BIDDING DOCUMENT

(Two Bid System for Machinery & Equipment)

FOR

NATIONAL CANCER INSTITUTE
ALL INDIA INSTITUTE OF MEDICAL SCIENCES
(JHAJJAR CAMPUS)

HITES
HLL INFRA TECH SERVICES LTD

B-14 A, Sector-62,Noida-201 307
Phone: 0120-4071500; Fax: 0120-4071513
URL: www.hllhites.com
Email: hll.ncij@hllhites.com

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Section -I

NOTICE INVITING BIDS (NIB)

ALL INDIA INSTITUTE OF MEDICAL SCIENCES
Ansari Nagar, New Delhi-110029

NOTICE INVITING BIDS (GLOBAL)

NIB Ref.: HITES/PCD/NCI-AIIMS/01/17-18 **Dated: 11.09.2017**

Procurement & Consultancy Services Division of **HLL Infra Tech Services Limited** (a fully owned subsidiary of HLL Lifecare Ltd., a Govt. of India Enterprise), for and on behalf of **Director, AIIMS - New Delhi,** invites e-bids in two bid system (technical and price bid) from the reputed, eligible & qualified firms/ manufacturers for purchase/supply of following goods at **National Cancer Institute, Jhajjar, Haryana** (AIIMS, New Delhi-29).

Sl. no.	Rfx/ Event number	Short Description of goods	Quantity	Bid Security (BS) (Rs.)	Tender Processing Fee (incl. GST) (Rs.)
1	3000002184	Pneumatic Tube Transport System (PTT System)	1	8,00,000	3,540
2	3000002185	Integrated Track-Based Automation Enabled Core Clinical Laboratory	1	30,00,000	5,900
3	3000002186	Centralised Medical Gas Pipeline System	1	24,00,000	5,900
4	3000002187	Modular Operation Theater (MOT)	9	18,00,000	5,900
5	3000002188	Integration and Data Management System for Modular OT with OT Light	8	16,00,000	5,900

	Venue for pre-bid meeting	**Sr. no. of item**	**Date & Time of pre-bid meeting**
Pre-bid conference meeting with prospective bidders	Chief Board Room Room No. 236, 2nd Floor Dr. BRAIRCH Building, AIIMS New Delhi-29.	Item no. 01	21.09.2017 at 2:30 pm
		Item no. 02	21.09.2017 at 3:00 pm
		Item no. 03	26.09.2017 at 2:00 pm
		Item no. 04	26.09.2017 at 3:00 pm
		Item no. 05	26.09.2017 at 3:30 pm

Last date and time of tender downloading	19.10.2017 at 6:00 pm
Last date and time of online submission of tender	20.10.2017 at 12:00 noon
Last date and time of physical submission of EMD, Tender processing Fee, any other document specified in the Bidding Document	20.10.2017 at 2:00 pm

Date of tender Opening	20.10.2017 at 2:30 pm
Contact Person	Project Officer, DVP(PCD), HITES Email: hll.ncij@hllhites.com

2. Interested bidders are advised to download the complete Tender Enquiry document from the websites www.aiims.edu or www.hllhites.com or www.lifecarehll.com or www.eprocure.gov.in/cppp or https://etender.lifecarehll.com/irj/portal for complete details.

3. The prospective bidders have to register with the E-procurement system of HLL at https://etender.lifecarehll.com/irj/portal. On completion of the registration process, the bidders will be provided user ID and password within 48 hours (excluding non-working days). In order to submit the bids electronically, bidders are required to have a valid Class 3-B Digital Signature Certificate (signing and encryption/ decryption certificates).

4. Bidders are requested to read the bidders help document on e-tender web site link before proceeding for bidding.

5. Post receipt of User ID & Password, Bidders can log on for downloading & uploading tender document.

6. The bidders shall submit the required Tender Processing Fee (in form of Demand Draft or Banker's Cheque) and Bid Security (as per GIB clause no. 19.3) in physical form in favour of **'HLL Infra Tech Services Limited**' at the scheduled time and venue. Tender processing Fee is required from all the bidders irrespective of their registration with NSIC or any other Govt. organisation.

7. The online submission of bid(s) can only be done through https://etender.lifecarehll.com/irj/portal

8. All prospective bidders (maximum two representative of a firm bearing ID proof issued by their firm) may attend the Pre-bid conference meeting. The venue, date and time indicated above.

9. Bidders shall ensure that their bid(s), complete in all respects, are submitted online through HLL's e-portal (as described above**) ONLY. No DEVIATION is acceptable.**

10. Tender Processing Fee and BID SECURITY should be deposited within the scheduled date & time in the Tender Box located at: **HLL Infra Tech Services Limited, Procurement and Consultancy Services Division, B-14 A, Sector-62, Noida-201307, Uttar Pradesh.**

11. Prospective bidders are advised to browse the above websites regularly before submission of their bids as any further amendments will be published in these websites only.

CEO (HITES)

SECTION - II

GENERAL INSTRUCTIONS TO BIDDERS (GIB)
CONTENTS

GENERAL INSTRUCTIONS TO BIDDERS (GIB)

A. PREAMBLE

1. Definitions and Abbreviations

1.1 The following definitions and abbreviations, which have been used in these documents shall have the meanings as indicated below:

1.2. Definitions:

i. "Purchaser" means means HLL INFRA TECH SERVICES LIMITED (HITES) for and on behalf of The Director, AIIMS, New Delhi.
ii. "Bid" means Quotation / Tender received from a Firm / Tenderer / Bidder.
iii. "Bidder" means Tenderer/ the Individual or Firm submitting Bids / Quotation / Tender
iv. "Supplier" means the individual or the firm supplying the goods and services as incorporated in the contract/purchase order.
v. "Goods" means all articles, material, commodity, livestock, furniture, fixtures, raw material, spares, instruments, machinery, equipment, vehicles, medicines, assemblies, sub-assemblies, accessories, intangible products like software, technology transfer, licenses, patents or other intellectual properties purchased or otherwise acquired for the use of Government but excludes books, publications, periodicals, etc. for a library. The term 'goods' also includes works and services which are incidental or consequential to the supply of such goods, such as, transportation, insurance, installation, commissioning, training and maintenance.

vi. "Services" means services allied and incidental to the supply of goods, such as transportation, installation, commissioning, provision of technical assistance, training, after sales service, maintenance service and other such obligations of the supplier covered under the contract.
vii. "Bid Security" (BS) means Earnest Money Deposit / monetary or financial guarantee to be furnished by a bidder along with its tender.
viii. "Contract" means the written agreement entered into between the purchaser and the supplier, together with all the documents mentioned therein and including all attachments, annexure etc. therein.
ix. "Performance Security" means monetary or financial guarantee to be furnished by the successful bidder for due performance of the contract placed on it. Performance Security is also known as Security Deposit.
x. "Consignee" means the Center/Hospital/Department/Sections /person to whom the goods are required to be delivered as specified in the Contract.
xi. "Specification" also called Technical Specifications means the document/standard that prescribes the requirement with which goods or service has to conform.
xii. "Inspection" means activities such as measuring, examining, testing, gauging one or more characteristics of the product or service and comparing the same with the specified requirement mentioned in the contract to determine conformity.
xiii. "Day" means calendar day.

1.3 Abbreviations:

(i) "NIT" means Notice Inviting Tenders.
(ii) "GIB" means General Instructions to Bidders
(iii) "SIT" means Special Instructions to Bidders

(iv) "GCC" means General Conditions of Contract
(v) "SCC" means Special Conditions of Contract
(vi) "LC" means Letter of Credit
(vii) "DP" means Delivery Period
(viii) "BG" means Bank Guarantee
(ix) "GST" means Goods & Service Tax
(x) "CD" means Custom Duty
(xi) "BL" means Bill of Lading
(xii) "FOB" means Free on Board
(xiii) "CIF" means Cost, Insurance and Freight
(xiv) "CIP (Destinations)" means Carriage and Insurance Paid up to named port of destination. Additionally the Insurance (local transportation and storage) would be extended and borne by the Supplier from ware house to the consignee site for a period including 3 months beyond date of delivery.
(xv) "INCOTERMS" means International Commercial Terms as on the date of Bid Opening
(xvi) "CAMC" means Comprehensive Annual Maintenance Contract (labour, spare and preventive maintenance)

2. Introduction

2.1 The Purchaser has issued these Bidding Documents for purchase of goods and related services as mentioned in Section – VI – "List of Requirements", which also indicates, *interalia,* the required delivery schedule, terms and place of delivery.

2.2 This section (Section II - "General Instructions to Bidders") provides the relevant information as well as instructions to assist the prospective bidders in preparation and submission of bids. It also includes the mode and procedure to be adopted by the bidder for receipt and opening as well as scrutiny and evaluation of bids and subsequent placement of contract.

2.3 The bidder shall also read the Special Instructions to Bidders (SIB) related to this purchase, as contained in Section III of these documents and follow the same accordingly. Whenever there is a conflict between the GIB and the SIB, the provisions contained in the SIB shall prevail over those in the GIB.

2.4 Before formulating the bid and submitting the same to the purchaser, the bidder should read and examine all the terms, conditions, instructions, checklist etc. contained in the Bidding Document. Failure to provide and/or comply with the required information, instructions etc. incorporated in these Bidding Documents may result in rejection of its Bid.

3. Availability of Funds

3.1 Expenditure to be incurred for the proposed purchase will be met from the funds available with the purchaser/consignee.

4. Language of Bid

4.1 The bid submitted by the bidder and all subsequent correspondence and documents relating to the bid exchanged between the bidder and the purchaser, shall be written in the English language. However, the language of any printed literature furnished by the bidder in connection with its bid may be written in any other language provided the same is accompanied by an English translation and, for purposes of interpretation of the bid, the English translation shall prevail**.**

5. Eligible Bidders

5.1 This Invitation for Tenders is open to all bidder who fulfil the eligibility criteria specified in these documents.

6. Eligible Goods and Services

6.1 All goods and related services to be supplied under the contract shall have their origin in India or any other country with which India has not banned trade relations. The term "origin" used in this clause means the place where the goods are mined, grown, produced, or manufactured or from where the related services are arranged and supplied.

7. Bid Expense

7.1 The bidder shall bear all costs and expenditure incurred and/or to be incurred by it in connection with its bid including preparation, mailing and submission of its bid and for subsequent processing the same. The purchaser will, in no case be responsible or liable for any such cost, expenditure etc. regardless of the conduct or outcome of the bidding process.

B. TENDER ENQUIRY DOCUMENTS

8. Content of Tender Enquiry Documents

8.1 In addition to Section I – "Notice Inviting Tender" (NIT), the Bidding Documents include:

Section II – General Instructions to Bidders (GIB)
Section III – Special Instructions to Bidders (SIB)
Section IV – General Conditions of Contract (GCC)
Section V – Special Conditions of Contract (SCC)
Section VI – List of Requirements
Section VII – Technical Specifications& General Points
Section VIII – Qualification Criteria
Section IX – Bid Form
Section X – Price Schedules
Section XI - Check List
Section XII – Bank Guarantee Form for Bid Security
Section XIII – Manufacturer's Authorization Form
Section XIV – Bank Guarantee Form for Performance Security/CAMC Security
Section XV – Contract Forms A & B
Section XVI – Proforma of Consignee Receipt Certificate
Section XVII – Proforma of Consignee Acceptance Certificate by the consignee

8.2 The relevant details of the required goods and services, the terms, conditions and procedure for bidding, bid evaluation, placement of contract, the applicable contract terms and, also, the standard formats to be used for this purpose are incorporated in the above-mentioned documents. The interested bidders are expected to examine all such details etc to proceed further.

9. Amendments to a Bidding documents

9.1 At any time prior to the deadline for submission of bids, the purchaser may, for any reason deemed fit by it, modify the Bidding Documents by issuing suitable amendment(s) to it.

9.2 Such an amendment will be notified through AIIMS Website (www.aiims.edu) and/or CPPP (eprocure.gov.in/cppp) and/or www.hllhites.com and/or www.lifecarehll.com and will be binding on them.

9.3 In order to provide reasonable time to the prospective bidders to take necessary action in preparing their bids as per the amendment, the purchaser may, at its discretion extend the deadline appropriately for the submission of bids and other allied time frames, which are linked with that deadline.

10. Clarification of Bid document

10.1 A bidder requiring any clarification or elucidation on any issue of the Bidding Documents may take up the same with the purchaser in writing. The purchaser will respond in writing to such request provided the same is received by the purchaser not later than ten days (unless otherwise specified in the SIB) prior to the prescribed date of submission of Bids.

C. PREPARATION OF BIDS

11. Documents comprising the e-Bid

11.1 The bid(s) shall only be submitted online as mentioned below:

1. Technical Bid (Consisting of Techno-Commercial bids in excel format provided with the tender enquiry along with the supporting documents i.e. scanned copies of Tender Processing Fee, BID SECURITY, Eligibility Criteria & Technical Specifications viz. Product Specification Sheets/Brochures, OEM Certificate, etc.) have to be attached in the C-folder of e-tendering module. Bidders have to ensure that the documents uploaded in pdf format are legible.

2. Price Bid has to be submitted in the prescribed excel format provided with the tender enquiry.

Note:

a. The tender Processing fee and BID SECURITY has to be submitted in physical form as per Section – I, Notice Inviting Tender of this tender enquiry.

b. The bidders have to follow the steps listed in Bidding Manual – Attachment Modem available in the Bidder Help Documents of e-tender portal login screen for uploading the Techno-Commercial Bid.

A) Techno-commercial Bid (Un-priced Bid)

(Bidders shall furnish the following information along with technical tender in pdf format):

i) Bid Security furnished in accordance with GIB clause 19.1 alternatively, documentary evidence as per GIB clause 19.2 for claiming exemption from payment of Bid Security.
ii) Bid Form as per Section IX (without indicating any price).
iii) Documentary evidence, as necessary in terms of clauses 5 and 17 of GIB establishing that the bidder is eligible to submit the bid and, also, qualified to perform the contract if its bid is accepted.
iv) Bidder who quotes for goods manufactured by other manufacturer shall furnish Manufacturer's Authorisation Form. While giving authorization to agent, to quote on their behalf, manufacturer has to give the reasons for

not quoting directly against this bid in the Manufacturer's Authorisation Form.

v) Power of Attorney in favor of signatory and/or who is digitally signing the bidding documents and signatory of Manufacturer's Authorization Form.

vi) Documents and relevant details to establish in accordance with GIB clause 18 that the goods and the allied services to be supplied by the bidder conform to the requirement of the bidding documents.

vii) Performance Statement as per section VIII along with relevant copies of orders and end users' satisfaction certificate.

viii) Price Schedule(s) as per Section X filled up with all the details including Make, Model etc. of the goods offered with prices blank (without indicating any prices).

ix) Documents confirming to Sole Proprietorship/Partnership/Private Limited Firm in the country of origin as the case may be.

x) Checklist as per Section XI.

xi) Copies of GST registration certificate and PAN Card.

xii) Copies of annual report, audited balance sheet and profit & loss account as per tender requirement.

xiii) Non conviction /no pending conviction certification issued by Notary on judicial stamp paper for preceding three years.

xiv) Notarized affidavit that bidder does not have any relation with the person authorized to evaluate technically or involve in finalizing the tender or will decide the use of tendered items.

xv) A self-declaration on Rs. 10/- non-judicial Stamp Paper that the rates quoted in the tender are the lowest and not quoted less than this to any Government Institution (State/Central/ other Institute in India).

xvi) Technical and Commercial Compliance statement in excel format provided in the e-tender portal.

xvii) Product catalogues/original Data Sheets for all quoted items.

xviii) Copies of quality certificates, if applicable, namely, BIS, ISO, FDA, CE, etc.

B) Price Tender:

Prices are to be quoted in the prescribed Price Bid format in excel provided along with the tender enquiry in the e-tender portal. The price should be quoted for the accounting unit indicated in the e-tender document.

Note:

a) The bidder has to be diligent while filling up the Techno-commercial Bid and Price Bid provided in excel formats and must not tamper the contents of the sheets.

b) It is the responsibility of bidder to go through the TE document to ensure furnishing all required documents in addition to above, if any.

c) The bidders have to follow the steps listed in Bidding Manual – Attachment Mode available in the *Bidder Help Documents of e-tender portal login screen* for uploading the Price Bid.

11.2 The authorized signatory of the bidder must sign the bid duly stamped at appropriate places and initial all the remaining pages of the bid. Individuals signing the bid or other documents connected with a contract must specify whether he signs as:

i. A 'Sole Proprietor' of the firm or constituted attorney of such Sole Proprietor.

ii. In case of partnership firm he must have authority to quote & to refer to arbitration dispute concerning the business of the partnership either by virtue of the partnership agreement or a power of attorney;
iii. Constituted attorney of the firm if it is a company.

Note:

1. In case of (ii) above, a copy of the partnership agreement duly registered with "Registrar of Firm's" or general power of attorney, in either, case, attested by a Notary Public should be furnished, or affidavit on stamped paper of all the partners admitting execution of the partnership agreement or the general power of attorney should be furnished.
2. In case of the partnership firms, where no authority to refer disputes concerning the business of the partnership has been conferred on any partner, the bid and all other related documents must be signed by every partner of the firm.
3. A person signing the bid form or any documents forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, liable for rejection of bid or cancel of contract and hold the signatory liable for all cost and damages.

