Government of India
Ministry of External Affairs

Tender for
Supply, Installation and Maintenance of Medical Equipment at JFK Medical Centre, Monrovia in Liberia.

Development Partnership Administration
Ministry of External Affairs, Jawaharlal Nehru Bhawan, Janpath, New Delhi

Date: 18/09/2015

Ministry of External Affairs
(Development Partnership Administration-I)

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia.

Contents

Acronyms used in the tender document:

MEA:	Ministry of External Affairs
GoI:	Government of India
HLL:	HLL Lifecare Limited
JFK:	John F. Kennedy Medical Centre, Monrovia
ITB:	Instruction to Bidders
IFB:	Invitation for Bids
CMC:	Comprehensive Maintenance Contract
PAO:	Pay & Accounts Officer
DPA:	Development Partnership Administration
PO:	Purchase Order
BG:	Bank Guarantee
OEM:	Original Equipment Manufacturer

Ministry of External Affairs
(Development Partnership Administration-I)
Tender Notice

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia. (Tender No. - DPA-1/230/95/2013/3)

Ministry of External Affairs on behalf of the President of India invites sealed proposals from eligible and qualified Bidders for Supply, Installation and Maintenance of Medical equipment for JKF Medical Centre, Monrovia, Liberia. Eligible bidders are requested to submit their proposal along with complete technical details & commercial proposals as per "List of Requirements" given in **Annexure-I** and Technical Specifications given in **Annexure-II**.

SECTION I: Invitation for Bids (IFB)

1. General

Original Equipment Manufacturers or their Authorised agents or dealers can participate in this tender. The Equipment to be procured have been categorized into two Groups i.e. **Group X** and **Group-Y**. **Separate and independent bid is required to be submitted for each Group of medical equipment**. However, it is mandatory for bidders to quote for all medical equipment of a Group for which the proposal is being submitted. Proposals having qotation for partial list of medical equipment in any group shall be summarily rejected. Further, the bidders can bid for either one or both the Groups as long as they fulfil the eligibility criteria as mentioned in **Clause 6 under Section-II** of this tender document.

2. Contact Information

Proposal(s) and subsequent Correspondence(s) should be sent to the address given below:

Consultant (DPA-I),
Ministry of External Affairs,
Room No 3104,
Jawaharlal Nehru Bhawan,
23-D, Janpath,
New Delhi 110011
Tel: 011-49015517
E-mail: consultantdpa1@mea.gov.in

3. Submission, Sealing and Marking of Proposals

i. Separate and independent proposals are to be submitted for each Group of medical equipment. Each proposal should have separate Bid Security, separate Tender Document Fee (if downloaded from Website) and other documents required to be submitted as per EMD requirement and other eligibility conditions defined in the tender document. For example, if a bidder is applying both for Group X and Group Y, then two separate and independent proposals are to be submitted i.e. one proposal for each Group.

ii. Each proposal is to be submitted on "Two Bid System" comprising of "Technical Bid" and "Financial Bid" both of which should be submitted in sealed cover separately and then put together in another sealed cover. The outer envelope should bear the name of the Project and the Group of medical equipment like "Tender for Supply, Installation and Maintenance of Medical equipment for JKF Medical Centre, Monrovia - GROUP X" (X is the name of the Group of medical equipment bidder is applying for), Liberia. One complete set of Bids is to be submitted to **SO (DPA-I), Ministry of External Affairs, Room No 3131, Jawaharlal Nehru Bhawan, 23-D, Janpath, New Delhi**. The Proposals and Technical Bids thereof will be opened as per the time schedule given in the tender document and Financial Bids of the technically qualified bidders will be opened on a later date after due intimation. Bidders or their duly authorized representative may attend the proposal and technical-bid opening process.

iii. Technical Bid of the Proposal should be a complete document bound as a volume separately. The document should be page numbered, duly signed with seal and appropriately flagged and contain the list of contents with page numbers. Any deficiency in documentation may result in rejection of the offer.

iv. All pages of the Technical & Financial bid should be duly signed with seal by the duly authorized representative of the bidder.

v. The "Technical Bid" shall contain Tender Fee (if downloaded from website), Bid Security and all other technical details/documents in support of the offer.

vi. Group-wise Bid Security/EMD amount should be submitted in the proforma as per **Annexure-V** of the tender document.

vii. There will be no mention of prices anywhere in the Technical Bid. However a copy of the "Price Schedule" **without price** must also be provided with the Technical Bid.

viii. The bidder should clearly provide the following information on the **face of all the envelopes**:
- Tender No.
- Tender name
- Name of the Group of the medical equipment (**Group X or Group Y**)
- Contents of the envelope
- Bidder's name and contact details

ix. The following documents must also be submitted in the technical bid of the proposal:
a. The bidder must sign each page of this tender document, and submit the complete document without detaching any page with their offer. Also, the bidder must attach a certificate conveying acceptance of all the terms and conditions of the tender document. The certificate and signed tender document are to be submitted with the Technical Bid.
b. Certificate of Incorporation of the firm (if the bidder is a Company).
c. Power of Attorney/General Power of Attorney or proper authorisation to the person empowered by the firm to sign the documents on its behalf. Three specimen signatures duly attested and two latest photographs of the person authorised to sign, execute and act in respect of this tender should be included.
d. Turnover certificate of the firm certified by the auditor/CA/CS indicating the turnover in area of medical equipment procurement related works.
e. VAT/Service Tax Registration number and self attested copy of Registration Certificates.
f. Details of desirable past experience of the bidder as defined under clause 6 under Section-II of the tender document with supporting documents.
g. Any other information, documentary evidence in support of suitability of the offer.
h. Vendors to give details Brochures, Manuals, etc. and Traceability criteria of the

materials to be used, in support to the Technical Specifications

i. A copy of the "Price Schedule" along with Terms & Conditions with prices hidden.
j. Duly filled in and signed Statement of Applicant (**Annexure-III**)
k. Duly filled in and signed Bid-Form (**Annexure-VI**)
l. Demand Draft of Rs. 5000/- (Rs. Five Thousand Only) against tender document fee (in case of download from website) in favour of "**Pay and Accounts Officer, Ministry of External Affairs**" payable at New Delhi.
m. Duly filled and signed Compliance checklist for the items to be supplied (**Annexure VIII**).
n. Documentary evidence to establish CE/USFDA certification / approvals for the medical equipment and other items offered by the bidder. Please refer to technical specifications for details.
o. Manufacturer Authorization Form and compliance checklist for medical equipment in the **Group-X** (Serial No. 9, 11, 12, 19, 30, 34, 35, 38, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52) for which the Proposal has been submitted (Refer to **Annexure VII for MAF and Annexure-VIII for Compliance checklist**) (desirable).
p. Manufacturer Authorization Form and compliance checklist for CT scan machine in the **Group-Y** for which the Proposal has been submitted (Refer to **Annexure VII for MAF and Annexure-VIII for Compliance checklist**) (essential).

4. Late Bids

Any Bid received by MEA after the deadline for submission of Bids prescribed in this Bid document, will be rejected.

5. Important Dates

- Sale of tender: upto 1600 hrs on **13/10/2015**
- Pre-bid meeting: at 1500 hrs on **24/09/2015**
- Deadline for submission: upto 1430 hrs on **14/10/2015**
- Opening Date of Technical Bid: at 1500 hrs on **14/10/2015**

All prospective bidders / authorized representative of the bidders who have purchased / downloaded the tender document may attend the pre bid meeting to get clarifications on their queries, if any. The prospective bidders should depute senior level representative(s) who should be well conversant with the subject and bid requirements. Due to security reasons, Bidders, wishing to attend the pre-bid meeting, are requested to convey their contact details to MEA latest by 1700 hrs on **23-09-2015** so that necessary arrangements could be made. Details are to be conveyed through email to **consultantdpa1@mea.gov.in**. The queries, if any, should be e-mailed to **consultantdpa1@mea.gov.in** a day prior to the pre bid meeting. . ***No queries shall be entertained after the Pre – Bid Meeting.***

End of Section-I

Section II: Instruction to Bidders (ITB)

1. General Definitions

1.1. **"Agreement"** means the document signed between the MEA, Govt of India and the successful bidder, that incorporates any final corrections or modification to the bid, and is the legal document binding on both the parties to the agreement, with all terms and conditions of the contract.

1.2. **"Bid"** means the proposals submitted by the Bidder(s) in response to this tender in accordance with the provisions thereof including the Technical Bid/proposal and Financial Bid/proposal along with all other documents forming part and in support thereof.

1.3. **"Bidder"** means a company/firm incorporated in India, who has submitted the bid as per the terms, conditions, and technical specifications of the tender document.

1.4. **"Bid Security" or "EMD"** shall have the meaning prescribed to it in "Instructions to Bidders."

1.5. **"Bid Process"** means the process of selection of the successful bidder through competitive bidding and includes submission of bids, scrutiny and evaluation of such bids as set forth in the tender**.**

1.6. **"Consignee"** means the person/office to whom the services/equipments are required to be delivered at the destination, i.e. CEO, JKF Medical Centre, Monrovia, Liberia.

1.7. "**Consultant**" means the Agency viz. HLL Lifecare Limited (HLL), New Delhi which will work on behalf of MEA to supervise, monitor and assist the process of tendering, procurement, installation, commissioning and maintenance of the medical equipment.

1.8. **"Effective date"** of the agreement/purchase order shall mean the date on which the 'Letter of Acceptance (LOA) shall be dispatched or e-mailed by the Purchaser.

1.9. **"Letter of Acceptance"** means the letter or memorandum communicating to the successful bidder the acceptance of its bid and includes an advance acceptance of its bid.

1.10. **"Maintenance"** means maintenance of the supplied medical equipment and CT scan machine during the period of warranty.

1.11. **"Nationalized/ Scheduled bank"** means Indian nationalized/scheduled bank.

1.12. **"Purchaser"** means Ministry of External Affairs, Govt. of India, New Delhi or its authorized representatives.

1.13. **"Purchase order"** means the principal's order for work, which is the principal's acceptance of the bidders' tender to perform the work.

1.14. **"Period"** shall mean the entire term of the agreement/purchase order.

1.15. **"Rupees"** means Indian rupees.

1.16. **"Services"** means services ancillary to the supply of medical equipment and CT scan machine (as per List of Requirement) such as transportation up to consignee, installation, warranty, insurance and any other incidental services.

1.17. **"Such/ Similar supply order"** means the supply of medical equipment for **Group-X** and the supply of CT scan machine/MRI machine for **Group-Y**.

1.18. **"Tender" and** / or **"Tender Document"** means this tender document comprising the sections namely Disclaimer, Notice Inviting Tender (NIT), Definitions and Abbreviations, Instructions to Bidders (ITB), General Conditions of Contract (GCC), List of Requirements (LOR), Technical Specifications (TS), Price Schedule (PS), and Bid Forms, Annexures and other formats and any applicable schedules thereto added/modified before the freezing of the tender.

1.19. The terms **"Successful Bidder, "Acceptable L1 Bidder"** and / or **"Vendor"** shall mean the Bidder who qualifies the Technical bid/proposal stage and the Financial bid/Proposal stage of this **tender** and to whom a Letter of Acceptance is consequently issued by the **purchaser.**

1.20. **"Works"** means all the works specified or set forth and required in and by the said **'** Technical Specifications', 'General Conditions of Contract ' and 'List of Requirements', ' Bid Forms, Annexures and other Formats' hereto annexed to be implied there from or

incidental thereto, or to be hereafter specified or required in such explanatory instructions and drawings (being in conformity with the said original Specification (s), Drawing (s) and ' List of Requirements) and also in such additional instructions and drawings not being in conformity as aforesaid, as shall from time to time, during the progress of the work hereby Contracted for, be supplied by the Purchaser.

2. Location for Supply, Installation, Commissioning, Training & Warranty Services

It is the responsibility of the bidder to ensure supply of medical equipment to JKF Medical Centre, Monrovia, Liberia and also to ensure installation and satisfactory commissioning and relevant training of the supplied equipment at specified locations of JKF Medical Centre, Monrovia, Liberia. Supplied medical equipment would be maintained by the bidder during the warranty period from the date of its successful installation.

3. Warranty Services:

a. Product to be offered shall be warranted for a period of one year for **Group-X** and three years for **Group-Y** from the date of its successful installation and handover to JKF Medical Centre authorities.

b. The Supplier shall be responsible for preventive maintenance including testing & calibration as per technical/ service /operational manual of the manufacturer, labour and spares, after satisfactory completion and to replace the material free of cost at site in whole or in part if found defective in any respect after receipt at site or during normal & proper usage or storage/maintenance for which the JKF Medical Centre shall give prompt written notice. Such replacements shall be effected by the Supplier within a reasonable time actually required to do so which in no case shall be more than 20 days.

c. The above provisions shall also equally apply to the material replaced by the Supplier under this Clause, in case the same is again found to be defective after its replacement. If the Supplier fails to act with requisite promptness and thereby entails avoidable loss to the JKF Medical Centre, it shall be liable to suitable action as deemed fit during the operative Warranty period.

d. There will be 98% uptime service during warranty period on 24 (hrs) X 7 (days) X 365 (days) basis, with penalty, to extend warranty period by double the downtime period (for **Group-Y**).

e. During warranty period, the supplier is required to visit consignee's site at least twice in a year commencing from the date of the successful completion of the warranty period for preventive maintenance of the goods (for **Group-Y**).

f. All software updates should be provided free of cost during the warranty period.

g. Failure of the above by the Supplier may lead to forfeiture of the Bank Guarantee and may face action as per Government rules.

4. Release of payment:

The price quoted by the bidder under column D and E of the price schedule in **Annexure-IV**, should be a lump-sum price which includes cost of medical equipment, transportation, installation, cost of warranty, all taxes, etc. Payment shall be released to the bidder, on the basis of lump-sum price, in the following manner:

4.1 On Dispatch: 70% of the quoted value shall be paid on issue of dispatch clearance by MEA subsequent to submission of proof of dispatch by the bidder to MEA.

The following documents would be required to be submitted by the bidder for issue of Dispatch Clearance Certificate by MEA:

i. Country of Origin Certificate
ii. Quality & Quantity Certificate
iii. Packing List
iv. Internal and Factory Inspection Report
v. Warranty Certificate
vi. Insurance certificate (in favour of MEA) valid upto installation & commissioning of equipment at site
vii. Invoice
viii. Certificate by ISO certified third party inspection agencies

4.2 On installation, commissioning/training: 30 % of the quoted value shall be paid on submission of proof of successful installation, training & handover of relevant documents such as satisfactory installation certificate from the JKF Medical Centre, Liberia.

5. Payment Procedure:

a. Where there is a statutory requirement for tax deduction at source, such deduction towards income tax and other taxes as applicable will be made from the bills payable to the Supplier at rates as notified from time to time.
b. The supplier shall send its claim for payment in writing, when contractually due, along with relevant documents etc., duly signed with date, to the purchaser.
c. While claiming payment, the supplier is also to certify in the bill that the payment being claimed is strictly in terms of the Purchase Order (PO) and all the obligations on the part of the supplier for claiming that payment has been fulfilled as required under the terms & conditions.
d. The Terms & Conditions not covered in the tender document shall be mentioned in the PO. Though such conditions will be general but will be binding to the bidders.
e. Exemption on Custom Duty charges will be provided to the bidders

6. Eligibility Criteria

a. Should be a company/firm incorporated in India.
b. The bidders should have minimum average annual turnover of Rs 6.5 crore for Group X and Rs. 7 crore for Group-Y during the last 3 financial years.
c. The bidder should have experience of supply and satisfactory installation of medical equipment to the Government of India/State Governments or Hospitals/Institutes run by the Central/State Governments. Required experience for each Group is mentioned below:

Group-X: The bidder must have successfully executed at least one such supply order of value not less than Rs. 5.25 crore or two such orders of value not less than Rs. 3.25 crore each or three such orders of value not less than Rs. 2.6 crore each during the last 7 years.

Group-Y: The bidder or its principal (OEM) must have successfully executed at least one such supply order of value not less than Rs. 6 crore or two such orders of value not less than Rs. 4 crore each or three such orders of value not less than Rs. 3 crore each during the last 7 years.

d. Bidder should be authorised by the Original Equipment Manufacturers or their authorized dealers for the offered medical equipment for supply and support during warranty period.
e. Bidders should not be under a declaration of ineligibility for corrupt or fraudulent practices.
f. Bidder should be registered with Sales Tax/ Income Tax Department of Government of India and should hold a valid VAT registration certificate, as applicable.

7. Cost and availability of tender documents

Interested Bidders may submit their proposal(s) as per the tender Document which can be obtained from SO (DPA-I), Room No 3131, Ministry of External Affairs, Jawaharlal Nehru Bhawan, 23-D, Janpath, New Delhi, India on payment of INR Rs. 5000/- (Rupees Five thousand only) upto 1600 Hrs on **13/10/2015** between 1100 hrs and 1600 hrs on any working day. The payment will be accepted in the form of a crossed demand draft in favour of "**Pay and Accounts Officer, Ministry of External Affairs"**; drawn on any nationalized bank/scheduled bank, payable at New Delhi. The Tender document can also be downloaded from MEA website http://www.mea.gov.in or Central Procurement Portal http://eprocure.gov.in, in which case the tender fee of Rs. 5000/- (non-refundable) as stated above, must be submitted with the bid through Demand Draft. **Separate tender fee is required for each proposal.**

8. Opening of Proposals and Bids

a. The purchaser will open the Technical Bid, in presence of Bidder's representatives who choose to attend, on the due date and time. The Bidder's representatives who are present shall sign a register evidencing their attendance.
b. The Bidders' representatives shall furnish Letter of Authority from their principals to attend the bid opening.
c. Financial Bids of only those bidders whose Technical Proposal are found technically suitable and complying with the tender documents will be opened on a date to be intimated later to those bidders.

9. Amendment of Tender Documents

a. At any time prior to the deadline for the submission of the proposals, MEA may, for any reason, whether at its own initiative or in response to clarification requested by the prospective bidder modify the tender document by amendments.
b. The amendment will be notified on the CPP Portal and www.mea.gov.in website.
c. In order to afford prospective bidders reasonable time to take the amendment in account in preparing their proposals, MEA may, at its discretion, extend the deadline for the submission of the proposals.

10. Language of Bid

The proposals prepared by the Bidder and all correspondence and documents relating to the proposal(s) exchanged by the bidder and MEA, shall be written in English language, provided that any printed literature furnished by the Bidder may be written in another language so long as it is accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Bid, the English translation shall govern.

11. Transit Insurance:

Rates quoted being door delivery basis, the Supplier shall be fully responsible for satisfactory commissioning of the medical equipment/ CT scan machine, at consignee's site. As such the Supplier shall dispatch the material duly insured (for 110% value of goods) till commissioning of the medical equipment/ CT scan machine, at consignee's site & expenses on this account shall be borne by the Supplier.

12. Bid Security

a. Bidder shall furnish Bid Security for an amount of Rs. 13,00,000 (Rupee Thirteen Lac only) for **Group-X** and Rs. 15,00,000 (Rupee Fifteen Lac only) for **Group-Y** along with the bid.

b. The Bid Security can be furnished in the form of Account Payee Demand Draft (DD) or Bank Guarantee (BG). In case of a Bank Guarantee, it should be valid for 225 days from the date of tender opening.
c. The DD shall be drawn on any Scheduled / Nationalised Bank in India, in favour of "Pay and Accounts Officer, Ministry of External Affairs, payable at New Delhi".
d. Proposals received without requisite Bid Security shall be rejected outright.
e. The Bid Security of the unsuccessful bidders will be released to them without any interest not later than thirty days after finalization of the tender. However, Bid Security of the successful bidder will be released without any interest, only after submission of the Performance Bank Guarantee.

13. Validity of bids

The Rates should be valid for a minimum period of 180 days from the date of submission of the proposal(s). The bids for lesser period shall stand rejected.

14. Evaluation of Bids

Only the bids having complete documents as mentioned in Clause 6 (Eligibility criteria) under Section II and the Bid Security shall be considered for technical evaluation. Technical and Financial evaluation for **Group-X** and **Group-Y** shall be done separately.

A. **Technical Evaluation** shall be based on:
   a. Responsiveness of the bidder on account of furnishing the documents mentioned in eligibility criteria.
   b. Satisfactory installation certificate from the previous clients.
   c. Work completion certificate.
   d. Client details (Name, Contact details).
   e. Other evidences of Supply & Installation of similar equipment inside and outside the country.
   f. Methods proposed for providing warranty.
   g. Matching up the specification as mentioned in the tender document (**Annexure-II**). The bidder has to submit the compliance checklist as per **annexure-VIII**.

