leaf	02			
7	Audio Video Management, Documentation & Communication	01			
8	Digital Multi-viewer With PACS Connectivity	01			
9	Manual Single Leaf Hinged Door	02			
10	RGB Clean Room Peripheral Lights for Operation Theaters, Static Dissipative Homogenous Vinyl Flooring for Operation Theaters	10			
11	Static Dissipative Homogenous Vinyl Flooring For Operation Theaters	Operation Rooms (quantity as per the drawing)			
12	Homogenous Vinyl flooring for control and other area	Operation Rooms (quantity as per the drawing)			
13	Hybrid Laminar Air Flow Ceiling	01			

14	Fluff Separators for Return Air Near Ceiling	04			
15	Fluff Separators for Return Air Near Floor	04			
16	Hygienic Air Handling Unit	01			
17	Apparatus Control Panel	01			
18	Direct Digital Controls for HVAC System	01			
19	HVAC Ducting Works	01			
20	Insulation	01			
21	Exhaust Fan (Ceiling Suspended)	Operation Rooms (quantity as per the drawing)			
22	Single Dome Led Operating Light with Second Arm for Monitor	02			
23	Electric Window Blinds with Lead Protection	01			
24	Stainless Steel Surgical Scrub with Knee & Sensor Operation	01			
25	Led X-Ray Film Illuminator for Operating Room	01			
26	Dual Arm Surgical Pendant	01			
27	Dual Arm Anesthesia Pendant	01			
28	Electrical Cable Work - Misc. for OT's & AHU	01			
Optional Item Turnkey Basis					
01	Portable surface & Ducts decontamination system using dry fog process	01			
02	Hand Held Particle Counter	01			
03	DOUBLE WING MANUAL DOOR FOR CLEAN CORRIDOR WITH ACCESS CONTROL	01			
04	EXO-Scope	01			
05	UVC AIR DISINFECTION FOR AIR DUCT	01			
Individual Items					
01	Anesthesia Machine with Ventilator	01	Pcs.		
02	Patient Monitor for Operation Theater	01	Pcs.		
03	Portable Monitor	01	Pcs.		
04	Vascular Doppler	01	Pcs.		
05	Patient Warmer (Water Based)	01	Pcs.		
06	Blood / Fluid Warmer	01	Pcs.		
07	ECG Machine	01	Pcs.		
08	Portable Suction Machine	01	Pcs.		
09	Diathermy	01	Pcs.		

10	Defibrillator	01	Pcs.		
11	Syringe Pump	01	Pcs.		
12	Portable Operation Theater Light	01	Pcs.		

DIGITAL HYBIRD MODULAR OPERATION THEATRE		
S. #	**Item Description**	**Qty.**
1	**Powder Coated SS304 Modular Wall Panel System with lead lining for Hybrid OT** **1.** STAINLESS STEEL wall panel system of sheet thickness min 1 mm or better. **2.** Powder coated in antimicrobial RAL color of user choice **3.** Invisible mounting of the panel to the substructure with screws. **4.** Panels thickness 20-22mm glued on to the back with 12-14mm thick gypsum sheet **5.** Must allow easy assembling/ dismantling of for future changes on the back of wall panel. **6.** Galvanized steel U-profile sub-structure should be used for connection to concrete elements of the building and wall panels **7.** Substructure system must allow for installation of medical gases, and services on back. **8.** Galvanized steel coved corner panels must be made of one steel sheet to avoid bacteria colonies and easy cleaning. Must be smoothly integrate with the wall panels on the sub-structure to give perfect finishes between wall to wall and wall to ceiling connections. **9.** Wall to wall and wall to ceiling connections Should be rounded / coved made of stainless-steel sheet powder coated finishing Like the wall panels and smoothly integrated with the wall panels on the sub-structure assembled similar like wall panels with screws covered with removable silicone gasket. **10.** Corner panels (inner and outer) are made of one steel sheet. **11.** 5-6 mm gaps for screws covered with removable silicone hermetic seal resistant to UV, detergents, bactericidal products, water, fire resistance, steam and chemicals used to sterilize Operation Theater **12.** Floor skirting are made of galvanized steel sheet of appropriate thickness with base height 100mm or better **13.** Service Panel: A removable element of 200m is provided for the on-wall utility and service outlets in contrast color at the level of 1100mm from finished floor level throughout the perimete r of the OT in the wall panels.	**Operation Rooms (As per site requirement)**
2	**Decorative Glass Wall Panels with Picture for Hybrid Operation Theaters (1 Wall of OT)** **1.** 5mm or better tempered glass with layer of 0.1mm Self-adhesive PVC sheet with digital picture or RAL color pallet and fused with stainless steel panel of minimum thickness 1mm. **2.** Panel must allow for invisible mounting of the panel to the substructure with screws. **3.** Panels thickness 20-22mm glued on to the back with 12-14mm thick gypsum sheet. **4.** Must allow easy assembling/ dismantling of for future changes on the back of wall panel.	**Operation Rooms (As per site requirement)**

	5. Galvanized steel U-profile sub-structure is used for connection to concrete elements of the building and wall panels **6.** Substructure system must allow for installation of medical gases, and services on back. **7.** Stainless steel coved corner panels must be made of one steel sheet to avoid bacteria colonies and easy cleaning. Must smoothly integrated Must be smoothly integrate with the wall panels on the sub-structure to give perfect finishes between wall to wall and wall to ceiling connections. **8.** 5-6 mm gaps for screws covered with removable silicone hermetic seal resistant to UV, detergents, bactericidal products, water, steam and chemicals used to sterilize Operation Theater **9.** Floor skirting is made of galvanized steel sheet of appropriate thickness with base height 100mm	
3	**SURGEON CONTROL PANEL WITH TOUCH SCREEN** **Surgeon Control Panel with minimum 21" or more multifunction control touch screen with a resolution min. 1024 x 768,** **SCP designed to ensure efficient work of medical personnel with comfort.** **FEATURES** **1.** Digital Real Time & Date **2.** Elapsed Timer **3.** Surgical Light Control along with camera control **4.** Peripheral & RGB Light Control **5.** Door Access Control **6.** Real Time Temperature and Humidity control of HVAC system and should be integrated to Digital control of the HVAC system **7.** Real Temperature and humidity Run time display and should be integrated to Digital control of the HVAC system **8.** HVAC filter and HEPA Filter status and should be integrated to Digital control of the HVAC system **9.** Room and Laminar air flow differential pressure monitoring and should be integrated to Digital control of the HVAC system **10.** Future Upgradable	01
4	**STAINLESS STEEL MEDICAL CABINET FOR STORAGE** **1.** The cabinet body must be stainless steel 304 1mm or better thick and self-supporting, **2.** Smooth body with no edges and welded on all sides and no inside frames and rivets etc. **3.** Cabinet easy to integrate and completely flushed with wall panel system. **4.** The cabinet body and doors are flushed with wall panel surface. **5.** Cabinets are sealed with a hermetic removable silicone seal with antibacterial silver ions additive **6.** Double wing Cabinets door with self-closing stainless-steel hinges **7.** Wide angle opening door to min. 120° or better. **8.** Doors with Safe Glass, fitting in double steel sheet window frame. **9.** Doors window with safe glass, min. 6 mm thick, smooth door edges, no rivets, screws, etc.	02

	10. Must be zero dirt penetration. Equipped with rubber seals, fixed (pushed in) on the door wing (using adhesives is not allowed). **11.** Stainless steel 304, 1mm thick Height adjustments shelves. **12.** Back wall and shelves shall be supported from bottom by trapeze profile to avoid bulging of the steel. **13.** Height adjustable feet to allow for leveling of the cabinet. **14.** All edges are rounded and safe to prevent bacteria colonies and easy cleaning. **15.** Cabinet door hinges must be durable **16.** External Dimensions – 1200 x 450 x 2100 mm or as per site requirement	
5	**CLEAN ROOM METAL CEILING SYSTEM FOR OPERATION THEATERS,** Galvanized steel 0.7-0.8mm thick clip-in ceiling system with antimicrobial powder coated front surface in specified color. **1.** Rounded/ coved wall to ceiling connection to avoid bacteria colony growth. **2.** Smooth integration with ceiling fixtures and Laminar flow with hygienic finish **3.** Galvanized Steel allowing easy and quick assembling / dis-assembling. **4.** Galvanized steel substructure connected by clamps, made of supporting and cross profiles for stable construction. **5.** Suspension points correspond with ceiling grid and infrastructure installation. **6.** Easy removal and replacement of ceiling panels. **7.** Grid size of 600 x 1200 mm or 600x600mm	**Operation Rooms (As per site requirement)**
6	**AUTOMATIC SLIDING DOOR FOR OPERATION THEATER WITH LEAD SHIELDING IN DOOR LEAF** **1.** Door wing with 1.5mm or better Stainless Steel 304, fully closed construction **2.** Minimum 40mm brushed finish or powder coated as per end user requirements **3.** "C" shaped long handles Stainless Steel from external side and recessed type handle from inside **4.** Stainless Steel 304, 1.5mm thick sheet Door Frame SS finished or power coated in any RAL color. Made in inner and outer parts to smoothly mix with the concrete wall and modular system. **5.** Inspection electronic fogging Window 400 x 600 mm or better double glazed with operating switch on door frame WITH Lead shielding. **6.** 2 pair photocell sensors in door frame **7.** Long bar switch on both sides of door for opening. **8.** Touch less sensors are on both side of the door for ease of opening after scrubbing. **9.** Stainless Steel switch with LED Ring light Symbol provided inside and outside of the door frame for full, partial and permanent opening. Program key must be provided for program selection. **10.** Imported door drive of famous brand BESSAM or DORMA that should have the ability to be program for full and half opening **11.** Integrated back-up module to open the door wing in case of power failure. **12.** Door Dimension – 1500 x 2100 mm or as per the size requirements	**Operation Rooms (As per site requirement)**
7	**AUDIO VIDEO MANAGEMENT, DOCUMENTATION & COMMUNICATION**	1