11.3 A bid, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.

12. Bid Currencies

12.1 The bidder supplying indigenous goods or already imported goods shall quote only in Indian Rupees.

12.2 For imported goods if supplied directly from abroad, prices shall be quoted in any freely convertible currency say US Dollar, Euro, GBP or Yen. As regards price(s) for allied services, if any required with the goods, the same shall be quoted in Indian Rupees only, if such services are to be performed/undertaken in India. Commission for Indian Agent, if any and if payable shall be indicated in the space provided for in the Price Schedule and will be payable in Indian Rupees only after satisfactory supply, installation and acceptance of the goods. The rate of conversion shall be taken as on the date of placement of purchase order.

12.3 Bids, where prices are quoted in any other way shall be treated as non-responsive and rejected.

13 Bid Prices

13.1 The Bidder shall indicate on the Price Schedule provided under Section X all the specified components of prices shown therein including the unit prices, applicable taxes and total bid prices of the goods and services it proposes to supply against the requirement. All the columns shown in the Price Schedule should be filled up as required. If any column does not apply to a bidder, same should be clarified as "NA" by the bidder.

13.2 If there is more than one schedule in the "List of Requirements", the bidder has the option to submit its bid for any one or more schedules and, also, to offer special

discount for combined schedules. However, while quoting for a schedule, the bidder shall quote for the complete requirement of goods and services as specified in that particular schedule.

13.3 The quoted prices for goods offered from within India and that for goods offered from abroad are to be indicated separately in the applicable Price Schedules attached Under Section X.

13.4 While filling up the columns of the Price Schedule, the following aspects should be noted for compliance:

13.4.1 For domestic goods or goods of foreign origin located within India, the prices in the corresponding Price Schedule shall be entered separately in the following manner:

a) The price of the goods, quoted ex-factory/ ex-showroom/ ex-warehouse/ off-the-shelf, as applicable, including packing charges and GST and Custom Duty already paid or payable on the components and raw material used in the manufacture or assembly of the goods quoted ex-factory etc. or on the previously imported goods of foreign origin quoted ex-showroom etc;
b) Any taxes and duty, which will be payable on the goods in India if the contract is awarded;
c) Charges towards Inland Transportation, Insurance (local transportation and storage) would be borne by the Supplier from ware house to the consignee site for a period including 3 months beyond date of delivery, Loading/Unloading and other local costs incidental to delivery of the goods to their final destination as specified in the List of Requirements and Price Schedule;
d) The price of Incidental Services (including installation & commissioning, supervision, demonstration and training), at the consignee site as mentioned in List of Requirements, Technical Specification and Price Schedule;
e) The prices of Turnkey Work (if any), as mentioned in List of Requirements, Technical Specification and Price Schedule; and
f) The price of CAMC, as mentioned in List of Requirements, Technical Specification and Price Schedule.

13.4.2 For goods offered from abroad, the prices in the corresponding price schedule shall be entered separately in the following manner:

a) The price of goods quoted on FOB at port/ FCA at airport of shipment, as mentioned in List of Requirements, Technical Specification and Price Schedule
b) The amount of Freight and Insurance (port of loading to port of entry) and other incidental costs.
c) The price of Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training) at the Consignee's site as mentioned in List of Requirements, Technical Specification and Price Schedule.
d) The price of Extended Insurance (local transportation and storage) from port of entry to the consignee site for a period including 3 months beyond date of delivery.
e) The Unit Price on CIP Name port of Destination + Extended Insurance (local transportation and storage)
f) The price of total Price on CIP Named port of Destination +Insurance (local transportation on and storage)
g) The prices of Turnkey Work (if any), as mentioned in List of Requirements, Technical Specification and Price Schedule; and
h) The price of CAMC, as mentioned in List of Requirements, Technical Specification and Price Schedule.

13.5 Additional information and instruction on Taxes and Duties:

13.5.1 **GST (Goods & Services Tax)**

If the bidder desires to ask for GST (goods and services tax) to be paid extra, the same must be specifically stated. In the absence of any such stipulation, the price will be taken inclusive of GST and no claim for the same will be entertained later.

13.5.2 **Customs Duty**

The Purchaser will pay the Customs duty wherever applicable.

13.6 For transportation of imported goods offered from abroad, relevant instructions as incorporated under GCC Clause 10 shall be followed.

13.7 For insurance of goods to be supplied, relevant instructions as provided under GCC Clause 11 shall be followed.

13.8 Unless otherwise specifically indicated in this Bidding Document, the terms FCA, FOB, CIF, CIP etc. for imported goods offered from abroad, shall be governed by the rules & regulations prescribed in the current edition of INCOTERMS - 2010, published by the International Chamber of Commerce, Paris

13.9 The need for indication of all such price components by the bidders, as required in this clause (viz., GIB clause 13) is for the purpose of comparison of the bids by the purchaser and will no way restrict the purchaser's right to award the contract on the selected bidder on any of the terms offered.

14. Indian Agent

14.1 If a foreign bidder has engaged an agent in India in connection with its bid, the foreign bidder, in addition to indicating Indian agent's commission, if any, in a manner described under GIB sub clause 12.2 above, shall also furnish the following information:

a) The complete name and address of the Indian Agent.
b) The details of the services to be rendered by the agent for the subject requirement.
c) Details of Service outlets in India, nearest to the consignee(s), to render services during Warranty and CAMC period.

15. Firm Price

15.1 Unless otherwise specified in the SIB, prices quoted by the bidder shall remain firm and fixed during the currency of the contract and not subject to variation on any account.

15.2 However, as regards taxes and duties, if any, chargeable on the goods and payable, the conditions stipulated in GIB clause 13 will apply.

16. Alternative Models

16.1 Alternative Models are permitted. The Bidder can quote alternate models meeting the specifications of the bidding document of same manufacturer with single Bid Security.

16.2 If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same ATE for the same item/product. In a bid, either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same models in the same ATE.

16.3 One Principal/OEM cannot authorize two agents simultaneously for the same item against same ATE.

17 Documents Establishing Bidder's Eligibility and Qualifications

17.1 Pursuant to GIB clause 11, the bidder shall furnish, as part of its bid, relevant details and documents establishing its eligibility to quote and its qualifications to perform the contract if its bid is accepted.

17.2 The documentary evidence needed to establish the bidder's qualifications shall fulfill the following requirements:

a) In case the bidder offers to supply goods, which are manufactured by some other firm, the bidder has been duly authorised by the goods manufacturer to quote for and supply the goods to the purchaser. The bidder shall submit the manufacturer's authorization letter to this effect as per the standard form provided under Section XIII in this document.
b) In case the bidder is not doing business in India, it is duly represented by an agent stationed in India fully equipped and able to carry out the required contractual functions and duties of the supplier including after sale service, maintenance & repair etc. of the goods in question, stocking of spare parts and fast moving components and other obligations, if any, specified in the conditions of contract and/or technical specifications.

18. Documents establishing good's Conformity to Bidding Document.

18.1 The bidder shall provide in its bid the required as well as the relevant documents like technical data, literature, drawings etc. to establish that the goods and services offered in the bid fully conform to the goods and services specified by the purchaser in the Bidding Documents. For this purpose the bidder shall also provide a clause-by-clause commentary on the technical specifications and other technical details incorporated by the purchaser in the Bidding Documents to establish technical responsiveness of the goods and services offered in its bid.

18.2 In case there is any variation and/or deviation between the goods & services prescribed by the purchaser and that offered by the bidder, the bidder shall list out the same in a chart form without ambiguity and provide the same along with its bid.

18.3 If a bidder furnishes wrong and/or misguiding data, statement(s) etc. about technical acceptability of the goods and services offered by it, its bid will be liable to be ignored and rejected in addition to other remedies available to the purchaser in this regard.

19. Bid Security (BS)

19.1 Pursuant to GIB clauses 8.1 and 11.1 A (i) the bidder shall furnish along with its bid, Bid Security for amount as shown in the Notice Inviting Bids (NIB). The Bid Security is required to protect the purchaser against the risk of the bidder's unwarranted conduct as amplified under sub-clause 19.7 below.

19.2 The bidders who are currently registered with MSME for the specific goods as per bidding document specification shall be eligible for exemption from Bid Security as defined in MSE Procurement Policy issued by the department of MSME. In case the bidder falls in this category, the bidder shall enclose relevant certificate of registration issued by department of MSME.

19.3 The Bid Security shall be denominated in Indian Rupees or equivalent currencies as per GIB clause 12.2. The Bid Security shall be furnished in one of the following forms:

i) Account Payee Demand Draft/ Banker's cheque
ii) Fixed Deposit Receipt
iii) Bank Guarantee

19.4 The demand draft or banker's cheque shall be drawn on any commercial bank in India or country of the bidder, in favour of the "……."(as indicated in the NIB) payable at New Delhi. In case of Bank Guarantee, the same is to be provided from any commercial bank in India or country of the bidder as per the format specified under Section XII in these documents.

19.5 The Bid Security shall be valid for a period of forty-five (45) days beyond the validity period of the bid. As validity period of Bid as per Clause 20 of GIB is 270 days, the Bid Security shall be valid for 315 days from Techno-Commercial Bid opening date.

19.6 The Bid Security of unsuccessful bidders will be returned without any interest, after expiry of the bid validity period, but not later than thirty days after conclusion of the resultant contract. The Bid Security of successful bidder will be returned without any interest, after receipt of performance security from that bidder.

19.7 Bid Security is required to protect the purchaser's right against the risk of the Bidder's conduct, which would warrant the forfeiture of the Bid Security. Bid Security of a bidder will be forfeited, if the bidder withdraws or amends its bids or impairs or derogates from the bid in any respect within the period of validity of its bid or if it comes to the notice that the information/documents furnished in its bid is incorrect, false, misleading or forged without prejudice to other rights of the purchaser. The Bid Security of the successful bidder will be forfeited without prejudice to other rights of Purchaser if it fails to furnish the required performance security within the specified period.

19.8 In the case of Bank Guarantee furnished from banks outside India (i.e. foreign Banks), it should be authenticated and countersigned by any nationalized bank in India by way of back-to-back counter guarantee and the same should be submitted along with the bid.

20. Bid Validity

20.1 If not mentioned otherwise in the SIB, the bid shall remain valid for acceptance for a period of 270 days (Two hundred and Seventy days) after the date of bid opening prescribed in the Bidding Document. Any bid valid for a shorter period shall be treated as unresponsive and rejected.

20.2 In exceptional cases, the bidder may be requested by the purchaser to extend the validity of their bids up to a specified period. Such request(s) and responses thereto shall be conveyed by mail/fax/email. The bidders, who agree to extend the bid validity, are to extend the same without any change or modification of their original bid and they are also to extend the validity period of the Bid Security accordingly. A bidder, who may not agree to extend its bid validity after the expiry of the original

validity period, their bid will not be considered further and the Bid Security furnished by them shall be returned.

20.3 In case the day up to which the bids are to remain valid falls on/subsequently declared a holiday or closed day for the purchaser, the bid validity shall automatically be extended up to the next working day.

21. Signing and Sealing of Bid

21.1 The bidders shall submit their bids as per the instructions contained in GIB Clause 11.

21.2 Unless otherwise mentioned in the SIB, a bidder shall submit only one copy of its bid marking it as "Original". Bidders are requested to submit their Bids after binding and page numbering.

21.3 The Bid shall either be typed or written in indelible ink and the same shall be signed by the bidder or by a person(s) who has been duly authorized. The letter of authorization shall be by a written power of attorney, which shall also be furnished along with the bid.

21.4 All the documents of the bid shall be duly signed at the appropriate places as indicated in the Bidding Documents and all other pages of the bid including printed literature (if any), shall be initialled and stamped by the same person(s) signing the bid. The bid shall not contain any eraser or overwriting, except as necessary to correct any error made by the bidder and, if there is any such correction; the same shall be initialled and stamped by the person(s) signing the bid.

21.5 The bidder is to seal the bid and writing the address of the purchaser and the bid reference number on the envelopes. The sentence "NOT TO BE OPENED" before _____ (The bidder is to put the date & time of bid opening) are to be written on this envelope. If the envelope is not sealed and marked properly as above, the purchaser will not assume any responsibility for its misplacement, premature opening, late opening etc.

21.6 Bidding Document seeks quotation following "Two Bid System", in two parts. First part will be known as 'Techno-Commercial Bid', and the second part 'Price Bid' as specified in clause 11 of GIB. Bidders shall seal 'Techno-Commercial Bid' and 'Price Bid' separately and covers will be suitably super scribed. Both these sealed covers shall be than put in a bigger cover and sealed and procedure prescribed in Paras 21.1 to 21.5 be followed.

D. SUBMISSION OF BIDS

22. Submission of Bids:

22.1 Unless otherwise specified, the bidders are to drop the Bids in the tender box located at **HLL Infra Tech Services Limited, Procurement and Consultancy Division, B-14 A, Sector-62, Noida-201307, Uttar Pradesh** or the same shall be submitted by the bidder by hand to concerned Project Officer dealing hand or his nominee. The necessary entry will be made in the Bid Receipt Register.

22.2 The bidders must ensure that they submit the on-line bids within the scheduled closing date & time. They shall also ensure to submit the original Tender

Processing Fee and Bid Security within its scheduled date & time. It is the responsibility of the bidder to ensure that their Bids whether sent by post or by courier or by person, are dropped in the Tender Box by the specified clearing date and time. In the event of the specified date for submission of bid falls on / is subsequently declared a holiday or closed day for the purchaser, the bids will be received up to the appointed time on the next working day.

23. Late Bid:

23.1 A bid, which is received after the specified date and time for receipt of bids will be treated as "late bid" and will be ignored.

24. Alteration and Withdrawal of Bid

24.1 The bidder, after submitting its bid, is permitted to alter/modify its bid, within the deadline for submission of bids. Alterations/modifications to bids received after the prescribed deadline will not be considered.

24.2 No bid should be withdrawn after the deadline for submission of bid and before expiry of the bid validity period. If a bidder withdraws the bid during this period, it will result in forfeiture of the Bid Security furnished by the bidder in its bid.

E. BID OPENING

25. Opening of Bids:

25.1 The purchaser will open the bids at the specified date and time and at the specified place as indicated in the NIB.

In case the specified date of bid opening falls on / is subsequently declared a holiday or closed day for the purchaser, the bids will be opened at the appointed time and place on the next working day.

25.2 Authorized representatives of the bidder, who have submitted bids on time may attend the bid opening provided they bring with them letter of authority from their bidder. The bid opening official(s) will prepare a list of the representatives attending the bid opening. The list will contain the representatives' names & signatures and corresponding bidder's names and addresses.

25.3 Two Bid System as mentioned in Para 21.6 above will be as follows. The "Techno - Commercial Bids" are to be opened in the first instance, at the prescribed time and date as indicated in NIB. These Bids shall be scrutinized and evaluated by the competent committee/authority with reference to parameters prescribed in the Bidding Document. During the Techno-Commercial Bid opening, the bid opening official(s) will read the salient features of the bids like brief description of the goods offered, Bid Security and any other special features of the bids, as deemed fit by the bid opening official(s). Thereafter, in the second stage, the Price Bids of only the Techno-Commercially acceptable offers (as decided in the first stage) shall be opened for further scrutiny and evaluation on a date notified after the evaluation of the Techno-Commercial Bid. The prices, special discount if any of the goods offered etc., as deemed fit by bid opening official(s) will be read out.

F. SCRUTINY AND EVALUATION OF BIDS

26. Basic Principle

26.1 Bids will be evaluated on the basis of the terms & conditions already incorporated in the Bidding Document, based on which bids have been received and the terms, conditions etc. mentioned by the bidders in their bids. No new condition will be brought in while scrutinizing and evaluating the bids.

27. Scrutiny of Bids

27.1 The Purchaser will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required Bid Securities have been furnished, whether the documents have been properly signed stamped and whether the Bids are generally in order.

27.2 The Purchaser's determination of a Bid's responsiveness is to be based on the contents of the Bid itself without recourse to extrinsic evidence.

27.3 The Bids will be scrutinized to determine whether they are complete and meet the essential and important requirements, conditions etc. as prescribed in the Bidding Documents. The bids, which do not meet the basic requirements, are liable to be treated as non-responsive and will be rejected.

27.4 The following are some of the important aspects, for which a bid shall be declared non-responsive during the evaluation and will be ignored;

(i) Bid form as per Section IX (signed & stamped) not enclosed.
(ii) Bid is unsigned.
(iii) Bid validity is shorter than the required period.
(iv) Required Bid Security (Amount, validity etc.)/ Exemption documents have not been provided.
(v) Bidder has quoted for goods manufactured by other manufacturer(s) without the required Manufacturer's Authorization Form as per Section XIII.
(vi) Bidder has not agreed to give the required Performance Security of required amount in an acceptable form in terms of GCC clause 5, read with modification, if any, in Section - V – "Special Conditions of Contract", for due performance of the contract.
(vii) Bidder has not agreed to other essential condition(s) specially incorporated in the bidding document like terms of payment, liquidated damages clause, warranty clause, dispute resolution mechanism, and applicable law.
(viii) Poor/unsatisfactory past performance.
(ix) Bidders who stand de-registered/banned/blacklisted by any Central Govt. Ministries/Departments/Hospitals/Institutes.
(x) Bidder is not eligible as per Clauses 5, 6 & 17 of GIB.
(xi) Bidder has not quoted for the entire quantity as specified in the List of Requirements in the quoted schedule.
(xii) Bidder has not agreed for the delivery terms and delivery schedule.