B. **Financial Evaluation**
   a. Only the bidders who qualify in Technical Evaluation shall be informed about of the opening of Financial Proposals.
   b. Proposals for **Group-X** and **Group-Y** will be evaluated separately for the scope of work.
   c. Composite Price would be the criteria to determine the Lowest (L-1) bidder and the work would be awarded to the L-1 bidder.
   d. Proposals having quotation for part list of medical equipment in a Group shall be summarily rejected.

15. Award of Contract

a. MEA will award the Purchase Order to the successful bidder whose bid has been determined to be techno-commercially acceptable and lowest, provided further that the bidder is determined to be qualified to perform the assignment.
b. Terms & Conditions not covered in the PO but part of the tender document shall be binding on the bidders.
c. MEA will notify the successful bidder by e-mail/registered post/FAX.

16. Performance Bank Guarantee (PBG):-

a. The successful Bidder shall furnish to the Purchaser a Performance Bank Guarantee (as per the format provided at **Annexure-IX**), for an amount equivalent to 10% of the total contract value within 10 working days of dispatch of the Purchase Order by the Purchaser.

b. The Performance Bank Guarantee will be discharged by the Purchaser after completion of the Supplier's performance obligations including warranty obligations under the Contract.

c. Validity of PBG would be initially for 18 months for Group-X and 42 months for Group-Y from the issue of Bank Guarantee and shall be extendable further whenever asked by MEA.

17. Purchaser's Right to Vary Quantities at time of Award

The Purchaser reserves the right at the time of award of contract to increase/decrease the total quantity of Goods and services for which bids have been invited by up to 25% of their value (rounded to the next whole number).

18. Purchaser's Right to accept or Reject any or all Bids

The Purchaser reserves the right to accept or reject any Bid and annul the Bidding Process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds of the purchaser's action. The purchaser is not bound to accept the lowest or any bid.

19. Corrupt or Fraudulent Practices

It is required by all concerned namely Bidders/Suppliers etc to observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Purchaser

a. Defines, for the purposes of this purpose of this provision, the terms set forth below as follows:
   i. "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
   ii. "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among bidder (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition.

b. Will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

c. Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract by the purchaser if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing the contract.

20. Interpretation of the clauses in the Tender Document/Contract Document

a. Unless specifically mentioned to the contrary in their offer itself, it will be assumed that all terms and conditions mentioned in this enquiry are acceptable to the Bidders.

b. Any clarifications intending towards understanding the clauses shall be addressed in Pre-bid meeting.

c. The tender quotation of the Supplier not in conformity with the above conditions is liable to be rejected.

d. Ministry of External Affairs reserves the right to reject or accept any or all tender(s) without assigning any reason or to place the order for part or full quantity.

End of Section-II

SECTION III: GENERAL CONDITIONS OF CONTRACTS (GCC)

1. Scope of Work

Group-X: Supply, Installation, Testing, Commissioning & maintenance of medical equipment at JKF Medical Centre, Monrovia in Liberia. All civil alterations, cabling, flooring, safety protective furnishings, signage, interiors shall be responsibility of the vendor, if required. The hospital has sufficient capacity for additional electricity load for the newer equipment. To calculate the area, length of the cabling, etc., the bidder has to gather all information about the location at JFK Medical Centre, Liberia. The Supplier will also provide post-installation training & re-training to the staff operating the equipment.

Group-Y: This would be a turnkey project for the bidder wherein a single bidder has to carry out all the following functions. Supply, Installation, Testing, Commissioning & maintenance of medical equipment at JKF Medical Centre, Monrovia in Liberia. All civil alterations, cabling, flooring, safety protective furnishings, signage, interiors shall be the responsibility of the vendor. The hospital has sufficient capacity for additional electricity load for the newer equipment. To calculate the area, length of the cabling, etc., the bidder has to gather all information about the location at JFK Medical Centre, Liberia**.**

a. Supply, Installation, Testing, Commissioning & maintenance of 64 slice CT Scan at JKF Medical Centre, Monrovia in Liberia;
b. Supply, Installation, Testing and Commissioning of 130 kV DG Set & servo stabilizers at JKF Medical Centre, Monrovia in Liberia;
c. Laying cable connection for DG set to CT Scan;
d. Laying cable connection for Transformer to AMF panel;
e. Installation of AMF Panel with change over switch;
f. All civil alterations, flooring, safety protective furnishings, signage and interiors; and
g. Post installation training and retraining.

2. Price

a. The price quoted by bidder under columns D and E of the price schedule in **Annexure-IV**, should be a lump-sum price which should include cost of medical equipment, transportation, installation, training, cost of warranty, all taxes, etc.
b. Prices quoted should be 'firm & final' as per Price Schedule given in **Annexure-IV**.
c. Freight charges, local transportation, Excise duty, other levies should be included in the quoted rates (taxes extra as applicable)
d. Proposals having quotation for part list of medical equipment shall be summarily rejected.
e. Bidders must take into consideration in their bids, costs to be incurred for any additional work for **Group-X** pertaining to civil, electrical, radiation protection if required as per government regulation; as annexed in the specifications.
f. Bidders must take into consideration in their bids, costs to be incurred for any additional work for **Group-Y** pertaining to civil, electrical, plumbing, sanitary, radiation protection as per government regulation; furniture, servo stabilizers, U.P.S for CT Scan machine installed as annexed in the specifications.
g. The price should be quoted along with taxes applicable on the date of Tender Opening. The service taxes to be paid extra, if any, should be specifically stated. In the absence of any such stipulation the price will be taken inclusive of such taxes and no claim for the same will be entertained later.

3. Delivery Timelines

In the event of placement of Supply order, the bidder shall dispatch the medical equipment at JKF Medical Centre, Monrovia in Liberia within 12 weeks from the date of release of the Supply Order by MEA. Further, the bidder shall install & commission the medical equipment/items within 20 weeks from the date of release of Supply Order by MEA.

4. Penalty for delayed services

a. In the event of placement of an order, if the Supplier fails to deliver, install and commission the equipment in full or part thereof within the delivery period. T he Purchaser reserves the right to levy Liquidated damages @ 1% (one percent) per week of the amount of the undelivered stores for delay in supplies subject to maximum of 10% value of the supply Order.

b. Once the maximum LD amount has been reached, the purchaser may consider termination of the contract and purchase the same from elsewhere, at the risk and cost of the Supplier.

5. Arbitration and Jurisdiction

a. If a dispute or difference of any kind arises between the Purchaser and the Supplier in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultations.

b. If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration. The same will be referred by either party (MEA or the Bidder) after issuance of 30 days notice in wring to the other party clearly mentioning the nature of dispute to a single arbitrator acceptable to both the parties. The agreement to appoint an Arbitrator will be in accordance with the Arbitration and Conciliation Act, 1996 of India. The award of the Arbitrator shall be final and binding on both the parties to the agreement.

c. The Arbitrator may from time to time, with the consent of both the parties, enlarge the time for making and publishing the award. Subject to aforesaid Arbitration and Conciliation Act 1996, and the rules made thereunder or any modification thereof for the time being in force shall be deemed to apply to the arbitration proceeding under this clause.

6. Force Majeure

If at any time, during the currency of the contract, the performance in whole or in part by either party or any obligation under this contract is prevented or delayed by reason of any war, hostility, acts of public enmity, civil commotion, sabotages, fires, floods, explosions, epidemics, quarantines, restrictions, strikes, lock outs or acts of God (herein after referred to as 'the events') then provided, neither party has any claim for damage against the other in respect of such non-performance or delays in performance, deliveries under the contract shall be resumed as soon as possible when the events causing the prevention / delay have ceased to exist . If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.

7. Termination and Suspension

Unless specifically mentioned to the contrary in their offer itself, it will be assumed that all terms and conditions mentioned in this enquiry are acceptable to the bidder. The tender quotation of the Supplier not in conformity with the above conditions is liable to be rejected.

*End of Section-III**

Annexure I: List of Requirement

Scope of Work: Supply, Installation, Testing, Commissioning & maintenance of medical equipment at JKF Medical Centre, Monrovia in Liberia

GROUP -X

S.No.	Product description	Quantity
1.	Radiant Warmers for Infant	4
2.	Resuscitation equipment/ bags (Paediatric)	2
3.	Cystoscope set (Paediatric)	2
4.	Birthing table	4
5.	Resuscitation Cart	2
6.	Phototherapy Machine	2
7.	Pulse oxymeter hand held (paediatric)	10
8.	Blood Pressure Ciff kit (Paediatrics)	10
9.	Ventilator (Paediatric)	2
10.	Incubator infant (with oxygen)	2
11.	Gastroscope (Paediatric)	1
12.	Bronchoscope (Paediatric)	1
13.	Nebulizer	10
14.	Caesarean section kit	4
15.	Fetal Monitors	4
16.	Gynaecological table	2
17.	LEEP Equipment	2
18.	Manual Tracheal Suction	2
19.	Spectrophotometer	1
20.	Spirometer	1
21.	ECG Machine	1
22.	EKG Portable(ECG Portable)	4
23.	Laryngoscope	5
24.	Cardiotocography Machine	2
25.	Fetoscope	10
26.	Stretcher on Wheels	20
27.	Pulse oximeter	10
28.	Resuscitation equipment/ bags (Adult)	4

29.	Suction Unit	4
30.	Urethrotome with accessories	4
31.	Vacuum Extractor	5
32.	Monitoring Equipment (ECG,pulse,temperature,SPO2)	4
33.	I.V & Feeding pumps (Volumetric Infusion Pump)	4
34.	Operation table	3
35.	Automated Defibrillator	4
36.	Nursing trolley	10
37.	Examination table	10
38.	Anaesthesia machine	3
39.	Blood Gas machine (Analyzer)	1
40.	Blood Cell Counter	1
41.	Colposcope	1
42.	Cryosurgery Equipment kit	4
43.	Laparoscope Set	1
44.	Portable X-ray machine	2
45.	Colour Doppler Echocardiography System with Advanced 2D Facility	1
46.	Portable Color Doppler Echo Cardio Graphy System	1
47.	600mA X-Ray Machine with Fluoroscopy (IITV)	1
48.	Portable Ultrasound B & W	2
49.	Mid - Range Whole Body Colour Doppler	1
50.	Ventilator	4
51.	Video Colonoscope	1
52.	Video Gastroscope	1
53.	Cardiac Stress Testing Treadmill	1
54.	Auto C-PAP Machine	2
55.	Dental Chairs	2
56.	Hysteroscopy Instrument set	1
57.	Surgical light	3

GROUP -Y

S.No.	Product description	Quantity
1.	CT SCANNER 64 Slice	1

Annexure II: TECHNICAL SPECIFICATIONS

GROUP X.

X.1 Radiant Warmers for Infant

The unit should confirm all relevant international, national and local standards.

A. Temperature control:

1. Range 30-38° C
2. Skin range 25 – 42 °
3. Increment 0.1°
4. Display Digital

B. Control Unit (to be supplied with)

1. Automatic heat control type
2. Set point mechanism
3. Heater Indicator.

C. Alarms (Audible and Visual)

1. High air temperature
2. Sensor disconnect
3. Power Failure
4. Alarm in manual mode: every 15 minutes with automatic shutoff

D. The warmer should include:

1. Self- check features
2. Breaks for casters
3. Skin sensor
4. Supplemental humidity
5. Protection against breaks and bursts of radiant and light source

E. Spares and accessories

1. No. of hand ports 6
2. No. of tubing ports 6
3. No. of oxygen inlet port 1
4. Backup thermostat
5. Examination Light 50 W Halogen
6. Radiant heat source Quartz tube 600w
7. Service and users manualsa

F. Options

1. Phototherapy lights
2. Resuscitation equipment packages
3. X-Ray cassette holder

G. Others

1. Should be European CE or US FDA

X.2 Resuscitation Equipment/bags (Paediatrics)

A. To have Retromolar Intubation fiberscope for unexpected difficult airways.

1. Tip Distal Bending 40°.
2. To be movable eyepiece
3. To have a light source connection

4. With length 40-42cms and dia 5-6 mms.
5. ET tube holder should be provided
6. Should take min. 5.5 size of ET tube

B. Portable LED light source should be provided with

1. Illumination not less than 50000 Lux
2. Should run on two 3V photo batteries
3. Burning life should be more than 100 minutes
4. Ergonomically designed and can be connected to both the fibrescopes
5. Life of LED should be close to 50000 hrs

C. One Laryngoscope with rechargeable battery pack and blade with fibre optic mechanism should be provided to be used on both adult and paediatric patients with charger.

D. Other accessories like, magill forceps should be provided.

E. Should have Emergency Cricothyroidotomy for paediatric and adult

1. Disposable blades
2. Dialator

F. Should have Combitube size 37Fr.

1. With complete kit

G. Should have Intubating Laryngeal Mask Airways with Following Components:

1. ILMA Sizes 3 & 4.
2. ILMA Tubes ID 7mm & 7.5mm.
3. Tube Stabilizing rod
4. Cuff deflator

H. Should have Laryngeal Mask Airways

1. Sizes 1,2 and 4

I. Others

1. Handy and strong brief case/bag should be provided to keep all the instruments safe.
2. Set of disposable percutaneous tracheotomy kit for adult and pediatric.
3. Should have standard AMBU bag for pediatric and adult.
4. Mechanical suction pump with suction catheter and stomach tubes.
5. Should have Aluminum Oxygen reservoir 2 Liter with oxygen tube and cather.
6. Oxygen pressure reducer, regulable 0-15 liter with coupler for respirator.
7. Ventilating bag
8. Lubricant
9. Blood pressure meter, boso K-II
10. Stethoscope
11. Rescue blanket gold/silver
12. Infusion system.
13. Should be European CE or US FDA

X.3 Cystoscope and Resectoscope set (Paediatric)

A. The fibre cysto-urethroscope (rigid) for neonates, infants & children should have cysto-urethroscope 6/7.5Fr, 0 degree angle of view and 4 Fr working channel with working length of 140mm – 1 no

B. Bugby electrode 2.4 fr., 255mm – 5 nos

C. High-frequency cable 3 mtr long – 2 nos

D. The Pediatric Resectoscope for neonates and infants should have the following features

1. Panoview telescope 1.9 mm dia., 0 degree angle of view and autoclavable – 1 no
2. Resectoscope sheath 9 Fr oblique and insulated distal tips with fixed irrigation tap including obturator color code white – 1 no
3. Working element passive cutting action – 1 no
4. High Frequency connecting cable 3 meter long – 2 nos
5. Cutting electrode – 5 nos
6. Coagulation electrodes – 5 nos
7. Hook electrode – 10 nos
8. Adaptor with instrument port capacity 3 Fr – 1 no
9. Panoview telescope 2.7 mm dia., 30 deg. Angle of view with fixed eye piece autoclavable – 1 no

E. Cystoscope sheath 7, 8, 9.5 Fr including obturator color code with 3- 4 Fr capacity working channel – 1 each

F. Rigid Grasping forceps "ENLANGEN" 3 Fr for removing stents with working length 260mm – 1 no

G. Compact universal operating cystourethroscope for infant and children should have

1. Compact universal operating cystourethroscope (rigid fibre cystourethroscope), 8/9.8Fr, 12 degree angle of view having working channel 5Fr and working length 150mm – 1no
2. Rigid Grasping forceps "ENLANGEN" 5Fr for removing stents with working length 260mm – 1no
3. Coagulating button electrode, 5 Fr – 2 nos
4. Bugby hook electrode 4Fr – 2 nos

H. Should have a halogen light source of 150W/24v halogen lamp, 230vac./50Hz. Variable range of brightness, standby lamp for immediate switch over, safety cut-out in case of overheating, overvoltage protection.

I. Should have 2 Nos. Spare Halogen lamp of 150W/24V

G. Others

1. Should be European CE or US FDA

X.4 Birthing Table

A. Description of Function

1. Delivery bed is used for Baby Delivery and should incorporate ideal blend of the patient's individual requirements on comfort and the professional needs of the delivery team, focusing on the aesthetic and functional design of the entire product.

B. Operational Requirements

1. Delivery bed should be supplied with all accessories as mentioned in the technical specifications.

C. Delivery Bed should have following essential specifications:

1. It should have control devise for making height (44cm to 90cm) and back adjustments.[manual as well as remote control].
2. It should have collapsible side rails
3. It should have three sectional mattress and seat section should have large perineal cut. The mattress thickness should be 50mm or more.
4. Head board and food section can be detached or slides and stores under the bed.
5. Should have wheels (dia- 6" or 8") provided with locking system.
6. Should have retractable foot section with indication for locking, so as to convert bed into table.

7. Should have infusion rods which have adjustable heights, quick release and attaches to all corners of bed.
8. Should have adjustable leg rests available as an accessory
9. Should have push grip handles
10. Should have sliding stainless steel bowl at perineal part of table
11. It should have catheter bag holder which can be attached on either side of bed
12. It should be able to give trendelenburg, reverse trendelburg and 60 degree sitting position both mechanically and electronically.
13. It should have adjustable foot supports for nursing staff
14. It should be easy to clean, sterilize (especially blood stains) and maintain
15. Frame should be of epoxy powder coated steel
16. Dimensions - Length: Minimum 180 cm and width: Minimum 75 cm
17. Pelvic tilt: – 15 degree.
18. Should have easy slide calf supports swing into correct positional lock with single lever.
19. Should have CPR release.
20. Weight capacity: 200 (Approx)

D. System Configuration Accessories, spares and consumables

1. All consumables required for installation and standardization of system to be given free of cost.

E. Others

1. User/Technical/Maintenance manuals to be supplied in English

X.5 Resuscitation Cart

A. Compact unit with minimum 'foot print' and provided with good quality castors with braking system.

B. Modular storage system, rust proof, allows full extension drawers.

C. 40-45" height

D. Swing outside pod left side for extra space with 4 Nos. tilt out bins & one pod tray for storage.

E. Short utility hooks to hang items, with one utility pole and clamps.

F. Single over bridge with minimum 2 hangers rails to fit assorted baskets, shelves & bins.

G. Specimen bag holder along with over bridge with clamps.

H. Utility bin on lower hanger rail and 2 utility bins on upper hanger rail with three tape/ label dispenser.

I. Multiple drawers 3" drawers 9" drawers which are interchangeable with central locking system.

J. The firm should clearly indicate in the technical bid itself that the prices of all standard accessories and the accessories mentioned in the specification are included in the quoted price.

X.6 Phototherapy Unit

A. Heavy sturdy mobile stand

B. Overhead unit

C. Adjustable height 1.20 meter to 1.6 meter

D. Compact florescent lamp (20 W/4 Blue and 2 White) or LED light (with white light option)

E. Light source are protected by heat-resistant grill, should not melt/deform with prolonged use (covered in comprehensive warranty)

F. Wavelength: 420 to 500nm with peak at 470 nm

G. Irradiance at skin level: 25 uW/cm2/ nm or more (Should not exceed 65)
H. Integrated cumulative hour timer
I. Antistatic castors: 2 with breaks
J. Inbuilt mechanism to avoid overheating of the unit
K. Power cut off for ≥ 85 ºC.
L. Should have removable head.
M. Should be European CE or US FDA
N. Each unit is supplied with (Only for CFL model)
O. Spare blue CFL : 10
P. Spare white CFL : 5
Q. Spare set of fuses: 5
R. Starters: 5

X.7 Pulse Oximeter Hand held

A. Compact Hand held Pulse oximeter with probe
B. Light weight
C. Continuous monitoring of SpO2 and pulse rate
D. Measuring range:
1. Spo2 : 10 to 100%
2. Pulse rate : Pulse rate : 20 to 240 bpm,

E. Display shows: SpO2(%), HR(bpm) and perfusion bar
F. Audible and visual alarm for SpO2 and pulse rate for High or Low saturation, pulse rate, sensor off and low battery.
G. Silencing feature for audio alarm
H. Battery life: Minimum 30 hours
I. Carrying case and battery charger.