	The system offers 4K UHD A/V distribution inside the OR, documentation and audiovisual communication within the hospital environment, designed to be operated from the most compact Device. System should offer brilliant surgical image quality and content management in up to 4K UHD, from the endoscope to the Hospital Information System. Ensures connectivity and management of all its elements – cameras, video sources, monitors and network connected participants **TECHNICAL FEATURES:** **1.** A/V Management: Video distribution in the operating room – in 4K UHD, 3D and FULL HD. **2.** Documentation: Content management in up to 4K UHD – from the endoscope to the HIS. Fully integrated documentation solution in up to 4K UHD. Data security through automated data transfer via HL7 and DICOM. **3.** Communication video streaming and audio talkback with bidirectional telestration for teaching activity. Real time high-definition video streaming to share the surgical image with other consultants or an auditorium in a secure and privacy protected environment. Seamless communication is ensured by audio talkback function. **4.** Telestration: Telestration on the touch screen inside the Operation Room for teaching activity. **5.** Video Routing and Switching with Picture and Picture: Flexible 8x8 video management system in 4K UHD, 3D and FULL HD including PiP/PaP functionality with control through touch screen. **6.** Integration components should be installed on the Surgical Equipment Pendant. **TECHNICAL DATA (AV SYSTEM):** **1.** Video inputs: 5x 12G SDI / 3x HDMI 2.0 **2.** Outputs: 6x 12G SDI / 2x HDMI 2.0 **3.** USB: 4x USB 3.0 / 1x USB 2.0 **4.** LAN: 2x Ethernet **5.** Audio: 1x Audio in / 1x Audio out **6.** Degree of protection: Ipx0 **7.** Protection class: I **TECHNICAL DATA (DOCUMENTATION SYSTEM)** **1.** Video inputs: 1x DP 1.2a / 1x HDMI 2.0 **2.** Outputs: 1x DP 1.2a / 1x HDMI 2.0 **3.** Interfaces: DICOM, HL7 **4.** Image formats: BMP, JPG, JPNG **5.** Video formats: MPEG-4, MPEG-2, MOV **6.** Hard Disk Capacity: 2TB or more **7.** CPU: core i7 or better **8.** RAM: 16 GB or more **9.** Operating System: Windows 10 **System Should include Following Items along with their Connectivity with the Main System:** **1.** 21” or more Touchscreen should be Wall Mounted with Keyboard and Mouse	

	2. Wireless Microphone Headset for Surgeon inside the Operation room along with its connectivity with the integration system **3.** HD Room Camera 3G-SDI/DVI for Operation room view along with its connectivity with the integration system, should be controllable from 21inch Touch Screen **4.** Ceiling Loudspeaker (pair) for Each Operation room along with its connectivity with the integration system **5.** Connectivity for Angio display **6.** Connectivity for Room Camera **7.** Connectivity for Ceiling Mounted Speaker **8.** Connectivity for Wireless Microphone **9.** Connectivity with Digital Multiview **10.** Connectivity with 2 Monitor on Spring Arm of OT Light	
8	**DIGITAL MULTIVIEWER WITH PACS CONNECTIVITY** The 55" Digital Viewer OR Workstation, digital viewer 55" available in Recessed / Built-in type, integrate able with the modular wall system and wall mount system and viewer can also be utilized in combination with Integration System. Any integrated imaging device, such as the Endoscopic Camera or C-arm, can be routed through the integration system and displayed on the Digital Viewer. Any image retrieved from the Digital Viewer (i.e. DICOM images) can be sent to the integration system, to be: displayed on the boom-mounted screens, archived, or transmitted to the Auditorium. **Technical Specifications** **1.** Should be Available in Recessed / Built-in type, integrate able with the modular wall system and wall mount system **2.** Antimicrobial powder coating **3.** 1x 55" display DICOM preset **4.** PC unit **5.** MDD safety electronics **6.** Network isolator **7.** Short hub keyboard incl. touchpad **8.** Silicone mouse (5 keys) **9.** 2x USB 3.0 ports **10.** Switchover for PACS/OR1 **11.** Antireflective safety glass **12.** Dimensions for wall inset in mm (w x h x d): 1110 x 870 x 120 or as per site requirement **13.** Should be Supplied from the Same Manufacturer of Integration for compatibility and Good Quality images **14.** With Built-in Video Conferencing Feature on Zoom or team.	1
9	**MANUAL SINGLE LEAF HINGED DOOR** Door wing with 1.5mm or better Stainless Steel 304 fully closed construction. Option of Door wing stainless steel color or RAL Powder coated with antimicrobial properties according to user choice Hermetic sealed door to prevent foreign bodies when closed Stainless Steel handles with key lock from both sides.	**Operation Rooms (As per site requirement)**

	Stainless Steel 304 1.5mm or better thick sheet Door Frame brushed finished or power coated in any RAL color. Best quality Door Closer and hinges Door Dimension – 1100 x 2100 mm	
10	**RGB CLEAN ROOM PERIPHERAL LIGHTS FOR OPERATION THEATERS**, **1.** Suspended light system to smoothly integrate with modular and plaster-board suspended ceilings, **2.** Highly efficient LED source. **3.** Luminary body made with steel sheet and powder coated in white. **4.** Aluminum free frame. **5.** Hermetic sealed body to prevent foreign bodies when closed **6.** Resistant to disinfectants and UV radiation with white-coated steel frame **7.** Lamp: LED **8.** Power: 54W or better **9.** Protection Class: IP65	**Operation Rooms (As per site requirement)**
11	**STATIC DISSIPATIVE HOMOGENOUS VINYL FLOORING FOR OPERATION THEATERS,** **1.** Static dissipative homogenous vinyl flooring for OT's and Non-Homogenous for corridor **2.** Tile size: 615mm x 615mm for OT **3.** Size: Roll for corridor **4.** Minimum thickness: 2 mm or better **5.** Made with slicing from highly compressed homogenous solid block material with conductive veins **6.** Electrical resistance of $106 \leq R \leq 108$ ohms (IEC 61340-4-1 / EN 1081 (100V) ANSI/ESD 7.1) Bacteriostatic in accordance with SNV 195 920, **7.** Chemical resistant ISO 26787 / EN 423, **8.** Slip resistance rating is R9 according to DIN 51130. **9.** Floor must give hygienic and outstanding finishes suitable for operating rooms. **10.** Coved edges at the wall with factory molded corners **11.** Able to connect with grounding point inside the operation theater	**Operation Rooms (As per site requirement)**
12	**HOMOGENOUS VINYL FLOORING FOR CONOTRL AND OTHER AREA** **1.** homogenous vinyl flooring for OT's and non-homogenous for corridor **2.** Tile size: Roll for Control & Equipment room **3.** Size: Roll for corridor **4.** Minimum thickness: 2 mm **5.** Chemical resistant ISO 26787 / EN 423, **6.** Slip resistance rating is R9 according to DIN 51130. **7.** Floor must give hygienic and outstanding finishes suitable for operating rooms. **8.** Coved edges at the wall with factory molded corners **9.** Able to connect with grounding point inside the operation theater	**Operation Rooms (As per site requirement)**
13	**HYBIRD LAMINAR AIR FLOW CEILING** to produce a germ- and particle lean area through a low turbulence displacement flow. The system is specially designed and suited for the use in Operating Theatres.	01

The requirements of all international standards including e. g. DIN 1946-4, ÖNORM H6020, SWKI VA 105-01 and HTM 03- 01 should be fulfilled.

The laminar flow system should consist of 3 separate parts which are specially designed for the installation in Hybrid OT with ceiling rail system (e.g. Siemens, Philips, etc.)

Technical Specification:

1. Pressure chamber, 3 parts Air tight pressure chamber built of aluminum sheet, material thickness min. 2.0 mm Smooth inner surfaces, no processing marks due to reversed housing wall production, therefore easy to clean and disinfect Stiffening profiles are positioned on the top outside for hygienic reasons. Laterally supply air connections completed as flange made out of Aluminum for the connection to the air ducts Two special screw connections for temperature probe and pressure probes aside the air distribution box

2. Support frame system to take up the pressure chamber, all required suspensions. Made out of extruded anodized Aluminum profiles with special aerosol tight counter screw connections. The profile system is carried out complete smooth on the top and at the inner surface.

3. Filter mounting frame made out of anodized Aluminum profile with integrated profile- frames for the placement of the HEPA filter panels are gastight welded. All components for the integration of the filter elements consists of stainless, respectively corrosion-proof materials.

4. High efficiency particulate air filter (HEPA) The filter medium should consist of finely pleated micro-glass fiber with thread spacers. The filter medium and frame are tightly interconnected by means of a 2-component PU casting. The filters have a frame optimized for huge filter surface and a correspondingly long service life as well as low pressure drops. The sturdy filter frame consists of an anodized aluminum profile and is equipped with a one-piece foamed gasket. A grip protection made of synthetic-resin coated aluminum expanded metal grid (color RAL 9016) is located on both sides of the filter medium. Each particular air filter insert is individually tested for leaks in our test facility. The corresponding test certificates are issued and enclosed with the documentation. The HEPA-filter exchange happens from the inside of the room after dismantle the CG-Distributor.

5. Air Distributor (Laminarization)
CG Distributor frame designed of flow-optimized aluminum profiles,
double-sided covered with special precise polyester fabric; subdivided in
separate large area elements; downwards removable. The individual CG Distributor frames get mounted by use of clip profiles without any screws or tools. The optimized Aluminum profiles yield in connection bar widths of not more than 15 mm to avoid disturbances of the low turbulence air flow.

6. Air Outlet
The bottom layer of the CG Distributor forms the effective air outlet and is flush with the intermediate ceiling. Only the material thickness of the clip

profile sticks out the bottom layer.

7. LED Priming illumination
installed in the air distributor box above the transparent CG Diffuser.
Constructed as 3-distribution directions LED light baffle made out of steel powder coated in white RAL 9016 in premium quality design. LED life span: 55000h with high quality electronic control gear for current driven LED's DALI, harmonized with the OT table control system.
Because of the 3-distribution directions by special lens, the illumination uniformity over the whole CG Diffuser is very homogenous.
Luminaire luminous flux: 6342lm
Connection power: 52,4 Watt
Luminaire efficiency: 121lm/W
Luminous color: 4000K
Color rendering Ra >= 90
Color difference perception: 3 MacAdam
EEI-class: A++
Number of light baffles: 6 pcs.
Due to the variable adjustment of the height, the LED baffle can be adapted to the individual HEPA filter heights.
Wiring on the outside of the air distributor box with screened cables, per lamp separated mounted on a common terminal block, protection class IP 66 in the cabinet. The terminal block is accessible from the inside of the room, after removing the CG Distributor.

8. Testing port for LAF testing
At the outer edge of the support frame system an enameled panel (varnished RAL 9016) is attached for following tests:
- Aerosol feeding and withdrawal (Leakage test; DEHS test)
- Differential pressure of HEPA filter panels
- Ambient pressure (false ceiling cavity).