28. Minor Informality/Irregularity/Non-Conformity

28.1 If during the evaluation, the purchaser find any minor informality and/or irregularity and/or non-conformity in a bid, the purchaser will convey its observation on such 'minor' issues, which has not price implication, to the bidders by registered/speed post/ e-mail/fax etc. asking the bidder to respond by a specified date. If the bidder does not reply by the specified date or gives evasive

reply without clarifying the point at issue in clear terms, that bid will be liable to be ignored.

29 Discrepancies in Prices

29.1 If, in the price structure quoted by a bidder, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless the purchaser feels that the bidder has made a mistake in placing the decimal point in the unit price, in which case the total price as quoted shall prevail over the unit price and the unit price corrected accordingly.

29.2 If there is an error in a total price, which has been worked out through addition and/or subtraction of subtotals, the subtotals shall prevail and the total corrected; and

29.3 If there is a discrepancy between the amount expressed in words and figures, the amount in words shall prevail, subject to sub clause 29.1 and 29.2 above.

29.4 If, as per the judgment of the purchaser, there is any such arithmetical discrepancy in a bid, the same will be suitably conveyed to the bidder by registered/speed post/email. If the bidder does not agree to the observation of the purchaser, the bid is liable to be ignored.

30. Qualification Criteria

30.1 Bids of the bidder, who do not meet the required Qualification Criteria prescribed in Section VIII, will be treated as non-responsive and will not be considered further.

31. Conversion of Bid currencies to Indian Rupees

31.1 In case the Bidding Documents permits the bidder to quote their prices in different currencies, all such quoted prices of the responsive bidder will be converted to a single currency viz., Indian Rupees for the purpose of equitable comparison and evaluation, as per the exchange rates established by the Reserve Bank of India for similar transactions, as on the date of 'Price Bid' opening.

33. Schedule-wise Evaluation

1.1 In case the List of Requirements contains more than one schedule, the responsive bids will be evaluated and compared separately for each schedule. The bid for a schedule will not be considered if the complete requirements prescribed in that schedule are not included in the bid. However, as already mentioned in GIB sub clause 13.2, the bidders have the option to quote for any one or more schedules and offer discounts for combined schedules. Such discounts wherever applicable will be taken into account to determine the lowest evaluated cost for the purchaser in deciding the successful bidder for each schedule, subject to bidder (s) being responsive.

33. Comparison of Bids

33.1. Unless mentioned otherwise in Section – III – Special Instructions to bidder and Section – VI – List of Requirements, the comparison of the responsive Bids shall be carried out on Free Delivery at consignee site basis. The quoted Turnkey Work prices and CAMC prices will also be added for comparison/ranking purpose for evaluation. "Net Present Value (NPV) of the Comprehensive Annual Maintenance

Contract Charges (CAMC) quoted for 5 years after the warranty period shall be added to the bid price for evaluation and will be calculated after discounting the quoted price by a discounting factor of 10% per annum." However the payment of CAMC shall be made to the successful bidder at approved rates.

34. Additional Factors and Parameters for Evaluation and Ranking of Responsive Tenders

34.1 Further to GIB Clause 33 above, the purchaser's evaluation of a bid will include and take into account the following:

i) In the case of goods manufactured in India or goods of foreign origin already located in India, GST which will be contractually payable (to the bidder), on the goods if a contract is awarded on the bidder; and

ii) in the case of goods of foreign origin offered from abroad, customs duty and GST which will be contractually payable (to the bidder) on the goods if the contract is awarded on the bidder.

34.2 The purchaser's evaluation of bid will also take into account the additional factors, if any, incorporated in SIB in the manner and to the extent indicated therein.

34.3 The Purchaser reserves the right to give the price preference to small-scale sectors etc. and purchase preference to central public sector undertakings as per the instruction in vogue while evaluating, comparing and ranking the responsive Bids.

35. Bidder's capability to perform the contract

35.1 The purchaser, through the above process of bid scrutiny and bid evaluation will determine to its satisfaction whether the bidder, whose bid has been determined as the lowest evaluated responsive bid is eligible, qualified and capable in all respects to perform the contract satisfactorily. If, there is more than one schedule in the List of Requirements, then, such determination will be made separately for each schedule.

35.2 The above-mentioned determination will, inter alia, take into account the bidder satisfying all the requirements of the purchaser as incorporated in the Bidding Document. Such determination will be based upon scrutiny and examination of all relevant data and details submitted by the bidder in its bid as well as such other allied information as deemed appropriate by the purchaser.

36. Contacting the Purchaser

36.1 From the time of submission of bid to the time of awarding the contract, if a bidder needs to contact the purchaser for any reason relating to NIB/Bidding Document and / or its bid, it should do so only in writing.

36.2 In case a bidder attempts to influence the purchaser in the purchaser's decision on scrutiny, comparison & evaluation of bids and awarding the contract, the bid of the bidder shall be liable for rejection in addition to appropriate administrative actions being taken against that bidder, as deemed fit by the purchaser.

G. AWARD OF CONTRACT

37. Purchaser's Right to accept any bid and to reject any or all bids.

37.1 The purchaser reserves the right to accept in part or in full any bid or reject any or more bid(s) without assigning any reason or to cancel the bidding process and reject all bids at any time prior to award of contract, without incurring any liability, whatsoever to the affected bidder(s).

38. Award Criteria

38.1 Subject to GIB clause 37 above, the contract will be awarded to the lowest evaluated responsive bidder decided by the purchaser in terms of GIB Clause 35.

39. Variation of Quantities at the Time of Award/ Currency of Contract

39.1 At the time of awarding the contract, the purchaser reserves the right to increase or decrease by up to twenty five (25) per cent, the quantity of goods and services mentioned in the schedule (s) in the "List of Requirements" (rounded off to next whole number) without any change in the unit price and other terms & conditions quoted by the bidder.

39.2 If the quantity has not been increased at the time of the awarding the contract, the purchaser reserves the right to increase by up to twenty five (25) per cent, the quantity of goods and services mentioned in the contract (rounded off to next whole number) without any change in the unit price and other terms & conditions mentioned in the contract, during the currency of the contract.

40. Notification of Award

40.1 Before expiry of the bid validity period, the purchaser will notify the successful bidder(s) in writing, by registered / speed post or by fax/email (to be confirmed by registered / speed post) that its bid for Goods & Services, which have been selected by the purchaser, has been accepted, also briefly indicating there in the essential details like description, specification and quantity of the goods & services and corresponding prices accepted. The successful bidder must furnish to the purchaser the required Performance Security within thirty days from the date of dispatch of this notification, failing which the Bid Security will be forfeited and the award will be cancelled. Relevant details about the Performance Security have been provided in clause 5 of GCC under Section IV.

40.2 The Notification of Award shall constitute the conclusion of the Contract.

41. Issue of Contract

41.1 Promptly after notification of award, the Purchaser will mail the contract form (as per Section XV) duly completed and signed, in duplicate, to the successful bidder by registered / speed post.

41.2 Within twenty one days from the date of the contract, the successful bidder shall return the original copy of the contract, duly signed and dated, to the Purchaser/ by registered / speed post/courier.

41.3 The Purchaser reserves the right to issue the Notification of Award consignee wise.

42. Non-receipt of Performance Security and Contract by the Purchaser

42.1 Failure of the successful bidder in providing Performance Security and/or returning contract copy duly signed in terms of GIB clauses 40 and 41 above shall make the bidder liable for forfeiture of its Bid Security and, also, for further actions by the Purchaser it as per the clause 24-Termination of default of GCC under Section IV.

43. Return of Bid Security

43.1 The Bid Security of the successful bidder and the unsuccessful bidder will be returned to them without any interest, whatsoever, in terms of Clause 19 of GIB.

44. Publication of Bid Result

44.1 The name and address of the successful bidder (s) receiving the contract(s) will be mentioned in the Website of AIIMS, CPPP and HITES.

H. CORRUPT OR FRADULENT PRACTICES

45. Corrupt or Fraudulent Practices

45.1 It is required by all concerned namely the Bidder /Suppliers/Purchaser/Consignee/End User 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 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 bidders (prior to or after Bid submission) designed to establish Bid 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.

SECTION – III

SPECIAL INSTRUCTIONS TO BIDDERS (SIB)

The following Special Instructions to Bidders will apply for this purchase. These special instructions will modify/substitute/supplement the corresponding General Instructions to Bidders (GIB) incorporated in Section II. The corresponding GIB clause numbers have also been indicated in the text below:
In case of any conflict between the provision in the GIB and that in the SIB, the provision contained in the SIB shall prevail.

Sl. No.	GIB Clause No.	Topic	SIB Provision	Ref. Page No.
A	1 to 7	Preamble	No Change	
B	8 to 10	Bidding Document	Change in GIB Clause no. 10.1	
	10.1	Clarification of Bid document	Changed as under	10
C	11 to 21	Preparation of Bids	Change in GIB Clause no. 21.1	
	21.1		Changed as under	17
D	22 to24	Submission of Bids	Guiding notes given as under	18
E	25	Bid Opening	No Change	
F	26 to 36	Scrutiny and Evaluation of Bids	No Change	
G	37 to 44	Award of Contract	No Change	
H	45	Corrupt or Fraudulent Practices	No Change	

10. Clarification of Bid document

10.1 A bidder requiring any clarification or elucidation on any issue of the TE documents may take up the same with the purchaser in writing in their letter head duly signed and scanned through email to hll.ncij@hllhites.com. The purchaser will respond to such request provided the same is received 2 (two) days prior to the Pre-bid Meeting Conference. Any queries/representations received after the pre-bid meeting will not be taken into cognizance.

21. Digital Signing of e-Bid

21.1 The bidders shall submit their bids **online** as per the instructions contained in GIB Clause 11 and any other specific instruction mentioned in the e-Tender portal using the digital signature.

Instruction on submission of Bids

i) All the necessary documents as prescribed in the NIB shall be prepared and scanned in different files (in PDF format as prescribed) and uploaded for on-line submission of Proposal.

ii) The scanned copies of Bid Processing Fee, Bid Security, all document(s)/ information(s) including the Financial Proposal should be uploaded **online only** in the

prescribed format given in the designated e-tendering portal website. No other mode of submission shall be acceptable.

However, **Bid Processing Fee, Bid Security, Catalogue(s)/Data-sheet(s)** related to all quoted items must be submitted in original at the desired venue before the last date and time of physical submission as mentioned in the NIB.

iii) The prospective bidders may **scan the documents in low resolution (75 to 100 DPI)** instead of 200 DPI. The documents may be scanned for further lower resolution (if possible). This would reduce the size of the Cover and would be uploaded faster.

iv) The Individual file size of uploading is restricted up to 5 MB. Bidders may upload multiple files (Not exceeding 5 MB individually) & give relevant file name indicating the contents.

v) The file name of price bid should not be different from the price bid format uploaded by the Bid inviting Authority in the portal. This can be downloaded from the **Notes & Attachment** under **Details** of item when the RFx/event is in **Display Mode**.

SECTION - IV

GENERAL CONDITIONS OF CONTRACT (GCC)
TABLE OF CLAUSES

1. Application

1.1 The General Conditions of Contract incorporated in this section shall be applicable for this purchase to the extent the same are not superseded by the Special Conditions of Contract prescribed under Section V, List of requirements under Section VI and Technical Specification under Section VII of this document.

2. Use of contract documents and information

2.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract or any provision thereof including any specification, drawing, sample or any information furnished by or on behalf of the purchaser in connection therewith, to any person other than the person(s) employed by the supplier in the performance of the contract emanating from this Bidding Document. Further, any such disclosure to any such employed person shall be made in confidence and only so far as necessary for the purposes of such performance for this contract.

2.2 Further, the supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC sub-clause 2.1 above except for the sole purpose of performing this contract.

2.3 Except the contract issued to the supplier, each and every other document mentioned in GCC sub-clause 2.1 above shall remain the property of the purchaser and, if advised by the purchaser, all copies of all such documents shall be returned to the purchaser on completion of the supplier's performance and obligations under this contract.

3. Patent Rights

3.1 The supplier shall, at all times, indemnify and keep indemnified the purchaser, free of cost, against all claims which may arise in respect of goods & services to be provided by the supplier under the contract for infringement of any intellectual property rights or any other right protected by patent, registration of designs or trademarks. In the event of any such claim in respect of alleged breach of patent, registered designs, trademarks etc. being made against the purchaser, the purchaser shall notify the supplier of the same and the supplier shall, at his own expenses take care of the same for settlement without any liability to the purchaser.

4. Country of Origin

4.1 All goods and services to be supplied and provided for the contract shall have the origin in India or in the countries with which the Government of India has trade relations.

4.2 The word "origin" incorporated in this clause means the place from where the goods are mined, cultivated, grown, manufactured, produced or processed or from where the services are arranged.

4.3 The country of origin may be specified in the Price Schedule.

5. Performance Security

5.1 Within Thirty (30) days from date of the issue of notification of award by the Purchaser, the supplier, shall furnish Performance Security to the Purchaser for an amount equal to ten percent (10%) of the total value of the contract, valid up to

ninety (90) days after the date of completion of all contractual obligations by the supplier, including the warranty obligations.

5.2 The Performance security shall be denominated in Indian Rupees or in the currency of the contract as detailed below:

It shall be in any one of the forms namely Account Payee Demand Draft or Fixed Deposit Receipt drawn from any Scheduled bank in India or Bank Guarantee issued by a Scheduled bank in India, in the prescribed form as provided in Section XIV of this document in favour of the Purchaser. The validity of the Fixed Deposit Receipt or Bank Guarantee will be for a period up to ninety (90) days beyond Warranty Period.

5.3 In the event of any failure/default of the supplier with or without any quantifiable loss to the government including furnishing of consignee wise Bank Guarantee for CAMC security as per Performa in Section XIV, the amount of the performance security is liable to be forfeited. The needful will be done to cover any failure/default of the supplier with or without any quantifiable loss to the Government.

5.4 In the event of any amendment issued to the contract, the supplier shall, within fifteen (15) days of issue of the amendment, furnish the corresponding amendment to the Performance Security (as necessary), rendering the same valid in all respects in terms of the contract, as amended.

5.5 The supplier shall enter into Comprehensive Annual Maintenance Contract as per the 'Contract Form - B' in Section XV with respective consignees, 3 (three) months prior to the completion of Warranty Period. The CAMC will commence from the date of expiry of the Warranty Period.

5.6 Subject to GCC sub – clause 5.3 above, the Purchaser will release the Performance Security without any interest to the supplier on completion of the supplier's all contractual obligations including the warranty obligations & after receipt of Consignee wise bank guarantee for CAMC security in favour of concerned Director AIIMS/Chief of Centres/MS of Hospital/Head of the Department/Dean as per the format in Section XIV.

6. Technical Specifications and Standards

6.1 The Goods & Services to be provided by the supplier under this contract shall conform 'Technical Specification' under Sections VII of this document.

7. Packing and Marking

7.1 The packing for the goods to be provided by the supplier should be strong and durable enough to withstand, without limitation, the entire journey during transit including transhipment (if any), rough handling, open storage etc. without any damage, deterioration etc. As and if necessary, the size, weights and volumes of the packing cases shall also take into consideration, the remoteness of the final destination of the goods and availability or otherwise of transport and handling facilities at all points during transit up to final destination as per the contract.

7.2 The quality of packing, the manner of marking within & outside the packages and provision of accompanying documentation shall strictly comply with the requirements as provided in Technical Specifications under Section VII and in SCC under Section V. In case the packing requirements are amended due to issue of any

amendment to the contract, the same shall also be taken care of by the supplier accordingly.

7.3 Packing instructions:

Unless otherwise mentioned in the Technical Specification under Section VII and in SCC under Section V, the supplier shall make separate packages for each consignee (in case there is more than one consignee mentioned in the contract) and mark each package on three sides with the following with indelible paint of proper quality:

a. Contract number and date
b. Brief description of goods including quantity
c. Packing list reference number
d. Country of origin of goods
e. Consignee's name and full address and
f. Supplier's name and address

8. Inspection, Testing and Quality Control

8.1 The purchaser and/or its nominated representative(s) will, without any extra cost to the purchaser, inspect and/or test the ordered goods and the related services to confirm their conformity to the contract specifications and other quality control details incorporated in the contract. The purchaser shall inform the supplier in advance, in writing, the purchaser's programme for such inspection and, also the identity of the officials to be deputed for this purpose. "The cost towards the transportation, boarding and lodging will be borne by the purchaser and/or its nominated representative(s) for the first visit. In case the goods are rejected in the first instance and the supplier requests for re-inspection, and if same is accepted by Purchaser/Consignee, all subsequent inspections shall be at the cost of the supplier. The expense will be to and fro Economy Airfare, Local Conveyance, Boarding and Lodging of the inspection team for the inspection period."