X.8 Blood Pressure Ciff kit (Paediatric)

A. Fully assembled, professional blood pressure kits
B. Child: 13.5" X 4.5", Infant 10.25" X 3"
C. Washable cuff with large Velcro strip
D. Latex free

X.9 Ventilators with HFO

A. Suitable for neonates.
B. Continuous flow, Time cycled & pressure limited.
C. Volume guarantee with every mode.
D. Volume targeting (Range 2 ml to 50 ml)
E. Modes: IMV, SIMV, nasal CPAP, CPAP, PSV, A/C - (It should have pressure control and volume targeted both)
F. It should have facility for High Frequency oscillation mode of ventilation(HFO)
G. Apnea back-up ventilation.
H. Capable of providing:
1. PIP : 0-60 cm water
2. PEEP : 0-25 cm water

3. Frequency : 5-150 breath /min

I. Digital display : Should have integrated high resolution LCD screen minimum 10" or more color display with touch screen facility for real-time display of scalar (Pressure, Flow and Volume against time) and loop (Pressure-volume, volume-flow and pressure-flow). Graphic display of at least 3 waveforms together out of choice of flow, volume and pressure versus time with a facility to freeze these waveforms. Facility for loops together with a facility to freeze the same.

J. Digital display of FiO2, peak pressure, mean airway pressure, CPAP/PEEP, Expiratory tidal volume, expiratory minute volume, total frequency, spontaneous frequency, lung function monitoring including compliance, resistance, lung distention coefficient, (C20/C), Lung time constant, Rate volume ratio etc.

K. Should have built-in logbook for recording events like various alarms

L. Integrated monitoring: Integrated volume and pressure monitoring i.e. monitoring of PEEP Pmax, Pmean and VT, VTspont, MV and MVleak. The volume monitoring should have NTPD to BTPS correction

M. Monitoring of I:E, frequency and Spontaneous Frequency

N. Audiovisual alarms with advisory on-screen message: MV high/Low, Apnea, tube obstruction, FiO2 high/low, high PIP, low PEEP/CPAP, CO2 alarm, fail to cycle, gas supply low, power failure, ventilator inoperative, alarm log book ,Tables and Trends of Two days should be available.

O. Monitoring of flow: At the Y piece with facility to activate or deactivate it

P. Ventilator should have following features in Pressure Support/ Volume Guarantee:

i. It should be possible to give leakage adapted inspiratory trigger during pressure support to spontaneously breathing patients with a set volume guarantee.

ii. Volume guarantee should be regulated with lowest possible airway pressure within a set PIP.

iii. It should be possible to adjust the Volume Guarantee manually as per patient requirement

Q. Control Panel user friendly

R. Reusable patient tubings (after chemical and heat sterilization)

S. Proximal flow sensor

T. Ventilator should be European CE or US FDA

U. Ventilator should be supplied with medical air compressor (European CE/ FDA marked).

V. The Servo Controlled Heated wire Humidifier should be supplied along with Reusable patient circuit. The humidifier must be CE or FDA approved.

W. Integrated Battery back-up (at least 30 minutes) should provide for ventilator

X. Should be supplied with ultrasonic nebulizer which should have capability to deliver particle size of < 3 micron and to be used in both off and on line with ventilator.

Y. Settings range:

1. Trigger Flow/ volume, leak adapted
2. PIP 10 to 80 cm H2O
3. PEEP/ CPAP 0 to 25mbar
4. I:E ratio 1:0 to 1:10
5. Insp. Time 0.1 to 2 Sec
6. Exp. Time 0.2 to 30 sec
7. Frequency Up to 200 BPM
8. Base Flow (VIVE) 1 to 30 LPM
9. Synchronization Patient synchronization with adjustable flow trigger
10. High frequency amplitude 1-100% Or upto 100 cms H2O
11. Integrated blender for Oxygen 21% to 100%

12. Integrated nebulization facility
13. Integrated monitoring of FiO2.

Z. SUPPLIES (WITH EACH UNIT) Scope of supply with each ventilator

1. Ventilator on trolley with wheels and brake facility
2. Integral medical air compressor
3. Humidifier: Auto-clavable humidifier chamber (2 Chambers with each ventilator)
4. Circuit support arm
5. 2 hose sets for conventional reusable neonatal ventilation circuit
6. 5 hose sets of disposable conventional neonatal ventilation circuit
7. 1 hose set for reusable HF ventilation
8. Bacterial filters
9. Flow sensors (30 sets with each ventilator)
10. Oxygen cell
11. Oxygen connecting hose
12. Air connecting hose
13. Test lung
14. Heater wire (3 each)
15. Temperature probe (3 each)
16. Expiratory valve (2 with each)
17. Nasal interface (3 in number) with nasal mask (4 each of all sizes) and nasal prongs (4 each of all sizes) and bonnet (5 each of only preterm size) with each ventilator.

X.10 Incubator Infant (with oxygen)

A. Double wall transparent canopy with mattress, mount on collapsible stretcher

B. Front and head access door, slide-out mattress tray

C. With baby restraining straps

D. Warm air circulation system

E. Bacterial filter to remove air born particles

F. Incubator air temperature monitoring and servo control : 25 to 38 deg C ,increments 0.1deg C,Humidity control.

G. Digital displays outside shows air temperature

H. Ventilator – basic ventilator with integrated compressor at least CPAP and IMV modes with controls for CPAP/PEEP. PIP, rate. Ti and FiO2

I. Two 10L integrated oxygen cylinders, regulator and flow meter

J. Audiovisual alarms: high /low air temperature, temperature sensor failure, power failure and low battery

K. Construction allows frequent washing and disinfection of the incubator

L. Battery and AC supported.

M. Should have facility for IV stand.

N. The battery should be capable of recharging from mains as well as the ambulance power source

O. It should be able to run the following equipment when disconnected from the power source: heater, suction machine

P. It should be European CE or US FDA supplied with:

1. Spare skin temperature probe 5 nos
2. Spare rechargeable battery 1 nos
3. Empty 10 L oxygen cylinders 2 nos

4. Spare set of fuses 2 nos
5. Slot for X-Ray cassette for taking X-rays without removing babies.

X.11 Gastroscope (Paediatrics)

A. Gastroscope – Should have

1. High definition true color video images
2. Large depth of field
3. Uniform image brightness-even under difficult lighting conditions
4. Wide angle optics with high light transmitting capacity
5. Enhanced control unit
6. Optimal position of control functions
7. Graduated, torsion-proof insertion sheath
8. Optimal instrument passage even at extreme angles
9. Robust supply tube with standard connection
10. At distal end it should be equipped with specially designed air water nozzle with a separate path towards optical lens used for controlled water flow to better clean-up of optical lens and to squeeze the blockage problems
11. Insertion Tube Quter Diameter - Not more than 5.9 mm
12. Distal Tip Quter Diameter - Not more than 5.9 mm
13. Working channel diameter - 2.0 mm or more
14. Working length - 110 cm or more
15. Deflection of distal tip (up-down) - 210/1100
16. Deflection of distal tip (left – right) - 1200- 1200
17. Field of view - 1400or better

B. HIGH DEFINITION VIDEO PROCESSOR

1. System should be on High Definition platform,
2. Max resolution 1920x1080 (1080p)
3. Should provide full screen image with wide angle.
4. Fully compatible to the color systems PAL & NTSC.
5. Should have USB interface at front panel for image & Video storage.
6. Should be equipped with integrated image capture module.
7. Processor is having the facility of Digital Image processing for better tissue differentiation.
8. Should have 6-8 fold magnification, Multiple settings allow the user to select the preferred level of Image enhancement.
9. Processor is having the additional facility of electronic 2x zoom, selectable in 2-4 steps.

C. Integrated Still Image function.

1. Should have Variety of output connections option (HD-SDI, RGB, DVI, S-Video and composite etc)
2. Auto Exposure System for consistent illumination level
3. Automatic white balance with memory function for true color setting

D. XENON LIGHT SOURCE

XENON light source should be easy to operate and offer outstanding light delivery in compact design.

1. Optimal light delivery.
2. Excellent brightness with daylight spectrum.
3. Infinitely adjustable luminous intensity.

4. High-performance air filters with low noise level.
5. Special dialectical heat protection filter increase light delivery by up to 20%
6. Lamp service life display
7. Easy lamp replacement.
8. Integrated insufflations pump with minimum 3 output levels.

E. TECHNICAL SPECIFICATIONS OF HD

1. MONITOR – 1 Nos.
2. Monitor should be 26”HD Flat Screen, aspect ratio 16:10 Desktop, should have Color System PAL/NTSC.
3. Monitor should have Resolution max. 1936 x 1360 with the following inputs.
4. SDI Composite, S-Video RGB, DVI and VGA
5. Input Brightness should be 500cd/m2 with the Contrast: 700:1
6. The Monitor should be supplied with the Table top Stand.
7. Drip water protected, dustproof housing
8. Liquid crystal display/ LED
9. Max. resolution of 1936 x 1360 pixels
10. Compact and lightweight design
11. Composite, S-Video, RGB, VGA, SDI and DVI compatible
12. Antireflexion coated front glass
13. Easy-to-access control buttons on the housing front.
14. All Scopes, Endoscopy equipment, Endoscopy instruments and monitor quoted should be CE approved or FDA USA approved
15. Local Trolley should be provided – 1 No
16. Biopsy forceps - 2
17. Snare - 2
18. Cleaning brush - 2

F. Others

1. Should be European CE or US FDA

X.12 Bronchoscope (Paediatrics)

A. PAEDIATRIC BRONCHOSCOPES EXTENDED LENGTH WITH PROXIMAL ILLUMINATION Special features:

1. Adjustable proximal prismatic light deflector
2. Maximum lumen and small external diameter
3. No loss of lumen through light carrier
4. Pediatric bronchoscope –extended length
5. Consisting of: Bronchoscope sheaths of size 2.5Fr, 3Fr, 3.5 Fr, 4Fr, 4.5Fr and 5 Fr of standard length.
6. Prismatic light deflector with connection for fibre optic light cable.
7. Glass window plug
8. Rubber telescope guide
9. FLUVOG adapter with sliding glass window plug, sealing cap, notched lens and Keyhole opening, movable.
10. Injection cannula , O.D 3.5mm,
11. For positive pressure assisted ventilation system, for use with bronchoscopes
12. Instrument guide for aspiration catheter.
13. Adapter to respirator

14. Sealing plug for respiration connector.
15. Adjustable magnifier, swing –away type

B. ACCESSORIES:

1. Straightforward telescope 0°, diameter 2.8mm, length 44cms. Fibre optic light transmission incorporated. Colour code: green
2. Lateral telescope 30°, diameter 2.8mm,length 44 cm fibre optic light transmission. Colour code: yellow.
3. Pediatric Optical forceps for peanuts and soft foreign bodies, for use with mentioned telescopes.
4. Pediatric Optical alligator forceps, for use with telescopes.
5. Rigid suction tube with rubber tip, working length 50cm, straight and curved Sponge holder, spring holder, working length 50 cm,
6. Radio opaque plastic tubing for aspiration, 7 Fr, 5 m coil, with adapter.
7. Telescopic Bridge for a fixed position between telescope and bronchoscope.
8. Grasping Forceps with peanut, Crocodile/ alligator Jaw, single action, 1.5 mm shaft diameter, 45 cm length (pediatric)-2 each
9. Cup Grasping Forceps, 1.5 mm shaft diameter, 35 cm length
10. 1Forceps peanuts and soft foreign bodies, double action jawas, sheath diameter 1.5 mm working length 35 cm – 1No
11. Micro Scissors, 30 cm length, 3.0 mm shaft diameter (pediatric).
12. (Telescope and other accessories should be compatible with above mentioned halogen light source).

C. Other s

1. Should be European CE or US FDA

X.13 Nebulizer

A. Description of Function

1. Nebulizer is a device used to administer medication to people in forms of a liquid mist to the airways. It is commonly used in treating cystic fibrosis, asthma, and other respiratory diseases

B. Operational Requirements

1. Heavy duty compact Nebuliser is required.

C. Technical Specifications

1. Compact, light weight, low noise
2. Durable long life compressor. Suitable for heavy duty/ institutional (hospital) use, should be able to run uninterruptedly for one hour, Max Press= 2.0-2.5 bars
3. Should produce particle of size 1-5 micron
4. Aluminium cabinet painted with epoxy powder.
5. Piston-type electric aspirator that offers high performance and great durability.
6. Protective thermal cut out relay
7. Air delivery rate app.15 L/min.
8. 24 hours continuous work for hospital use.

X.14 CAESERAN SET

	Item	Qty per set
A.	BP Handle No.04	2
B.	DEbakey Forceps plain 8" atraumatic tissue forceps	4
C.	DEbakey Forceps toothed 6" atraumatic tissue forceps	4
D.	Adson Forceps plain 5"	2
E.	Adson Forceps toothed 5"	2
F.	Metzenbaum Scissor Stght 8" (TC TIP)	2
G.	Metzenbaum Scissor Cur 8" (TC TIP)	2
H. (i)	Kocher Artery Forceps Stght 7"	1
(ii)	Haeny Mod Cur 8" Hysterectomy Clamp "	1
I. (i)	Babcock Tissue Forceps 6"	2
(ii)	Babcock Tissue Forceps 7"	2
J. (i)	Allis Tissue Forceps 6"	4
(ii)	Allis Tissue Forceps 8"	4
K.	Artery Forceps Cur 8" long	2
L.	Artery Forceps Cur 6" Medium	2
M.	Mosquito Artery Forcep Cur 5"	4
N.	Doyen‟s Retractor 3"	2
O.	Langenback Retractor 11x35mm	1
P.	Heavy Straight Scissor S.S./Sharp 8"	2
Q.	Needle Holder 8" & 6" (TC TIP)	03+2
R.	Kidney Tray 8" S.S.	2
S.	Bowl S.S.	1
T.	Green Armytage X‟s series	4
U.	Artery Forceps str 6"	2
V.	Right Angle Artery Forcep MIXTER 8"	2
W.	Sponge Holding Forcep 10" & 6"	02+02
X.	Suction Tip Pool Stght 8mm All S.S.	1
Y. (i)	Cross Action Towel Clips Engl.Mod. Angled 3.5"	4
(ii)	Cross Action Towel Clips Backhaus 3"	1
Z.	Wrigley Outlet Forceps	01 set
AA.	Instruments should be of High quality stainless steel, corrosive resistant & reusable, and rust free	
AB.	Demonstration of all the instruments is must as & when required	
AC.	All instruments should be CE marked	

X.15 Fetal Monitor

A. Should have 7" TFT / Colour LCD Display.

B. Should have facility to store patient data of more than 1500.

C. Should have 1 MHZ Sensitivity.
D. Battery Backup should be present.
E. Twin Monitoring should be made available.
F. Built in thermal printer for foetal heart trace.
H. Tocodynamometer for recording uterine contractions.
I. Should be compact, lightweight and should have inbuilt carrying handle and waterproof transducers.
J. Capability of automatic foetal movement detector. Digital numeric and text display along with audio signal of foetal movement.
K. Ability to give an accurate continuous trace and should be able to detect sudden beat changes up to 25 bpm.
L. External tocotransducer which should be a sealed waterproof unit. Guard ring designed to reduce maternal respiration artifact.
M. Should have FHR Range : 50-240 bpm
N. FHR Accuracy : ±2% of Range
O. Central Network monitoring facility.
P. Alarms – Foetal Heart rate – Maximum and Minimum, Unit function, No paper.
Q. Should be able to record the data in digital form in computer.
R. Patients' event marker.
S. Should work continuously for CTG for 10 hours.
T. One central station with monitor and Laser jet printer facility to archive 15,000 patient data. Wiring of individual foetal monitor to central station to be included in the scope of supply.
U. Capability to integrate with the HIS and transfer the data through LAN / Wireless LAN to any other monitoring room / doctor's desk. Should be HL-7 compatible for transmitting and receiving data to/fro LAN/HIS.
V. Cart to keep the foetal monitor.
W. Should be US FDA or European CE approved
X. System Configuration Accessories, spares and consumables

1. Thermal paper- 30 rolls to be provided along with the machine.
2. Should be provided with 2 USB probes & 1 Toco probe.
3. Power cord of atleast 3meters in length to be provided.
4. Should provide following accessories – Transducer belts, Belt buckles, Main cables, interconnecting cables, ultrasound gel bottles.
5. Should be provided with trolley with wheels with locking facility for mounting the unit on it with accessories for storage of transducers paper etc. or the unit must have the facility for wall mounting and a protective cover with cabinet.

X.16 Gynaecological Table

A. General operating table features:

1. Full-length radio-translucent top.
2. 4 or 5 sections tabletop, which should be made of a special scratch resistant, hardwearing and easy to clean material. Base column cover to be made of 100% stainless steel alloy and stainless steel.
3. Removable head and leg sections to suit different applications.

4. Battery powered, with facility for connection to mains electricity for immediate use. Battery Exhaustion protection and low battery warning via an audible „beep"/display indicator should be available.
5. Table should not have a thread/sharp edge for ensuring proper cleaning and user safety.
6. Mattress should be of high quality that spans tabletop break for improved patient support. Its depth should be 50mm. Mattress must be Latex free.
7. The robust handset should offer 8 controls namely Trend. /Reverse Trend, Lateral Tilt, Flexion/ Extension and Height functions.
8. Brakes, 4nos Wheels
9. Table should have a narrow T-shaped base allowing optimum access and greater stability.
10. The table top should not be fitted with transverse members casting shadows on the X-ray images except for the release brackets for adjustment on either side.
11. The Table should be operated by the following operating elements: corded hand control, Manual override panel with manual override facility.
12. There should be „U" cut compatible for Gynae surgery

B. Electrical specification:

1. Special-design, maintenance-free rechargeable batteries with capacity for about a week's use in the operating room.
2. Recharging of the batteries and supply of the operating table by means of a mains cord Nominal mains voltage (selectable) via mains cord with inbuilt stabilizer

C. Technical Data:

1. Length : 6-6.5 ft
2. Width: 500 mm or more
3. Minimum height (without mattress): 700 mm.
4. Maximum Height (without mattress): 1000 mm
5. Maximum lateral tilt: 20-30 deg. (either side)
6. Trendelenburg: atleast 25 deg.
7. Reverse Trendelenburg : atleast 25 deg
8. Head section adjustment: ±40-45 deg.
9. Leg section adjustment: +20 deg or more to -90 deg or more.
10. Break (extension) position : 200-220 deg
11. Break (flexion) position: 100-130 deg
12. Cranial & caudal traversing: 200-300 mm. It should be operated with remote control.
13. Back section adjustment: (-35 to +75) deg.
14. Maximum patient weight: 180 kg or more in all positions.
15. Technical Specification-
16. Accessories
17. Arm board - 2
18. Lithotomy leg holders "Geopel type" (adult and paediatric)-1set each
19. Body strap- 3
20. Anaesthesia screen with clamps- 2
21. Side supports with clamps – 2
22. Knee crutches with clamps - 2

23. Clamp, rotary- 4 pc
24. Clamp, circular - 4 pc
25. Accessories stand, mobile on castors- 1 pc
26. Arm support, perplex -2 pc
27. Infusion rod with clamp
28. Drain Tray

F. Others

1. Should be USFDA or European CE approved product
2. Comprehensive training for lab staff and support services till familiarity with the system.
3. User/Technical/Maintenance manuals to be supplied in English.

X.17 LEEP SYSTEM with Smoke Evacuator & integrated cart

A. Should have electrosurgical generator with isolated power output and LED display located in front for precise power selection, deliver and easy to use.
B. Should have provision of choice to CUT, BLEND and COAG. Wave form to accommodate subtle differences in technique and electrode performance.
C. Should have RF output frequency 350 – 450 KHz power cut 0-100 watt.
D. Should have flash faceplate membrane facilitate operation cleaning.
E. Should have microprocessor controlled for increased precision, accuracy, reproducibility and safety.
F. Should have pneumatic / normal spring type pedal for maximum safety.
G. Should have audible safety features include distinct tones for each operating setting.
H. Should have automatic self test mechanism ensures accurate system operation.
I. Should have high air flow efficiently captures smoke plume with a variable speed control.
J. Should have triple stage filtration captures airborne particulate matter, vapor and odor with a 99.999% efficiency level.
K. Should have virtually maintenance free.
L. Should have replacement filters available.
M. Standard accessories are:
    1. Hand piece adaptor
    2. Patient return (single use)
    3. Smoke evacuator package
    4. Smoke evacuator pre filter
    5. Smoke evacuator reducers
    6. Smoke evacuator disposable tubing (6 ft.)
    7. Ball electrode
    8. Electrode 2cmx0.8cm, 12c"

N. Should be USFDA or European CE approved.

X.18 Manual Tracheal Suction

A. Technical Specifications:

1. Foot-operated suction pump
2. High performance suction pump for pharyngeal and tracheal suction

3. Double acting piston pump provides a combination of large airflow and high vacuum
   See-saw movement of pedal generates suction every time one side of the pedal is depressed
   Pump chassis complete with valve diaphragms, manifold pipe, bottom cover, cylinder with draw link and valve diaphragm, piston O-ring, pedal with retaining springs, aspirating tube with angle connector and combination suction tip
4. Pump can be totally disassembled, is easy to clean and disinfect
5. All parts can be autoclaved at 121°C
6. Vacuum, max: 80 – 200 mmHg with Regulator
7. Free airflow at two pumping strokes per second, approx: 8 to 10 L / min
8. All parts made of high-strength, long-life materials, not requiring specific maintenance or storage
9. Transparent polycarbonate collection container capacity, approx: 1 L
10. Bottom cover: thermoplastic rubber
11. Manifold pipe: polypropylene
12. Gasket, O-rings and valve diaphragm: silicone rubber
13. Piston rings: teflon
14. Foot pedal: aluminium

B. Supplied with:

1. Silicone rubber suction tubing, approx: diam. 10 mm, length 1.5 m -1 set
2. Angle connector and combination acetal suction tip- 1 no
3. Spare valve diaphragms- 1 nos
4. Spare piston O-ring- 1 nos
5. Spare retaining springs- 1 nos
6. User manual with trouble shooting guidance, in English.