The testing port consists of nickel-plated brass bulkhead fittings with tight sealing plugs with O-ring gasket and disinfectant proof inscriptions. The tubing is factory delivered by PUN tubing.
The testing and service measurements are executed without dismantle the

9. CG distributors. The high efficiency particulate air filter and the CG-distributor frames should be mounted shortly before putting into operation after the final cleaning of the room.

10. Potential balance The connection for the potential balance is mounted on the outside of the air distributor box.

11. Contact angle at the outer side of the support frame system over the whole length the same clip profiles are used to connect the intermediate ceiling as at the inner side for mounting the CG Distributor.

Technical Data's
Air volume (in flow) 8.350 m^3/h
Outer dimension (length x width) 2 parts 4165 x 895 mm Middle part 4165 x 799 m
Sterile air-flow field (length x width) 2 parts 4063 x 793 mm

	Middle part 4063 x 697 mm Height of pressure chamber (height) 515 mm Height of available ceiling space (minimum requirement) 535 mm Average air velocity 0,25 m/s Average Intensity of illumination right within the range of the sterile air distributor, 120 cm over the floor: ≥ 1000 lux Number of HEPA filters/Type 8 pcs. 915 x 730 mm, 4 pcs. 915 x 634 mm Filter Class according to EN 1822: H14 Initial pressure drop 60 Pa Recommended max. pressure drop before filter change 120 Pa Filter surface per m² face area 38 m²	
14	**FLUFF SEPARATORS FOR RETURN AIR NEAR CEILING** Stainless Steel SS 304 with 1mm frame thickness. Stainless steel fluff separator wire mesh in accordance with DIN EN 9044 with rigid stainless-steel frame. Must be easily removable for cleaning and disinfection purposes. **TECHNICAL DATA** **1.** Air Flow: as per design of vendor **2.** Air Velocity: 2.5 m/s **3.** Size:370x370mm **4.** Should be from the same manufacturer of Laminar air Flow	**Operation Rooms (As per site requirement)**
15	**FLUFF SEPARATORS FOR RETURN AIR NEAR FLOOR** Stainless Steel SS 304 with 1mm frame thickness. Stainless steel fluff separator wire mesh in accordance with DIN EN 9044 with rigid stainless-steel frame. Must be easily removable for cleaning and disinfection purposes. **TECHNICAL DATA** **1.** Air Flow: as per design of vendor **2.** Air Velocity: 2.5 m/s. **3.** Size: 870x370mm **4.** Should be from the same manufacturer of Laminar Air Flow	**Operation Rooms (As per site requirement)**
16	**HYGENIC AIR HANDLING UNIT** **1.** Galvanized square steel tubes frame, to avoid thermal bridges and best thermal performance of the casing. **2.** Double-skin panels made of galvanized steel sheet, with 50 mm insulation by synthetic profiles for excellent thermal insulation and lowest thermal bridging. Powder-coated surfaces on outside and inside **3.** Simple and quick to clean, easy for maintenance with integrated Stainless-Steel drip-tray, 80 mm slope. Smooth, with no depressions. **4.** Each section with U shaped base frame of 100mm. **5.** SS 304 Laser welded drain pan, integrated into the unit's floor sloped to all sides and a drain connection at its lowest point. Technical Data of Casing - **1.** Compliant to DIN EN 1886 are acceptable. **2.** Thermal Transmittance: Class T2 or better **3.** Thermal Bridging: Class TB1 or better **4.** Casing Leakage: Class L1(M) or better	01

	5. Filter bypass leakage: Class F9 or better **6.** Casing deflection: Class D1/D2 or better **TECHNICAL DATA** **1.** Hygienic **2.** Floor Inside: SS 304 **3.** Powder Coated Panel Inside **4.** Airflow: 9445-10500m³/h (Should exceed the air volume requirement of Laminar Air Flow & Control room) **5.** Air velocity: V1 according to EN13053 **6.** 2 stage Filtration- G2, F7 & F9 **7.** Plug fan with European quality EC Motor vibration isolated **8.** Operating Voltage: 400 V |Frequency: 50 Hz **9.** Protection class / ISO-Class: IP 55 / ISO F **10.** DX type coil **11.** Coil Type: Copper & fins Aluminum **12.** Cooling Coil Media: Refrigerant 407C/410A **13.** Cooling Capacity: 30 Tons **14.** Built in dehumidifier ducted type as per area humidity calculation **15.** Heating Capacity: 26.7 Kw or better Electric Heater: Yes, Built in inside the AHU **16.** Outdoor Temperature (summer/winter): 45.0°C / 5°C **17.** Indoor Temperature Conditions: 22°C ± 2°C **18.** Indoor Relative Humidity Conditions: 45% ± 5% **19.** EUROVENT Energy Efficiency Class: A **20.** Secondary chill water coil same cooling capacity (optional but mandatory to be quoted). Note: Pressure measuring connections at each filter stage with Magnehelic gauges. Measuring pipe with connection to the maintenance side Isolated Duct Connectors, Galvanized Steel Dampers (SA, RA, OA), Terminal box with wiring for fan and electric heaters. The Bidder are required to share the Technical Data Sheet of Ahu from Manufacture along with Drawing & HAP DATA Sheet with the bid.	
17	**APPARATUS CONTROL PANEL** Dedicated apparatus control panel to control its respective with components mounted in a logical order based on the sequence of operation. The panel must be equipped with all components as specified by the AHU manufacturer for the satisfactory operation of the Air Handling Unit. **FEATURES** **1.** Floor Standing, Powder Coated and Comply to IP-42 **2.** Proper Ventilation and Door Locking Arrangement. **3.** Separate Neutral & Earth Bars/Terminals. **4.** Proper Cable dressing, Tagging & Cable tying Arrangement.	1
18	**DIRECT DIGITAL CONTROLS FOR HVAC SYSTEM** Air handling Unit will be remotely controlled through a Direct Digital Controller for a high level of control of the HVAC system. Able to be connected with building BMS and can be access able for remote monitoring and control. System equipped with Direct digital controller and area Sensor for Temperature & Humidity, inside	1

	OT Supplier should ensure provision of following features for DDC control system complete in all respects **1.** 1x DDC controller **2.** Separate starter signal for heater start stage with modulation **3.** 1x Separate starter signal for humidifier **4.** 1x Separate starter signal for AHU fan motor **5.** 1x humidity & temperature sensor for OR without screen. **6.** 1x fan run status sensors **7.** 1x duct temperature Sensors **8.** 1x low pressure filter sensor for Laminar HEPA Filters pressure differential monitoring **9.** 1x low pressure sensor for Room pressure differential monitoring **10.** Pressure sensors for monitoring differential pressure monitoring across each filter stage **11.** 1x Smoke sensors for smoke status monitoring **12.** 1x Fire stat for fire status monitoring. **13.** 1x Operation & Monitoring of DDC control system with integration with surgeon control panel of respective OR **14.** 1x powerful, high-speed router/gateway to connect control modules to BACnet/IP backbone. Support for BACnet/IP, BACnet over Ethernet, BACnet over ARC156, and BACnet over MS/TP communications **15.** Display of respective temperature, humidity, and differential pressure values and filter status for respective AHU. **GENERAL INSTRUCTIONS:** **1.** AHU should be independent with absolutely no hard ware or software connectivity or interference with other AHU. **2.** Bacnet connectivity for chiller with Network. **3.** Central monitoring of network **4.** Noise reduction built in duct. **5.** HMI with local Display with license **6.** Independent Controller for handling Unit with absolutely no sharing with other AHU. **7.** All monitoring sensors must be connected to main controller. **8.** Standard spare I/O points at least 10-15% **9.** Best quality Stranded, BC, PP/PVC, Shielded, Security and Commercial Audio Cable for sensor connectivity. **10.** Best quality communication cable for communication network connectivity **11.** Technical details of sensors with Drawing & Brochure for Verification. **12.** IP-65 rated Imported DDC Panel Communication and integration of the system through extremely powerful, high-speed router/gateway to connect control modules to a BACnet/IP backbone. Must allow a wide range of open and proprietary protocol translator drivers to allow to serve as a gateway to other manufacturers' equipment. Fully programmable, and able to execute complex control strategies for high-level system integration. The suppliers are required to share the theme and BOQ with the bid.	

19	**HVAC DUCTING WORKS** **1.** All duct work shall be of galvanized steel sheet unless otherwise indicated on Drawings. Galvanized steel shall be of lock forming quality (LFQ) and shall have a galvanizing coating of 245 grams (G80) total for both sides of one square meter of sheet with regular spangles. The G.I. sheet shall conform to ASTM A-924 and ASTM-90. **2.** Structural Steel shall be M.S. members rolled from Pakistan Steel billets or equivalent. **3.** Fabrication, Installation, Insulation, testing and commissioning of GI sheet metal duct work complete in all respect with hangers, supports, bracing and fixing accessory in accordance with the final approved ducting drawing. **4.** Ducting: GI Sheet: 22 AWG **5.** Cladding: GI Sheet: 24 AWG **6.** Volume Control Damper: GI 18 AWG **7.** Grills & Diffusers: GI 18 AWG	**Operation Rooms (As per site requirement)**
20	**INSULATION** Polyolefin Rolls and Sheets should be made of closed cell cross linked polyolefin foam that controls condensation, has high thermal efficiency and sound absorption. They should be made up of a sandwich product that is composed of foam, Alupet foil and self-adhesive backing. **Technical Specification (For Inner Duct)** **1.** Fire rated "CLASS 0" as per BS 476 Parts 6 & 7 **2.** Thickness 12mm **3.** Very low water vapor permeance (0 perms) **4.** Water tight due to the pre-applied Alupet foil **5.** High thermal efficiency (λ[W/(m•k)] 0.032 – 0.035 (23 °C – 45 °C) **6.** Wide temperature range (from -50 ˚C to +105 ˚C) **7.** Chemical resistance – resistant to most chemicals (sodium, silica, fluoride, chloride, etc. **8.** Antibacterial & antifungal **9.** Environmentally friendly – ODP = 0 and GWP < 5 **10.** Very low VOC emission level (< 4 µg/m2/hr in 24 hours) **11.** Good mechanical resistance **12.** Sound absorption properties **13.** Easy and fast to install **14.** Aesthetical look	**Operation Rooms (As per site requirement)**
21	**EXHAUST FAN (CEILING SUSPENDED)** **1.** Air Flow: 1671 m3/hr. **2.** EC Motor, IP 55, TEFC, Class F, Rated motor at 50C, Integrated with AHU of OT	**Operation Rooms (As per site requirement)**
22	**SINGLE DOME LED OPERATING LIGHT WITH SECOND ARM FOR MONITOR** **Specifications:** **1.** Unit should have Clarity of vision, optimum performance **2.** Unit should have Concentrated light source **3.** Unit should have Patented, proven reflector technology **4.** Unit should have No color deterioration **5.** Unit should have Cool light **6.** Unit should be User-friendly **7.** Unit should have Optimum hygiene	2