8.2 The Technical Specification incorporated in the contract shall specify what inspections and tests are to be carried out and, also, where and how they are to be conducted. If such inspections and tests are conducted in the premises of the supplier or its subcontractor(s), all reasonable facilities and assistance, including access to relevant drawings, design details and production data, shall be furnished by the supplier to the purchaser's inspector at no charge to the purchaser.

8.3 If during such inspections and tests the contracted goods fail to conform to the required specifications and standards, the purchaser's inspector may reject them and the supplier shall either replace the rejected goods or make all alterations necessary to meet the specifications and standards, as required, free of cost to the purchaser and re-submit the same to the purchaser's inspector for conducting the inspections and tests again.

8.4 In case the contract stipulates pre-dispatch inspection of the ordered goods at supplier's premises, the supplier shall put up the goods for such inspection to the purchaser's inspector well ahead of the contractual delivery period, so that the purchaser's inspector is able to complete the inspection within the contractual delivery period.

8.5 If the supplier tenders the goods to the purchaser's inspector for inspection at the last moment without providing reasonable time to the inspector for completing the inspection within the contractual delivery period, the inspector may carry out the inspection and complete the formality beyond the contractual delivery period at the

risk and expense of the supplier. The fact that the goods have been inspected after the contractual delivery period will not have the effect of keeping the contract alive and this will be without any prejudice to the legal rights and remedies available to the purchaser under the terms & conditions of the contract.

8.6 The purchaser's contractual right to inspect, test and, if necessary, reject the goods after the goods' arrival at the final destination shall have no bearing of the fact that the goods have previously been inspected and cleared by purchaser's inspector during pre-dispatch inspection mentioned above.

"On rejection, the supplier shall remove such stores within 14 days of the date of intimation of such rejection from the consignee's premises. If such goods are not removed by the supplier within the period mentioned above, the purchaser/consignee may remove the rejected stores and either return the same to the supplier at his risk and cost by such mode of transport as purchaser/consignee may decide or dispose of such goods at the suppliers risk to recover any expense incurred in connection with such disposals and also the cost of the rejected stores if already paid for."

8.7 Goods accepted by the purchaser/consignee and/or its inspector at initial inspection and in final inspection in terms of the contract shall in no way dilute purchaser's/consignee's right to reject the same later, if found deficient in terms of the warranty clause of the contract, as incorporated under GCC Clause 15.

8.8 Principal/ Foreign supplier shall also have the equipment inspected by recognized/ reputed agency like SGS, Lloyd, Bereau Veritas, TUV etc. prior to dispatch at the supplier's cost and furnish necessary certificate from the said agency in support of their claim.

9. Terms of Delivery

9.1 Goods shall be delivered by the supplier in accordance with the terms of delivery and as per the delivery period specified in the schedule of requirement. Please note that the time shall be the essence of the contract.

10. Transportation of Goods

10.1 Instructions for transportation of imported goods offered from abroad:

The supplier shall not arrange part-shipments without the express/prior written consent of the purchaser. The supplier is required under the contract to deliver the goods under CIP (Named port of destination) terms.

11. Insurance

11.1 Unless otherwise instructed in the SCC, the supplier shall make arrangements for insuring the goods against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the following manner:

i) In case of supply of domestic goods on Free Delivery at Consignee's Site basis, the supplier shall be responsible till the entire stores contracted for arrival in good condition at destination. The transit risk in this respect shall be covered by the Supplier by getting the stores duly insured for an amount equal to 110% of the value of the goods from warehouse to warehouse (consignee site) on all risk basis. The insurance cover shall be obtained by the Supplier and should be valid till 3 months after the receipt of goods by the Consignee.

ii) In case of supply of the imported goods on CIP (named port of Destination Basis), the additional extended Insurance (local transportation and storage) would be borne by the Supplier from the port of entry to the consignee site for a period including 3 months beyond date of delivery for an amount equal to 110% of the overall expenditure to be incurred by the purchaser from warehouse to ware house (consignee site) on all risk basis.

If the equipment is not commissioned and handed over to the consignee within 3 months, the insurance will have to be extended by the supplier at their cost till the successful installation, testing, commissioning and handing over of the goods to the consignee. In case the delay in the installation and commissioning is due to handing over of the site to the supplier by the consignee/End User, such extensions of the insurance will still be done by the supplier, but the insurance extension charges at actual will be reimbursed.

12. Spare parts

12.1 If specified in the List of Requirements and in the resultant contract, the supplier shall supply/provide any or all of the following materials, information etc. pertaining to spare parts manufactured and/or supplied by the supplier:

a) The spare parts as selected by the Purchaser/End User to be purchased from the supplier, subject to the condition that such purchase of the spare parts shall not relieve the supplier of any contractual obligation including warranty obligations; and

b) In case the production of the spare parts is discontinued:

i) Sufficient advance notice to the Purchaser/End User before such discontinuation to provide adequate time to the purchaser to purchase the required spare parts etc., and

ii) Immediately following such discontinuation, providing the Purchaser/End User, free of cost, the designs, drawings, layouts and specifications of the spare parts, as and if requested by the Purchaser/End User.

12.2 Supplier shall carry sufficient inventories to assure ex-stock supply of consumables and spares for the goods so that the same are used during warranty and CAMC period.

13. Incidental services

13.1 Subject to the stipulation, if any, in the SCC (Section – V), List of Requirements (Section - VI) and the Technical Specification (Section – VII), the supplier shall be required to perform the following services:

i) Installation & Commissioning, Supervision, Demonstration, Trial run etc. of the goods.
ii) Turnkey work (if any).
iii) Training of Consignee's/End Users Doctors, Staff, operators etc. for operating and maintaining the goods.
iv) Supplying required number of operation & maintenance manual for the goods.

14. Distribution of Dispatch Documents for Clearance/Receipt of Goods

The supplier shall send all the relevant dispatch documents well in time to enable the purchaser clear or receive (as the case may be) the goods in terms of the contract. Unless otherwise specified in the SCC, the usual documents involved and the drill to be followed in general for this purpose are as follows:

Within 24 hours of dispatch, the supplier shall notify the concerned Store Officer in AIIMS Clearing Agent and others concerned the complete details of dispatch and also supply following documents by air mail/ courier etc. with intimation by e-mail:

a) Commercial Supplier's Invoice giving full details of the goods including quantity, value, etc.;
b) Packing list;
c) Certificate of country of origin;
d) Bill of Lading/Airway Bill;
e) Insurance Certificate; (if applicable)
f) Manufacturer's guarantee and Inspection certificate; (if applicable)
g) Inspection certificate issued by the Purchaser's Inspector; (if applicable)
h) Any other document(s) as and if required in terms of the contract.

15. Warranty and CAMC

15.1 The supplier warrants comprehensively that the goods supplied under the contract is new, unused and incorporate all recent improvements in design and materials unless prescribed otherwise by the purchaser in the contract. The supplier further warrants that the goods supplied under the contract shall have no defect arising from design, materials (except when the design adopted and/or the material used are as per the Purchaser's/Consignee's specifications) or workmanship or from any act or omission of the supplier, that may develop under normal use of the supplied goods under the conditions prevailing in India.

15.2 The warranty shall include all spares, labour and preventive maintenance from the date of completion of the satisfactory installation and acceptance till warranty period.

15.3 The Comprehensive Annual Maintenance Contract shall include all spares, labour and preventive maintenance from the date of completion of the satisfactory installation and acceptance till warranty period.

15.4 Warranty as well as Comprehensive Annual Maintenance Contract will be inclusive of all accessories and turnkey work and it will also cover the following, wherever applicable:-

- All kinds of Motors.
- Plastic & Glass Parts against any manufacturing defects.
- All kinds of sensors.
- All kinds of coils, probes and transducers.
- Printers and imagers including laser and thermal printers with all parts.
- UPS including the replacement of batteries.
- Air-conditioners

15.5 In case of any claim arising out of this warranty and CAMC period the Purchaser/Consignee shall promptly notify the same in writing to the supplier. The period of the warranty will be as per G.C.C clause number 15.2 unless revised in SCC in Section V of Bidding Document.

15.6 Upon receipt of such notice, the supplier shall, within 8 hours on a 24(hrs) X 7 (days) X 365 (days) basis respond to take action to repair or replace the defective goods or parts thereof, free of cost, at the ultimate destination. The supplier shall take over the replaced parts/goods after providing their replacements and no claim, whatsoever shall lie on the purchaser for such replaced parts/goods thereafter. The penalty clause for non rectification will be applicable as per conditions laid down in the Bidding Document.

15.7 In the event of any rectification of a defect or replacement of any defective goods during the warranty period, the warranty for the rectified/replaced goods shall be up to the completion of the original warranty period of the main equipment.

15.8 If the supplier, having been notified, fails to respond to take action to repair or replace the defect(s) within 8 hours on a 24(hrs) X 7 (days) X 365 (days) basis, the purchaser may proceed to take such remedial action(s) as deemed fit by the purchaser, at the risk and expense of the supplier and without prejudice to other contractual rights and remedies, which the purchaser may have against the supplier.

15.9 During Warranty and CAMC period, the supplier is required to visit at each consignee's site at least once in 6 months commencing from the date of the installation for preventive maintenance of the goods.

15.10 The Purchaser/Consignee reserve the rights to enter into Comprehensive Annual Maintenance Contract between the Purchaser and the Supplier for the period as mentioned in Section VII, Technical Specifications after the completion of warranty period.

15.11 The supplier along with its Manufacturer, Indian Agent and the CAMC provider shall ensure continued supply of the spare parts for the machines and equipments supplied by them to the purchaser for 10 years from the date of installation and handing over.

15.12 The Supplier along with its Manufacturer Indian Agent and the CMC Provider shall always accord most favoured client status to the Purchaser vis-à-vis its other Clients/Purchasers of its equipments/machines/goods etc. and shall always give the most competitive price for its machines/equipments supplied to the Purchaser/Consignee.

16. Assignment

16.1 The Supplier shall not assign, either in whole or in part, its contractual duties, responsibilities and obligations to perform the contract, except with the Purchaser's prior written permission.

17. Sub Contracts

17.1 The Supplier shall notify the Purchaser in writing of all sub contracts awarded under the contract, if not already specified in its bid. Such notification, in its original bid or later, shall not relieve the Supplier from any of its liability or obligation under the terms and conditions of the contract.

17.2 Sub contract shall be only for bought out items and sub-assemblies.

17.3 Sub contracts shall also comply with the provisions of GCC Clause 4 ("Country of Origin").

18. Modification of Contract

18.1 If necessary, the purchaser may, by a written order given to the supplier at any time during the currency of the contract, amend the contract by making alterations and modifications within the general scope of contract in any one or more of the following:

a) Specifications, drawings, designs etc. where goods to be supplied under the contract are to be specially manufactured for the purchaser,
b) Mode of packing,
c) Incidental services to be provided by the supplier
d) Mode of dispatch,
e) Place of delivery, and
f) Any other area(s) of the contract, as felt necessary by the purchaser depending on the merits of the case.

18.2 In the event of any such modification/alteration causing increase or decrease in the cost of goods and services to be supplied and provided, or in the time required by the supplier to perform any obligation under the contract, an equitable adjustment shall be made in the contract price and/or contract delivery schedule, as the case may be, and the contract amended accordingly. If the supplier doesn't agree to the adjustment made by the Purchaser the supplier shall convey its views to the Purchaser within twenty-one days from the date of the supplier's receipt of the Purchaser's amendment/modification of the contract.

19. Prices

19.1 Prices to be charged by the supplier for supply of goods and provision of services in terms of the contract shall not vary from the corresponding prices quoted by the supplier in its bid and incorporated in the contract except for any price adjustment authorized in the SCC.

20. Taxes and Duties

20.1 Supplier shall be entirely responsible for GST incurred until delivery of the contracted goods to the purchaser.

20.2 Further instruction, if any, shall be as provided in the SCC.

21. Terms and Mode of Payment

21.1 Payment Terms

Payment shall be made through electronic transfer in NEFT/RTGS subject to recoveries, if any, by way of liquidated damages or any other charges as per terms & conditions of contract in the following manner:

A) Payment for Indigenous Goods (M&E) Or Foreign Origin Located Within India. Payment shall be made in Indian Rupees as specified in the contract in the following manner:

a) **On delivery**: 75% payment of the contract price shall be paid on receipt of goods in good condition and upon the submission of the following documents:
   (i) Original copies of supplier's invoice showing contract number, goods description, quantity, packing list, unit price and total amount;

(ii) Consignee Receipt Certificate as per Section XVI of bidding document in original issued by the authorized representative of the consignee;

b) **On Acceptance**: Balance 25% payment would be made against "Installation and Acceptance Certificate" of goods to be issued by the End User subject to recoveries, if any, either on account of non-rectification of defects/deficiencies not attended by the Supplier or otherwise. "Installation and Acceptance Certificate" need to be issued by the concerned End User after installation, commissioning, testing and successful trial run (if applicable).

B) Payment for Imported Goods (M&E): Payment for foreign currency portion shall be made in the currency as specified in the contract in the following manner:

a) **On Shipment**: 75% of the net FCA/CIP price (i.e. FCA/CIP price less Indian Agency commission) of the goods despatch by Sea/Air shall be paid through irrevocable, non-transferable Letter of Credit (LC) opened in favour of the supplier in a bank in his country and upon submission of documents specified hereunder:

i) Commercial Supplier's Invoice giving full details of the goods including quantity, value, etc.;
ii) Packing list;
iii) Certificate of country of origin;
iv) Negotiable clean Bill of Lading/Airway Bill;
v) Insurance Certificate; (if applicable)
vi) Manufacturer's guarantee and Inspection certificate; (if applicable)
vii) Inspection certificate issued by the Purchaser's Inspector; (if applicable)
viii) Any other document(s) as and if required in terms of the contract.

b) **On Acceptance**: Balance payment of 25% of net FCA/CIP price of goods would be made against "Installation and Acceptance Certificate" to be issued by the End User through irrevocable, non-transferable Letter of Credit (LC) opened in favour of the Foreign Principal in a bank in his country, subject to recoveries, if any. "Installation and Acceptance Certificate" need to be issued by the concerned End User after installation, commissioning, testing and successful trail run (if applicable).

c) Payment of Consumable Imported Goods/Reagents/Kits would be made 100% against "Installation and Acceptance Certificate" to be issued by the End User through Wire Transfer.

d) **Payment of Incidental Costs:** Incidental costs till consignee site towards Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training),if applicable will be paid in Indian Rupees to the Indian Agent on submission of "Installation and Acceptance Certificate" by the End User.

e) **Payment of Indian Agency Commission**: Indian Agency Commission (IAC) will be paid to the Authorised manufacturer's agent in Indian rupees indicated in the contract (as per prevailing rate of exchange ruling on the date of Contract) and shall not be subject to further escalation/exchange variation. The agency commission payment shall be made on submission of "Installation and Acceptance Certificate" by the End User.

C) Payment of Civil/Electrical Works at site: The payment related to Civil/Electrical Works at site will be made as indicated in the contract (as per prevailing rate of exchange ruling on the date of Contract) and shall not be subject

to further escalation/exchange variation. The payment for Civil/Electrical works shall be made on submission of "Installation and Acceptance Certificate" by the End User.

D) Payment for Comprehensive Annual Maintenance Contract Charges: The consignee will enter into CAMC with the supplier at the rates as stipulated in the contract. The payment of CAMC will be made on six monthly basis after satisfactory completion of said period, duly certified by the End User on receipt of bank guarantee for an amount equivalent to 2.5% of the cost of the equipment as per contract in the prescribed format given in Section XV of the bidding document valid till 3 months after expiry of entire CAMC period. The Performance Bank Guarantee for CAMC will be applicable in case of contract value is more than Rs. 10 lakh.

21.2 Terms of payment for imported goods

21.2.1 The supplier shall not claim any interest on payments under the contract.

21.2.2 Where there is a statutory requirement for tax deduction at source, such deduction towards income tax and other tax as applicable will be made from the bills payable to the Supplier at rates as notified from time to time.

21.2.3 Irrevocable & non-transferable LC shall be opened by the Purchaser. However, if the supplier requests specifically to open confirmed LC, the extra charges would be borne by the supplier. If LC is required to be extended and/or amended for reasons not attributable to the purchaser, the charges thereof shall be borne by the supplier.

21.2.4 The payment shall be made in the currency/currencies authorised in the contract.

21.2.5 The supplier shall send its claim for payment in writing, when contractually due, along with relevant documents etc., duly signed with date.

21.2.6 While claiming payment, the supplier is also to certify in the bill that the payment being claimed is strictly in terms of the contract and all the obligations on the part of the supplier for claiming that, payment has been fulfilled as required under the contract.

21.2.7 While claiming reimbursement of duties, taxes etc. (like GST, sales tax, excise duty, custom duty) from the Purchaser, as and if permitted under the contract, the supplier shall also certify that, in case it gets any refund out of such taxes and duties from the concerned authorities at a later date, the supplier shall refund to the Purchaser forthwith.