X.19 U.V/Visual Spectrophotometer

A. Minimum Sample Size: 0.5 microlitre
B. Path Length 1 mm
C. Light Source(s) Xenon
D. Detector Type CCD/PDA
E. Wavelength Range 230-1000 nm
F. Wavelength Accuracy 1 nm
G. Spectral Resolution of 2-3 nm
H. Absorbance Precision of 0.002 – 0.003 0.003
I. Absorbance Range: 0.0 – 2.0 A 0.002 – 1.5
J. Sample detection limit: 0.5-1.0 ng/microlitre of dsDNA.
K. Sample detection for RNA and Protein.
L. Maximum sample concentration: 750-1000 ng/microlitre of dsDNA.
M. Measurement Time < 5 seconds.
N. PC with software Windows XP/2007 or inbuilt LCD Screen.
O. System should be US FDA or European CE approved.

X.20 Digital Spirometer

A. Description of Function
Used for measuring lung function.

B. Operational Requirements

Complete with all hardware and software is required

C. Technical Specifications

1. The system should be able to measure spirometry and flow volume parameters and sub divisions, Maximum Ventilation Volume (MVV), Lung Volume including TLC, RV& FRC by multi-breath closed circuit Helium Dilution/ Nitrogen wash out.
2. Should be able to perform diffusion studies.
3. Broncho Provocation/ Histamine Challenge Test Software
4. System should incorporate Precision Dry Rolling Seal Spirometer (11-13 Litres)/ heated Pneumotech for highest accuracy and reproducibility and Flow Volume Differentiator (Resistance less than 1 cm of H2O / Litre/Sec
5. Volume resolution < 8ml
6. Accuracy < 0.5%
7. Flow Range+/- 15 Litre / Sec.
8. Should have linear analyzers for
9. Helium/Methane analyser: Range 0-15% Helium accuracy +/- 0.1 % or Methane analyzer-Range 0-0.35% CH4, accuracy +/- 0.1%
10. "Carbon Monoxide Analyzer: Range0- 0.350%CO, Accuracy+/- 0.1%
11. Oxygen Analyzer: Range: Range 0-100% Accuracy +/- 0.1%
12. Gas Control Module with Automatic Filling circuit.
13. System should have automated O2 compensation during FRC test.
14. System should also have fully automated Calibration/Test procedure with computer.
15. Computer specification: CPU corei5 2GB RAM; 150 GB Hard Disk Drive; High Speed DVD/CD Rom, Serial and parallel ports; Keyboard, Mouse and Mouse Pad, Monitor size 15” and printer"

D. Accessories, Spares and Consumables

1. System as specified
2. Helium/oxygen cylinder -01
3. Helium Cylinder-01 b) Cylinders Diffusion Mixtures-02

E. Standards, Safety and Training

1. The quoted model should have US FDA or European CE certificate

F Documentation

1. Two numbers of Complete User/Technical/Maintenance manuals to be supplied in English.
2. Certificate of calibration and inspection from factory.

X.21 Lead ECG Machine

A. Twelve channel LCD display for all 12 leads along with on screen details.
B. Recording for 12 channels (3 leads and one user selectable any lead as Rhythm lead).
C. Recording speed selection of 5, 10, 25 & 50 mm/sec.
D. Sensitivity of 2.5,5,10,20 mm /mV. It should also have AGC (Automatic Gain Control)
E. Facility to enter patient information (Name, Age. Sex, Height, Weight < Blood pressure, doctor’s name, Hospital’s name which get updated in system and is recorded on the recorder A4 paper.
F. Patient memory function, up to 100 patients.
G. Waveforms can be recorded.
H. Interpretation software.
I. Mains and in built rechargeable Lithium battery.
J. Should have European CE or US FDA approved.

X.22 Portable ECG Machine

A. The ECG machine should be light weight and Portable.
B. LCD display
C. The recorder should run minimum of 4 hours on fully charged battery.
D. It should provide facility to record following leads.
1. Standard Lead (the limb leads or bipolar limb leads): I, II & III.
2. Augmented Limb Leads: AVL, AVR & AVF.
3. Chest Leads (the unipolar or V-leads): From V_1 to V_6.
4. Right sided chest leads.

E. Electrodes of Paediatrics sizes for use in Newborn, Infants, and Paediatrics patients must be provided.
F. It should record on standard thermal printer paper.
G. It should record the paper at a speed of 25 mm per second.
H. Should have European CE or US FDA approved.

X.23 Laryngoscope set with neonate blades

A. Constituted of large hollow, cylindrical, slightly ribbed handle and a set of depressors in stainless steel.
B. Handle is made of either chromium-plated or stainless steel and can be opened at an extremity to insert two alkaline batteries (size **AA**, 1.5 Volts). The other end has a stud contact which fits the various sizes and types of depressors.
C. 2 x straight depressors, Miller type No**. 00, 0, 1** with halogen bulb
D. Presented in suitable protective plastic box.
E. **Supplied with:**
1. Spare halogen bulbs (1 for each depressor) - 2 nos
2. User manual with trouble shooting guidance, in English.

X.24 Cardiotocography Machine

A. **Description of Function**
Antepartum and Intrapartum foetal monitor (Cardiotocomachine) is used to monitor Foetus during antepartum period (before labour) or intrapartum period (birth process)"

B. **Operational Requirements**
The complete unit with printer and all accessories should be offered.

C. **Technical Specifications**
The monitor should be provided with :

1. Battery and main operation facility
2. Should have inbuilt LCD / TFT Screen with tilt adjustment upto 90 degree with facilities to display on screen fetal heart tracings and toco tracings.
3. Should be compact, light weight and should have inbuilt carrying handle and waterproof transducers.
   The unit should have :

   a) Foetal Heart Rate range 50 to 240 bpm
   b) External Toco range 0 to 127 relatives units
   c) Should have NST timer for antepartum applications
4. Highly sensitive ultra sound transducer which should be 1.5 MHZ for less signal attenuation and good signal acquisition. Ultrasound transducer should be a waterproof unit. Designed with Snap Clasp closure for easy application and cleaning. Should have facility to connect any

transducer in any socket for easy use. Preferably there should be facility to switch between transducers when more than one transducer is used.

5. Ability to give an accurate continuous trace and should be able to detect sudden beat changes upto 25 bpm
6. Audible alert indication of foetal bradycardia and tachycardia
7. External tocotransducer which should be a sealed waterproof unit. Guard ring designed to reduce maternal respiration artifact
8. Patients event marker
9. Capability of automatic foetal movement detector
10. Digital numeric and text display along with audio signal of fetal movement Should have inbuilt keyboard entry screen for patient data entry, name etc. Minimum 5 hour memory of traces with fast printing
11. Should provide following accessories – Transducer belts, Belt buckles,Main cables, interconnecting cables, ultrasound gel bottles
12. Inbuilt high resolution thermal/Laser printer with easily available cost effective paper.
13. Should be provided with trolley with wheels with locking facility for mounting the unit on it with accessories for storage of transducers paper etc or the unit must have the facility for wall mounting and a protective cover with cabinet.
14. Should have facility for intra uterine pressure monitor.
15. Should have facility to record fetal heart rate pattern through fetal ECG.
16. Should have facility to monitor twins. Should have twin offset feature so that both fetal heart traces are clearly visible
17. Should have facility of connection of central monitor system.

D. System Configuration Accessories, spares and consumables

1. Machine will be supplied with 20 nos of paper roll with each unit. Bidder has to ensure the supply of paper roll. (Price for paper roll to be quoted separately)

E. Standards, Safety and Training

1. Should be US FDA or European CE approved product
2. Comprehensive training for lab staff and support services till familiarity with the system.

F. Documentation

User/Technical/Maintenance manuals to be supplied in English

X.25 Fetoscope

Handheld light weight pocket - size device based on Ultrasonic Doppler to measure foetal heart rate (FHR) and listen to the sound of the Foetal heart beat.

A. Specifications

1. 2MHz or 3MHz waterproof probe
2. FHR Range : 50 – 200 BPM , resolution : 1 BPM
3. LCD / Digital Display of the heart beat rate
4. Power source : Rechargeable AA Batteries
5. Built-in loudspeaker and adjustable volume listening to the baby sound through headphones
6. Headphone output
7. Headphone set
8. Battery charger
9. Carrying Case
10. European CE or USFDA marking

X.26 Stretcher Trolley

A. 213L x 56W x 81H cms.

B. Frame work made of 31 mm x 1.60 mm vertical & 25 mm x 1.22 mm horizontal CRC tubes Trolley mounted on 15 cms dia castors – 2 with brakes.

C. Removable stretcher top made of 1.22 mm aluminium sheet with S.S. handle at both end with 25mm thick suitable rubber.

D. Mattress covered with good quality rexine.

E. All mild steel components should be thoroughly pre-treated chemically to remove rust and foreign matter like Grease; Oil etc. by diptank process pre-treatment System.

F. The treated Metal Surface should have coating of Epoxy Polyester Powder and oven baked at 180 degree to 200 degree Centigrade to avoid contamination of the clean metal surface from dust particles.

X.27 Pulse Oximeter

A. Description of Function

1. A pulse oximeter is a medical device that indirectly measures the amount of oxygen in a patient's blood (as opposed to measuring oxygen saturation directly through a blood sample) and changes in blood volume in the skin, producing a photoplethysmograph

B. Operational Requirements

1. Suitable for all types of Patient range: Adult, paediatric, infant, and/or neonate (Masimo/Nelcore technology)

C. Technical Specifications

1. Display- LCD, Backlight illuminated
2. Parameters and waveform displayed- SpO2, pulse rate, system status, plethysmogram, menus for user settings
3. SPO2 range- 21- 100 %
4. Accuracy of SPO2- ±2 %(70-100% adult paediatric non motion) ±3 %(70-100%, neonate, nonmotion)
5. Pulse rate range should be 18-300 bpm
6. Audiovisual Alarms- High/low SpO2 and pulse rate, sensor off, sensor failure, low battery Alarm range- 50-100%
7. Alarm override facility
8. Cable length should be minimum 1 metre
9. Interface for data communication.
10. Integrated Printer/External Printer
11. Battery back-up operating time 5 hours.

D. System Configuration Accessories, spares and consumables

1. System as specified-
2. SpO2: Adult, Paediatric & Neonate SpO2 sensor with cable- two nos each per monitor.
3. Rechargeable battery operated system. Charger to be provided if integrated charger is not there

E. Standards

1. Should be US FDA or European CE approved product

X.28 Resuscitation Equipment/bags (Adult)

A. To have Retromolar Intubation fiberscope for unexpected difficult airways.
1. Tip Distal Bending 40°.
2. To be movable eyepiece
3. To have a light source connection
4. With length 40-42cms and dia 5-6 mms.
5. ET tube holder should be provided
6. Should take min. 5.5 size of ET tube

B. Portable LED light source should be provided with;
1. Illumination not less than 50000 Lux
2. Should run on two 3V photo batteries
3. Burning life should be more than 100 minutes
4. Ergonomically designed and can be connected to both the fibrescopes
5. Life of LED should be close to 50000 hrs

C. One Laryngoscope with rechargeable battery pack and blade with fibreoptic mechanism should be provided to be used on both adult and pediatric patients with charger.

D. Other accessories like, magill forceps should be provided.

E. Should have Emergency Cricothyroidotomy for pediatric and adult
1. Disposable blades
2. Dialator

F. Should have Combitube size 37Fr.
With complete kit

G. Should have Intubating Laryngeal Mask Airways with Following Components:
1. ILMA Sizes 3 & 4.
2. ILMA Tubes ID 7mm & 7.5mm.
3. Tube Stabilizing rod
4. Cuff deflator

H. Should have Laryngeal Mask Airways
Sizes 1, 2 and 4

I. Handy and strong brief case/bag should be provided to keep all the instruments safe.

J. Set of disposable percutaneous tracheotomy kit for adult and pediatric.

K. Should have standard AMBU bag for pediatric and adult.

L. Mechanical suction pump with suction catheter and stomach tubes.

M. Should have Aluminum Oxygen reservoir 2 Liter with oxygen tube and cather.

N. Oxygen pressure reducer, regulable 0-15 liter with coupler for respirator.

O. Ventilating bag

P. Lubricant

Q. Blood pressure meter, boso K-II

R. Stethoscope

S. Rescue blanket gold/silver

T. Infusion system.

U. Should be US FDA or European CE approved product

X.29 Suction Machine

A. High vacuum suction unit, run on electricity with two suction jars of 3 liters capacity each.

B. Auto cut off device for preventing entry of fluid in pump.

C. Fast and efficient jar change facility.

D. Easy access and controls.
E. It should be heavy duty and noiseless.
F. Should be able to create desired maximum vacuum in least possible time.
G. Light and manoeuvrable.
H. One plastic suction jar cover, steam sterilizeable to be provided extra.
I. Two extra suction jar (plastic) of capacity 3 liters should be provided.
J. Should be quoted along with accessories like lid, tubing etc with the equipment to make the unit functional.
K. 500mm Hg Vaccum Capability.

X.30 OPTICAL URETHROTOMY (SET)

A. Optical urethrotome sheath 21 ch with obturator
B. Guide tube half round for optical urethrotome
C. Working element for optical urethrotome - passive
D. Cold knife - round for working element -2 nos
E. Cold knife - straight for working element- 2 nos
F. HF cable - 2 nos
G. OTIS urethrotome set with dialation unit, knives, head parts.
H. Should be US FDA or European CE approved product.

X.31 Vacuum Extractor

A. Noiseless suction unit have fast vacuum built up
B. Vacuum should have maximum -90 k pa/-675 mm Hg, Suction capacity 50ltr/min/1kg/cm2 & bottle capacity 3ltrs
C. Suction system should have piston / cylinder (self lubricating)
D. Should have mechanical overflow protection system.
E. Set of silicon cups 50mm & 60mm-2each
F. Set of bird cups, stainless steel 40mm, 50mm & 60mm-2each
G. Machine can be operated on 220-240 V AC single phase
H. Should be provided with a gauge to display of vacuum generated
I. Should have vacuum release valve.

X.32 Monitoring Equipment (ECG, Pulse, Temp, SpO2)

The monitor should have:

A. Modular monitor High – resolution colour TFT display of minimum 10" or more.
B. Should be able to monitor ECG, NIBP, 2 IBP, SpO2. Temperature and Respiration.
C. Plethysmograph with perfusion indicator (optional – price to be quoted separately).
D. Monitor should monitor at least three channel.
E. 24 Hrs. graphical / tabular trends.
F. NIBP trends memory should be at least 50 readings (tabular).
G. Suitable for Adult / paediatric/neonate.
H. Selectable Arrhythmia detection.
I. Should have inbuilt three channel recorder.
J. Must have Graded and Colour coded alarms.

K. User selectable screen formats and user – friendly menu driven functions.

L. Battery backup for at least 3 Hrs.

M. It should be European CE or US FDA Certified.

N. Should be supplied with: One 3 lead ECG cable, Reusable SpO2 (adult, paediatric, neonate) sensor, NIBP cuffs (each for Adult, child and neonate), IBP cable.

X.33 Volumetric Infusion Pump

A. Description of Function

Volumetric Infusion Pump is a medical device that delivers intravenous fluids and medicine to patients in hospitals, outpatient surgical centres, hospices, nursing homes, and in ambulances

B. Operational Requirements

Programmable volumetric infusion pump is required

C. Technical Specifications

1. Battery back-up operating time 5 hours.
2. LCD programming display
3. Data entry calculator style alpha numeric programming keyboard
4. Pole clamp Multi-function mounting clamp
5. Nurse call output alarm, time and date settings
6. Quick titration of rate or dose with volume-time programming
7. Flow rate range (primary) 0.1 to 99.9 ml/hr. (0.1 ml increments) and 1 to 1200 ml/hr. (1ml increments.)
8. Volume to be infused 0.1 to 99.9 ml (o.1ml increments) and 1 to 9999 ml(1 ml increments).
9. Both flow rates and volume to be infused should be configured to limit the maximum allowable range
10. RS232C/USB/RS485 output for Printer, PC connectivity and Data acquisition with selectable baud rate options should be there.
11. Accuracy ±3%.
12. Pump Database: events of 24 hours with real time.

D. System Configuration Accessories, spares and consumables

1. Compatible with any standard infusion sets available in local Indian market
2. 1000 numbers of required infusion sets should be supplied with the single unit

E. Standards, Safety and Training

1. Should be US FDA or European CE approved product

F. Documentation

User/Technical/Maintenance manuals to be supplied in English.

X.34 Operation table with accessories

Multipurpose electro hydraulic with manual override mobile Table with divided leg section suitable for all major surgical procedures, complete with 5cm mattress and corded handset.

A. General operating table features:

1. Full-length radio-translucent top.
2. Tabletop should be made of a special scratch resistant, hardwearing and easy to clean material. Base column cover to be made of 100% stainless steel alloy and stainless steel.
3. Removable head and leg sections to suit different applications.

4. 100% Kidney Bridge position should be obtained without moving the patient, thru' remote Control by using extension/break function.
5. Battery powered, with facility for connection to mains electricity for immediate use. Battery Exhaustion protection and low battery warning via an audible 'beep'/display indicator should be available.
6. Table should not have a thread/sharp edge for ensuring proper cleaning and user safety.
7. Mattress should be of high quality that spans tabletop break for improved patient support. Its depth should be 50mm. Mattress must be Latex free.
8. The robust handset should offer 8 controls namely Trend. /Reverse Trend, Lateral Tilt, Flexion/ Extension and Height functions.
9. Brakes, 4nos Wheels
10. Table should have a narrow T-shaped base allowing optimum access and greater stability.
11. Table should have offset slim-line column, with S.S. Inverted telescopic covers, for superior imaging and access.
12. It should have a stable construction with 4nos Wheels of the base with large twin-disk castors for easy motion and manoeuvring (base braking by locking the twin-disk castors at the head end via a central foot pedal/ Hand control)
13. The table top should not be fitted with transverse members casting shadows on the X-ray images except for the release brackets for adjustment on either side.
14. The Table should be operated by the following operating elements: corded hand control, Manual override panel with manual override facility.

B. Electrical specification:

1. Special-design, maintenance-free rechargeable batteries with capacity for about a week's use in the operating room.
2. Recharging of the batteries and supply of the operating table by means of a mains cord
3. Nominal mains voltage (selectable) 100/110-115/127/200/220/230-240V AC via mains cord.
4. Length : 2000-2100 mm
5. Width : 550-600 mm
6. Minimum height (without mattress) : 600-650 mm
7. Electrical specification: Maximum height (without mattress) more than 1050 mm.
8. Maximum lateral tilt : 20-30 deg. (either side)
9. Trendelenburg atleast 25deg.
10. Reverse Trendelenburg atleast 25deg.
11. Head section adjustment: ±40-45 deg.
12. Leg section adjustment : +50 deg; to -110 deg
13. Break (extension) position: 200-220 deg.
14. Break (flexion) position : 110-130 deg
15. Maximum patient weight : 250 kg

C. Accessories

1. Arm board - 2
2. Lithotomy leg holders "Geopel type" (adult and paediatric)-1set each
3. Body strap- 3
4. Anaesthesia screen- 2
5. Clamp, rotary- 4 pc
6. Clamp, circular - 4 pc
7. Accessories stand, mobile on castors- 1 pc
8. Arm support, perplex -2 pc

D. Standard

1. The table should be US-FDA or European CE approved product.

X.35 Defibrillator with ECG Monitor

A. Description of Function

1. Defibrillator is required for reviving the heart functions by providing selected quantum of electrical shocks with facility for monitoring vital parameters.