	8. Unit should have Ultra-reliable lighting **9.** Unit should have Safety glass for best possible clarity. **10.** Unit Should have Sterilize-able and Remove-able Handles **11.** Unit Should have dust protection **12.** Should have light intensity of main light 160,000 lux **13.** Should have light intensity of satellite light 160,000 lux **14.** Should have Color temperature adjustment 3500 - 5500 Kelvin **15.** Should have Electric field adjustment. **16.** Should have Focusable light field size d10 at 1m of light should be 180 mm -300 mm or better **17.** Should have Temperature increase at head height < 1 ºc **18.** Should have color rendering index to 99 Ra or above. **19.** Life time of LED should be 50,000 hours or more. **20.** Dome should be adjustable upper side maximum 7 Feet or more and lower side minimum 4 Feet or more. **21.** Based on room size and can customize the configuration. **22.** System should be compatible with Laminar Flow System. **23. INTEGRATED HD CAMERA (qty1)** **24.** Resolution: 1920 x 1080 Full HD or better **25.** Second arm for the monitor with holder to hold 26'' or more monitor (medical Grade) (qty2) **Power Requirement:** **1.** Line voltages: 100-240VAC **2.** Line Frequency: 50/60 Hz **Certification:** **1.** System should have Certification **FDA 510(k)/CE/JIS/MHLW/JQAO** **Warranty and Maintenance Period:** **1. Warranty Period required 5 years with** maintenance and parts replacement. All the parts are included in the warranty i.e. LED, Keypad, camera, medical grade monitor and etc. **1.** PPM must be done according to the OEM criteria in warranty period. **2.** Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by O.E.M. **3.** Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. **4.** Required surety of service support and parts from the manufacturer, in case of transfer agency / distributor via undertaking by O.E.M. **5.** Up-time guarantee during warranty period must be 90-95%. **6.** Response to breakdown during and after warranty period must be 1-3Hours. **7. Down Time:** If equipment is malfunctioning or not working properly then down time period would start i.e., if machine remain out of order for more than one day; then one and half day increase in contract of concerned equipment will be charged but if	

	any part required from manufacturer, then downtime period not calculated for a month but after a month the down time should be calculated, are mentioned below; 90% → No Down Time Below 90% → 1.5 days increase daily Below 75% → 3.5 days increase daily Below 50% → 5 days increase daily **Trainings & Manual:** **1.** Operating and service manual with troubleshooting and circuit diagram must be provided. **2.** In house operator and application training session for end user by Principle Certified resource. **3.** In house service training session by Principal Certified resource **Note:** **1. Safely installation of new OT light and dismantling of old installed OT light should be responsibility of awarded firm/supplier.** **2. Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) are the responsibility of awarded firm/supplier).** **3. OT light should be fully compatible with the Modular Operation Theater and as per site requirement.** COUNTRY OF ORIGIN: UK / USA / EUROPE / JAPAN OR EQUIVALENT	
23	**ELECTRIC WINDOW BLINDS with LEAD PROTECTION** The window element is installed flush with modular wall system. Additionally, venetian blinds are installed on the inside to meet the hygienic demands of OR, ensuring the ease of installation and cleaning. Window blinds with automatic operation and functions including raise, lower and turn. 2 x safety glass (ESG) min. 5mm with venetian blinds on the inside. Material: Aluminum Operating Voltage: 24 VDC Dimensions: 1600 x 1200 mm or as per end user Requirement	**Operation Rooms (As per site requirement)**
24	**STAINLESS STEEL SURGICAL SCRUB WITH KNEE & SENSOR OPERATION** Self-supporting construction Made of 1mm thick stainless steel 304 Able to dispense soap and disinfectant solution for 2-3 persons, Completely welded construction for hygienic finishes for knee operated water control as a backup. In addition, the sink is also equipped with knee operated soap dispensing Wall mounted **1.** Deep Sloping Basin **2.** Adjustable thermostatic mixing valve 35°C to 41°C **3.** Check stops strainers **4.** Flow control valve **5.** Back-flow preventer **6.** Flow regulator 0.25 sec to 12min **7.** Dimensions – Customized as per site requirement	1
25	**LED X-RAY FILM ILLUMINATOR FOR OPERATING ROOM** **1.** Integrate able with the modular wall system.	1

	2. No. of Films: 3 **3.** Intensity adjustable **4.** Life of LED Lights: 50,000 hours **5.** Absolutely Flickering free **6.** Film Activated Switch in the film Holder **7.** On / off switch with dimmer control for each screen **8.** Mains Voltage: 220V, 50/60 Hz	
26	**DUAL ARM SURGICAL PENDANT** Ceiling mounted Surgical pendant is installed to provide all the necessary electrical, data and medical gases services within the sterile field to assist the surgery. Shelves – 5 Pcs **1.** Drawer – 1 Pcs **2.** No. of Arms: 2 **3.** Length of first arm: 600/800 mm or as per site requirement **4.** Length of second arm: 600/800 mm or as per site requirement **5.** Max. degree of rotation at each arm: 340° **6.** Max. loading capacity: 200 Kg or better **7.** Pneumatic brakes to control horizontal movement. **8.** Electrical Sockets British Standard – 12 Pcs **9.** LAN Data ports RJ45 for PC – 1 Pc **10.** Telephone Outlets RJ11 – 1 Pc **11.** O2 Outlet (British Standard): 2 Pc **12.** Medical Air 4 Bar (British Standard): 2 Pc **13.** Vacuum Outlet (British Standard): 2 Pcs **14.** CO2 Outlet (British Standard): 1 Pc **15.** I.V Pole – 1 Pc **16.** Equipotential Sockets: 5 Pcs **17.** Basket for accessories	1
27	**DUAL ARM ANESTHESIA PENDANT** Ceiling mounted Surgical pendant is installed to provide all the necessary electrical, data and medical gases services within the sterile field to assist the surgery. **1.** Shelves – 2 Pcs **2.** Drawer – 1 Pcs **3.** No. of Arms: 2 **4.** Length of first arm: 600/800 mm or as per site requirement **5.** Length of second arm: 600/800 mm or as per site requirement (IF required) **6.** Max. degree of rotation at each arm: 340° **7.** Max. loading capacity: 400 Kg or more **8.** Pneumatic brakes to control horizontal movement. **9.** Electrical Sockets British Standard – 12 Pcs **10.** LAN Data ports RJ45 for PC – 1 Pc **11.** Telephone Outlets RJ11 – 1 Pc **12.** Oxygen Outlet (British Standard): 2 Pcs **13.** Medical Air 4 Bar (British Standard): 2 Pcs **14.** Vacuum Outlet (British Standard): 2 Pcs **15.** Nitrous Oxide Outlet (British Standard): 2 Pcs **16.** AGSS Outlet: 1 Pc **17.** I.V Pole – 1 Pc	1

	18. Equipotential Sockets: 5 Pcs **19.** Basket for accessories **20.** Should be compatible with the Anesthesia machine lifting/mounting	
28	**Electrical Cable Work - Misc. for OT's & AHU**	**Operation Rooms (As per site requirement)**
	Requirement for Item No: 1 to 28 except item no 22 i.e. OT Light **Warranty and Maintenance Period:** 1. **Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty i.e. door, control panel, audio video system, digital multiviewer, peripheral lights, complete laminar flow including filters, Air handling unit including all parts (fan, dehumidifier, DX coil, control panel), HVAC control system, Scrub unit valve & sensor and etc. 2. PPM must be done according to the OEM criteria in warranty period. 3. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by O.E.M. 4. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 5. Required surety of service support and parts from the manufacturer, in case of transfer agency / distributor via undertaking by O.E.M. 6. Up-time guarantee during warranty period must be 90-95%. 7. Response to breakdown during and after warranty period must be 1-3Hours. 8. **Down Time:** If equipment is malfunctioning or not working properly then down time period would start i.e., if machine remain out of order for more than one day; then one and half day increase in contract of concerned equipment will be charged but if any part required from manufacturer, then downtime period not calculated for a month but after a month the down time should be calculated, are mentioned below; 90% → No Down Time Below 90% → 1.5 days increase daily Below 75% → 3.5 days increase daily Below 50% → 5 days increase daily **Trainings & Manual:** **1.** Operating and service manual with troubleshooting and circuit diagram must be provided. **2.** In house operator training session for end user. **3.** In house service training session for Biomedical and Maintenance by Principal Certified resource **Note:**	

	1. **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** 2. **All the Item No: 1 to 28 including Wall panel, Glass wall panel, Surgeon control panel, Medical cabinet, Doors, Audio video management, documentation & Communication, Multi-viewer, Vinyl flooring Laminar Air flow including all parts, HVAC system and its digital controls, Insulation, Exhaust fan, scrub, x-ray illuminator, Pendant and etc. are from Europe, USA, Japan or equivalent.** 3. **HVAC ducting, Apparatus control panel and Electric wiring can be supplied locally, must be of high quality, and will be verified by the concerned department / Authorized nominated Officer by Procuring Agency.** 4. **The winning bidder for the modular operation theater should sign an MOU with the winning bidder of Ceiling mounted Angiography system. The purpose of the MOU is to ensure the smooth and proper functioning of the Angiography system and Modular operation theater, and to guarantee proper coordination (attached).** 5. **Complete Modular Operation Theater should be installed with the presence of Principle technical person.** **COUNTRY OF ORIGIN:** USA / EUROPE / JAPAN / UK SHOULD HAVE FDA 510(K) / CE(MDD) / JIS /JQAO/ MHLW.	
	Optional Items Mandatory to Quote	
1	**Portable surface & Ducts decontamination system using dry fog process** Disinfectant dispersal speed 21ml/min Total disinfectant volume 2.5 liters Dual dispersal protocols (6ml/m3 or 3ml/m3) Electric reservoir lock system Data entry by touch screen (room volume, operator, room, etc.) Memory of 500 process events Maximum room volumes disinfected 800m3 at 3ml/m3 and 400m3 at 6ml/m3 Hydrogen peroxide (H2O2) 7% boosted by peracetic acid (PAA) Up to 6 log reduction. Huge removal capacity due to the 5 carbon filters. H2O2 Detector (Dragger Brand) MASK (qty.: 2)	01
2	**Hand Held Particle Counter** Should comply with all the stringent requirements set forth in ISO 21501-4. It is calibrated with NIST traceable PSL spheres using TSI's world-class Classifier and Condensation Particle Counters, Technical Specification 0.3 to 25 μm CFM (2.83 L/min) flow rate Up to three channels of simultaneous data ISO 21501-4 compliant USB serial output Compatible with TrakPro Lite Secure	01