22. Delivery

22.1 The supplier shall deliver the goods and perform the services under the contract within the time schedule specified by the Purchaser in the List of Requirements and as incorporated in the contract. The time for and the date of delivery of the goods stipulated in the schedule shall be deemed to be of the essence of the contract and the delivery must be completed no later than the date(s) as specified in the contract.

22.2 Subject to the provision under GCC clause 26, any unexcused delay by the supplier in maintaining its contractual obligations towards delivery of goods and

performance of services shall render the supplier liable to any or all of the following sanctions:

(i) Imposition of liquidated damages,
(ii) Forfeiture of its Performance Security and
(iii) Termination of the Contract for default.

22.3 If at any time during the currency of the contract, the supplier encounters conditions hindering timely delivery of the goods and performance of services, the supplier shall promptly inform the Purchaser in writing about the same and its likely duration and make a request to the Purchaser for extension of the delivery schedule accordingly. On receiving the supplier's communication, the Purchaser shall examine the situation as soon as possible and, at its discretion, may agree to extend the delivery schedule, with or without liquidated damages for completion of supplier's contractual obligations by issuing an amendment to the contract.

22.4 When the period of delivery is extended due to unexcused delay by the supplier, the amendment letter extending the delivery period shall, interalia contain the following conditions:

(a) The Purchaser shall recover from the supplier, under the provisions of the clause 23 of the General Conditions of Contract, Liquidated Damages on the goods and services, which the Supplier has failed to deliver within the delivery period stipulated in the contract.

(b) That no increase in price on account of any ground, whatsoever, including any stipulation in the contract for increase in price on any other ground and, also including statutory increase in or fresh imposition of GST levied in respect of the goods and services specified in the contract, which takes place after the date of delivery stipulated in the contract shall be admissible on such of the said goods and services as are delivered and performed after the date of the delivery stipulated in the contract.

(c) But nevertheless, the Purchaser shall be entitled to the benefit of any decrease in price on account of reduction in or remission of customs duty and GST which takes place after the expiry of the date of delivery stipulated in the contract.

22.5 The supplier shall not dispatch the goods after expiry of the delivery period. The supplier is required to apply to the Purchaser for extension of delivery period and obtain the same before dispatch. In case the supplier dispatches the goods without obtaining an extension, it would be doing so at its own risk and no claim for payment for such supply and/or any other expense related to such supply shall lie against the purchaser.

22.6 Passing of Property

22.6.1 The property in the goods shall not pass to the purchaser unless and until the goods have been delivered to the consignee in accordance with the contract.

22.6.2 Where there is a contract for sale of specific goods and the supplier is bound to do something to the goods for the purpose of putting them into a deliverable state the property does not pass until such thing is done.

22.6.3 Unless otherwise agreed, the goods remain at the supplier's risk until the property therein is transferred to the purchaser.

23. Liquidated Damages

23.1 Subject to GCC clause 26, if the supplier fails to deliver or install/commission any or all of the goods or fails to perform the services within the time frame(s) incorporated in the contract, the Purchaser shall, without prejudice to other rights and remedies available to the Purchaser under the contract, deduct from the contract price, as liquidated damages, a sum equivalent to 0.5% per week of delay or part thereof on delayed supply of goods, installation, commissioning and/or services until actual delivery or performance subject to a maximum of 10% of the contract price. Once the maximum is reached Purchaser may consider termination of the contract as per GCC 24.

During the above-mentioned delayed period of supply and/or performance, the conditions incorporated under GCC sub-clause 22.4 above shall also apply.

24. Termination for Default

24.1 The Purchaser without prejudice to any other contractual rights and remedies available to it the Purchaser, may, by written notice of default sent to the supplier, terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the Purchaser pursuant to GCC sub-clauses 22.3 and 22.4.

24.2 The Performance Security in such cases will be forfeited.

24.3 Unless otherwise instructed by the Purchaser, the supplier shall continue to perform the contract to the extent not terminated.

25. Termination for Insolvency

25.1 If the supplier becomes bankrupt or otherwise insolvent, the purchaser reserves the right to terminate the contract at any time, by serving written notice to the supplier without any compensation, whatsoever, to the supplier, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the Purchaser.

26. Force Majeure

26.1 Notwithstanding the provisions contained in GCC clauses 22, 23 and 24, the supplier shall not be liable for imposition of any such sanction so long the delay and/or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure.

26.2 For purposes of this clause, Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable and not brought about at the instance of the party claiming to be affected by such event and which has caused the non – performance or delay in performance. Such events may include, but are not restricted to, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes excluding by its employees, lockouts excluding by its management and freight embargoes.

26.3 If a Force Majeure situation arises, the supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within twenty one days of

occurrence of such event. Unless otherwise directed by the Purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

26.4 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.

26.5 In case due to a Force Majeure event the Purchaser is unable to fulfil its contractual commitment and responsibility, the Purchaser will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.

27. Termination for Convenience

27.1 The Purchaser reserves the right to terminate the contract, in whole or in part for its Purchaser's convenience, by serving written notice on the supplier at any time during the currency of the contract. The notice shall specify that the termination is for the convenience of the Purchaser. The notice shall also indicate interalia, the extent to which the supplier's performance under the contract is terminated, and the date with effect from which such termination will become effective.

27.2 The goods and services which are complete and ready in terms of the contract for delivery and performance within thirty days after the supplier's receipt of the notice of termination shall be accepted by the Purchaser following the contract terms, conditions and prices. For the remaining goods and services, the Purchaser may decide:

a) To get any portion of the balance completed and delivered at the contract terms, conditions and prices; and / or
b) To cancel the remaining portion of the goods and services and compensate the supplier by paying an agreed amount for the cost incurred by the supplier towards the remaining portion of the goods and services.

28. Governing Language

28.1 The contract shall be written in English language following the provision as contained in GIB clause 4. All correspondence and other documents pertaining to the contract, which the parties exchange, shall also be written accordingly in that language.

29. Notices

29.1 Notice, if any, relating to the contract given by one party to the other, shall be sent in writing or by Facsimile/email and confirmed in writing. The procedure will also provide the sender of the notice, the proof of receipt of the notice by the receiver. The addresses of the parties for exchanging such notices will be the addresses as incorporated in the contract.

29.2 The effective date of a notice shall be either the date when delivered to the recipient or the effective date specifically mentioned in the notice, whichever is later.

30. Resolution of Disputes

30.1 If dispute or difference of any kind shall arise between the Purchaser/Consignee 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.

30.2 If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, unless otherwise provided in the SCC, either the Purchaser/Consignee or the supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided the applicable arbitration procedure will be as per the Arbitration and Conciliation Act, 1996 of India.

30.3 In the case of a dispute or difference arising between the Purchaser and a domestic Supplier relating to any matter arising out of or connected with the contract, such dispute or difference shall be referred to the sole arbitration to be appointed by the Director, AIIMS. The award of the arbitrator shall be final and binding on the parties to the contract subject to the provision that the Arbitrator shall give reasoned award in case the value of claim in reference exceeds Rupees One lakh (Rs. 1,00,000/-).

30.4 **Venue of Arbitration:** The venue of arbitration shall be the place from where the contract has been issued, i.e., New Delhi, India.

30.5 **Jurisdiction of the court** will be from the place where the Bidding Document has been issued, i.e., New Delhi, India.

31. Applicable Law

The contract shall be governed by and interpreted in accordance with the laws of India for the time being in force.

32 Withholding and Lien in respect of sums claimed

32.1 Whenever any claim for payment arises under the contract against the supplier the purchaser shall be entitled to withhold and also have a lien to retain such sum from the security deposit or sum of money arising out of under any other contract made by the supplier with the purchaser, pending finalization or adjudication of any such claim.

32.2 It is an agreed term of the contract that the sum of money so withheld or retained under the lien referred to above, by the purchaser, will be kept withheld or retained till the claim arising about of or under the contract is determined by the Arbitrator or by the competent court as the case may be and the supplier will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention.

33. Fall Clause

Fall clause is a price safety mechanism. The fall clause provides that if the contract holder reduces its price or sells or even offers to sell the contracted goods of identical specification and terms & conditions to that of the contract, at a price lower than the contract price, to any person or organization during the currency of the Contract, the Contract price will be automatically reduced with effect from that date for all the subsequent supplies under the Contract and the contract amended accordingly.

SECTION – V

SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract (SCC) will apply for this purchase. The corresponding clauses of General Conditions of Contract (GCC) relating to the SCC stipulations have also been incorporated below.

These Special Conditions will modify/substitute/supplement the corresponding (GCC) clauses.

Whenever there is any conflict between the provision in the GCC and that in the SCC, the provision contained in the SCC shall prevail.

The warranty conditions will be as mentioned in the list of requirement as per section VI of the Bidding Document.

SECTION- VI

LIST OF REQUIREMENTS

Part I:

Sl. no.	Rfx/ Event number	Short Description of goods	Quantity	Warranty Period	CAMC period after warranty
1	3000002184	Pneumatic Tube Transport System (PTT System)	1	05 years	05 years
2	3000002185	Integrated Track-Based Automation Enabled Core Clinical Laboratory	1	05 years	05 years
3	3000002186	Centralised Medical Gas Pipeline System	1	05 years	05 years
4	3000002187	Modular Operation Theater (MOT)	9	05 years	05 years
5	3000002188	Integration and Data Management System for Modular OT with OT Light	8	05 years	05 years

Part II: Required Delivery Schedule:

a) For Indigenous goods or for imported goods if supplied from India:
90 days from date of Notification of Award to delivery at consignee site. The date of delivery will be the date by when it is to be delivered at consignee site. Bidders may quote earliest delivery period.

Installation and Commissioning shall be done at the earliest but not later than 45 days of delivery of goods at site or date of handing over the site for installation, whichever is later.

b) For Imported goods directly from foreign:
90 days from the date of opening of L/C. The date of delivery will be the date of Bill of Lading/Airway bill. (Bidders may quote the earliest delivery period).

Installation and Commissioning shall be done at the earliest but not later than 45 days of delivery of goods at site or date of handing over the site for installation, whichever is later.

For delayed delivery and/or installation and commissioning liquidated damages will get applied as per GCC clause 23.

Part III: Scope of Incidental Services:
Installation & Commissioning, Supervision, Demonstration, Trial run and Training etc. as specified in GCC Clause 13.

Part IV: Turnkey Work (if any) as per details in Technical Specification.

Part V: Warranty period as per details mentioned in technical specification and as specified in Part I above. Warranty period will start from the date of installation, commissioning and acceptance.

Comprehensive Annual Maintenance Contract (CAMC) as per details in Technical Specification as specified in part I above. Comprehensive Annual Maintenance Contract (CAMC) will start from the date of successful completion of warranty period.

Part VI: Required Terms of Delivery and Destination.

a) For Indigenous goods or for imported goods if supplied from India:
Free Delivery at Consignee's Site(s)

b) For Imported goods directly from abroad:

The foreign bidders are required to quote their rates on CIP (Named Port of Destination Basis) giving breakup of the price as per the Proforma prescribed in the Price Schedule. Purchaser will place the order on CIP (Named Port of Destination basis).

Insurance (Local Transportation and Storage) would be extended and borne by the Supplier from ware house to the consignee site for a period including 3 months beyond date of delivery.

c) The Consignee details are as under but the supplier is required to deliver the goods at the designated site in the floor and building of concerned Centers/Hospital/ Departments:

Consignee	Site	Contact Address.	Air Port	Sea Port
NCI-AIIMS (National Cancer Institute – All India Institute of Medical Sciences)	Jhajjar Campus	Badsha Village Jhajjar Haryana	New Delhi	ICD Tuglakabad (for containerised shipments) Or ICD Patparganj

Note: The consignee will ensure timely issue of NMIC, CDEC etc., wherever applicable to the supplier.

SECTION - VII

TECHNICAL SPECIFICATION AND GENERAL POINTS

A. TECHNICAL SPECIFICATION:

Item sl. no. 01

Pneumatic Tube Transport System (PTT System)

Scope of Work:

1. Supply of Pneumatic Tube Transport System (herein after mentioned as PTT system) of 160mm pipe (outer diameter) Network, with transfer speed ranging from a minimum transfer rate of 4 m/s to maximum rate of 6 m/s; as per specifications, conforming to DIN/EN/CE standards.
2. The Primary function of the PTT system is to transport bio-samples from various locations within the Institute to the Core Laboratory situated in the First floor of the Diagnostic Block.
3. The 160mm diameter Carrier or Container should be able to carry loads weighing upto 7 kg.
4. Local Supply/ Local Materials as per specifications.
5. Testing, Installation and Commissioning of the Pneumatic Tube Transport (PTT) System supplied. (in two stages- as described in BOQ).
6. The bidders must quote the STIC (Supply, Installation , Testing & Commissioning) cost per Front Load Station.
7. Service engineer of PTT system shall be deployed in the NCI campus 24 x 7 basis to attend to maintenance for period of ten years.

The Pneumatic Tube Transport (PTT) System shall cover the following buildings:

1. **OPD**
2. **HOSPITAL BLOCK**
3. **DIAGNOSTIC BLOCK**
4. **ADMIN & RESEARCH BLOCK(BIO BANK BLOCK)**

Location wise Quantity of Front Load Stations					
	OPD BLOCK	HOSPITAL BLOCK	DIAGNOSTIC BLOCK	BIO BANK BLOCK	Total
PHASE I					
BASEMENT		1			
GROUND FLOOR	2	2	1		
FIRST FLOOR	1	2	1		
SECOND FLOOR	1	4			
THIRD FLOOR	1	5			
Total – Phase I	5	14	2		21
PHASE II					
BASEMENT				1	
GROUND FLOOR			1		
FIRST FLOOR			1		
SECOND FLOOR			1		
THIRD FLOOR			1		
FOURTH FLOOR	3	5	1		
FIFTH FLOOR		4	1		

SIXTH FLOOR		4			
SEVENTH FLOOR		4			
EIGHTH FLOOR		4			
PHASE II	**3**	**21**	**6**	**1**	**31**
TOTAL	**8**	**35**	**8**	**1**	**52**
AUTO UNLOAD STATION			1		1

I. **Main Control System:**

a. The entire Pneumatic Tube Transport System (PTT) has to be electronically controlled by Dedicated Computer / microprocessors / digitally with software unit and the main control unit, which controls the sending process and the compressor unit, supervises all system components.

b. The Main Control System of the PTT must remain fully operational at all times without any restrictions in the event of errors detected in the system.

c. The sending process has to be indicated on the display of the **Main Control System**. The Main Control System has to provide information to find the cause of a system malfunction. Customer-specific data such as the system's layout, Target / Station numbers, target names, arrival signals, and priority and special functions must be selectable onsite without change or external reprogramming of memory devices of the Main Control System.

d. The Main Control System should have ability to store all data regarding carrier destination, so that, the PTT system when restarted after mains power failure , should automatically start functioning normally and the system status is restored to what it was while power failure. Carriers must be delivered to their assigned target/station address automatically after power restoration without any manual intervention.

e. All components of the Pneumatic Tube Transport system should be constantly monitored; the operating software has to be based on action-reaction control for any carrier. The status of each carrier should be checked by the master control unit/system.

f. A test program must be included in the Main Control System, so as to automatically check, move and supervise all of the system's carrier, or specific selected carrier from the master control unit.

g. During both normal operation and testing, all devices (namely Carriers and Stations) should be able to inform the Main Control System that the selected functional position has been reached. The PTT system should be designed in such a way that it has facility for error detection of stations.

h. Main Control System should also allow the transfer to continue functioning with a robust fault-clearance program that automatically recognizes operating errors, power failures, time-out errors and other system errors.

i. It should be possible to designate a particular station as Recovery Station wherein carriers which have been lost in transit can be returned / recovered.

j. Main Control System should include the following:
   - Main Control Unit Hardware for Main Control System with power supply.
   - Software package for main controller includes the following:-

1. Licensed Software for the system including extension lines, as required.
2. Licensed Software for Code-Tag System/Transponder System/RFID.
3. Licensed Software for Visualization & Editor.
4. Licensed Software for History & Evaluation.

II. Online UPS:

Uninterruptable Power Supply shall be provided for Main Controller. It should be of standard make, minimum **Capacity of 3KVA**, Back-up of minimum 30 minutes power backup for Main Control System & peripherals excluding Blowers.