B. Operational Requirements

1. Defibrillator should be Bi- Phasic, light weight and latest model
2. Should monitor vital parameters and display them
3. Should print the ECG on thermal recorders.
4. Should work on both Manual and Automated external defibrillation (AED) mode up to 200 J or more.
5. Should be capable of doing synchronized & asynchronized cardioversion
6. Can be operated from mains as well as battery
7. Should have defibrillator testing facility

C. Technical Specifications

1. Should be a Low Energy Biphasic defibrillator monitor with Recorder, having capability to arrest all arrhythmia within a maximum energy of 200 Joules.
2. Should monitor ECG through paddles, pads and monitoring electrodes and Defibrillate through pads and paddles. Should have Automatic or Manual Lead switching to see patient ECG through paddles or leads
3. Should measure and compensate for chest impedance for a range of 25 to 125 ohms
4. Should have a built in 50mm strip printer/ thermal recorder
5. Should have charging time of less than 6 seconds for maximum energy. Charging indicator should be there.
6. Should have bright LCD / TFT display for viewing messages and ECG waveform of 4 seconds
7. Single Adult and pediatric paddles should be available.
8. Internal paddles should also be available and price to be quoted separately."
9. Should have event summary facility for recording and printing at least 250 events and 50 waveforms. Patient data storage 90 mins of ECG and events.
10. Should have a battery capable of usage for at least 90minutes or 30 discharges.
11. Should be capable of printing Reports on Event summary, configuration, self-test, battery capacity etc
12. Should have facility for self-test/check before usage and set up function
13. Should have SPO2 and EtCO2 integrated facility.
14. Should be capable of delivering energy in increments of 1-2 joules up to 30J and increments of maximum 50J thereafter.
15. Should have user friendly 1, 2, 3 color coded operation.
16. Voice prompts on AED mode
17. Printing reports of events summary configuration/set test/ battery capacity
18. Optional noninvasive pacing/ transcutaneous pacing

D. System Configuration Accessories, spares and consumables

1. Defibrillator -01
2. Paddles Adult/Paediatric (pair) -01
3. Paddles –Internal (pair) -01

4. Patient cable -02
5. ECG Rolls -50
6. Disposable pads-10 nos.
7. "Reusable SPO2 Finger Probe-Adult -02
8. Reusable SPO2 Paediatric Finger Probe - 02"
9. Complete set of ECG Leads- 02

E. Standards, Safety and Training

1. Should be USFDA or European CE approved product.

X.36 Nursing Trolley

A. Size: 750*450*900mm (Approx)
B. Made of high-strength ABS material
C. One-piece ABS plastic top board with raised-edge design, covered transparent soft plastic glass.
D. With four plastic-steel columns.
E. Five ABS drawers: 2 small, 2 middle & 1 big drawers, inner with dividers can be organized easily and freely, label cards for the trolley and drawers.
F. Stainless steel guard rail
G. Sliding side shelf (Optional), Writing Shelf(Optional)
H. Multi bin container, Over bridge tray, Dust basket, Needle disposal holder, IV pole, Utility container, storage box
I. Centralized lock
J. Four casters with brakes

X.37 Examination couch

A. Overall approx size: 1890 mm L x 560mm W x 840mm H.
B. Fixed upholstered top 64mm thick in two sections.
C. Body frame work made from 18G.
D. CRCA sheet and 20 mm x 40mm x 18 G MS.
E. Rectangular Tubes Couch fitted with stainless steel Legs.
F. Headrest adjustable on gas spring.
G. Upper section of box approx size 1220 mm L x 460 mm W x 630 mm H with three sliding drawers of approx size 320 mm L x 430 mm W x 75 mm H.
H. Lower section comprises of three cabinets of approx inside size 350 mm L x 440 W mm x 430 H mm with separate doors & lock.
I. B.P.apparatus tray made of 18 G MS sheet of approx size 350 mm L x 120 mm W X 20 mm H provided on a swinging rod rotating through a bush welded on the body of the couch.
J. Should have Sliding Inbuilt Step Stool.
K. All mild steel components should be thoroughly pre-treated chemically to
L. remove rust and foreign matter like Grease, Oil etc. by dip tank process pre-treatment system.
M. The treated Metal Surface should have coating of Epoxy Polyester Powder and oven baked at 180 degree to 200 degree
N. Centigrade to avoid contamination of the clean metal surface from dust particles.

X.38 Anesthesia Machine

- **A.** Should have pipeline attachments for Oxygen, Nitrous oxide and compressed air.
- **B.** Should have yoke assembly for Oxygen and Nitrous oxide with pin index system.
- **C.** Durable main switch to put the machine in the on or off position.
- **D.** Should have cascade double tube bobbin type flow meters for oxygen and nitrous oxide and single for air.
- **E.** Should have safety features like :
- **F.** Minimum oxygen flow of 50ml/min or more even when the machine is in ON position.
- **G.** Should provide 25% or more of oxygen when an anesthetic gaseous mixture is in used.
- **H.** Should be provided with mechanical hypoxic guard.
- **I.** Should have oxygen flush with a flow rate of more than 35L/min.
- **J.** Machine to be supplied with one Sevoflurane vaporizer. The Machine should be capable of holding two Seletatec vaporizers (Isoflurane, Sevoflurane) simultaneously. Vaporizers should be maintenance free.
- **K.** CO2 absorber system with the following features:
- **L.** Single/Double canister
- **M.** Autoclavable
- **N.** Canister capacity of 1.2kg or more.
- **O.** It should be possible to bypass the canister if removed during clinical cases to change sodalime.
- **P.** APL valve assembly and Bag mount should be conveniently placed.
- **Q.** Independent port for Open circuit.
- **R.** Should be provided with two or more drawers.
- **S.** Machine should have a good quality handle and castors
- **T.** Machine will be supplied with all standard accessories.
- **U.** The machine should be European CE or US FDA approved.

X.39 Blood Gas Analyser (ABG Machine)

- **A.** Fully automatic, upgradeable, fast electrolyte & Blood gas analyzer.
- **B.** Essential Measured parameters; pH, pCO2, pO2, SaO2 with co-oximetry, tHb, Hemotocrit Lactates, Na+, K+, Ca++, BUN, Cl-. All these parameters should be measured simultaneously.
- **C.** Calculated parameters should include BE, BE ecf, HCO3, Anion Gap etc.
- **D.** Sample volume-less than 100 micro litre.
- **E.** Fast analysis time – less than 60 sec.
- **F.** Maintenance free electrodes with individual electrodes ON/OFF facility.
- **G.** Fully automatic liquid calibration of all parameters at user-defined intervals without the use of Gas calibrated reagents, external gases, tanks or regulators.
- **H.** Continuous reagent level monitoring with graphic display.
- **I.** Data display on well-illuminated, adequate size screen display.
- **J.** Data print out on built in graphic printer.
- **K.** Built in auto Quality control facility.
- **L.** Suitable UPS with at least 30 min backup.
- **M.** Reagents for one year@ at least 20 samples/day should be provided along with the machine.
- **N.** Cost of reagents to be quoted for comparative evaluation.
- **O.** It must be US-FDA or European CE approved.

X.40 Blood cell counter (Automated three part differential haematology analyser)

- **A.** Should be a fully automated hematology analyzer providing 18 parameters including a 3- part differential, with user definable settings for RDW – CV or RDW – SD.
- **B.** The system should give the Differential count as Lymphocytes, Mid population & Neutrophils/Granulocytes While Mid population should include Eosinophils, Basophils and Monocytes.
- **C.** The system should be capable of processing samples at a speed of 60samples/hour.
- **D.** The system should have large LCD display to have a review of all the results along with the three histograms of WBC, RBC and PLT on the screen.
- **E.** The system should have around 200 samples test result memory.
- **F.** The system should have autoprobe wiper to clean the sample probe automatically after sample aspiration.
- **G.** The system should use non-cyanide based reagent for Hb estimation.
- **H.** The system should have an option to print the results with or without histograms
- **I.** The system should have automatic floating thresholds for the correct separation of RBC‟s and PLT‟s during overlap in cases of Microcytosis / large platelet.
- **J.** System should not require any daily maintenance except daily shutdown.
- **K.** The system should automatically give an alarm to the operator for doing the maintenance.
- **L.** The system should use high intensity LED for Hb estimation and not the lamp.
- **M.** The system should be open and reagent from other company can also be used
- **N.** All reagents required should be available locally from the Company or its authorized distributor. Cost of consumables shall be considered in financial comparison. Two vials each of 3 level quality controls (i.e. total 6 vials) should be provided for initial training and validation of instrument.
- **O.** Firm will have to supply the UPS with 30 min back up along with the equipment free of cost
- **P.** It must be US-FDA or European CE approved.

X.41 COLPOSCOPE

- **A.** Qualify stereoscopic optics. Facilities assessment of the finest epithelial changes.
- **B.** Ergonomic design: For convenient and fast positioning and focusing of colposcope
- **C.** Compact size: To conveniently move from one room to another
- **D.** Inclinable Binocular tubes 0-180 degree or more: for best viewing experience
- **E.** Objective lenses: with different focal lengths allow user to select the convenient working distance. 300 mm, 400 mm
- **F.** Stepless zoom magnification settings: allow user to study epithelium at high magnification and carry you treatment at low magnification.
- **G.** Swing in vessel delineation fitter: For improved visual activity.
- **H.** Optimum cold light illumination system: Help distinguishing small color differences in epithelium
- **I.** Suitable for tuboplasty (with swivel Arm Stand) & other Micro Surgical Procedure.
- **J.** It must be US-FDA or European CE approved.

X.42 Cryo Surgical System

- **A.** Operating Pressure Range: 40-60 bar.
- **B.** Coolant: N2O or CO2 in two cylinders (A type).
- **C.** Gas consumption for freezing: ca.35g – 50 g/min.
- **D.** Max. exhaust gas volume: 40-60 l/min.
- **E.** The unit should have Manometer to monitor operating pressure.
- **F.** A different indicator lamp to indicate freezing and defrosting phase.
- **G.** Should have a connection pipe for gas exhaust.
- **H.** It should be mounted in a cart with cylinder case for easy mobilization.
- **I.** Activation should be via footswitch or hand control.
- **J.** Min freezing temperature should reach within 5 seconds.
- **K.** It should be supplied with multiple different sized probe-tips to cater for cervical cryocautery of lesion of all sizes.
- **L.** All cryo probes and accessories should be autoclavable.
- **M.** Should be European CE or US FDA approved.
- **N.** Minimal maintenance, Flawless performance, Available with knob to regulate pressure.

X.43 Laparoscopic Surgery Set with High Definition Camera

1 Description of Function	**QTY**
1.1 Laparoscope is used for minimally invasive surgery and comprises of telescope and associated instruments and units.	
2 Operational Requirements	
2.1 The set for Laparoscopic surgery should have units/groups of items/components as given below. They could be offered bundled in a comprehensive system or separately for each individual group, which should be adaptable with all major international brands.	
3 Technical Specifications	
3.1 CAMERA CONTROL UNIT & CAMERA	**One(1)**
High definition Endoscopic camera system should have following features:	
a) Pure Digital HD technology with high definition video of 1920 x 1080p (min) native resolution.	
b) Progressive scan technology both on camera head and console	
c) Consistent use of 16:9 format for input and output for HDTV function	
d) CCD chip having hi-fidelity image transmission with digital conversion at camera head itself	

e) **The system should have digital zoom and/or integrated optical zoom with auto focus to enhance the quality of image size & cross speciality standardization of the camera system, regardless of the telescope used.**	
g) System should be able to optimize all the settings and should be ready as soon as connected to camera control unit with automatic brightness control	
h) Should be compatible for remote controlled operation of various features	
Technical Specifications :-	
a) Image Sensor:3 x 1/3 Progressive scan CCD Chip. Aspect ratio- 16:9	
b) Pixels 1920 X 1080 pixels per chip (min)	
c) AGC Microprocessor controlled	
d) Lens F14-32mm ± 10 %	
e) Video Outputs Composite to BNC, Y/C to S-VHS, RGB to Dsocket, HDTV-DVI-D, DV for recording	
g) Facility to directly record HD (High definition) quality photos and SD (standard definition) quality videos directly through the hub into an USB device.	
h) Camera settings (e.g. white balance, zoom, gain, sharpness etc.) should be possible directly from the camera head buttons.	
i) There should be communication bus to control all the units.	
3.2 MONITOR	**One(1)**
One Wide Screen Monitor having the following features:	
a) 26" full HD medical grade monitor in 16: 9/10 HDTV format, LED Crystal display,	
b) Resolution: Minimum of 1920 x 1080 pixels	
c) SDI/HD-SDI, Composite, S-Video, RGB, DVI-D and VGA input	
d) All required cables and connectors, which should be specified	
e) TFT screen stand/Fixtures for connecting to Pendant System/Ceiling Light Arm	
f) Dustproof and Drip water protected	
3.3 **TELESCOPES (HD Compatible)**	
1. 5 mm - 30 degree angle of view 0 degree straight view (each approximately 27-30 cm long)	**One(1)** **One(1)**
10 mm - 30 degree angle of view 0 degree straight view (each approximately 30-35 cm long)	**One(1)** **One(1)**

2. Colour coded for identification	
3. Autoclavable	
3.4 CO2 Electronic INSUFFLATOR	**One(1)**
1. Fully automatic, electronically controlled gas fill	
2. Adjustable flow rate of 30-40 litres per minute and pressure range adjustable between 0 to 30 mm Hg	
3. Optical and acoustic warning signals in case of malfunction or excessive pressure with automatic release of over pressure by back flow	
4. Selective connection to medical gas pipeline as well as direct connection to high pressure CO2 cylinder should be available	
5. Control by keys on front panel	
6. Clear and adjacent front display of actual and preset flow rate, actual and preset pressure, gas consumed	
7. Facility for preheating of gas to body temperature with both internal and external heating device	
8. Facility for easy evacuation of smoke and mist	
9. Memory for retention of previous pressure settings	
10. Should include pin-index connection to small/big gas cylinder with regulator, high pressure hose, mains cord, silicone autoclavable tubing set, universal wrench and gas filter	
3.5 LIGHT SOURCE (Xenon 300) with TWO Spare Bulbs	**One(1)**
1. Xenon cold light fountain with 300 watts xenon lamp	
2. Colour temperature of at least 5800 °K	
3. Manual and automatic adjustment of light intensity	
4. Brightness control to be regulated manually or automatically via the output signal of a video camera	
5. Lamp life 500 hrs or more	
6. Display of lamp life/Bulb usage meter warning light	
7. Standby mode with emergency lamp with visual indicator	
8. Electrical specifications	
a) Power supply voltage: 100-240 VAC	

b) Power frequency: 50-60Hz		
9. The light source should comply with IEC 60601-1, belong to Class II a with CE mark		
3.6 SUCTION-IRRIGATION UNIT		**One(1)**
1. Controlled suction and irrigation unit with flow rate of at least 1l/min.		
2. Irrigation pressure control between 0-400 mm Hg, preferably by roller pump.		
3. Suction pressure control between 0.75 bar.		
4. Control from control panel and/or foot pedal		
5. Main unit with digital display		
6. Overflow protection on suction bottles		
7. Accessories should include silicone suction tubing set with reusable pressure domes, bacterial filter and suction bottles with cap (minimum 5 ltrs.)		
3.7 VIDEO-CART (Indian made)		**One(1)**
a. Made of Stainless Steel/Epoxy coated metal with minimum 4 shelves		
b. Portable on 4 antistatic dual castors, 2 with locking brakes		
c. Required number of shelves for housing all the units of the set		
d. Preferable adjustable arm for fixation to either side for fixing the TFT monitor		
e. One drawer unit with lock and key		
f. Cable Manager		
g. Power box with concealed wiring for providing electrical connections of proper rating to all the units suitable for Indian plugs		
3.8 CARBON DIOXIDE CYLINDER		**Two(2)**
Two large size cylinders with required regulators and connecting pipe to the insufflator with pressure gauze.		
3.9 HAND INSTRUMENTS & OTHER ACCESSORIES		
Instrument	**Specifications**	
Reusable Veress Pneumoperitoneum Needle	Spring loaded blunt stylet Length-10 cm	2
	luer lock	2
Reusable Trocar :- 5mm	Multifunctional valve, insufflation stopcock and smooth sleeves, pyramidal tip with safety outlet hole near tip , length (10.5cm), autoclavable	6

Reusable Trocar :- 10/11mm	Multifunctional valve, insufflation stopcock and smooth sleeves, pyramidal tip with safety outlet hole near tip, length (10.5cm), autoclavable	5
Reusable Trocar :- 5mm	Multifunctional valve, insufflation stopcock and threaded sleeves, pyramidal tip with safety outlet hole near tip, length (10.5cm), autoclavable	2
Reusable Trocar :- 13.5mm	Multifunctional valve, insufflation stopcock and smooth sleeves, pyramidal tip with safety outlet hole near tip, length (10.5cm), autoclavable	1
Two ways Suction and Irrigation cannula	a-Size 5mm, length 32-38cm, used with suction and irrigation handle and handpiece with stopcock b- Size 10 mm, length 32-38 cm	1 1
Tissue Grasping forceps – toothed 2x3 teeth	Double action jaws of 20-23 mm , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles with ratchets, autoclavable	1
Tissue Grasping forceps – toothed 2x 3 teeth	Single action jaws of size 30-35mm, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles with ratchet, autoclavable	1
Maryland forceps	a-Double action jaws with size 14-16 mm , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without ratchet, autoclavable	2
Grasping forceps- Atraumatic	Double action jaws, spoon shaped with multiple teeths of jaw length 18-23 mm and rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without ratchet, autoclavable	1
Dissecting and Grasping forceps- Alligator type	Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles with ratchet, autoclavable	1
Dissecting and Grasping forceps-	Single action jaw , with dolphin nose tip of 16-20 mm, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without ratchet, autoclavable	1

Grasping forceps- Atraumatic – Reddick Olsen type	Double action jaws, with fine serrations on jaw length 12-18 mm and rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, plastic handles without ratchet, autoclavable	1
Grasping forceps- Fenestrated	Single action straight jaw of 24-26mm length with fine serrations and fenestration , rotating, size 5mm, length 33-36cm, dismantling facility, plastic handles with ratchet, autoclavable	1
Grasping forceps- Fenestrated	Single action curved jaws of 35-40 mm length with fine serrations and fenestration, rotating, size 5mm, length 43-46cm, dismantling facility, plastic handles with ratchet, autoclavable	1
Babcock Grasping forceps- (5 mm)	Double action jaws, atraumatic fenestrated, rotating, size 5mm, length 33-36cm, dismantling facility, plastic handles with ratchet, autoclavable	1
Babcock Grasping forceps- (10 mm)	Double action robust jaws with large atraumatic gripping surface, rotating, size 10mm, length 33-36cm,dismantling facility, plastic handles with ratchet, autoclavable	1
Dissecting and Grasping Forceps	Single action,atraumatic, fenestrated, curved jaws of length 25-28mm, rotating, size 5 mm, length 33-36cm, dismantling type, , plastic handles with ratchet, autoclavable	1
Dissecting Forceps- Right Angled	Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, , plastic handles without ratchet, autoclavable	1
Fan shaped retractor	Rotating with 4-5 blades, size 5mm, length 33-36cm, dismantling facility	1
Hook Scissors,	Double action jaws , rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, , autoclavable	2
Rotating Metzenbaum Scissors	a-Double action jaws of length 14-16mm, rotating with connector pin for unipolar coagulation, size 5mm, length 33-36cm, dismantling facility, autoclavable b- Insert of Metzenbaum scissors	2 2