<table>
<tr><td></td><td>1,500 sample record storage
250 location labels
Large 3.2-inch (8.1-cm) display
On screen data review
User selectable middle size channel
Removable Li-ion battery
Intuitive keypad menus
High impact injection molded plastic</td><td></td></tr>
<tr><td>3</td><td><u>DOUBLE WING MANUAL DOOR FOR CLEAN CORRIDOR WITH ACCESS CONTROL</u>
1. Door wing with 1.5mm Stainless Steel 304 fully closed construction.
2. Option of Door wing stainless steel color or RAL Powder coated with antimicrobial properties according to user choice
3. Hermetic sealed door to prevent foreign bodies when closed
4. Stainless Steel handles with key lock from both sides.
5. Stainless Steel 304 1.5mm thick sheet Door Frame brushed finished or power coated in any RAL color.
6. Best quality Door Closer and hinges
7. Door Dimension – 1500 x 2100 mm or as per the size requirements</td><td>01</td></tr>
<tr><td>4</td><td>EXO-Scope<table><tr><td>Telescope 0°, working distance 25 – 75 cm for white light, 20 – 30 cm length 11 cm, autoclavable, with fiber optic light transmission incorporated</td><td>1</td></tr><tr><td>Clamping Cylinder, folding, for flexible mounting of 10 mm telescopes to telescope sheath, autoclavable. The clamping cylinder allows vertical movement and rotation of the telescope, for use with Clamping Jaw and universal adaptor 10 - 15 mm</td><td>1</td></tr><tr><td>Clamping Jaw, with ball joint, large, clamping range 16.5 to 23 mm, with quick release coupling SLOCK (male), for use with all square-headed telescopes</td><td>1</td></tr><tr><td>Articulated Stand, reinforced version, only, L-shaped, especially long operating range, with one mechanical central clamp for all five joint functions, height 48 cm, operating range 66 cm, with fastener: Lock (female)</td><td>1</td></tr><tr><td>Rotation Socket, to clamp on the operating table with one already mounted butterfly nut, for use with European and United States standard rails, with lateral clamping element for height and angle adjustment of the articulated stand</td><td>1</td></tr></table></td><td>01</td></tr>
<tr><td>5</td><td>UVC AIR DISINFECTION FOR AIR DUCT
1. UVC air disinfection system should be installed in the supply ducting of an HVAC system to disinfect</td><td>01</td></tr>
</table>

	2. airborne mold, virus, bacteria and carbon-based odors. The system should comprise of 5 lamps, each **3.** secured in their own parabolic aluminum reflector for maximum UVC intensity. In addition, it should be **4.** installed parallel to airflow to achieve the maximum amount of contact time with the airborne **5.** contaminants. **6.** It should be ideal for any building equipped with a HVAC system. The ballast/control box should be **7.** equipped with BMS dry contacts to work with any building automation system. **Technical Specification** **1.** UV Wavelength Nanometers (nm) * UVC 254nm **2.** UV Lamp Configuration Straight T6 (5) **3.** Reflector Anodized aluminum parabolic reflectors (5) **4.** Lamp Change Out Time 17,000 Hours **5.** UV Lamp Type Proprietary high intensity 19mm mercury vapor quartz **6.** Should be as per the Air Flow.	
	Requirement for Optional item NO 1 to 5: **Warranty and Maintenance Period:** 1. **Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty i.e., LCD/LED, Battery, UV lamp, Scope, Door, Keypad, Filter, Sensor and all other parts & consumable items and etc. 2. PPM must be done according to the OEM criteria in warranty period. 3. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by O.E.M. 4. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 5. Required surety of service support and parts from the manufacturer, in case of transfer agency / distributor via undertaking by O.E.M. 6. Up-time guarantee during warranty period must be 90-95%. 7. Response to breakdown during and after warranty period must be 1-3Hours. 8. **Down Time:** If equipment is malfunctioning or not working properly then down time period would start i.e., if machine remain out of order for more than one day; then one and half day increase in contract of concerned equipment will be charged but if any part required from manufacturer, then downtime period not calculated for a month but after a month the down time should be calculated, are mentioned below; 90% → No Down Time Below 90% → 1.5 days increase daily Below 75% → 3.5 days increase daily Below 50% → 5 days increase daily	

	Trainings & Manual: **1.** Operating and service manual with troubleshooting and circuit diagram must be provided. **2.** In house operator training session for end user. **3.** In house service training session for Biomedical and Maintenance by Principal Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **COUNTRY OF ORIGIN:** USA / EUROPE / JAPAN / UK SHOULD HAVE FDA 510(K) / CE(MDD) / JIS /JQAO/ MHLW.	
	INDIVIDUAL ITEM LIST	
01	**ANESTHESIA MACHINE WITH VENTILATOR** **Technical Specification** 1. Gas Supply: Pipeline input pressure: 3 to 6 bar supply required; Connections: for O2, N2O, Air and Vacuum. 2. Non-interchangeable gas supply pipeline inlets. 3. Pin index cylinder yokes for O2 and N2O one each or more. 4. Stainless steel/fiber work surface. 5. Central Gas / Electronically driven unit. 6. Continual fresh gas flow with fresh gas flow compensation during mechanical ventilation. 7. Should be low flow 8. Auxiliary O2 Outlet one or more. 9. Two lockable castors 10. Absorber bag support arm 11. Oxygen flush 30 l/min or more 12. Should have built in suction operating on vacuum 13. Should have built in Active scavenging system compatible with hospital AGSS 14. Manometer gauges (Manual or Digital) i. Pipeline: O2, N2O & Air ii. Cylinder NIST: O2, N2O iii. Pin indexed: O2, N2O 15. Rotameter (hypoxic guard system) i. O2 tube (Double tube) ii. N2O tube iii. Air 16. Common gas outlet option should be present. 17. Front outlet 22mm OD – 15mm ID 18. Built in Oxygen monitoring system. 19. Built in autoclavable flow sensor compatible with all type of patient. 20. Should have ability to add module or other optional features like EtCO2, Agent monitoring. 21. Selectatec system two or more station vaporizer mounting i. Vaporizer should be flow and temperature compensated ii. Should not be brand specified and can be interchangeable	01

22. Minimum 1.5 liters CO2 absorber volume compatible with all type of patient
    i. Absorbent canister should be Autoclavable
23. Breathing assembly/system should be completely Autoclavable and not be cycle bounded.
24. Two or more drawer units.
25. Anesthesia ventilator with minimum 15" or more color Touch LCD/TFT screen and should be capable of ventilating adult, pediatric and neonate patient.
26. Ventilation modes: MAN, SPONT, VCV, PCV, PSV
27. Should be equipped with anti-barotrauma and anti-volutrauma system
28. Tidal volume from 5 ml to 1500 ml or better
29. Ventilation frequency starting from 4 bpm up to 80 bpm or better
30. Inspiratory to expiratory time starting from 1:1 till 4:1
31. PEEP 4 cmH20 to (20 cmH2O or more)
32. Oxygen failure safety system
33. Measured parameters should include: Expired tidal volume, frequency, minute volume, PIP, plateau pressure, PEEP, mean pressure, airway pressure
34. Battery backup: 60 minutes or more
35. Audible and visual alarms: Low air/ N2O/ O2 input pressure, apnea alarm, O2 alarms, upper/ lower limit alarms and leak or patient disconnection
36. Silent indicator, time and date and mains and battery indicator

Should Be Supplied with:

1. 2*Rebreathing patient circuit for Adult and Paeds
2. 1*Reusable bag 2L
3. 1*Power cord
4. 1*Vaporizers (Isoflurane)
5. 1*Side arm for Patient Monitor attachment

Power Requirement:

i. Line Voltages 100-240 VAC
ii. Line Frequency 50/60Hz

Requirement:

Warranty and Maintenance Period:

1. **Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty i.e., O2 sensor, battery & etc.
2. **Five years' warranty of internal flow sensor.**
3. PPM must be done according to the OEM criteria in warranty period
4. Up-time guarantee during warranty period must be 90 -95%

After Sales Service Support:

1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model.
2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM.
3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor

	4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Demonstration:** 1. **Quoted model demonstration is mandatory in technical approval is subject to satisfactory demonstration.** **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **COUNTRY OF ORIGIN:** USA / EUROPE / JAPAN / UK SHOULD HAVE FDA 510(K) / CE(MDD) / JIS /JQAO/ MHLW. **MANUFACTURER FROM OTHER COUNTRIES** (OTHER THAN USA, EUROPE OR JAPAN) SHOULD HAVE FDA (510K) AND CE / (MDD) / JIS / JQAO / MHLW.	
02	**PATIENT MONITOR FOR OPERATION THEATER** 1. Monitor for Adult / Paeds / Neonates 2. Operating Features and Characteristics: 3. Screen Size: At least 15" or more diagonal (Touch Operated) or better with non-fade LCD / TFT LCD / LED color display 4. Electro-Surgical Interference Suppression / Protection 5. Defibrillator Protection 6. Freeze and Cascade Facility 7. Waveform: Six wave forms or more 8. Waveform Traces Speed: 25 & 50 mm / sec **Parameters:** **ECG** 1. Input: 3&5-lead ECG cable and standard AAMI line for connection Lead Choice: I, II, III, aVR, aVF, aVL, V, V1-V6, 2. Numeric: Heart Rate 3. Real time, and freeze ECG Trace **Non-Invasive Blood Pressure (NIBP):** 1. Method: Oscillometric Principle 2. Numeric: Systolic, Diastolic, and Mean Pressure 3. Selectable auto inflate interval settings 4. Rising Cuff / Continuous Pressure Display **Invasive Blood Pressure (IBP):** 1. IBP Two or more Channels **EtCO2:** 1. Mainstream Capnography (EtCO2) **C.O (Cardiac Output):** 1. Measurement Method Thermodilution Method **Temperature:** 1. Numeric: Temperature selectable in ºC / ºF **Pulse Oximetry:** 1. Numeric: 0 – 100% oxygen saturation measuring range	01