III. Side Channel Blower with speed control(VFD)

1. Independent Blowers of maximum power consumption of **6 KW**, 3-phase 400v/50Hz power rating**,** low noise, unidirectional rotation with electronic air switch to switch between compressed air and vacuum.
2. Each blower should be provided with a system to Control frequency of the blower which will further control the speed of the carrier for transferring sensitive laboratory samples at lower transfer speed of 3m/s.
3. It should be provided with all the mounting accessories and soundproof enclosure.
4. Solid particles or contaminants must be withheld using the filters before entering the side channel blower.
5. The open intake and discharge ports should be protected by wire guards

IV. Front Load Station 160mm:

1. The Front Load Station should be designed as a fully automatic dispatch and receiving unit and used as pass- through or terminal station. The enclosure of Front Load Station shall be of durable and aesthetically appealing material, which allows application of surface disinfectants without discolouration.
2. The Front Load Station should be able to send auto-unload carriers and normal carriers.
3. The Front Load Station should be able to receive normal carriers.
4. The conveying direction of the carriers should be both sided.
5. Inserting a carrier into the Front Load Station and selecting a target number should be possible independent of the target station / line being busy.
6. The carrier should be loaded on the **FRONT SIDE** of the Station.
7. The Front Loading Station should be provided with maintenance-free mechanism, self-adjusting optical switches, and self-adjusting maintenance free gaskets for noise less operations, contact less censoring of the unit positions. There should not be any air exiting at the Station.
8. The Front Loading station shall be provided with a minimum 5-line LCD display with backlit facility, soft membrane touch buttons, RFID reader circuit board, built-in pneumatic pressure trough passage for sample safety.
9. Integrated Radio Frequency ID (RFID) readers for identifying the carrier should be provided within the station to ensure automatic carrier redistribution to its home address & also non-acceptance of any items than authorized carrier.
10. The carrier's arrival should be sensed by the Station , and the carrier must be decelerated on arrival to facilitate soft landing of the carrier.
11. The Pneumatic Station should be provided with OEM carrier rack for minimum 5 carriers and OEM receiving basket for 3 carriers with cushions / foam pad for soft landing of carriers.

V. Automatic Unload Station 160mm for Core Laboratory:

1. The Auto Unload Station is a dedicated Receiving station, should be provided with a dedicated line. This station should be exclusively used for receiving Auto Unload carriers. The system must be configured to prevent Normal Carriers from choosing the Auto Unload Station as its destination.

2. When the carrier comes into the Auto Unload Pneumatic station, the carrier should decelerate within the line and it should automatically open inside the stations (without exiting the station) and the sample bags / containers should slide out of the carrier, drop safely out of the station onto a soft landing basket. The carrier, after unloading the samples, should automatically return to its origin pneumatic station based on RFID transponder technology.
3. The Auto Unload Station at Hospital's Core-Laboratory should be programmed into the System, so as to direct all Auto Unload Carriers to it automatically.
4. The Auto Unload Station should be maintenance free gear mechanism, with self adjusting optical switches, with self adjusting maintenance free gaskets for noise less operations, contact less of the unit positions.
5. There must be RFID readers for carrier ID and inventory, which should ensure automatic carrier distribution to its home address & also non-acceptance of any items than authorized carrier.
6. System should not accept an open carrier.
7. Integrated Radio Frequency ID (RFID) readers should be provided within the station for identifying the carrier, and sensing the arrival of carrier in the station.
8. The samples should land softly onto a horizontal platform or container; accompanied by audio-visual arrival indicator in the station.
9. The carrier's arrival should be sensed by the Station , and the carrier must be decelerated on arrival to the station.
10. The samples should have soft landing facility for arriving containers to exit the station safely.
11. Should be provided with OEM carrier rack to store minimum 10 nos. Carriers.

VI. Auto Unload Carriers with RFID:

1. Auto Unload Carriers for hospital-laboratory use should be with easy to operate, with swivel top mechanism, sealed load chamber to prevent contamination of tubing in the unlikely event of spill of transported goods. Auto unload carriers should be such that no manual handling be required during unloading.
2. Auto unload carriers should be such that no manual handling be required during unloading.
3. The carrier should automatically unload at the Auto Unload Pneumatic Station, then automatically close & go back to the original Pneumatic Station. Each Auto Unload Carrier should be programmed, so that there is no need to input the station ID for returning the Auto Unload carrier to its original station.
4. The carrier should also be able to open manually at the unloading station. The RFID of Auto Unload Carriers should be programmable to in order to assign different Pneumatic Stations to each of them.
5. Should have at least two free programmable data transponder system.
6. All Auto Unload Carriers should be programmed to have the Hospital's Core-Laboratory as its destination , irrespective of the send station.
7. The carrier lid shall be closed in a "LOCKED" position. The lid should be kept locked by a spring force and has to be equipped with seals to prevent accidental opening of the carrier in transit. Furthermore the design of the carrier shall ensure that an open carrier cannot be sent.
8. Every carrier has to be equipped with two free programmable data transponders. These transponders are used to electronically identify any carrier by a unique address and to offer the user automatic redistribution to home Station and optionally a second address

for dedicated locations or special carrier use.

9. The carriers must be provided with an easily visible wear and tear resistant colour coding system, which must be changeable also on site by the user without damage and not requiring special tools.
10. The carrier should be minimum 300mm, compatible with the 160mm transfer line system.
11. To be provided with suitable holders of vacutainers and a pair shuttle bung for each carrier.

VII. Carriers with RFID:

1. Carriers for hospital use should be with easy to operate, with swivel top mechanism, sealed load chamber to prevent contamination of tubing in the unlikely event of spill of transported goods.
2. The carrier lid shall be closed in a "LOCKED" position. The lid should be kept locked by a spring force and has to be equipped with seals to prevent accidental opening of the carrier in transit. Furthermore the design of the carrier shall ensure that an open carrier can't be sent.
3. Every carrier has to be equipped with two free programmable data transponders. These transponders are used to electronically identify any carrier by a unique address and to offer the user automatic redistribution to home Station and optionally a second address for dedicated locations or special carrier use.
4. The carriers must be provided with an easily visible wear and tear resistant colour coding system, which must be changeable also on site by the user without damage and not requiring special tools.
5. The carrier should be minimum 300mm , compatible with the 160mm transfer line system.
6. To be provided with suitable holders of vacutainers and a pair shuttle bung for each carrier.

VIII. Radio frequency ID (RFID)

The system should be provided with an integrated Radio frequency ID (RFID) solution within the Stations, Carriers as standard supply, so that proper management of carriers can be achieved; especially the return of empty carriers. The RFID system has to be built-in to all stations and carriers. No separate module of RFID system shall be used in any station for carrier / station authentication.
The RFID system shall be programmed so that it shall not allow anything other than legitimate carriers to go in the PTT system.

IX. Line Transfer Zone Mechanism : (minimum 8 lines)

The PTT system should be provided with a "Line Transfer Zone Mechanism" which allows the interface between all the transport lines of the PTT system, so as to allow smooth transfer of carriers between the transfer lines, providing smooth and uninterrupted operation of the PTT system.

The Line Transfer Zone Mechanism should have the following features:

a. Contactless positioning, two direction operation.
b. Carrier designated as "Emergency-Carrier" should be able to physically overtake the normal carriers in the PTT system within the Line Transfer Zone Mechanism using line prioritisation.
c. Should have the provision to keep the storage units vacant for the transit of Emergency carriers.
d. Should be able to accommodate multiple carriers within the Line Transfer Zone

Mechanism, so as to prevent stacking of carriers within the incoming lines.

e. The Line Transfer Zone Mechanism shall operate without any manual intervention.

X. Diverters (Three-Way)

The routing device shall consist of One incoming and Three outgoing delivery tubes.
It should Air Tight with Steel Housing and provided with Optical Sensors.
The Routing device must provide smooth connection between incoming and outgoing tube, to prevent impact on transported items. The Routing device must consist of a maintenance-free rotary oscillating pipe in a pneumatically sealed device housing, to prevent air loss with self-adjusting Teflon gaskets providing airtight operation in negative as well as positive pressure operation.

XI. Forwarding Tube:

Every Station and Routing device must be provided transparent tube.
The forwarding tube should be made of medium density PVC of 160 mm Outer Diameter and 153 mm (approx.) Inner Diameter with properties such as good Physical tensile strength, absorption of water, self-extinguishing.

XII. Bends:

It should be of 90 deg. with radius not more than 800 mm (centre) with length approx 1.5 metre, for optimal space utilization.

XIII. Composite System Cable:

Forwarding tube should be supplied with the necessary cable and other tube mounting accessories for networking between Pneumatic Stations.
It should not be localized and it should be supplied from the principal equipment manufacturer with company brand name marked.

XIV. Inserts:

Cushion Bag or Foam Pad for holding vacutainers.

XV. Quality Control

The Contractor must ensure that the works conform to the quality standards and to the satisfaction of the Institute. The contractor shall submit his quality plan in accordance with the above.
The works and materials shall be subject to tests from time to time as per best practices in the industry. Wherever mentioned in the Contract, the tests must be carried out at the Contractor's expense. The materials shall be procured from reputed vendors approved by the Institute-Engineer.
The Contractor must also supply samples to the Institute-Engineer for his approval and also carry out the tests as and when required by the Engineer.

XVI. Tests after completion

After completion of the project, the Institute may carry out the tests after completion, which shall be carried out under normal operating conditions to assure that the system performs well under normal operating conditions.
These tests will include but not limited to:

i. Running of equipment and system as a whole to a minimum of 15 days.
ii. System specific tests and equipment specific test

iii. Any other test which Institute intends to carry out to check the stability and reliability of the system.
iv. Any defects if pointed out in the tests after completion shall be ratified at Contractor's expense and within time as deemed reasonable by the Institute.

XVII. Maintenance and Training requirements for systems, machines and equipment

i) The Contractor shall maintain the system during the defects liability period. The Contractor shall see to it that all the warranty and guaranty cards are properly filled and duly submitted to the Institute along with their maintenance manuals.

ii) The Contractor shall train the staff of the Institute for proper operation and essential trouble shooting of the system. The Contractor shall make arrangements for demonstration & trial run before commissioning of the system.

iii) Operation and Maintenance Manual shall be supplied to the Institute. These manuals shall contain in sufficient detail, the procedures for operation and the maintenance schedule for the all the components.

XVIII. Turnkey Work

1) Bidders are strongly advised to visit the site and carry out the assessment of works before bidding.
2) Area dedicated for plant room is approx. 600sqft.
3) Plant room should aesthetically look good and all the tubes, cables, diverters etc. should be properly routed .
4) All electrical work required for commissioning and installation of equipment like cable wire, electrical outlets, switches, cable trenches, railings, etc. should be fire proof, of reputed make, certified for electrical safety as per international standard. All work has to be done by the bidder including Electrical Isolators, MCBs, Electrical boards, Switches, Sockets and any other thing which are required for smooth running of Equipment.
5) Institute will provide one point electrical supply and further distribution within the plant room will be responsibility of bidder as per approved layout.
6) Carry out the complete partitioning/separation of the work site with controlled access.
7) Bidder has to provide sound proof (noise level below 65 dB) enclosure/ room for the operator in the plant room.
8) Provide all necessary safety equipment to site as per international guide line.
9) Ensure that signage are posted all around (Work permit, hot work permit, Site inspection check list, etc).
10) Carry out the complete flooring inclusive of all materials.
11) Carry out any other finishes required in the area of work such as wall protectors, corner guards, etc.
12) Bidder has to specify its electrical load including equipment, air-conditioning, peripherals load, etc for Pneumatic Tube Transport System.
13) Supply, install, testing & commission the distribution box, circuit breaker, fire sensors & extinguishers and cabling from the nearest mains power supply. Rerouting all electrical, fire safety, telephone, security & network cables as per chosen design.
14) Carry out all plant area renovation, maintenance and preparation, including, doors, furniture, windows, tiles, ceilings, lights, painting etc.

XIX Manpower Requirement:

1) The vendor will ensure 24x7 physical presence of required number of operator/technician/engineer at the plant room facility at NCI Jhajjar for the following activities:-
2) Routine maintenance (Daily, weekly, monthly)

3) Main control system and log handling/operations for all tasks.
4) Any other activity linked to operations and maintenance for smooth functioning of pneumatic tube transportation system.
5) Medical examination of staff: The bidder shall employ only those persons in the plant room who are found to be medically fit. Hospital reserves its rights to examine any of the employees for medical fitness without prior notice. Expenses, if any incurred by the NCI-AIIMS on medical examination of such employees, shall be borne and paid by the bidder.
6) Wages and insurance: The vendor shall comply with the laws applicable to employees working in the plant rooms regarding working hours, minimum wages, safety, cleanliness, leave, over time allowances, provident fund, retrenchment benefit, and medical benefit like ESI etc.
7) NCI-AIIMS management has no liability for the manpower deployed by the party, their health and safety. Firm will provide uniforms, aprons and other protective gear to ensure proper protection to all workers.
8) NCI AIIMS shall not provide any boarding/ lodging and transporting facilities to the staff deputed by the vendor permanently or temporarily.

XX Future Expansion

1) PTT system may be expended to other blocks/new buildings coming in the campus. Unit rates coated shall aply for such cost

XXI BILL OF QUANTITY (BOQ)

S.No	Name of item		Quantity	Total Quantity
1	Main Control System: including hardware, software package with license key for programming, real time monitoring & RFID pack for all carriers , stations & transfer System	1st Phase Qty	1	1
		2nd Phase Qty	0	
2	Line Transfer Zone Mechanism (minimum 8 lines)	1st Phase Qty	1	1
		2nd Phase Qty	0	
3	Side Channel Blower with speed control(VFD)	1st Phase Qty	6	8
		2nd Phase Qty	2	
5	Diverter 160 mm, 3-Way, Air Tight, Steel Housing. Provided with Optical Sensors.	1st Phase Qty	9	11
		2nd Phase Qty	2	
6	Front-load station : 160 mm , with OEM carrier rack , OEM soft-landing basket,	1st Phase Qty	21	51
		2nd Phase Qty	30	
7	Auto-Unload station : 160 mm with OEM carrier rack , OEM soft-landing basket,	1st Phase Qty	1	1
		2nd Phase Qty	0	
8	Arrival Signal Unit (Optic & Acoustic) with extension card	1st Phase Qty	2	4
		2nd Phase Qty	2	
9	Auto Unload Carrier 160 mm: Inload carrier minimum 300mm, compatible with the 160mm transfer line system and two programmable RFID tag for easy return of empty carrier.	1st Phase Qty	42	102
		2nd Phase Qty	60	

10	Carrier 160 mm: Inload 300mm , compatible with the 160mm transfer line system, size programmable RFID tag for easy return of empty carrier.	1st Phase Qty	21	51
		2nd Phase Qty	30	
11	Disposable gasket of Carrier (Spare)	1st Phase Qty	200	500
		2nd Phase Qty	300	
12	160mm Pipe clamp, Screw bolts, Cable Tie, Clips, 90 Deg Bends for Air Tube, Dowel, PVC Conduit for Cable, Baskets, Cushion, insert for carrier PU Foam including other misc. items	1st Phase Qty	lump sum	
		2nd Phase Qty		
13	Tubing material suitable for 160 mm system including 160mm Tube, Air tube, Bends, Endpiece, Sleeve, Special Adhesive Glue, Cleaner for PVC Tube, System cable & Mounting tools etc	1st Phase Qty	lump sum	
		2nd Phase Qty		

Item sl. no. 02

Integrated Track-Based Automation Enabled Core Clinical Laboratory

Description

1. The integrated track-based automation should be a high throughput automated sample handling system which processes, Biochemistry, Hematology, Immunoassay and coagulation sample tubes.
2. The track-based automation should be connected to the Laboratory Information System (LIS) of the Hospital and should perform tasks like sample login, positive identification of sample barcodes, centrifugation, decapping, aliquoting, recapping and storing of samples in ambient and refrigerated storage modules and facility to automatically retrieve samples for retesting etc.
3. System should have facility to check for and detect hemolysis, ictericity, turbidity, clot, bubble and inadequate sample volume
4. Maximum turnaround time ≤ 120 minutes for all the routine tests except for immunology tests.
5. System should raise appropriate alarm and divert the rejected sample to predefined racks.
6. IQ, OQ & PQ of all the equipment must be provided to the laboratory at the time of installation. The PQ must be done by the vendor after every maintenance cycle or at least once in a year.
7. The supplier must perform equipment calibration as required by latest ISO 15189 and NABL 112 or as specified by NABL from time to time and the records of such calibration must be made available to the laboratory, including certificate of calibration. The cost of the calibrators shall be borne by the vendor for the duration of the contract.
8. The total work should be on Turnkey basis as per the given specifications and all the necessary works should in the scope of bidder for smooth installation, commissioning, testing and functioning.

The track based automation should have following processing stages and modules:

1. Pre-analytical module: It should have the following:-

a. Input/Output Module
b. Inbuilt Centrifuge (refrigerated) module with at-least 2 centrifuges connected to the track.
c. Decapper module
d. Aliquoting module with Level Detector, Labeler and Aliquoter
e. Recapper module
f. Any other component required for smooth functioning of pre-analytical module

The Pre-analytical track system should be controlled by an efficient Line controller software for intelligent sample management to eliminate any chances of bottlenecks and delay in sample turnaround time (TAT).