Bipolar coagulating forceps	Wide jaws for dissection, grasping large vessels,size 5mm, length 33-36cm fenestrated. Jaws with robust hinge and 360° rotational, ring handles, can be completely disassembled and a cleaning port, autoclavable	1
Spoon Forceps	10 mm size, without ratchet	1
Reusable Hem-o-lock clip applicator	10 mm size	1
Bipolar coagulating forceps (Only Insert)	Maryland type jaw of 18-20 mm length, and 34-36 cm long to fit into the other parts of No. 23, autoclavable	1
Needle Aspirator	Size 5mm, length 30- 36cm, Needle diameter of 1.5-2 mm	1
Needle holder (Disengageable, coaxial type)	Size 5mm, tungsten carbide tip, straight handle with ratchet, single moving with curved tip to left, length 33-36cm	1
Needle holder insert (Straight type)	Size 5mm, tungsten carbide tip, single moving straight jaws, length 33-36cm.	1
Extracorporeal Knot pushers	Closed Eye type, length 28-32cm, size 3mm	1
Endoloop applicator	To fit into trocar size of 6 mm	1
Clip Applicator - Medium Large	Rotatable, provision for locking the shaft conveniently, 10mm, compatible with clip LT 300	1
Clip Applicator - Large	Rotatable, provision for locking the shaft conveniently, 10mm, compatible with clip LT 400	1
Hassan cone	Adaptable to 10mm trocar	1
Reduction Sleeves/Extractors	From 10/11mm to 5mm, metallic	1
Reducers	from 10/11mm to 5mm	3
L-Hook	Size 5mm, length 33-36cm with pin for cautery	2
J- Hook	Size 5 mm, length 33-36 cm	2
Spatula	Size 5mm, length 33-36cm with pin for cautery	1
Fascia closure instrument	Size 2.8mm, length 17cm with single action jaw	1
High Frequency Cord.	For 5mm & 10mm hand instruments with Monopolar Electrodes	2

Washers	For 5 & 10 mm cannula and reducers	10 pieces each
Fibreoptic Light cables	With straight connectors of 4.8mm diameter and 250 cm long	1
Fibreoptic Light cables	With straight connectors of 4.8mm diameter and 300 cm long	1
Light Adaptor	Angled 90°, diameter 4.8 mm, free rotatable, to connect with standard telescopes	1
Container Systems: Metal & Plastic	For sterilization and storage of telescopes, hand instruments and other accessories of different sizes	3
Bipolar HF connecting cable		2
Unipolar HF cables		2
Hydatid suction cannula		1
Cleaning Brush	Length 35 cm, 0.0 -7 mm	2
Cleaning Brush	Length 35 cm, 0.0 -2.5 mm	2
Cleaning Brush	Length 50 cm, 0.0 -11 mm	2
Cleaning Brush	Length 50 cm, 0.0-7 mm	2
Oil dropper	No 38	2
Silicon Oil for instruments	Bottle of 50 ml	4
Special lubricant for stopcocks		4
Duraglit for polishing metal sheaths and instruments		2
Formalin chamber	Made of Virgin acrylic 4.5 mm thickness, size 26" x 8" x 8" (LxBxH) with three tray for sterilizing lap. Set	2
4 System Configuration Accessories, spares and consumables		
4.1 System as specified. But all the items should be of the same manufacturer of International repute only. All electronic devices should have CF protection.		
4.2 ACCESSORIES:- All possible accessories of the equipment should be quoted. The specific accessory and its quantity will be decided on the basis of actual requirement		
4.3 The system should be capable of accepting standard accessories of major international brands, which should be specified and for which suitable adaptor, if		

required, is to be provided	
4.4 The codes and rates of all relevant individual accessories should be quoted separately with clear mention of period of validity of rates	
5 Power Supply	
5.1 Optional UPS of adequate rating for power supply to the system for 60 minutes	
6 Standards & Safety	
6.1 **Should be US FDA or European CE product.**	
6.2 Electrical safety conforms to standards for electrical safety IEC 60601-1 General Requirements (or equivalent BIS Standard)	
6.3 Shall meet internationally recognised standard for Electro Magnetic Compatibility (EMC) for electromedical equipment: IEC-60601-1-2 :latest edition Or Equivalent BIS) or should comply with 89/366/EEC; EMC-directive as amended	
6.4 Certified to be compliant with IEC 60601-2-2 Medical Electrical Equipment Part 2-2: Particular requirements for the safety of equipment mentioned above – wherever applicable	
7 Training	
7.1 Comprehensive training for staff of user department and support services till familiarity with the system.	

X.44 Mobile X ray machine

- **A.** High Frequency mobile X ray machine with output 100 mA or more. The mobile x ray equipment is required to perform x ray studies in emergency and trauma center and bedside in wards and ICU. The unit should be compact, lightweight and easily transportable. It should have following specifications. The system should have been quality certified.
- **B.** The unit should be operative on mains voltage from single phase 180-260 v AC with automatic main compensation.
- **C.** Generator:
- **D.** Power : 4 kW or more
- **E.** kVp. Range : 40 – 100 kVp or more
- **F.** m AS Range: 250 m As or more.
- **G.** m A range : 10 mA to 100 mA or more
- **H.** Exposure Time: 10 ms to 5 sec.
- **I.** The digital display: kV and mAs parameters, System ON, System OFF, status and fault messages on the kV and mAs area
- **J.** X RAY Tube: Stationary/Rotating Anode tube with focal spot 1.8 X 1.8 mm or better.
- **K.** Tube stand: The tube stand should be fully counterbalanced with rotation in all directions.
- **L.** Collimator: Collimator rotation should be +90 to -90 degrees with auto shut off lamp facility.
- **M.** Cassette storage box: The equipment should have cassette storage box for minimum of 4 cassette.

N. Ergonomics: The unit should have small foot print. The height of the column stand should not be more than 150 cm for easy transportation in the lift etc. and areas with small height doors. The equipment should be light weight, not more than 130 kg.

O. Brake system: The unit should have effective brake system for parking.

P. Should be US FDA or European CE product.

Q. The unit should be AERB Approved

X.45 Colour Doppler Echocardiography System with Advanced 2D Facility

Sl No.	
1	**Description of Function**
1.1	Colour Doppler Echocardiography System is required to study the anatomical abnormalities and blood flow in the heart and associated vessels.
2	**Operational Requirements**
2.1	Latest generation Electronic Phased array Colour Doppler system with Minimum **20,000** Electronic independent channels. System should be DICOM ready and capable of being interfaced with HIS/RIS/ PACS.
2.2	Frequency compounding or better technology for better resolution and penetration.
3	**Technical Specifications**
3.1	Latest generation Electronic Phased array Colour Doppler system with Minimum **20,000** Electronic independent channels.
3.2	256 grey shades for sharp contrast resolutions
3.3	Adult Transthoracic Cardiac (2 probes) and Vascular probe to be supplied which should be latest generation wide band transducers
3.4	Harmonic Imaging- System should have following modes in harmonic with separate setting for:
a.	Tissue Harmonic
b.	Contrast Harmonic
c.	Harmonic Angio
d.	Strain rate imaging facility
3.5	Harmonic imaging capability in Adult Cardiac and linear Probe.
3.6	Gain control in two dimensions for additional level of flexibility to image quality control.
3.7	Real time high frequency 2D for higher resolution and low frequency Doppler for higher

	sensitivity in all probes
3.8	Frame rate should be 300 FPS or more
3.9	Steerable PW/CW in all Phased Array probes.
3.10	High-definition acoustic zoom for enlarging sections of 2D and Colour flow images with more acoustic information for greater clarity and detail while maintaining an optimal frame rate.
3.11	Modes —2D, M-Mode, Steerable PW/CW Doppler, Colour Doppler, and High Definition Colour flow Anatomical M Mode.
3.12	Monitor should be 15" or more, high-resolution colour Monitor.
3.13	Colour Flow Imaging for
a.	Increased lateral & spatial resolution.
b.	Detection of even subtle areas of turbulence, displaying a more physiological blood flow appearance without loss of frame rate.
c.	Colour flow with capability of automatically picking up colour flow as a function of focal depth
3.14	Tissue Colorization (B-Colour) for improved contrast resolution
3.15	Application software for Adult and Peripheral Vascular applications. (All application package should be built into the system)
3.16	Cine loop memory- more than 120MB of memory or equivalent cine loop memory in frames/ sec.
a.	High Frame rate review for better clarity of playback images study in slow motion.
b.	Quad loop with memory for pre and post image comparison of any procedure.
c.	Memory- 256 frames or more in quad loop. M Mode & Doppler Scroll Memory- 40seconds or more.
3.17	Various maps for pre and post processing.
3.18	ECG trigger facility.
3.19	User defined system and application presets for multi-user department.
3.20	Dedicated integrated dynamic stress echo package for flexible user defined protocols with stacked sub loops facility and contrast stress protocol usable for stress echocardiography.
3.21	**Tissue movement colorization** with quantification possibly for IHD/CAD/Heart Failure patient
3.22	Three or more transducer ports.

3.23	Colour Map resolution up to 128 levels.
3.24	Facility for high definition digital acquisition, review and editing of complete patient studies.
3.25	PC based Peripheral system comprising of dedicated computer of standard make, at least 500 GB storage space (Hard disc) with 4 GB RAM or more with a Microprocessor speed of more than 3.00 GHz, frame grabber incorporated (All Software Inclusive) interfaced with the echocardiography machine with DVD writer and a high quality Colour Laser printer.CD/DVD produced should be playable on any system.
4	**System Configuration Accessories, spares and consumables**
4.1	Colour Doppler System with all application packages Quad loop for serial studies with High frame rate review. Harmonic imaging capability in all modes. (Tissue, Contrast,Anglo) Integrated Stress Echo Package
4.2	PC based Peripheral system - 01
4.3	Adult Cardiac probe Electronics Phased Array probe - 01
4.4	Paediatric Cardiac probe Electronics Phased Array probe - 01
4.5	linear probe for vascular application - 01nos
4.6	DVD/CD Recorder with 100 CDs and 100 DVDs
4.7	Colour Print Paper- 500 sheets
4.8	ECG Cable - 05
4.9	Laser Colour Printer – 01
4.10	Online UPS with voltage regulation and spike protection of suitable rating to support main system and all accessories , for 30 min back up.
5	**Standards, Safety and Training**
5.1	Should be US - FDA or European CE approved product.
6	**Documentation**
6.1	User manual in English.
6.2	Service manual in English.
6.3	List of important spare parts and accessories with their part number and costing available in stock with the supplier.

X.46 Portable Color Doppler Echo Cardio Graphy System

A. Technical Specifications

1. It should be a State of the art Digital Technology System & should be capable of performing Imaging applications like Adult, Paeditric Echo Cardiography, Musculoskeletal, Small parts, Urology, Vascular, Transcranial imaging..
2. The system should incorporate facility for High-resolution 2D, M Mode, PW, CW, Colour Flow Imaging, Colour Power Angio Imaging, Directional Colour Power Doppler Imaging modes.
3. The equipment should have minimum 1024 Digital Processing Channels or more.
4. The system should have minimum 256 Grayscales or more.
5. All transducers should have Broad Bandwidth Beamformer technology for extreme High Resolution 2D Imaging. Frequency range of the system should be 1 to 15 Mhz or more. This should be available without the need for frequency switching.
6. System should support extended field of view imaging or equivalent.
7. Facility for independent steering of B mode and Colour beam on linear probe
8. The system shall provide 170 dB or more full time input dynamic range
9. System should have Pan Zoom facility on live and freeze images
10. Should have one touch image optimization & automatic real-time Doppler tracing
11. The system should have automatic quantification of Doppler parameters to display user-selected measurements.
12. System should be new generation ergonomically designs to curve minimum injury to the operator.
13. Should have an alphanumeric keyboard with illuminated keys and status display.
14. The system should be able to support at least three Transducers.
15. System should have a High resolution Non Interlaced TFT Monitor of 15 inches or more.
16. System should have Image Management facility with facility for direct storage of Images and loops in the Hard Disk Drive and also thumbnail review to view & edit Images, loops and also reports.
17. Storage-should have >2,00,0000 image storage facility in the hard disk drive. Should have inbuilt hard disk for image storage
18. Archive-should have inbuilt DVD-CD RW with the facility to transfer images.
19. System should have USB ports.
20. Should have direct connectivity to Inkjet printer for printing images & report
21. The system should have extensive Calculation software package for general measurement, Cardiac, Vascular, etc.
22. Should be US - FDA or European CE approved product.

B. Equipment with above features to be offered with the following Broad Bandwidth Probes

1. Linear Array Transducer with frequency range between 3 to 12 Mhz with tissue harmonic imaging
2. Phased Array Probe with frequency range between 2 to 4 Mhz for Adult Cardiac & Imaging applications.
3. Phased Array Probe with frequency range between 3 to 8Mhz for Pediatric. Cardiac Imaging applications.

X.47 600mA X-Ray Machine with Fluoroscopy (IITV)

A. The Radiography & Fluoroscopy system should have a High Frequency type generator

1. The Unit should be Compact and occupy minimum space
2. The unit should be AERB Approved
3. Should be US FDA or European CE approved product.

B. X-Ray High Frequency Generator

1. 65 Kw or more High Frequency generator with inverter frequency of not less than 30 kHz.
2. Maximum output: 65 kW or above (600 mA @ 100 kV)
3. Two tube selection – Capable of connecting two tubes.
4. IBS/ADR for auto stabilization for fluoroscopy – Standard
5. Radiographic kV range: 40 – 125 kV – please specify kV steps
6. Radiographic mA range:10 – 600mA
7. Anatomical program memory – user programmable – 50 programs or more
8. Exposure parameter display available – specify the mode – Digital, LED etc.,
9. Microprocessor controlled automatic exposure control.
10. Automatic setting of optimal radiography parameters and fluoroscopy parameters (kV,mAs).
11. Pulsed fluoroscopy should be possible.
12. All necessary cables should be provided.

C. X – Ray Tube

1. Anode heat capacity – 300 kHU or more
2. Focal spot size – Small focus – not more than 0.6mm ; Large focus – not more than 1.2mm
3. Maximum KV : 100 kV or more.
4. Maximum mA : 600 mA
5. Rotating anode.

D. Overhead tube

1. Anode heat capacity – 200 kHU or more
2. Focal spot size – Small focus – not more than 0.6mm , Large focus – not more than 1.2mm
3. Maximum KV 125 kV or more.
4. Maximum mA 600 mA at 100 KV
5. Rotating anode – Normal Speed – Please specify.

E. Radiography – Fluoroscopy Table

1. Table & table top operations should be completely motorized.
2. Table tilt: +90 to -12 deg or better – please specify.
3. Table should be Motorized Elevating type for easy patient access – specify the minimum elevation
4. Longitudinal movement Specify minimum and maximum possible travel distance movement of imaging unit is preferred for patient safety.
5. Electromagnetic Locking of spot film device.
6. Motorized Collimator with light beam
7. Fully Counterbalanced Bucky cabinet with electromagnetic brakes.
8. Cassette / film size: 8 x 10 in, 10 x 12, 14 x 14 & 14 x 17 in. – Specify.
9. Exposure programs: Up to 4 on 1 should be possible on Cassette spot Film - 3 on 1 for 14 x 17 and 12 x 10 should be possible.
10. Rapid spot filming should be possible.
11. Automatic Cassette Spot filming should be possible
12. X Ray Grid: 10:1 or better
13. Flat table top with step-less adjustment of foot-rest.
14. Foot switch for examinations at the patient bed side.
15. Remote console with Monitor mount
16. Table side controls for controlling the table movements
17. X ray tube 180 degree swing out should be provided for chest X- Ray.
18. Same Tube should be able to take Chest X-Rays
19. Chest stand to be provided

20. Foot rest, Shoulder rest, Hand Grips and Binder should be provided.

F. Radiographic Wall Stand

1. Floor mounted radiographic wall stand
2. Vertical movement of at least 100 cm – please specify.
3. Should be capable of taking Cassette of sizes 5”x7” to 14”x17”
4. Very high ratio Grid.

G. Column stand

1. Floor mounted column stand
2. Rotation of column stand full 360 deg.

H. Image Intensifier & Camera

1. Input field: 9”
2. Resolution: Not less than 45 1p/cm
3. Contrast ratio: Not less than 30:1
4. CCD camera 1k x 1k pixels or better with Last Image Hold.
5. 19” or more Monochrome LCD Medical Grade Monitors – 4 Nos.(2 Nos. in the examination room and 2 Nos. in the console room).
6. Image Reversal.
7. Flicker Free Monitor
8. Automatic gain control (suitable for high frequency X-ray generators).
9. Trolley for mounting the LCD Monitors
10. Intercom between console and fluoroscopy room.

I. Memory System:

1. Permanent Image Storage capacity of Approx.10,000 Images.
2. More than 1000 images storage capacity in 1k x 1k format.
3. 50 Temporary Image Storage for quick review
4. Dicom 3.0 compatibility
5. Dicom CD & DVD writer
6. 32-bit image storage for excellent resolution
7. Image sharpening (Real-time or stored images)
8. Image Rotation
9. Image flipping
10. Image Invert
11. Window Level/Window width manipulations
12. Recursive filters
13. Gamma curve adjustment for optimum image quality
14. Image zoom with pan
15. Colorized Images
16. Length, angle and area measurements with annotations.
17. Digital Subtraction of image
18. Cine loop of 500 frames (Multiple Cine Loops can be stored permanently)
19. Variable frame rate of 2,5, 10, 15, 27 frames per second for cine loop
20. Images can be stored in folders of individual patient name.
21. Facility for image printing
22. Text annotation and provision of removal of all text from the image
23. Automatic capture and storage of Cine loop with cine foot switch
24. Thumb nail use of complete study
25. Frame by frame review
26. Frame rate selection

27. LAN connectivity
28. DICOM compatibility

H. Accessories-

1. Cassette 15” x 12” - 2nos. 12”x10” – 6 nos. 10” x 8” – 4 nos. 14” x 14” - 2 nos. 17” x 14” – 1 no.
2. Lead Aprons – Full covered – 4 nos. wrap around AERB approved. Lead equivalent minimum 0.5mm (specify).
3. X ray viewing box 4 films and 2 films - 1 each.
4. Stabilizer for the entire equipment - 1 no
5. Split A/C 1.5 ton (5 star rating) with separate wall mounted stabilizer -3 nos.

X.48 Portable Ultrasound B & W

A. Scanning mode: linear and convex
B. Display mode: B mode, M mode and B+M
C. Monitor screen should be 12” high resolution latest technology
D. Display depth:25 cm max
E. Magnification: 8 steps
F. Facility for image zoom, image reverse, image freeze and image magnification, reduction
G. Alphanumeric keyboard for character entry and character display
H. Complete Obstetrics calculation package.
I. Gynecology measurement facility for uterus, cervix.
J. probes :
   a. 3.5 Mhz convex probe
   b. 6 Mhz ICT probe
K. ultrasound gel -5 Ltr pack with dispensing bottle
L. Black and white video thermal printer with at least 10 no. Rolls, mobile stand.
M. Should be US FDA or European CE approved product.

X.49 Mid - Range Whole Body Colour Doppler

2D Color Doppler Ultrasound Equipment

The equipment must be capable of operating in B, M, Doppler, Color flow and Power Doppler modes. It must support transducers with linear, sector and convex formats. Further, it must include a full array of measurement and calculation packages. The specific minimum requirements for this equipment are as follows

A. User Interface & Ergonomics

1. The system shall support backlight keys or provide an integrated light for ease of use in darkened work areas.
2. The system shall include at least a 17" LCD monitor to allow for both excellent images viewing as well as providing for workflow and productivity features
3. The system shall have three active universal probe ports in a convenient, easy to access location to maximize the availability of needed probes

B. Productivity

1. The system shall offer an extended field-of-view imaging that operates by sweeping a transducer over the anatomy of interest. This mode shall build the extended field of-view in a real-time manner, showing the image as it builds
2. System shall have image management features that store images by patient and include the ability to review images from different exam dates

3. System shall support the ability of post image acquisition optimization to optimize imaging parameters such as B Gain, TGC, Color Gain, Dynamic Range and Speckle Reduction levels, Doppler Gain, Doppler Base Line on image recalled from the image archive.
4. System shall allow for live image and archive images side-by-side or quad display on a single monitor. This display shall allow any type of image – B-Mode, Color, or power Doppler on either side
5. The system shall display thumbnails on a clipboard while scanning to facilitate exams
6. Unit should have Semi-Auto/ Auto IMT (Intima media thickness measurement) facility.
7. Unit should have Ultrasound Contrast imaging capability (Micro bubbles). Tissue Harmonic imaging with contrast should be available as standard feature.