	2. Waveform-Plethysmograph Pulse with Pulse Strength Indication 3. Probe preferable Masimo/Nellcor **Arrhythmia Analysis:** 1. Arrhythmia Analysis and ST Analysis **Respiration:** 1. Breath Rate display and settable apnea alarms 2. Sweep Speed: 6.25, 12.5 mm / sec or better **Other Parameters:** 1. Built-in rechargeable battery with 2 or more-hour battery backup 2. Monitor should have ability to add module or other optional features like Agent monitoring and IBP up to 4 channels. IBP up to 4 channel, Agent Monitoring and etc. 3. Trend Data: Graphical / Tabular with at-least 48 hours' or better 4. Should have feature for the connectivity with the Central Monitoring station **Alarms:** 1. High & Low (settable) on all parameters 2. Visual and audible indication of alarms **Communication:** 1. Capability to interface with LAN / WLAN for data transfer **Accessories:** 1. The system must be complete with all reusable (sensors, probes, cables, or any other accessories) required for measuring all the above selected parameters for Adult, Paeds and Neonates 2. Reusable Cuffs (Latex Free) of all available sizes of all body contours **Note: Monitor attachment with existing installed anesthesia machine side arm is the responsibility of supplier/vendor** **Power Requirement**: 1. Line voltages: 100-240VAC 2. Line Frequency: 50/60 Hz **Requirement:** **Warranty and Maintenance Period:** **1. Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. (Battery, EtCO2 sensor and all others parts are included). **2.** PPM must be done according to the OEM criteria in warranty period **3.** Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:**	

	1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **Country of Origin:** USA / Europe / JAPAN / UK should have FDA 510(k) / CE(MDD) / JIS /JQAO/ MHLW. **Manufacturer from other Countries** (other than USA, Europe or Japan) should have FDA (510k) and CE / (MDD) / JIS / JQAO / MHLW.	
03	**PORTABLE MONITOR** 1. Less than 7" Color Digital display LCD/LED **NIBP:** 1. Method: Oscillometric Principle 2. Numeric: Systolic, Diastolic, and Mean Pressure 3. Selectable auto inflates interval settings 4. Rising Cuff / Continuous Pressure Display 5. NIBP Measurement Record: 2000 or more **SPO2:** 1. Preferable Masimo/Nellcor or equivalent. 2. Pulse Oximeter with Plethysmograph waveform and Pulse Strength Indication 3. Complete with all standard accessories reusable SPO2 probe for Paeds and Adult, reusable NIBP cuff with all standard sizes and etc. 4. Rechargeable battery with 2 hours or more battery backup 5. Integrated thermal printer optional **Power Requirement**: **1.** Linevoltages:100-240VAC **2.** Line Frequency: 50/60 Hz **Requirement:** **Certification:** **Warranty and Maintenance Period:** **1. Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. (Battery, and all others parts are included). **2.** PPM must be done according to the OEM criteria in warranty period **3.** Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor	01

	4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **Country of Origin:** USA / Europe / JAPAN / UK should have FDA 510(k) / CE (MDD) / JIS /JQAO/ MHLW. **Manufacturer from other Countries** (other than USA, Europe or Japan) should have FDA (510k) and CE / (MDD) / JIS / JQAO / MHLW.	
04	**VASCULAR DOPPLER:** 1. High Resolution Color Display 2. Vascular Probe: 8 MHz, 10 MHz and Intraoperative probe. 3. Bi-directional Doppler Waveform Display 4. Noise Reduction to reduce the background hiss 5. Removable Micro SD Card Storage 6. Compatible with Interchangeable Probes 7. Integrated Loudspeaker 8. Flow Separated Stereo Headphone Output 9. Auto Gain Control 10. Rechargeable Battery with 2 hours or more battery backup 11. Medical grade recharging kit 12. Accessories: complete with: gel, soft carry bag, user manual. Vascular probe (8 & 10 MHz and Intraoperative probe) and Adaptor for battery charging **Power Requirement**: **1.** Linevoltages:100-240VAC **2.** Line Frequency: 50/60 Hz **Requirement:** **Certification:** 1. System should have Certification **FDA 510(k)/CE/JIS/MHLW/JQAO** **Warranty and Maintenance Period:** 1. **Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. (Battery, and all others parts are included). 2. PPM must be done according to the OEM criteria in warranty period 3. Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM.	01

	3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **COUNTRY OF ORIGIN: JAPAN / EUROPE / UK / USA OR EQUIVALENT**	
05	**PATIENT WARMER (WATER BASED)** Patient Warmer whole-body system could be allowed conductive warming therapy. Which can be used in the operating room, pre-op, recovery, emergency department or any department in need of patient warming therapy Unit should have ability to pre-condition the water saves time for the caregiver. Digital display LCD/LED Water Temperature Range: 20°C - 42°C or better (Heating Only) Controller Accuracy: Water Temp: ±1°C or better Water Temperature Display Range: 0°C - 50°C Audible & Visible alarms for over temperature limits. Adult Blanket with Tubing: 60" x 24" or equivalent, Qty. 02 Paeds Blanket with Tubing: 30" x 22" or equivalent, Qty. 02 Mobile Trolley with two lockable castors (imported or local both must be quoted) Complete with all standard accessories Safety: Class 1, Type BF, Defibrillation-proof, IPX4 **Power Requirement**: **1.** Line voltages: 100-240VAC **2.** Line Frequency: 50/60 Hz **Requirement:** **Certification:** **1.** System should have Certification **FDA 510(k)/CE/JIS/MHLW/JQAO** **Warranty and Maintenance Period:** **1. Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. **2.** PPM must be done according to the OEM criteria in warranty period **3.** Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model.	01

	2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **COUNTRY OF ORIGIN: UK / USA / EUROPE / JAPAN OR EQUIVALENT**	
06	**BLOOD / FLUID WARMER** Microprocessor controlled for simple operation Digital display LCD/LED Temperature Setting: 39℃ to 43℃ Preheat Time <2 min or better Over temperature safety cutoff Visual & Acoustic Over-temperature & Under-temperature alarms Flow Rate: Standard (Low to Rapid Flow rate) Alarm Temperature: Standard (Visual and Acoustic) Heat Exchanger: Dry Operating mode: Continuous operation, 24hrs a day continuous duty No special disposable required Standard tube size 4mm or equivalent can be attached and should not be brand specified Safety: Class 1, Type BF, Defibrillation-proof, IPX4 Heat protection sleeve should be provided: To protect from the environmental effect. **Power Requirement**: **1.** Line voltages: 100-240VAC **2.** Line Frequency: 50/60 Hz **Requirement:** **Certification:** **1.** System should have Certification **FDA 510(k)/CE/JIS/MHLW/JQAO** **Warranty and Maintenance Period:** **1. Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. **2.** PPM must be done according to the OEM criteria in warranty period **3.** Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:**	01

	1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **COUNTRY OF ORIGIN: UK / USA / EUROPE / JAPAN OR EQUIVALENT**	
07	**ECG MACHINE** Instruments Type: Multi lead electrocardiography Input Channels: 12 Channel, Simultaneous Acquisition of all 12 leads Standard Leads Acquired: I, II, III aVR, aVL, aVF, V1, V2, V3, V4, V5, V6 Waveform Display: Backlit 10" or more color display Input Impedance Meet or exceed the requirements of ANSI/AAMI/ EC11 Input Dynamic Range Electrode Offset Tolerance Common Mode Rejection Patient Leakage Current Meet or exceed the requirements of ANSI/AAMI ES1 Chassis Leakage Current Digital Sampling Rate: 30,000 or better samples /second/Channel used for Pacemaker spike detection; 1,000 or better samples /second/Channel used for recording and analysis Printer Technologies: Thermal Printer; Thermal Printer Speed: 5, 10, 25 or 50 mm/s Gain Setting 5, 10 or 20mm /mV or Better Report Print Formats Standard or Cabrera: 3+1, 3+3, 6, 6+6, & 12 Channel Frequency Response 0.05 to 300 Hz or Better Filters High-Performance baseline filter; AC interference filter 50/60 Hz; Low-Pass filters 40Hz, 150 Hz, or 300 Hz	01

	A/D Conversion 20 bits or better Keyboard Type Full alphanumeric keyboard Heart Rate Range 30 to 300 bpm or better Sensitivity /Gain` 1.25, 2.5, 5, 10,20,10/5 mm/mV Device Classification Class I, Type CF defibrillation-proof applied parts Data Storage Internal Storage up to 500 files or better Support for external archiving to the system Capability to interface with LAN/WLAN for data transfer File Formats. PDF, SCP, XML, DICOM etc. Power Requirement: Line Voltages 100-240 VAC Line Frequency 50/60Hz BatteryRechargeable Battery 5 hours or more battery backup Accessories Complete with standard accessories ECG Leads, Printer paper, Power Cord and Original Mobile Cart with 2 Lockable Caster **Requirement:** **Certification:** • **System should have Certification FDA510k and CE/MHLW/JIS/JQAO** Warranty and Maintenance Period: 1. Warranty Period required 5 years with maintenance and parts replacement. All the parts are included in the warranty (battery, keypad, printer & etc. are included). 2. PPM must be done according to the OEM criteria in warranty period 3. Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Country of Origin: USA / Europe / JAPAN or equivalent**	
08	**PORTABLE SUCTION MACHINE** **Specification:** 1. Should have ability to be used in the emergency dept., intensive care, operating theatre. 2. The pump should have accurate vacuum setting with the vacuum regulator	01