2. Analytical Module: All Analytical modules should be automation ready (connected to Track based automation); multiple modules of each type should be able to be connect to the track. It should have the following analytical systems:

a. Biochemistry

b. Immunoassay
c. Hematology
d. Coagulation

3. Post Analytical (Storage)

a. Refrigeration and ambient temperature sample holding unit
b. Recapper module
c. Any other component required for smooth functioning of post-analytical module

4. Middleware/Software:

a. Software for quality control (QC)
b. Sample & reagent tracking
c. Auto-validation of results based on customization rules

Detailed Technical Specifications

1. Pre Analytical Modules

1.1 Input Module

1. It should have a throughput of a minimum of **600 tubes/hour.**
2. It should have STAT/Priority sample handling facility.
3. It should be able to detect tube type using color detection or any other standard method.
4. It should support intermixed **975 mm** and **1300 mm** sample tubes.
5. It should have the ability to allow samples that are pre-spun to bypass the centrifuge module(s) or ability to bypass any step.
6. It should have the ability to remap samples to allow re-introduction of new or previously processed sample tubes for routing to and from the storage.

1.2 Output Module

1. Output module is meant to put analyzed samples from the track automation out for the user.
2. It should have a throughput of a minimum of **600 tubes/hour.**
3. Rack mapping for sample tubes for off-line processing
4. Rack mapping for samples with error codes
5. It should support intermixed 975 mm and 1300 mm tubes

1.3 Centrifuge /Temperature Controlled Centrifuge

1. The track should be able to support at least **2** modules of integrated Centrifuges with automated loading, balancing and unloading of centrifuge racks.
2. Each centrifuge should be configurable for simultaneous handling of **975mm** & **1300 mm** tubes
3. It should support user configured variable time, speed, temperature (-4 degree to +40 degree) and batching of samples.
4. The setting up of centrifuge speed, configurability to prioritize STAT samples, time and batching of samples should be feasible for each centrifuge independently of the other.
5. Each unit of centrifuge should have centrifuged tube throughput of minimum **300 tubes/hour** with a centrifuge cycle time of 10 minutes.
6. Noise level at full speed should be less than 65 dB.
7. Should have facility to bypass the centrifuge for samples that do not require centrifugation.
8. Equipment must have USFDA or European CE with 4 digit notified body number.

1.4 Decapper

1. It should be an integrated Decapper and should be able to De-Cap sample tubes with rubber or screw cap or plastic lift off style caps.
2. Should be able to detect errors during the De-Capping process
3. Should support 975 and 1300 tubes simultaneously
4. Should have a minimum De-Capping capacity of **600 tubes/hour**

1.5 Aliquoter

1. There should be an integrated Aliquoting & Labeling module with a processing capacity of at least **150 primary tubes/hour.**
2. It should have Automatic level detection, Clot and Obstruction detection facility.
3. It should be flexible to facilitate user definable parameters for test volume, dead volume, gel height, aliquot priority, storage volume and aliquot label format.
4. It should have capability of aliquoting a minimum of four secondary tubes from a primary tube with ability to identify sample sufficiency as per the customized aliquot volume.
5. It should have facility for automatic routing of primary & secondary tubes.
6. The system should be able to track residual volume of samples for storage and retesting.
7. Should allow bypass of aliquoter module for samples that do not require aliquot creation

1.6 ReCapper: Integrated ReCapper with the following features:

1. Recap the uncapped tubes destined for storage and outlets
2. Recap primary and aliquot tubes
3. It should support 975 mm and 1300 mm tubes simultaneously.
4. It should have a minimum recapping capacity of **600 tubes/hour**

2. Analytical Module

Integrated, Random access system with consolidated work area for Clinical Chemistry, Immuno assay, Hematology & Coagulation. All analytical modules should be automation ready (connected to Track Based automation) & the individual module should be able to stand and run independently also.

2.1 Clinical Chemistry System

1. Two fully automated, random access, floor model biochemistry analyzers with a minimum throughput of **800 tests/hour.**
2. System should be able to use end point, kinetic, immunoturbidimetric assay and ion selective electrolyte assay with facility for therapeutic drug monitoring and drug of abuse
3. Must be able to handle bar coded samples
4. Must be able to handle various sample types including serum, plasma, CSF and body fluids
5. Must have facility of sample probe obstruction detection & correction
6. Must have clot detection facility to detect sample clots & provide error free results
7. Must be able to detect lipemic, icteric, hemolysed samples which can be configurable assay specific.
8. Must have level sensing capability for probes with alarms on insufficient samples
9. Must accommodate a minimum of 60 reagents on board. Test Menu of at least more than 100 assays must be available (including routine clinical chemistry, specific proteins, therapeutic drug monitoring, direct anti-globulin testing & ion selective electrolyte assays)
10. Must have on-board data storage of minimum of 100 assays
11. Must have at least 10 open channels to accommodate User Defined Reagents (third party reagents).
12. Must have reagent area cooling to offer long on-board stability of reagents

13. Must perform Real Time Reagent Tracking Management and provide data for the number of tests (utilized for calibration, QC, patient results & repeat testing), calibration expiry date, reagent lot expiry date & reagent lot numbers
14. Must facilitate inventory management by providing average consumption of reagents in specific time duration.
15. It must be able to load reagents even while the instrument is processing samples.
16. Capability for auto-validation of results as per customized rules.
17. Must have on-board quality control program (for internal QC) with the following features:
    a. Must facilitate user defined 'Auto QC' option (ability to order QC run automatically at pre-defined time intervals/test intervals) which must be assay dependent.
    b. Must have facility for in-built (Westguard rules, LJ plots & twin plots) and customizable QC rules to define QC acceptance and rejection criteria
    c. In case of violation of QC, the system should raise an alarm & automatically divert the samples to the other mirror analyzer for sample testing.
    d. Should be able to provide comprehensive QC data output for user defined time periods in graphical and tabular formats for evaluation and comparisons
18. Equipment must have USFDA or European CE with 4 digit notified body number.
19. Software Features
    1. Must have reagent inventory management with alerts on insufficient reagents
    2. Must facilitate bi-directional interfacing capability
    3. Must support remote monitoring & e-service facility
    4. Software must be user friendly with color coded alerts and messages
    5. Must have online user manual with instant help for the user
    6. Must support automated reflex testing (user defined – for specific assays)
    7. Must have data storage of minimum of 20,000 patient files

2.2 Immunoassay System

1. Two fully automated, random access, floor model immunoassay analyzers with Chemiluminescence technology integrated to track-based laboratory automation
2. Each of the immunoassay analyzers should have a minimum throughput of **170 tests/hour.**
3. It should support 975 mm and 1300 mm tubes simultaneously.
4. It must be able to handle bar coded samples.
5. System must be able to handle various sample types including serum, plasma, CSF & body fluids
6. Must be able to detect lipemic, icteric, hemolysed samples which can be configurable assay specific.
7. It must have level sensing capability for probes with alarms on insufficient samples
8. Must accommodate a minimum of 25 assays on board to be simultaneously assayed on a sample.
9. It must have reagent area cooling to offer long on-board stability of reagents.
10. Must perform Real Time Reagent Tracking Management and provide data for the number of tests (utilized for calibration, QC, patient results & repeat testing), calibration expiry date, reagent lot expiry date & reagent lot numbers
11. Must facilitate inventory management by providing average consumption of reagents in specific time duration.
12. Capability for auto-validation of results as per customized rules.
13. Must have on-board quality control program (for internal QC) with the following features:
    a. Must facilitate user defined 'Auto QC' option (ability to order QC run automatically at pre-defined time intervals/test intervals) which must be assay dependent.
    b. Must have facility for in-built (Westguard rules, LJ plots & twin plots) and customizable QC rules to define QC acceptance and rejection criteria.
    c. In case of violation of QC, the system should raise an alarm & automatically divert the samples to the other mirror analyzer for sample testing.

d. Should be able to provide comprehensive QC data output for user defined time periods in graphical and tabular formats for evaluation and comparisons

14. Equipment must have USFDA or European CE with 4 digit notified body number.

15. Software Features:
    a. Must have reagent inventory management with alerts on insufficient reagents
    b. Must facilitate bi-directional interfacing capability
    c. Must support remote monitoring & e-service facility
    d. Software must be user friendly with color coded alerts and messages
    e. Must have online user manual with instant help for the user
    f. Must support automated reflex testing (user defined – for specific assays)
    g. Must have data storage of minimum of 20,000 patient files

2.3 Hematology

1. Two fully automated Hematology analyzers integrated to track-based laboratory automation
2. Each analyzer should have a minimum throughput of **100 tests/hour**
3. The system should be based on flow cytometry or impedance-based or VCS principle with ability to perform CBC including but not limited to Hemoglobin, Total Leukocyte counts, Platelet counts, 5-part Differential leukocyte counts (DLC) and Reticulocyte counts.
4. It should have capability to measure & analyze whole blood, CSF and body fluids.
5. Following assay modes should be available on the system:
    a. CBC only
    b. CBC+ DLC+nRBC
    c. CBC+DLC+nRBC+Reticulocyte count
6. An **automated slide maker, stainer and labeler** connected with the hematology analyzers to prepare slides based on customized rules should be provided.
7. Should be able to differentiate between smaller RBC's and giant platelets
8. User defined rules & flagging limits for age, gender, geographical location and other parameters as and when required should be available.
9. Intra sample variation (CV) on repeat runs should be less than 5%.
10. Capability for auto-validation of results as per customized rules.

11. Must have on-board quality control program (for internal QC) with the following features:
    a. Must facilitate user defined 'Auto QC' option (ability to order QC run automatically at pre-defined time intervals/test intervals) which must be assay dependent.
    b. Must have facility for in-built (Westguard rules, LJ plots & twin plots) and customizable QC rules to define QC acceptance and rejection criteria
    c. In case of violation of QC, the system should raise an alarm & automatically divert the samples to the other mirror analyzer for sample testing.
    d. Should be able to provide comprehensive QC data output for user defined time periods in graphical and tabular formats for evaluation and comparisons

12. Equipment must have USFDA or European CE with 4 digit notified body number.

13. Software Features:
    a. Must have reagent inventory management with alerts on insufficient reagents
    b. Must facilitate bi-directional interfacing capability
    c. Must support remote monitoring & e-service facility
    d. Software must be user friendly with color coded alerts and messages
    e. Must have online user manual with instant help for the user
    f. Must support automated reflex testing (user defined – for specific assays)
    g. Must have data storage of minimum of 20,000 patient files

2.4 Coagulation

1. Two fully automatic coagulation analyzers integrated to track-based laboratory automation.
2. Each analyzer should have a minimum throughput of **300 tests/hour** when doing PT and APTT simultaneously.
3. It should be able to run clotting, chromogenic and immunological assays in random access mode.
4. Fully user defined and dedicated positions for calibrators, controls and STAT.
5. System should be able to detect hemolysis, icterus, and lipemia in the samples
6. It must be able to handle bar coded samples.
7. Must accommodate a minimum of 50 reagents on board. Test Menu of at least more than 20 assays must be available
8. Must have on-board data storage of minimum of 20 assays Must have reagent area cooling to offer long on-board stability of reagents
9. Must have at least 5 positions to accommodate STAT samples
10. Capability for auto-validation of results as per customized rules
11. It must perform Real Time Reagent Tracking Management and provide data for the number of tests (utilized for calibration, QC, patient results & repeat testing), calibration expiry date, reagent lot expiry date & reagent lot numbers
12. Must have on-board quality control program (for internal QC) with the following features:
    a. Must facilitate user defined 'Auto QC' option (ability to order QC run automatically at pre-defined time intervals/test intervals) which must be assay dependent.
    b. Must have facility for in-built (Westguard rules, LJ plots & twin plots) and customizable QC rules to define QC acceptance and rejection criteria
    c. In case of violation of QC, the system should raise an alarm & automatically divert the samples to the other mirror analyzer for sample testing.
    d. Should be able to provide comprehensive QC data output for user defined time periods in graphical and tabular formats for evaluation and comparisons

14. Equipment must have USFDA or European CE with 4 digit notified body number.
15. Software Features
    a. Must have reagent inventory management with alerts on insufficient reagents
    b. Must facilitate bi-directional interfacing capability
    c. Must support remote monitoring & e-service facility
    d. Software must be user friendly with color coded alerts and messages
    e. Must have online user manual with instant help for the user
    f. Must support automated reflex testing, re-dilution and repeat testing (user defined – for specific assays)
    g. Must have data storage of minimum of 20,000 patient files

3. Post Analytical Module

1. There should be an integrated Refrigerated and Ambient temperature storage unit for storage of samples & automatic retrieval to the track for retesting or discard.
2. The storage profiles should be programmable according to the test with automatic and configurable discard function for tube disposal directly to containers with biohazard covers and also to a standby container to support tube disposal without stoppage.
3. A minimum storage of 10,000 tubes (5000 refrigerated+5000 ambient) should be possible in the post analytical module.
4. An integrated ReCapper module with the following features should be available at the post-analytical stage:
    a. Recap the uncapped tubes destined for storage and outlets
    b. It should support 975 mm and 1300 mm tubes simultaneously.
    c. It should have a minimum recapping capacity of 600 tubes/hour

4. Middleware/software

The software supporting the track based automation should have following features and support the following functions:

1. There should be a single command system to monitor all the analyzers attached on the track for sampling status, sample location, QC status, additional testing, sample storage and disposal.
2. STAT sample handling by priority in both pre-analytical and analytical modules without interrupting the routine run
3. Automatic balancing of workload & number of sample tubes, reagent and calibration status, sample programming information and dynamic instrument test menu and status etc.
4. Automatic handling of sample and non-sample based errors
5. Support patient demographic information
6. Automatic communication of sample test status to properly handle storage or rerun of the sample
7. Automatic retrieval of samples for re-run, reflex and add-on testing
8. Automatic validation of test results
9. Automatic recognition of errors in any of the modules connected and notification to the user
10. Provide alerts to control station & monitoring screens
11. Allow user to search sample information via Sample or Sample History
12. Provide password protected system setup information to prevent usage by unauthorized user
13. Provide real time information about status of samples & turn-around time
14. Manual rerun – ability to accommodate request for a sample tube previously run on the track
15. Sample Processing Capabilities such as Sample identification, Aliquot creation, Test scheduling
16. Automatic routing of samples for testing based on tests ordered, test menu of the available connected analyzers, load balancing across analyzers with common test menus to optimize throughput and best fit sort destinations
17. Ability to accommodate user defined Reference ranges and Critical ranges for tests
18. There should be automatic sample tracking including sample arrival (date/time recording), sample location while on the automation line and time of sample removal from the system.
19. System track should permit future upgrades to host more analyzers to cover future increase in workload
20. System should be provided with all the necessary controlling devices and monitoring screens
21. Integration should be based on one of the standards HL7 or ASTM depending on the software/middleware provided

Future expansion: Vendor has to design the workflow with a future expansion of at least an additional of one unit including analyzers and other instruments attached to the track such as input-output modules, Recapper, Decapper, storage units etc.

L1 Calculation shall be based on: Cost of the equipment specified in BOQ + Reagents, additives and QC cost as per Annexure "A" and "B" + CAMC for 6th-10th year + all the Additional requirements listed in the tender including UPS, RO Water system, Manpower and all the turnkey works charges.

In addition, the bidder has to provide complete price list of reagents (including but not limited to buffers, dilutors, additives, semi-consumables, plastic ware, QC material) for all the tests other than those listed in Annexure "A" that can be possibly run on the analyzers quoted by them.

The prices of all the reagents and QC material will be fixed for the period of validity of the contract.

Additional Requirements:

1. All hardware & software required (including drivers, interfaces etc.) to be supplied.
2. All analytical modules and centrifuges must be available to operate & process samples in case of non-functioning of track system.
3. System should avoid cross contamination in biochemistry & immunoassay parameters.
4. **R.O. water system**: **If RO is required in system,** suitable R.O. water system to be provided and its installation & daily maintenance to be taken care of by the vendor during contract period. RO should of Eureka Forbes/Ion Exchange / Millipore / Kent / Aquacare / Rions make.
5. **UPS**: Suitable UPS for the entire system (100% back up) to be provided and its installation & maintenance including batteries to be taken care of by the vendor during the contract period.

Manpower Requirement:

1. The vendor will ensure 24x7 physical presence of required number of operator/technician/engineer at the core lab facility at NCI Jhajjar for the following activities:-
    a. Routine maintenance (Daily, weekly, monthly)
    b. Internal QC and calibrations
    c. Reagent/ additive/QC any other chemical replacement and refilling in the core lab system.
    d. Middleware and log handling/operations for all tasks.
    e. Any other activity linked to operations / maintenance for smooth functioning of core lab.
2. Medical examination of staff: The bidder shall employ only those persons in the lab who are found to be medically fit. Hospital reserves its rights to examine any of the employees for medical fitness without prior notice. Expenses, if any incurred by the NCI-AIIMS on medical examination of such employees, shall be borne and paid by the bidder.
3. Wages and insurance: The vendor shall comply with the laws applicable to employees working in the laboratory regarding working hours, minimum wages, safety, cleanliness, leave, over time allowances, provident fund, retrenchment benefit, and medical benefit like ESI etc.
4. NCI-AIIMS management has no liability for the manpower deployed by the party, their health and safety. Firm will provide uniforms, aprons and other protective gear to ensure proper protection to all workers.
5. NCI AIIMS shall not provide any boarding/ lodging and transporting facilities to the staff deputed by the vendor permanently or temporarily.