C. Post-acquisition Data Processing.

1. The system shall allow for Real Time or Frozen image manipulation to provide maximum image flexibility, review and productivity. It shall include, at a minimum the ability to change the:
   - Overall B-Mode gain, dynamic range and gray scale maps.
   - Overall Doppler gain, base line shift, sweep speed and inverted spectral waveform.
2. The system shall provide a display zoom function on frozen images.

D. Scanning Parameters

1. The system shall possess the ability to control speckle through the use of a speckle reduction (SRI) algorithm that enhances borders, reduces speckle artifact and improves detail and contrast resolution in gray scale with compatibility in Colour mode.
2. The system shall provide the ability to scan in the compound imaging mode with multiple lines on all linear and convex probes
3. The system shall provide scan depths from a minimum of 2 cm to a maximum of at least 30 cm.
4. System should have minimum of 17,000 Digital Channels for better resolution
5. System should have Dynamic Range of at least 170 Db.

E. M-Mode Imaging

1. The system shall have a facility allowing the M-Mode cursor to be adjustable in any plane and allow for accurate measurements. The M-mode shall be available from a CINE loop or live image.

F. Spectral Doppler (PW)

1. Doppler mode shall be available on all probes.
2. The Doppler cursor shall be user-steerable with linear transducers
3. The system shall provide the user with control to either have Doppler with real time B-Mode, Doppler with periodic B-Mode update or Doppler with frozen B mode scanning
4. The system shall provide stereo audio of the Doppler spectral signal
5. The system shall provide the user with control during timeline replay to review the spectrum only (i.e., frozen B-Mode) or with the spectrum and B-Mode together and synchronized.
6. The system should have auto colour with Doppler facility.

G. Measurements and Calculations

1. The system shall provide digital calipers for at least the following measurements:
   - Depth & Distance
   - Circumference
   - Area
   - Volume
   - Velocity
2. All measurements should be possible on frozen images as well as on images recalled from the image archive.

3. The system shall provide a comprehensive set of obstetrical and gynecologic calculations and vascular calculations with summary reports.
4. MULTIPLANAR views and surface rendering as well as vascular 3D capturing for Gray scale or Colour Mode or Power Doppler. System is capable of capturing 3 dimensional data from parallel or sweep movements.

H. Image Archive and Networking

1. The device should store images onto an integrated DVD-R Multi drive and a USB port storage device
2. The system shall include at least 100 GB bytes of dedicated hard drive for large local storage capacity.
3. DICOM Connectivity should be a standard feature with the hospital network.

I. Transducers

1. Transvaginal Probe with Biopsy attachment, Operating Frequency 4- 9 MHz
2. Convex Probe. Operating Frequency: 2 - 5 MHz
3. Linear Probe. Operating Frequency: 5 – 10 MHz
4. The unit must be US FDA or CE approved.

X.50 Ventilator-High End (I.C.U)

A. Description of Function

ICU ventilators provide artificial respiratory support to the critical patients in the Intensive Care Units.

B. Operational Requirements

1. Microprocessor Controlled ventilator with integrated facility for Ventilation monitoring suitable for Preterm, New born to adult ventilation.
2. Demonstration of the equipment is a must.
3. Technical Specifications
4. Standard hinged arm holder for holding the circuit
5. Colored Touch LCD/TFT screen, 12 Inch or more
6. Facility to measure and display
7. End tidal CO2 with capnography integrated in ventilator with display of values and EtCO2 waveform on the screen.
8. 3 waves- Pressure and Time, Volume and Time and Flow and Time.
9. 3 loops- P-V, F-V, P-F with facility of saving of 3 Loops for reference.
10. Graphic display to have automatic scaling facility for waves
11. Status indicator for Ventilator mode, Battery life, patient data, alarm settings, clock etc
12. Trending facility for 24 hours with minimum 5 minutes resolution
13. Automatic compliance & Leakage compensation for circuit and ET tube
14. Following settings for all age groups.
    i. Tidal Volume: Lowest 5 ml or less
    ii. Pressure (insp)
    iii. Pressure Ramp
    iv. Respiratory Rate
    v. SIMV Respiratory Rate
    vi. CPAP/PEEP
    vii. Pressure support
    viii. FIO2
    ix. Pause Time
    x. Pressure and/or Flow Trigger.
15. Monitoring of the following parameters
    i. Airway Pressure (Peak & Mean)
    ii. Tidal volume (Inspired & Expired)

iii. Minute volume (Inspired and Expired)
iv. Spontaneous Minute Volume
v. Total Frequency
vi. FIO2 dynamic
vii. Intrinsic PEEP and/or PEEPi Volume
viii. Plateau Pressure
ix. Resistance (Inspiratory and expiratory) & Compliance (Static and dynamic)

16. Use selector Alarms for all measured & monitored parameters
17. Shallow breathing index and stress index
18. Modes of ventilation

i. Volume controlled
ii. Pressure Controlled
iii. Pressure Support
iv. SIMV (Pressure Control and volume control) with pressure support
v. CPAP/PEEP
vi. Inverse Ratio Ventilation
vii. Advanced mode like pressure controlled volume guaranteed/dual modes /PRVC/Auto flow/ ASV/Smartcare/NAVA/ PAV.
viii. Non Invasive ventilation
ix. APRV
x. Apnea / backup ventilation

19. Two autoclavable expiratory blocks including flow sensors should be provided with each ventilator and no routine calibration should be required.
20. Should have the ability to calculate / Procedure
21. Intrinsic PEEP and/or PEEPi Volume
22. Occlusion Pressure
23. Spontaneous Breathing trial
24. Facility to calculate lower and upper inflection point (OPTIONAL)
25. In built/ Online nebuliser with capability to deliver particle size of < 3 micron.
26. Automatic Patient Detection facilities preferable
27. Technical Specifications for reusable face mask & nasal mask.

i. Reusable face & nasal mask with textured dual flap silicone cushion flap for easy fit.
ii. Removable forehead support and pad to match the angle of patient's forehead.
iii. Stability Selector for easy fit and angle. Ball & Socket headgear attachments.
iv. Should be autoclavable.

28. Battery backup for minimum 1 hour

C. System Configuration Accessories, spares and consumables

1. ICU Ventilator - 01
2. Adult, Neonatal and Paediatric autoclavable silicone breathing circuits – 02 each
3. Reusable Masks (Small, Medium, Large) with each machine. -02 sets each
4. All Accessories for non-invasive ventilation – 2 sets
5. Medical Air Compressor and ventilator should be from same principle manufacturer. (Price should be quoted separately)
6. Trolley, Hinged Arm and other parts should be from the same principal company/same Manufacturer/same OEM
7. Permanent flow sensors – 2 nos
8. Proximal flow sensors for neonates- 02 nos.

D. Standards, Safety and Training

i. Certified to be compliant with ANS/IEC60601.2.12-01 Medical Electrical Equipment—Part 2-12; Particular Requirements for the Safety of Lung Ventilators—Critical Care Ventilators
ii. Should be US FDA or European CE approved product.

E. Documentation

i. User Manual in English.
ii. Service manual in English.

X.51 Video Colonoscope

A. VIDEO COLONOSCOPE

1. Should have a minimum field of view of 140º.
2. Should have a depth of field from 5 to 100mm.
3. The insertion tube should have maximum 12.8mm diameter.
4. Should have an instrument channel of at least 3.2mm inner diameter.
5. Should have a minimum working length of 1600mm.
6. Should have minimum 180/180 degrees up/down angulations.
7. Should have minimum 100/90 degrees right/left angulations.
8. Independent channels for delivering air and water will be preferred.
9. Should be supplied with all standard accessories including different types of biopsy forceps each 2 nos., cleaning brushes each 2 nos.

B. VIDEO PROCESSOR AND LIGHT SOURCE

1. Should be a single chip camera.
2. Should have RGB, S-video, composite video output and all these types of video cables should be provided.
3. Should have white balance function.
4. Should have in-built 150 W halogen light source or xenon or metal halide.
5. Should have a stand-by lamp and should glow in the event of failure of the primary lamp.
6. Should have provision for air pump.
7. Should be compatible for both gastroscope and colonoscope.
8. Should work with input 200 to 240Vac 50 Hz supply.

C. MONITOR

1. Should be a 14 inches LCD /TFT monitor.
2. Should have provision for accepting RGB, S-video and composite video signal.
3. Should have minimum 1Kx1K resolution.
4. Should have wide viewing angle.

D. OTHERS

1. Should be supplied with suitable trolley
2. Trolley should have at least 5 power sockets to connect the processor, monitor etc.

E. ACCESSORIES

1. Biopsy Forceps elongated cups with needle fenestrated -1 no
2. Biopsy Forceps-Alligator type with RAT Tooth -1no
3. Air Water Channel Cleaning Adapter-1 no
4. Biopsy Valve -2 nos.
5. Channel plug-1 nos.
6. Channel Cleaning Brush -2 nos.
7. Channel Opening cleaning brush -2 nos.
8. Injection Tube -1 no
9. Suction Cleaning tube - 1no
10. Water resistant cap -1 no

F. Standards

1. Should be US FDA or European CE product

X.52 Video Gastroscope

A. Other Accessories:

1. Slim, light weight, fully immersible in disinfectant solution
2. Field of view: 120º to 150º
3. Depth of field: 3 - 100 mm
4. Tip Deflection: Up/Down 210 º/90º
5. Left/Right 100º/100º
6. Rigid distal diameter: Less than 9.8 mm
7. Insertion tube diameter: Not more than 9.8 mm
8. Instrument channel: 2.8 to 3.2 mm
9. Working length: 1050 to 1100 mm
10. Total length: 1350 to 1400 mm
11. Xenon light source cum video processor
12. Integrated or separate units with Xenon lamp
13. Color System : Single CCD Color
14. Lamp: 300 W Xenon
15. Appropriate connectors
16. Image display size: Full and small screen display on monitor
17. Video outputs: RGB, Y/C & composite output
18. Light control system: Automatic and manual control
19. Cooling system: Forced air cooling
20. Video Processing System: (common for all videoscope)
21. The Video Processor Should have facility of compact flash memory card. Processor should have facility to connect balloon enteroscope and endoscopy ultra sound.
22. LCD Digital Monitor 21", (Colour medical grade)
23. Endoscopy trolley (should from OEM): 1
24. Software for image capturing. DVD recorder, color printer, Archiving memory, report generator.
25. PC – Latest configuration with HDD 500 GB, RAM 4GB, TFT 21 inch, DVD R/W Drive

B. Other Accessories:

1. Biopsy forceps
2. Bite block
3. Leakage tester
4. Cleaning brush
5. Aspiration needle
6. EB Forceps

C. Standards

1. Should be US FDA or European CE product

X.53 Cardiac Stress Testing with Treadmill

1. Stress testing system should be complete with PC, Software, Tread Mill, Patient acquisition module and necessary cables.
2. System should be based on windows platform with 17" color monitor having minimum resolution of 1280 x 1024, 5000 GB HDD, DVD-RW, Mouse, UPS for analyser.

3. System should acquire and analyze 12 leads and should store the full 12 lead resting / stress ECG
4. Should show a pictogram and indicate which electrode has a bad contact before resting / Stress recording.
5. Should be able to review retrospective average beat and ST values.
6. Should have user settable protocols.
7. Patient module should have USB connectivity.
8. System should provide standard Full interpretation of Supine ECG with reasoning.
9. Should provide display of real time 12 lead diagnostic quality ECG waveform, average complexes beat of all 12 leads with superimposed comparison along with ST level & slope and ST trend graph.
10. Automatic detecton, display, storage and review of arrhythmia, heart rate.
11. Should have running trends of ST available on screen during the test process.
12. Should have ability of comprehensive auto-measurement package including RR intervals, P-wave duration, PQ interval and QRS width.
13. System should have high quality filters for muscle and baseline noise without influence on the ST results.
14. Should have alarm levels for ST, HR and Blood Pressure.
15. Should have keyboard short cuts.
16. Capability to pause ECG screen view to find a past ECG event without loosing track of current real time ECG.
17. Capability to insert event marks during stress.
18. Capability to change ST points during stress.
19. Should have manual measurement cursors for P-wave, QRS and T-wave.
20. Should allow to measure width (P, QRS, T-wave) and intervals (PR, QT etc.,)
21. Should have alarm levels for ST, HR and Blood Pressure.
22. Should be able to export QRS intervals from 12 lead Rhythm ECG, Stress / Resting
23. ECG report in word / RTF format and should be able to export raw ECG data.
24. Printing:
25. Should be able to print strips during stress or after.
26. Strips to be printed in 3 channels, 2x6 channels, 12 channels.
27. Print reports should be with summary table, event markers and stage information.
28. Should have average beat report with ST measurements.
29. Should have Trend graphs
30. System should provide multiple and customizable printing formats as per users choice on A4 size normal plain printing paper.
31. Heavy duty treadmill - imported. Noise free with speed ranging from 0.8 to 19 kph and have an elevation range of 0 to 25%.
32. Treadmill should provide smooth and safe operation.
33. Should have automatic belt alignment.
34. Treadmill should have 175 kgs weight capacity with all metal chassis.
35. Should have emergency stop button.
36. Other Technical specs:
37. ECG sampling rate: 1000 Hz
38. ECG input voltage: 16mm Vpp
39. Noise voltage: 20uV
40. 10 lead patient cable
41. Treadmill interface
42. Signal frequency range: 0.05Hz to 250 Hz.
43. Windows operating system.
44. PC Pentium latest workstation.
45. All consumables required for installation and standardisation of system to be part of the system.
46. Should have USFDA or European CE certifications.

X.54 Auto CPAP Machine (Bubble CPAP)

A. Should be light weight, easily portable, reliable and sturdy

B. CPAP generator:

1. Option of pressure setting from 3 to 12 cm H_2O
2. Should have a detachable overflow container
3. Should deliver the intended pressure constantly and accurately
4. Easy to clean/sterilize
5. The gradations (on the sliding rod) should be easily visible from a distance of 6 feet

C. Air-oxygen blender:

1. FiO2 concentration should be adjustable (21-100%) and accurate

D. Humidifier:

1. Should automatically regulate the required temperature
2. Should be a closed system for filling up water
3. Should have ports for heater wire as well as temperature probe
4. Should display the chamber temperature and/or temperature at the patient end.

E. Patient circuits:

1. Should have the option of using both disposable and reusable circuits
2. Disposable circuits should be readily available and reasonably priced
3. Should have / be able to accommodate a heater wire; heat loss should be minimal
4. along its length

F. Battery back-up

1. Should have a battery back up for at least 45-60 min

G. Safety features:

1. Limiting the delivered pressure in the event of an occlusion

H. Do not include compressor

I. Device is safety certified according European CE or US FDA certificate to be submitted

Supplied with:

J. reusable/disposable to be included

1. Soft, pliable nasal prongs – in at least 3 sizes (15 each)

K. Specification for Infant Flow Driver (IFD):

1. Flow Driver: able to deliver pressures of 0 - 12cm H2O,
2. Should have a bar graph pressure manometer for displaying the delivered pressure
3. Electronically controlled CPAP over pressure release valve
4. High and low alarms for pressure and oxygen concentration, alarm set and mute button.
5. O2/Air Mixer: 21 to 100% resolution 1%
6. Flow Meter: 0 - 15 L/min
7. System Safety" pressure release and Control Valve
8. Water Trap
9. Air and O2 Fittings.
10. Battery back up with at least 4 hour battery life;
11. Flow generator: nasal CPAP generators including one of each size nasal prong (small, medium & large; 15 each)
12. Bonnets in at least 3 sizes (small. Medium, and large; 15 each)
13. Delivery circuits - are disposable and reusable (four each)

X.55 DENTAL CHAIR (BASIC)

A. Description of Function

Dental Chair is the dental chair required for dental examination and dental procedures.

B. Operational Requirements

Physiological dental chair operated by electricity.

Demonstration of Quoted item is must at predetermined place by the purchaser.

C. Technical Specifications

1. It should have double articulated head rest.
2. It should have two 3 way syringes (tip autoclavable, with 6 spare tips) one on unit side and other on the assistant side.
3. It should have two high speed Air Rotor terminals with water control on coupling.
4. Should have one air motor terminal.
5. Arm of unit should be pneumatically locked
6. Removable auxillary tray (stainless steel)
7. It should have latest foot operated LED light (min 25,000 LUX)
8. It should have Rotatable Water System with removable spittoon
9. It should have Medium Vacuum Suction
10. It should have following programmes –
11. Two programmable working positions
12. Spitting and last working position with light ON and OFF automatically
13. Return to Zero position with light OFF automatically
14. It should have option to Lock the movements of chair
15. It should have LED based X-ray viewer
16. It should be provided with right arm (options for Fixed, Lateral 90 degree swivel available)
17. It should be provided with one doctor's stool with adjustable height & backrest tilt including an adjustable ring for foot rest.

D. System Configuration Accessories, spares and consumables

System as specified

All consumables required for installation and standardization of system to be given free of cost.

E. Standards, Safety and Training

1. Should be US-FDA or European CE approved product

F. Documentation

1. User/Technical/Maintenance manuals to be supplied in English.

X.56 HYSTEROSCOPY SYSTEM

A. Hysteroscopy set – telescope 30 deg.

1. Diameter 4mm length 30 cm, Autoclavable : 1 No.
2. Examination sheath Diameter approx 5.4 mm : 1 No.
3. Continuous flow operating sheath approx 6mm : 1 No.

4. Operating sheath approx 5.4 mm : 1 No.
5. Biopsy forceps, trough cutting single action jaws, approx 5FR : 2 No.
6. Scissor, signal action jaws, approx 5FR : 2 No.
7. Biopsy and grasping forceps approx 5FR : 2 No.
8. Hysteroscope pump for Diagnostic & operative Hysteroscopy, pressure pre – Selection: - 150 - 200mm Hg, Flow regulation: 0 – 500ml/mm. Equipments should be supplied along with set for at least 300 procedures.: 1 No.
9. Suction Unit with following Essential accessories:
   i. One pedal foot switch one stage : 1 No.
   ii. Suction bottle 51 : 1 No.
   iii. Bottle cap : 1 No.
   iv. Bottle stand : 1 No.
   v. Bottle stand holder : 1 No.

B. RESECTOSCOPE

To be compatible with Hysteroscopy mentioned above.

1. Working element set consisting of : 1 set
   i. One working element set.
   ii. Two cutting loops.
   iii. Two coagulating electrode.
   iv. Two high frequency cord.
   v. One protection tube.
2. Resectoscope sheath including connecting tubes
3. For in and out flow, approx 26 FR oblique beak, Inner tube with ceramic insulation, rotatable x 1 No.
4. Standard obturator for use with approx 26FR sheath : 1 No.
5. Instruments for tubectomy :
   i. Single Puncher
   ii. Ring Applicator
   iii. Hi-quality silicon rings-1000 Nos
6. System should be US FDA or European CE approved.

X.57 Dual Dome ceiling suspended operation light

A. Illumination intensity –
1. Large dome-100000 lux or more
2. Satellite dome- 95000 lux or more

B. Colour (light) temperature- 4200-4500 deg Kelvin
C. Type of lamp- Halogen
D. Life time of lamp-(1000 to 10000) hours Approx
E. Automatic switches to reserve bulb.
F. Radiated heat less than 5-8 deg C
G. Adjustable position- at least 3 axis up to 60 deg
H. Non fogging surface
I. Dimming facility of light of 3-6 levels without the change of colour temperature
J. Depth of illumination 80-130cm

K. Light emission area 1500-2400 cm sq

L. Timer indicating number of hours used

M. Detachable autoclavable handles - 25 Nos.

N. Standards

1. System should be US FDA or European CE approved.
2. Electrical safety confirms to standards for electrical safety IEC-60601-1 general requirement.