	3. Should have piston/cylinder system for a vibration free and noiseless operation (should be less than 50dB or better.) 4. The vacuum range should start from -95 kPa / 713 mmHg or better. 5. The flow rate should be adjustable from 40 to 60 liter/min. 6. One reusable suction jars of 5 liters, preferable 2 reusable jars of 5 liters. 7. Mobile Trolley Original with two lockable castor 8. Power Requirement: Line Voltages 100-240 VAC Line Frequency 50/60Hz 9. Foot switch ON/OFF **Requirement:** **Certification:** 1. "FDA (510k) /CE / (MDD) / JIS / JQAO / MHLW" **Warranty and Maintenance Period:** **1. Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. **2.** PPM must be done according to the OEM criteria in warranty period **3.** Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **COUNTRY OF ORIGIN: JAPAN / EUROPE / UK / USA OR EQUIVALENT**	
09	**DIATHERMY** 1. Microprocessor based electrosurgical unit for normal and under water cutting usages. 2. Automatic self-test function 3. Operation in radio frequency range 4. Controls for cutting, coagulation, spray and blends 5. Monopolar cutting power of 300 watts or more 6. Monopolar coagulation power of 100 Watts or more 7. Bipolar coagulation power of 50 Watts or more	01

	8. Spray coagulation mode. 9. Different gradations of blending of cutting and coagulation power 10. Digital display of all set values of cutting and coagulation power 11. Audio and visual alarms 12. Protection against electric shock: CF Class applied part equipment 13. Protection against harmful water penetration: IPX1 – Protected against vertical water drops 14. Classification (EC Directive 93/42): Class IIb **Accessories**: 1. Double footswitch monopolar, single footswitch bipolar, electrode hand-piece, multipurpose electrode set (ball /loop/straight knife/needle), Reusable patient cable for return patient pads, power cable and Reusable silicon patient plate **Power Requirement**: **1.** Line voltages: 100-240VAC **2.** Line Frequency: 50/60 Hz **Requirement:** **Certification:** 1. System should have Certification **FDA 510(k)/CE/JIS/MHLW/JQAO** **Warranty and Maintenance Period:** **1. Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. **2.** PPM must be done according to the OEM criteria in warranty period **3.** Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier. **COUNTRY OF ORIGIN: USA / EUROPE / JAPAN / UK OR EQUIVALENT**	
10	**DEFIBRILLATOR** **1.** The defibrillator should be built on Biphasic concept. **2.** LCD color display with Screen Size of approx. 5 inches or better **3.** Synchronized output with ECG.	01

	4. For External Defibrillation Energy Selection & Delivery on Control Panel and / Or External Paddles **5.** For Internal Defibrillation Energy Selection on Control Panel and / Or Internal Paddles and Delivery must be on Internal Paddles **6.** Charging Indicator **7.** The energy range should be adjustable for Neonates, Paeds and Adults up to 200 Joules or better **8.** Charging Time for full energy should be less than 6 – 7 seconds **9.** Display of HR, ECG through paddles and Lead I, II & III patient cable **10.** Built-in recorder for printing of full summary **11.** Alarms for High and low Heart rate, low battery warning **12.** Auto Tester / Self-Check **13.** External Paddles (Adult and Paeds) **14.** AED Facility with Cable **15.** Pacing Facility **16.** Other Parameters: Built-in Rechargeable battery with charger for minimum 100 shocks at maximum energy **Power Requirement**: **1.** Linevoltages:100-240VAC **2.** Line Frequency: 50/60 Hz **Requirement:** **Certification:** 1. System should have Certification **FDA 510(k) and CE/JIS/MHLW/JQAO** **Warranty and Maintenance Period:** **1. Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. (Battery, paddle and all others parts are included). **2.** PPM must be done according to the OEM criteria in warranty period **3.** Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:**	

	Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier. **COUNTRY OF ORIGIN: USA / EUROPE / JAPAN / UK OR EQUIVALENT**	
11	**Syringe Pump** **1.** Automatic identify different size (5/10/20/30/50/60ml). **2.** Should have 3 infusion mode or more **3.** Display should be more than 3 inch. **4.** Light Design, with battery backup **5.** Rate Range: 0.1-1500ml/h or more, with 0.01ml/h increment **6.** Total volume displays 0.1-9999.9ml **7.** Mechanical accuracy ±1%, accuracy including syringe ±2%. **8.** Selectable bolus modes (Manual and automatic) **9.** KVO Rate: 0.1ml/h to 5ml/h adjustable **10.** Should be able to change infusion rate during infusion without stopping **11.** Occlusion level: 03 or more levels, alarm with audio/visual reminder. **12.** Calibration function, self-definition for all syringes compliant to the standard **13.** All kinds of alarms: Nearly empty; Infusion complete; Occlusion; No battery; Low battery; No AC power; No DC power; Plunger/clutch disengaged Syringe disengaged; Reminder; Self-test error, invalid rate, and the limited volume less than or equal to total volume **14.** Special function; **a)** Repeat alarming: If there is still alarm after mute alarm sound, it will alarm again in 2 minutes **b)** Record of 3000 entries or more can be stored and reviewed **c)** Alarm volume setting: Visual and voice available **d)** Power supply switching: When AC/DC power supply is cut off, the infusion automatically switches to internal battery supply **e)** Screen Lock function in touch screen option **15.** Power Requirement: Line voltages: 100-240VAC Line Frequency: 50/60 Hz **16.** Battery backup 6 hours or more. **17.** Power Unit Waterproof design to prevent the liquid drop, IPX24 or better **18.** Interface port for data output and nurse call **19.** Should have certification to use in harsh condition like ambulances and medical transportation vehicle **Requirement:** **Certification:** **1.** System should have Certification **FDA510k/CE (MDD) / JIS or JQAO.** **Warranty and Maintenance Period:** 1. Warranty Period required 5 years with maintenance and parts replacement. All the parts are included in the warranty. 2. PPM must be done according to the OEM criteria in warranty period 3. Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:**	01

	1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Country of Origin: USA / Europe / JAPAN or equivalent**	
12	**PORTABLE OPERATION THEATER LIGHT:** **Specifications:** **1.** Unit should have Clarity of vision, optimum performance **2.** Unit should have Concentrated light source **3.** Unit should have Patented, proven reflector technology **4.** Unit should have No color deterioration **5.** Unit should have Cool light **6.** Unit should be User-friendly **7.** Unit should have Optimum hygiene **8.** Unit should have Ultra-reliable lighting **9.** Unit should have Safety glass for best possible clarity. **10.** Unit Should Have Sterilize-able and Remove-able Handles **11.** Unit Should have dust protection **12.** Should have light intensity of main light 120,000 lux **13.** Should have Color temperature adjustment 3500 - 5500 Kelvin **14.** Should have Electric field adjustment. **15.** Should have Focusable light field size d10 at 1m of light should be 180 mm -300 mm or better **16.** Should have Temperature increase at head height < 1 ºc **17.** Should have color rendering index to 99 Ra or above. **18.** Life time of LED should be 50,000 hours or more. **19.** Should have built-in battery backup more than 3 hours or more. **20.** Original trolley with flexible arm for height adjustment and two lockable castors. **Power Requirement**: **1.** Line voltages: 100-240VAC **2.** Line Frequency: 50/60 Hz **Requirement:** **Certification:** **1.** System should have Certification **FDA 510(k)/CE/JIS/MHLW/JQAO** **Warranty and Maintenance Period:**	01

	1. **Warranty Period required 5 years** with maintenance and parts replacement. All the parts are included in the warranty. 2. PPM must be done according to the OEM criteria in warranty period 3. Up-time guarantee during warranty period must be 90 -95% **After Sales Service Support:** 1. Free of cost software installation and up gradation would be responsibility of manufacturer and its authorized distributor for upcoming next ten years after installation of quoted model. 2. Service support and parts availability upcoming next ten years after installation of quoted model must be ensure via a separate letter by OEM. 3. Required surety of service support and parts from the manufacturer, in case of transfer agency/ distributor 4. Response to breakdown during and after warranty period must be 1-3 Hours **Trainings & Manual:** 1. Operating and service manual with troubleshooting and circuit diagram 2. In house operator training session for end user 3. In house service training session for Biomedical by Principle Certified resource **Note:** **Supply, Installation, Testing, Commissioning and Maintenance (Including all type of work for the completion of the installation) is the responsibility of awarded firm/supplier.** **COUNTRY OF ORIGIN: UK / USA / EUROPE / JAPAN OR EQUIVALENT**	

Note:

- Financial proposal must be submitted on company letter head duly signed and stamped. Bidder is required to type their offer in figure and as well as in words of the total amount; else the offer would be rejected.