O. Documentation:

1. User manual in English.
2. Service manual in English.

Group-Y: CT Scan Machine

SPECIFICATIONS:

1. **General requirements:** The system should be of latest slip-ring technology allowing full and continuous rotation, multi-slice scanning (64 slices per rotation and 64 rows of detector) with true isotropic volume acquisition and sub- millimetre resolution of at least 0.4 mm for body and vascular applications.
2. **X-ray Generator:** High frequency, with power output of 80 KW or more to support continuous and sustained operation.
3. **X-ray Tube:**
    a. Tube Current: minimum range 30-600mA.
    b. The system should have mechanism for real time mA modulation for both Z-axis and angular dose modulation.
    c. Tube Voltage: Minimum ranges 80-130 kV.
    d. Should have either anode heat storage capacity of 7 MHU or alternatively the tube should be with a very high heat dissipation rate.
    e. Filter and beam limiting devices: Their Al equivalent (at least 5mm) and other specific features to reduce radiation dose to the patient must be specified.
    f. Specify focal spot size and number according to IEC recommendations.
4. **Gantry :**
    a. Aperture: 70 cm or more.
    b. Tilt: +/- 30 degree.
    c. Entire range of rotation times for full 360 degree should be specified. Minimum rotation time should be 0.4 seconds for whole body applications.
    d. Remote controlled tilt from operator table should be possible.
    e. FOV should be at least 50 cm.
    f. Laser alignment lights should define accurately all 3 planes. It should operate over full range of gantry tilt.
5. **Patient Table:**
    a. Should be able to bear 200 kg or more with 1 mm positioning accuracy.
    b. Table speed: Horizontal – Up to 100mm or more/sec.
    c. Vertical table travel: range should be specified.
    d. Scan range: should have at least 150 cm metal free scan able range.
    e. Facility of positioning aid for horizontal iso-centric positioning of the patient.
    f. Additional calibrated flat table top for radiotherapy planning purpose
6. **Spiral CT:**
    a Minimum slice thickness should be 0.5 mm or less and maximum 10 mm or more. Slice thickness and increment should be freely selectable.
    b Pitch factor (volume pitch): Variable between 0.5 to 1.5 or more and should be user selectable. Specify all possible pitch selections.
    c Gapless spiral length: 150cm or more.
    d Single continuous 'spiral-on time' should be minimum 80 seconds or more.
    e Bolus triggered spiral acquisition should be possible.
    f True isotropic volume acquisition and sub-millimetre resolution of at-least 0.4 mm for all body applications.
7. **Topogram:**
    a. Length and width: specify range.
    b. Scan times: specify range
    c. Should be possible to interrupt acquisition manually once the desired anatomy is obtained.
8. **Data acquisition system:**
    a. Detector: Please specify the detector material and type of detector.

b. Specify number of detector rows &number of elements in each row.
c. Mention minimum acquired slice thickness in Axial & Helical mode after reconstruction.
d. In built mechanism for adapting the tube current during each scan. This should enable radiation dose reduction where body part thickness is less. Specify mechanism used in the offered system.
e. There should be in-built paediatric protocols adapted to weight and/or age.

9. Image Reconstruction:

a. Real time reconstruction speed: 20 images per second or more at 512 x 512 matrix.
b. Display matrix: 1024 x 1024 or more.
c. Reconstructed slice thickness range should be less than one mm (<1) to 10mm.
d. Specify scan field and reconstruction field.

10. Work stations:

a. A Client Server Architecture based solution; the server should have image storage capacity of at least 1 TB. A reputed antivirus solution for server should be in place. The server should be able to connect to 3 nos of users (3 Workstations) facility. All 3 workstations should have following processing capabilities
   i. MPR
   ii. Minimum and Maximum intensity projection (MINIP & MIP),
   iii. 3D Volume rendering,
   iv. 3D SSD (Shaded Surface Display),
   v. Advance Vessel Analysis,
   vi. Auto Bone Removal,
   vii. Volume Quantification,
   viii. Lung Nodule Assessment with CAD,
   ix. Liver lesion analysis,
   x. Virtual Endoscopy
   xi. Colonography with virtual dissection of the Colon.
   xii. Perfusion CT
   xiii. Dental CT: high-resolution evaluation of teeth and jaws with automatic

   panoramic and paraxial reconstruction, evaluation of mandibular canal and life size filming.

b. Full flat screen medical grade monitor of 19 inch size or more

11. Image evaluation tools:

a. Parallel evaluation of multiple ROI in circle, irregular and polygonal forms.
b. Statistical evaluation for area/volume, S.D., Mean, Min/Max and histogram.
c. Distance and angle measurement, freely selectable positioning of co-ordinate system, grid and image annotation.

12. Certification: The equipment offered by the bidder should have European CE or USFDA approvals/certified.

B. Civil Repairing & Alteration

i. 800 sq.ft. (approx)

C. Accessories

i. Dry imager 500 dpi resolution

ii. Film for dry imager to be supplied as per following schedule(Price to be quoted separately and this will be considered for ranking purpose):

Schedule	1st Year	2nd Year	3rd Year
Quantity (Pack of 125 films)	24 Packs (6 Packs every 3 months)	36 Packs (9 Packs every 3 months)	36 Packs (9 Packs every 3 months)

iii. Lead Apron – 05 nos.

iv. Gonad & Thyroid Shield
v. Crash cart – 01 nos.
vi. Ambu Bags - 02 nos.
vii. Signage

D. Specifications of 130 KVA Diesel Generator

i. Diesel generator set with operation manual and test report.
ii. Engine and coupled with alternator.
iii. High performance maintenance-free lead-acid starting batteries.
iv. Running, stable frequency and super output
v. Compact structure
vi. Automatic starting control panel
vii. Automatic changing-over panel
viii. Reliability, rigid engine body and safety

Diesel Generator Set Technical Data	
Prime power	130 kVA
Standby power	143 kVA
Rated speed	1500 RPM
Output frequency	50 Hz
Phase	3
Rated voltage	400 V
Tank capacity (L)	250
Engine Specifications	
Number of cylinders	6
Cycle	Four stroke
Aspiration	Turbocharged after cooled air/air
Bore ×Stroke (mm×mm)	104 x 132
Prime power/speed (kW/RPM)	114.2/1500
Standby power/speed (kW/RPM)	126/1500
Speed governor	Mechanical
Cooling system	Forced Water Cooling Cycle
Starter motor	DC12V
Alternator	AC12V

Alternator Specifications	
Rated output prime power	140 kVA
Rated speed	1500 RPM
Rated frequency	50 Hz
. Phase	3
Rated voltage	400V

Specification of Ancillary and Service Parts:

1. Air filters 130-150 KVA (40 units)
2. Fuel Filter 130-150 KVA (120 units)
3. Oil Filters 130-150 KVA (60 units)
4. Switch & Switch board (10 units)
5. Cable 130-150 (600 metres)

The DG set offered by the bidder should have BIS/ISO approved/certified.

E. Servo Controlled Voltage Stabilizer

1. Minimum capacity of 100 KVA for the entire CT scan system.
2. It should take instant load of 80 Kw
3. It should have high efficiency > 97%
4. Auto-manual operation facility.
5. over-under voltage facility.
6. MCB on input circuit.
7. Sound proof cabinet.
8. Regulation ±1% or better.
9. Input and output voltage for Liberia
10. Frequency for Liberia.
11. Duty cycle 100% continuous.
12. Cooling: Air/Oil as per requirement.
13. Suitability: Suitable for 3 P unbalanced/balanced supply and unbalanced/balanced load.
14. Mounting on wheels.
15. Earthing terminal to be provided.

F. Specifications of Cabling (Copper wire)

i. Pure 4 core 70 sq mm copper wire ISI standard
ii. Or pure 4 core tin plated 50 sq mm copper wire European standard.
iii. Approximate length of the cable is 120 mts.

G. Specification for AMF Control Panel

1. The diesel generator set shall be supplied with a AMF Control panel. This AMF Panel shall be housed inside the Acoustic enclosure. It should be floor mounting, free standing dust tight, sheet metal

enclosed, and cubicle type. The AMF panel shall be fabricated out of 2.0 mm. thick cold rolled sheet steel. The AMF panel shall be wired internally up to terminal blocks using 650 Volts grade 2.5 sq.mm. Copper conductor PVC wires. The sheet metal work of the panel shall be thoroughly cleaned, degreased, pickled, phosphatised and given two coats of primer and finished with Powder coated paint of shade steel grey. Cable entry to the AMF control panel shall be from the bottom for auxiliary cables such as priming pumps, Control cables etc whereas for incoming and main power cable connections shall be through top and outgoing main power connection from bottom.

2. The AMF panel shall be complete with the necessary control circuit fuses, nameplates, internal wiring, control terminals and cable glands. The AMF panel shall have provision for receiving starting impulses for the D.G. set from Purchaser's remote Main L.T Panel as well as to send out tripping impulses from AMF panel to the DG incomer breaker on purchaser's Main L.T Panel.
3. The AMF panel shall receive 415 Volts sensing supply from Purchaser's remote Main L.T Panel. The necessary interlocking between ACB of Grid Power and DG set Breaker should be done such that no two sources of Power are made parallel.
4. The AMF panel shall be suitable for extension on either side. All the cable entries to the AMF panel shall be from the bottom.

AMF LOGICS

1. The following AMF LOGIC shall be incorporated in the AMF control panel:
2. The DG Set shall start automatically when one of the following conditions is met.

a Mains supply failure.

b Mains voltage dips below 85% of nominal voltage (415V).

3. After the DG set starts and builds up the rates RPM & voltage, the DG breaker/ contactor shall close & the mains breaker/contactor shall open.
4. Upon restoration of Mains supply & normal voltage conditions, Necessary Time Delay Shall Be Allowed To Take Care Of Transient conditions.

Annexure III

Statement of Applicant

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia.

1	Name of the bidder	
2	Address of Head Office Telephone Fax No. E-mail Address :	
3	Address of office in India	
4	Address for communication (if different)	
5	Legal Status	
	Place & date of incorporation/establishment/Registration	

Place: (Name & Signature of Authorized Representative)
Date:

Annexure IV

Price Schedule for Equipment

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia (Group-X / Group-Y).

A	B	C	D	E	F =C x D
Item Sl. No (X.1, X.2… or Y)	Name of the Equipment	Quantity (Nos.)	Price/ unit (INR)*		Total Price *
			Figures	Words	
X.1					
X.2					
X.3					
Total Composite Price					

***Total Tender price in Rs**. (in figures):……

In words:……

**** Note: -***

a) In case of discrepancy between the unit price and total price THE UNIT PRICE shall prevail.
b) In case of discrepancy between the figures and words, the price quoted in words shall prevail.
c) **The price quoted by bidder under column D and E above, should be lump-sum price which includes cost of equipment, installation, cost of Warranty, all taxes, etc. Payment shall be released to the bidder, on the basis of lump-sum price quoted above.**
d) The cost of Comprehensive Maintenance Contract (CMC) which includes preventive maintenance including testing & calibration as per technical/ service/operational manual and labour, should be quoted for 2 years(excluding the year of warranty)
e) The payment will be made as per Clause 3 and 4 under Section-II of the tender document.
f) The uptime warranty will be 98 % on 24 (hrs) x 7 (days) x 365 (days) basis or as stated in Section III Clause 3 of the Tender document.
g) All software updates should be provided free of cost during CMC period.
h) The supplier shall keep sufficient stock of spares required during Comprehensive Maintenance Contract period. In case the spares are required to be imported, it would be the responsibility of the supplier to import and get them custom cleared and pay all necessary duties.

Signature of Bidder
Name
Business Address

Annexure V

Proforma of Bank Guarantee for Bid Security

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia (Group-X / Group-Y).

Ref: To
The Ministry of External Affairs
Jawaharlal Nehru Bhawan
23-D, Janpath, New Delhi, PIN-110011
Bank Guarantee No. ----------

Dear Sirs,
Whereas the Ministry of External Affairs having its office at Jawaharlal Nehru Bhawan, 23-D, Janpath, New Delhi-110011 (hereinafter called the MEA) which expression shall, unless repugnant to the context or the meaning thereof, include all its successors, administrators, executors and assignees has on behalf of the President of India invited Tender No.---------- ---------- and M/s ---------- having Registered/head office at ---------- (Hereinafter called the "Bidder" which expression shall, unless repugnant to the context or the meaning thereof, mean and include alt its successors, administrators executors and assignees) have submitted a Proposal Reference No. ---------- and the bidder having agree to furnish as a conditions precedent for participation in the tender as unconditional and irrevocable bank guarantee of Rs---------- ----------(Rupees ---------- Only) for the due performance of Bidder's obligations as contained in the Tender Document supplied by the MEA specially the conditions that the bidder shall keep his Proposal open for a period of day i.e. from ---------- to ---------- or any extension thereof, and shall not withdraw or modify it in a manner not acceptable to the MEA. The Bidder has absolutely and unconditionally accepted these conditions. The MEA and the Bidder have agreed that Proposal submitted by the Bidder is an offer made on the condition that the Proposal, if submitted would be kept open in its original form without variation or modification in a manner not acceptable to the MEA for a period of ----------days i.e. from ---------- to ---------- or any, extension thereof and that submission of the Proposal itself shall be regarded as an unconditional and absolute acceptance of the conditions, contained in the Tender document. They have further agreed that the contract consisting of Tender document and submission of the Proposal as the ACCEPTANCE shall be a separate contract distinct from the contract which will come into existence when the Proposal is finally accepted by the MEA. The consideration for this separate initial contract preceding the main contract is that the MEA is not agreeable to sell the Tender documents to the Bidder and to consider the Proposal to be made except on the condition that the Proposal shall be kept open for the period indicated above and the Bidder desires to submit a Proposal on this condition after entering into this separate initial contract with the MEA promises to consider the Proposal on this condition and Bidder agrees to keep this Proposal open for the required period. These reciprocal promises form the CONSIDERATION for this separate initial contract between the parties.

2. Therefore, we ---------- registered (indicate the name of Bank) under the laws of ----------having head/registered office at (hereinafter referred to as the "Bank") which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators and executors hereby issue irrevocable and unconditional bank

guarantee and undertake to pay immediately on first demand in writing Rupees all money to the extent of Rs---------- (Rupees---------- only) at any time immediately on such demand without any demur, reservations, recourse, contest or protest and/ or without any reference to the Bidder and any such demand made by the MEA on the bank shall be conclusive and binding notwithstanding any difference between the MEA and the Bidder or any dispute pending before any court/arbitrator or any other matter whatsoever. We also agree to give that Guarantee herein the MEA in writing. This guarantee shall not be determined/discharged/affected by the liquidation, winding up, dissolution or insolvency of the Bidder and will remain valid, binding and operative against the bank.

3. The bank also undertakes that the MEA at the option shall be entitled to enforce this guarantee, against the Bank as a principal debtor, in the first instance, without proceeding against the Bidder.

4. The bank further agree that as between the bank and the MEA, purpose of the guarantee, any notice of the breach of the terms and conditions contained in the Tender Documents as referred above given to the bank by the MEA shall be conclusive and binding on Bank, without any proof, notwithstanding any other matter or difference or dispute whatsoever. We further agree that this guarantee shall not be affected by any change in our constitution, in the constitution of the MEA or that of the Bidder. We also undertake not to revoke, in any case, this Guarantee during its currency.

5. The bank agree with the MEA that the MEA shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms of the Tender or get extension of the validity period from time to time. We shall not be relieved from our liability by reason of any such variation or extension of the validity period or for any forbearance, act of omission and commission on the part of the MEA or any indulgence shown by the MEA to the said Bidder or by any such matter or thing whatsoever which under the law relating to sureties, would, but for this provision, have the effect of so relieving us.

6. Not with standing anything contained here in above our liability under his Guarantee is limited to Rs. ---------- (Rupees ---------- only) in aggregate and it shall remain in full force upto ---------- (225 days from the date of bid opening) unless extended further from time to time, for such period as may be instructed in writing by M/s ---------- on whose behalf this guarantee has been given, in which case, it shall remain in full force upto the expiry of extended period. Any claim under this guarantee must be received by us before----------(date of expiry of validity period) or before the expiry of extended period, if any. If no such claim is received by us within the said date/extended date, the rights of the MEA under this guarantee will cease. However, if such a claim has been received by us within and upto the said date/extended date, all right of the MEA under this guarantee shall be valid and shall not cease until we have satisfied that claim.

7. In case contract is awarded to the Bidder here in after referred to as "Contractor" the validity of this Bank Guarantee will stand automatically extended until the Bidder furnished to the MEA a bank guarantee for requisite amount towards performance guarantee for satisfactory performance of the contract. In case of failure to furnish performance Bank Guarantee in the format prescribed by the MEA by the required date the claim must be submitted to us within validity period or extended period, if any. If no such claim has been received by us within the said date /extended date, rights, of the Ministry under this guarantee will cease. However if such a claim has been received by us within the said date/extended date all rights of the MEA under this guarantee shall be valid and shall not cease until we have satisfied that claim, In witness where of the Bank, through its authorised officer, has sent its hand & stamp on this _____day of at ____ of _____at _____

of_____ (month & year).

Signature
(Full name in capital Letters)
Designation with bank stamp

Witness No.1

Signature
(Full name and address in capital letters)

Witness No.2

Attorney as per power of attorney No _____Date _____

Signature
(Full name and address in capital letters)

Annexure VI

Bid Form

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia (Group-X / Group-Y).

Date:_____

To,
The Consultant (DPA I)
Room No. 3131, B Block
Ministry of External Affairs
New Delhi

IFB Ref: _____

Having examined the Bid Document including if any Addenda Nos. issued , the receipt of which is duly acknowledged, we, the undersigned, offer to supply, install, commission and maintain the CT Scan and related services in conformity with said bidding documents.

We, undertake, if our bid is accepted, to deliver the equipment in accordance with the delivery schedule specified.

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

We accept all your terms and conditions stipulated in this tender document without deviations, both technical & Financial

We ensure that the below mentioned documents are attached with this letter:
1.
2.
3.

Dated this…… Day of……2014…

(Signature)
(In the capacity of) Duly authorised to sign Bid for and on behalf of

Annexure VII

Manufacturer's Authorization Form

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia (Group-X / Group-Y).

To
(Name of the Purchaser)

Dear Sirs,

Ref. your TE document no_____, dated_____

We, _____ who are proven and reputable manufacturers of _____(name and description of the goods offered in the tender) having factories at _____ hereby authorize Messrs_____ (name and address of the agent) to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred TE documents for the above goods manufactured by us.

We further confirm that no supplier or firm or individual other than Messrs. _____ (name and address of the agent) is authorized to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred tender documents for the above goods manufactured by us.

We also hereby extend our fully warranty, CMC as applicable as per clause 3 of the General Conditions of the Contract, read with modification, if any, in the Special Conditions of the contract for the goods and services offered for supply by the above firm against this tender document.

Yours faithfully,

_____
[Signature with date, name and designation]
For and on behalf of Messrs _____
[Name & address of the manufacturers]

Note:

1. This letter of authorization should be on the letter head of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.
2. Original letter may be sent.

Annexure VIII

Compliance checklist

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia (Group-X / Group-Y).

Item No. as per list of requirement (like X.1-A-1, X.57-A-1, etc.)	Item Name	Make	Model	Whether complying with the specifications defined in the tender documents (Yes/No)

Signature of bidder
Name
Business Address

Annexure-IX

Form of Performance guarantee / Bank guarantee bond

Subject: Tender for Supply, Installation and Maintenance of Medical equipment at JFK Medical Centre, Monrovia in Liberia (Group-X / Group-Y).

In consideration of the President of India (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between ……and …….. (hereinafter called "the said contractor(s)" for the work …… (hereinafter called "the said agreement"} having agreed to production of an irrevocable Bank Guarantee for Rs…….(Rupees……only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We ……(hereinafter referred to as the "Bank") hereby undertake to (indicate the name of the Bank)

pay to the Government an amount not exceeding Rs ……. (Rupees……..only) on demand by the Government.

2. We …… do hereby undertake to pay the amounts due and payable

(indicate the name of the Bank) under this Guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs……. (Rupees……only).

3. We, the said Bank, further undertake to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder, and the contractor(s) shall have no claim against us for making such payment.

4. We …… further agree that the Guarantee herein contained shall (indicate the name of the Bank) remain in full force and effect during the period that would be taken for the performance of the said agreement, and it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid, and its claims satisfied or discharged, or till the Engineer-in-charge, on behalf of the Government, certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s), and accordingly discharges this guarantee.

5. We …… further agree with the Government that the Government (indicate the name of the Bank) shall have the fullest liberty without our consent, and without effecting in any manner our obligations hereunder, to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor(s),

and to forbear or enforce any of the terms and conditions relating to the said agreement, and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This Guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We ……..lastly undertake not to revoke this Guarantee except with (indicate the name of the Bank) the previous consent of the Government in writing.

8. This Guarantee shall be valid up to ……unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this Guarantee is restricted to Rs …….. (Rupees ……only), and unless a claim in writing is lodged with us within six months of the date of expiry or extended date of expiry of this Guarantee all our liabilities under this Guarantee shall stand discharged.

Dated the …….day of……. For …….....

(Indicate the name of the Bank)