Signature of Manufacturers /Importers/Sole Agents/Contractors_____

Name of Medical Store_____

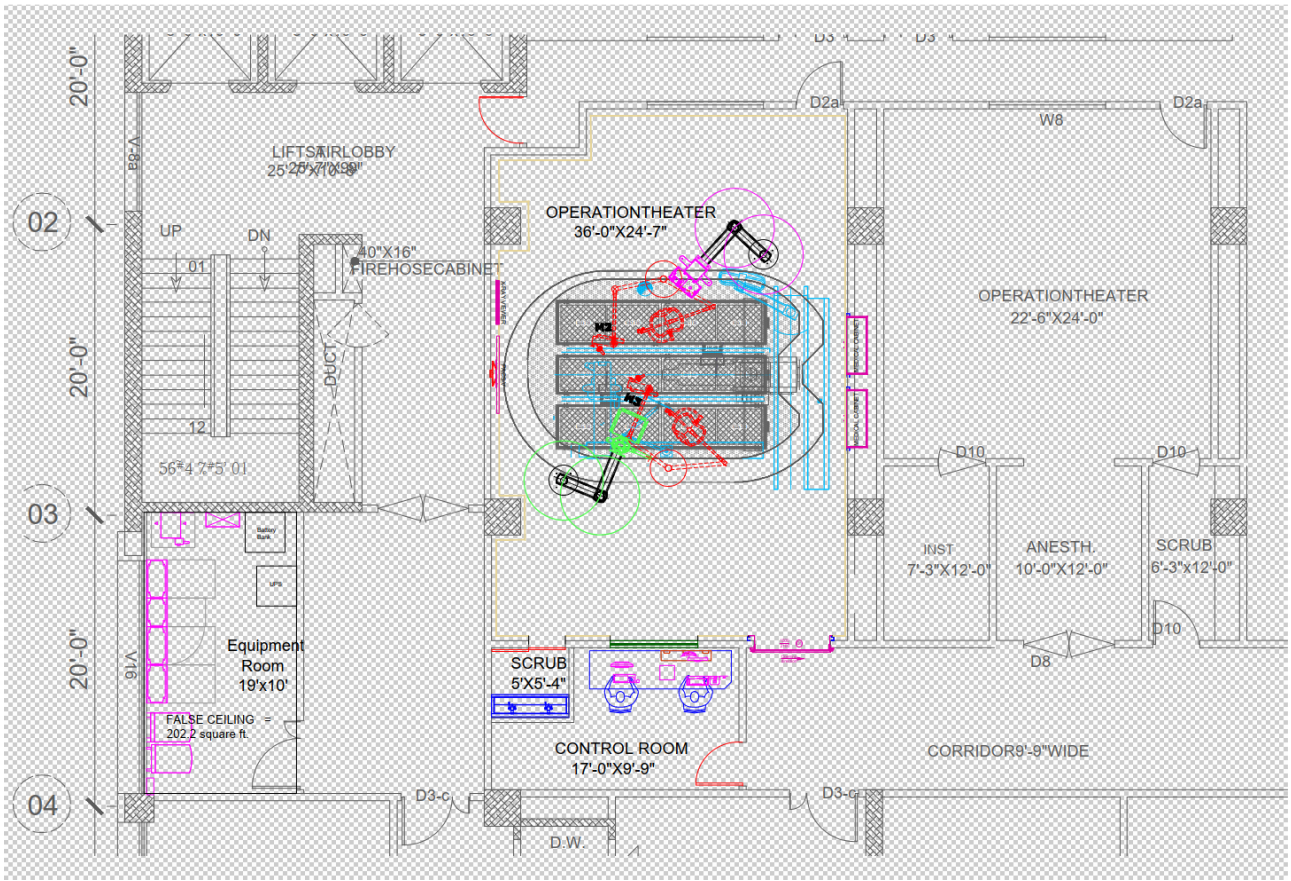
Full Address_____

Telephone No. Office_____Cell No: -_____

Email Address (if any) _____

DRAWING

For reference purpose bidder should visit and inspect the site at their own expense and responsibility and obtain all necessary information prior to submitting the tender. Any detail / specification missing in the document should be obtained from concerned department of procuring agency before bidding. Once the tender is submitted, it will be assumed that no further clarification was required.



BID LETTER FORM

From:
(Registered name and address of the bidder)
To:
Executive Director,
Shaheed Mohtarma Benazir Bhutto Institute of Trauma, Karachi –74200

Dear Sir,
Having examined the bidding document and amendment thereon we undersigned, offer to provide services to the works including in conformity with the terms and conditions of the bidding document and amendments there on, for the following project in response to your tender call dated_

Tender Title: _____

We undertake to provide services/execute the above project or it part assigned to us in conformity with the said bidding documents for an estimated sum of Rs. (Rupees)(total bid amount in words and figures) which may vary in accordance with the schedule of prices attached herewith and coverage options made by SMBBIT or its user organization.

If our bid is accepted, we undertake to;

1) Provide services/execute the work according to the time schedule specified in the bid document,
2) Obtain the performance guarantee of bank in accordance with bid requirements for the due performance of the contract, and
3) Agree to abide by the bid conditions, including pre-bid meeting minutes if any, which remain binding upon us during the entire bid validity period and bid may be accepted any time before the expiration of that period.
4) We understand that you are not bound to accept the lowest or any bid you may receive, nor to give any reason for the rejection of any bid and that you will not defray any expenses incurred by us in bidding.

Place: Bidder's signature
Date: and seal.

CONTRACT FORM

THIS AGREEMENT made the …….....Day of.....(year) Between the Procuring Agency (hereinafter part "The SMBB INSTITUTE OF TRAUMA") of one and ……. (Name of Vendor) of ……. (City and country of Vendor) (Hereinafter "the Supplier") of the other part:

WHEREAS the SMBB INSTITUTE OF TRAUMA is desirous that certain Supplies, as described in the bid document and briefly outlined below, should be provided by the Vendor.

Date of tender call:
Title of the project:
Brief outline of the work:

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS;

In this agreement words and expression shall have the same meanings as are respectively assigned to them in the bid document referred to.

The following document shall be deemed to form and be read and construed as part of this Contract, viz.

1) Bid document(s)
2) Pre-bid conference minutes (if any),
3) Clarification on bid document issued (if any),
4) SMBB INSTITUTE OF TRAUMA notification of award.

In case of conflict among documents mentioned above, the documents mentioned above in reverse order will prevail over other documents. In consideration of the payments to be made by the SMBB INSTITUTE OF TRAUMA to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the SMBB INSTITUTE OF TRAUMA to (**Tender Title ..**) and to remedy defects therein conformity,
in all respects, with the provisions of the contract.

The SMBB INSTITUTE OF TRAUMA 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.

Brief particulars of the services which shall be supplied / provided by the Supplier areas under:

Solutions, service or material	**Quantity**	**Unit price**	**Amount**	**Remarks**

IN WITNESS whereof the parties hereto have caused this Agreement executed the day and year above written.

Signed, sealed, delivered by_____the (for the Procuring agency)
Signed, sealed, delivered by_____the (for the Supplier)

FORM OF PERFORMANCE SECURITY
(Bank Guarantee)

Guarantee No. _____Executed on: Expiry date: _____

[Letter by the Guarantor to the Employer]

Name of Guarantor (Bank) with complete address (Scheduled Bank in Pakistan):

_____

Name of Principal (Contractor, Manufacturer, Supplier or any bidder) with complete address:

_____

Penal Sum of Security (express in words and figures):

_____

Letter of Acceptance No: _____Dated: _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the are of the said Principal we, the Guarantor above named, are held and firmly bound unto the Executive Director, SMBBIT, Karachi (here in after called the Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the principal has accepted the Employer's above said Letter of Acceptance for (Name of Contract) for the _____(Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of said Documents that may hereafter be made, notice of which modificationstotheGuarantorbeingherebywaived,then,thisobligationtobevoid;otherwiseto remain in full force and virtue till all requirements of Condition of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We,_____(the Guarantor), waiving all objections and defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's written declaration

that the principal has refused or failed to perform the obligations under the Contract which payment will be affected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the principal(Contractor) has duly performed his obligations under the Contractor has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Witness:

_____

Guarantor
(Bank)
1._____ (Name, Title, Signature &Seal)

Signature:

_____

2. _____ Name:

_____

(Name, Title, Signature Seal) Title:

_____

(ANNEX-F)

AFFIDAVIT
(On Judicial Stamp Paper)

I/We, the undersigned [Name of the Supplier] hereby solemnly declare and undertake that:

1. I/We have read the contents of the Bidding Document and have fully understood it.
2. The Bid being submitted by the undersigned complies with the requirements enunciated in the bidding documents.
3. The Goods that we propose to supply under this contract are eligible goods within the meaning of this SBD.
4. The undersigned are also eligible Bidders within the meaning of the Standard Bidding Documents.
5. The undersigned are solvent and competent to undertake the subject contract under the Laws of Pakistan.
6. I/We have not paid nor have agreed to pay, any Commissions or Gratuities to any official or agent for SMBB Institute of Trauma related to this Bid or Award or Contract.
7. I/We are not blacklisted or facing debarment from any institute of Federal, Provincial Government or any Department /Agency/Organization/Autonomous body or Private Sector organization anywhere in Pakistan.
8. That undersigned has not employed any child labor in the organization/unit.
9. I/We understand that the Selection and Rate Contracting Committee of the Procuring Agency is not bound to accept the lowest or any other bid they may receive.

I/We affirm that the contents of this affidavit are correct to the best of our knowledge and belief.

Signatures with stamp Name: _____ Designation: _____

CNIC No._____**(Copy must be attached)**

For Messrs. [Name of Supplier]

INTEGRITY PACT

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

Contract Number: **NO.** **Dated:**
Contract Value: **Rs.**
Contract Title:

M/s._____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, **M/s.** _____repres ents 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, SMBBIT Karachi (PA), except that which has been expressly declared pursuant hereto.

M/s._____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.

M/s._____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, **M/s.** _____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 time the sum of any commission, gratification, bribe, finder's fee or kickback givenby**M/s.**_____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.

_____ _____

M/s. **Executive Director (D.D.O)**

SAMPLE MEMORANDUM OF UNDERSTANDING

BETWEEN
[Name of the Party Procuring Angiography Machine] [Address of the Party Procuring Angiography Machine]
AND
[Name of the Party Procuring Hybrid Modular Operation Theater] [Address of the Party Procuring Hybrid Modular Operation Theater]

WHEREAS, both parties are entering into separate procurement tenders, one for the angiography machine and the other for the Hybrid Modular Operation Theater.

WHEREAS, the successful installation and functioning of the angiography machine are dependent on its integration within the Hybrid Modular Operation Theater, requiring coordination in accordance with shipment arrivals and installation phases.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, both parties agree to the following terms:

1. **Scope of Work Coordination**

Both parties acknowledge the interdependence of their respective projects and commit to close coordination to ensure the seamless installation and functioning of the angiography machine within the Hybrid Modular Operation Theater.

2. **Installation Phases Coordination:**

The Parties recognize the importance of coordinating installation phases such as operation theater wall panel installation before the arrival of the angiography machine. The Party Procuring Angiography Machine shall provide the Party Procuring Hybrid Modular Operation Theater with a detailed installation schedule, allowing for adequate preparation and synchronization.

3. **Shipment Arrivals Coordination:**

Both parties shall coordinate the shipment arrivals of equipment, ensuring that the necessary components, including the angiography machine and operation theater wall panels, arrive in a timely manner to facilitate the installation process.

4. **Technical Integration:**

Both parties shall collaborate on technical aspects, ensuring that the angiography machine is seamlessly integrated into the Hybrid Modular Operation Theater infrastructure. This includes but is not limited to electrical, networking, and space requirements.

5. **Testing and Acceptance:**

The Parties shall jointly conduct testing and acceptance procedures to ensure the proper functioning of both the angiography machine and the Hybrid Modular Operation Theater as an integrated system.

6. **Responsibilities:**

Each party shall bear the responsibilities related to their respective procurements. However, in case of any issues arising during the integration process, both parties commit to working together to resolve them in a collaborative manner.

7. **Confidentiality:**

Both parties agree to treat any proprietary or confidential information obtained during the collaboration with the utmost confidentiality and not to disclose such information to any third

party without prior written consent.

TERM OF AGREEMENT:
This Memorandum of Understanding shall commence on the effective date and remain in effect until the successful completion of the installation and commissioning process.

IN WITNESS WHEREOF, the parties hereto have executed this Memorandum of Understanding as of the Effective Date. _____
Date: _____
[Name and Signature of Party Procuring Angiography Machine]

_____ Date: _____
[Name and Signature of Party Procuring Hybrid Modular Operation Theater]