Turnkey Work

1. Bidders are strongly advised to visit the site and carry out the assessment of works before bidding.
2. Total area dedicated for core lab is approx. **4000 sqft.**
3. All track devices, wiring ducts, water supply, drainage and network cables etc. should be concealed and aesthetically look good.
4. All electrical work required for commissioning and installation of equipment like cable wire, electrical outlets, switches, cable trenches, railings, etc. should be fire proof, of reputed make, certified for electrical safety as per international standard. All work has to be done by the bidder including Electrical Isolators, MCBs, Electrical boards, Switches, Sockets and any other thing which are required for smooth running of Equipment.

5. Institute will provide one point electrical, drain and water supply at lab and further distribution within the Lab area will be responsibility of bidder as per approved layout.
6. Vendor has to provide proper drainage ports/traps for prevention of contamination and bacterial growth.
7. Carry out the complete partitioning/separation of the work site with controlled access.
8. All water pipes distribution must run in walls & above false ceiling.
9. Provide all necessary safety equipment to site as per international guide line.
10. Ensure that signage are posted all around (Work permit, hot work permit, Site inspection check list, etc).
11. Carry out the complete flooring inclusive of all materials.
12. Carry out any other finishes required in the area of work such as wall protectors, corner guards, etc.
13. Bidder has to specify its electrical load including equipment, air-conditioning, peripherals load, etc for core lab.
14. Bidder has to specify its water & drainage requirements including equipment, peripherals load, etc for core lab.
15. Supply, install, testing & commission the distribution box, circuit breaker, fire sensors & extinguishers and cabling from the nearest mains power supply. Rerouting all electrical, fire safety, telephone, security & network cables as per chosen design.
16. Supply, install, testing & commission the water supply lines to the water system including pipes, joints connections, tees and valves to supply water to purification equipment. Rerouting of all air / water / drain pipes & ports as per chosen design.
17. Carry out all core lab project area renovation, maintenance and preparation, including, doors, furniture, windows, tiles, ceilings, lights, painting etc.
18. All water pipes distribution must run in walls & above false ceiling. No underground piping except for drainage is accepted.

BOQ

Sr. no	Equipment name	Total Qty
1	Input module	1
2	Output module	1
3	Centrifuge	2
4	Decapper	1
5	Recapper	2
6	Aliquoter	1
7	Fully Automatic Clinical Chemistry analyser	2
8	Fully Automatic Immunoassay analyser	2
9	Haematology analyser	2
10	Coagulation analyser	2
11	Ambient and refrigerated storage unit one each	1

ANNEXURE A

S. No	List of Parameters	No. of tests to be used for L1 calculation	Total Cost of Tests	Total Price of QC per year
1	Glucose	150000		
2	Electrolytes	150000		
3	Urea	150000		
4	Creatinine	150000		
5	Uric Acid	30000		
6	Cholestrol	150000		
7	Triglycerides	150000		
8	Direct LDL	150000		
9	HDL	150000		
10	Calcium	150000		
11	Phosphorus	30000		
12	Magnesium	30000		
13	Total Bilirubin	150000		
14	Bilirubin Conjugated	150000		
15	ALT	150000		
16	AST	150000		
17	Alkaline phosphotase	150000		
18	Gamma GT	150000		
19	Amylase	110000		
20	LDH	150000		
21	CK NAC	10000		
22	Acid Phosphatase	15000		
23	Urinary Proteins	150000		
24	Cystatin C	15000		
25	Lipoprotein A	10000		
26	Homocysteine	15000		
27	B12	15000		
28	Folate	15000		
29	NT Pro BNP	15000		
30	Ig G	30000		
31	Ig A	30000		
32	Ig M	30000		
33	Ig E	30000		
34	Ferritin	30000		
35	Haptoglobin	30000		
36	Transferrin	30000		
37	UIBC / TIBC	5000		
38	Total PSA	10000		
39	Beta 2 Microglobulin	15000		
40	CA 125	15000		
41	TSH	15000		
42	FSH	15000		
43	LH	10000		
44	Prolactin	10000		
45	PTH	10000		
46	Cortisol	10000		
47	Testosterone	10000		
48	Procalcitonin	15000		
49	Free T3	15000		
50	Free T4	15000		
51	Thyroglobulin	15000		
52	DHEA-S	10000		
53	Growth Hormone	10000		

54	SHBG	5000		
55	Anti-Mullerian hormone	5000		
56	ACTH	5000		
57	Non Specific enolase	5000		
58	Free PSA	5000		
59	β CrossLaps	5000		
60	N-MID Osteocalcin	5000		
61	P1 NP	5000		
62	Troponin	5000		
63	C-peptide	5000		
64	Insulin	10000		
65	IL-6	5000		
66	Fructosamine	5000		
67	Myoglobin	5000		
68	Estradiol	10000		
69	Progesterone	5000		
70	AFP	10000		
71	CEA	10000		
72	25 (OH) Vitamin D Total	15000		
73	EPO	15000		
74	Vitamin B12	15000		
75	CK-MB	6000		
76	HBs Ag	15000		
77	HIV Combo	30000		
78	CMV IgM	10000		
79	Albumin	30000		
80	CBC only mode	150000		
81	CBC+DLC+nRBC mode	150000		
82	CBC+DLC+nRBC+ Reticulocyte mode	50000		
83	Anti Xa assay	5000		
84	APTT	20000		
85	D-Dimer	10000		
86	Fibrin degradation products	10000		
87	Fibrinogen	10000		
88	Lupus anticoagulant	10000		
89	Prothrombin time	20,000		
90	Thrombin time	10000		
91	Protein C	5000		
92	Protein S	5000		
93	Antithrombin assay	5000		
94	Total protein	150000		
95	Lipase	5000		
96	C3	5000		
97	C4	5000		
98	CRP	10000		
99	RF	5000		
100	Valproic acid	5000		
101	Cyclosporin	10000		
102	AFP	10000		
103	CA 19-9	10000		
104	Calcitonin	3000		
105	hCG	10000		
106	Opiates	5000		
107	Iron	5000		
108	Total protein (CSF/Urine)	5000		

ANNEXURE B

S. No	List of Parameters	No. of tests to be used for L1 calculation	Reagent Pack Details						Additives						Total Cost of Tests (I+P)	QC Pack Details					Total Price of QC per year
			Pack Catalogue No.	No. of tests/pack	Pack size	Cost per Reagent Pack	Total No. of Reagent packs to be used as per No. of tests in column"B"	Total Cost of reagent	Pack Catalogue No.	No. of tests/pack	pack size	Cost per Pack	Total No. of packs to be used as per No. of tests in column"B"	Total Cost of additives		Pack Catalogue No.	pack size	2 level/ 3 level	Cost per QC Pack	Total No. of QC packs to be used/year if run twice a day	
1	Glucose	150000																			
2	Electrolytes	150000																			
3	Urea	150000																			
4	Creatinine	150000																			
5	Uric Acid	30000																			
6	Cholestrol	150000																			
7	Triglycerides	150000																			
8	Direct LDL	150000																			
9	HDL	150000																			
10	Calcium	150000																			
11	Phosphorus	30000																			
12	Magnesium	30000																			
13	Total Bilirubin	150000																			
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17	Alkaline phosphotase	150000																			
18	Gamma GT	150000																			
19	Amylase	110000																			
20	LDH	150000																			
21	CK NAC	10000																			
22	Acid Phosphatase	15000																			

23	Urinary Proteins	150000																			
24	Cystatin C	15000																			
25	Lipoprotein A	10000																			
26	Homocysteine	15000																			
27	B12	15000																			
28	Folate	15000																			
29	NT Pro BNP	15000																			
30	Ig G	30000																			
31	Ig A	30000																			
32	Ig M	30000																			
33	Ig E	30000																			
34	Ferritin	30000																			
35	Haptoglobin	30000																			
36	Transferrin	30000																			
37	UIBC / TIBC	5000																			
38	Total PSA	10000																			
39	Beta 2 Microglobulin	15000																			
40	CA 125	15000																			
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69	Progesterone	5000																			
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71	CEA	10000																			
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73	EPO	15000																			
74	Vitamin B12	15000																			
75	CK-MB	6000																			
76	HBs Ag	15000																			
77	HIV Combo	30000																			
78	CMV IgM	10000																			
79	Albumin	30000																			
80	CBC only mode	150000																			
81	CBC+DLC+nRBC mode	150000																			
82	CBC+DLC+nRBC+ Reticulocyte mode	50000																			
83	Anti Xa assay	5000																			
84	APTT	20000																			
85	D-Dimer	10000																			
86	Fibrin degradation products	10000																			

87	Fibrinogen	10000																			
88	Lupus anticoagulant	10000																			
89	Prothrombin time	20,000																			
90	Thrombin time	10000																			
91	Protein C	5000																			
92	Protein S	5000																			
93	Antithrombin assay	5000																			
94	Total protein	150000																			
95	Lipase	5000																			
96	C3	5000																			
97	C4	5000																			
98	CRP	10000																			
99	RF	5000																			
100	Valproic acid	5000																			
101	Cyclosporin	10000																			
102	AFP	10000																			
103	CA 19-9	10000																			
104	Calcitonin	3000																			
105	hCG	10000																			
106	Opiates	5000																			
107	Iron	5000																			
108	Total protein (CSF/Urine)	5000																			

Item sl. no. 03

Centralised Medical Gas Pipeline System

The system comprises of:

1. Secondary Oxygen Manifold and Emergency oxygen manifold with automatic control panels
2. Nitrous Oxide Manifold and Emergency NO2 Manifold with automatic control panel
3. CO2 Manifold & Emergency CO2 Manifold with automatic control Panel
4. Medical Air Supply System (4 Bar & 7 Bar) complete.
5. Medical Vacuum (suction) Supply System Complete.
6. Distribution Piping Complete with Accessories.
7. Area Valve Service System.
8. AGSS system Complete
9. Digital Alarm Systems (Master & Area)
10. Gas Outlets with Probes
11. Bed Head Panels
12. Other associated & Optional works
13. Running & Operation of MGPS

RESPONSIBILITY OF BIDDER

1. Bidder shall be responsible for complete design, supply, installation, testing and commissioning including Civil Modification works, demolition and construction as applicable .The bidders are required to survey the site before furnishing the quotations.
2. Bidder shall execute all required civil, electrical, plumbing, lighting, fire safety, exhaust systems and other works as maybe required for complete installation and trouble-free functioning as a part of the 'Civil Modification'.
3. Hospital will provide one point electrical supply with isolator in the plant. The wiring, peripheral lighting, fans, exhaust etc and for their equipment have to be done by the bidder.
4. Control panel for Vacuum system and Air plant system has to be supplied by the bidder.
5. Bidder will be responsible for trenching/Poling or other associated work related to installation and commissioning of complete MGPS system(If required).
6. The MGPS bidder has to terminate/interconnect all the medical gas lines upto/to the OT/MOT, Diagnostic Block, Animal Block, Admin Block, Basic Sciences Block, CSSD, Hospice & Other required areas.
7. Medical gas pipe line inside the minor operation theatre has to be done by the MGPS bidder. MGPS bidder shall cooperate with the MOT/OT bidder for associated works.
8. The bidder shall be responsible for the complete works including the submission of working drawings, and isometric views, detailed work schedule and materials. Bidder shall be responsible for design, supply, installation, testing and commissioning of medical gas supply system in coordination with NCI-AIIMS authorities & HLL/HITES/HSCC.
9. Bidder shall be responsible for free maintenance of all component of Gas pipeline system during warranty period including all filters & consumables.
10. Bidder should provide factory test certificates for the materials used. Bidder should supply complete set of part manuals, service manuals and user manuals for all the systems and subsystems supplied. Final electrical safety test, system test, leakage

and calibration should be done by authorized persons using calibrated test equipment as per standards.

11. If institute wants to verify the used material for MGPS Installation, Institute may go for 3rd Party Inspection and the cost will be borne by the bidder.
12. The Medical Gas Pipe Line System must follow Single Standard any one only from: NFPA 99c/HTM 02-01/ ISO 7396-1/DIN/EN. For AGSS Ventury type is not acceptable.
13. All Gas Outlets in MOT/OT (i.e. O2, N2O, MA4, MA7, Vacuum, CO2, etc.) will come with OT Pendants (Under MOT/OT Tender) Bidder has to provide pipe lines upto each MOTs/OTs.
14. Bidder shall co-ordinate with NCI-AIIMS Project Office for their final Gas Outlets requirement per bed and should incorporate the same in drawing.
15. The final Payment will be made on the actual consumption of the BOQ Items and ranking will be done with tendered BOQ.
16. Demonstration may be asked for individual BOQ items before supply to the institute.
17. **The following systems/Items must be from the same Manufacturer and undertaking/declaration must be submitted for the same from manufacturer with supporting documents** -
    a) **Control Panels & Manifold for O2, N2O & CO2**
    b) **Medical Air Plant**
    c) **Medical Vacuum Plant**
    d) **AGSS Plant**
    e) **Area & Master Alarm**
    f) **All types Outlets**
18. **Bidder must have a satisfactory installation of complete MGPS as per** HTM 02-01/NFPA 99C/DIN/EN/ISO-7396-1 standards **and demo may be taken for the same.**

Scope and Technical Specification:

1. Oxygen Supply System

1.1 Fully Automatic Oxygen Control Panel:

Automatic control panel should be constructed in accordance with the requirement of international standards. The fully automatic oxygen control panel should comply with HTM 02-01/NFPA 99C/DIN/EN/ISO-7396-1 standards. **It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.**

The manifold assembly should provide two stages of pressure regulation. A single stage primary regulator, one for each cylinder bank should be used to initially reduce cylinder pressure and two single stage pressure regulators should be provided in the control cabinet for final delivery pressure regulation. One delivery pressure regulator in service and one should be ready for service in a standby mode. The Manifold control panel should be digital, fully automatic type and switches from “Bank in Use” to “Reserve bank” without fluctuation in delivery supply line pressure. Changeover should be performed by electrically/pneumatically operated valves contained in the control cabinet. In the event of an electrical power failure the valves should automatically open to provide an uninterrupted gas flow. It should be 100% automatic and should not require manual adjustment.

Instruction for changing the cylinders should be clearly identified on the front of the control panel.

All functional components should be enclosed in corrosion resistant robust material.

All components inside the Control Panel like Pressure Regulators, piping and control switching equipment should be cleaned for Oxygen Service and installed inside the cabinet to minimize tampering with the regulators or switch settings.

The Control Panel shall include two pressure relief valves, one high pressure approx.200psi and one low pressure approx.75 psi.

The heavy duty control panel should be provided with a **flow capacity of 2000 or more** LPM at 50 to 60 psi.

The Automatic Control Panel should be installed in such a way to meet the peak flow requirement of the Hospital/Institute (If the requirement is more than flow capacity requirement automatic control panel the bidders has to supply additional numbers of Automatic Control Panel with zoning and design the system in such a way to meet the flow requirement of respective institute)

Control panel should have Alarm reset switch/Mute /acknowledgement switch to control and monitor the alarm indications by the operator.

1.2 Oxygen Manifold Supply System (without Cylinders)

The size of Manifolds should be **(2x20size)** as mentioned in BOQ, it shall be compatible with Class-D type bulk cylinders.

Manifold shall consist of two high pressure header bar assemblies to facilitate connection of primary and secondary cylinder supplies. Each header bar shall be provided with respective numbers of cylinder pigtail connections to suit cylinder valves as per IS 3224/ BS/ ASME incorporating a check valve at the header connection.

The high-pressure header bar shall be designed in such a manner that it can be extended to facilitate additional cylinder connections. Each header bar assembly shall be provided with a high pressure shut off valve. Oxygen Manifold should consist of 2 rows of respective numbers of class D-type bulk oxygen cylinders. The manifold should be hydraulically tested to 3500 psig. The manifold should be so designed that it shall suit easy cylinder changing and positioning. The system should have non – return valves for easy changing of cylinders without closing the bank. The cylinder should be placed with the help of cylinder brackets and fixing chains which should be galvanized.

It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

1.3 Emergency Oxygen Manifold (without Cylinders)

The size of Manifolds should be (2x10 size) as mentioned in BOQ and it shall be compatible with Class-D type bulk cylinders.

Manifold shall consist of two high pressure header bar assemblies to facilitate connection of respective numbers of primary and secondary cylinder supplies. Each header bar shall be provided with respective numbers of cylinder pigtail connections to suit cylinder valves as per IS.3224/ BS/ ASME incorporating a check valve at the header connection. The high-pressure header bar shall be designed in such a manner that it can be extended to facilitate additional cylinder connections. Each header bar assembly shall be provided with a high pressure shut off valve.

Oxygen Manifold should consist of 2 rows of respective numbers of class D-type bulk oxygen cylinders. The manifold should be hydraulically tested to 3500 psig. The manifold should be so designed that it shall suit easy cylinder changing and positioning. The system should have non – return valves for easy changing of cylinders

without closing the bank. The cylinder should be placed with the help of cylinder brackets and fixing chains which should be galvanized.

It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

1.4 Oxygen Flow meter with Humidifier Bottle

Back Pressure Compensated flow meter for accurate gas flow measurement with following features:

A) Control within a range of 0-15 LPM.

B) It should meet strict precision and durability standard.

C) The flow meter body should be made of brass chrome plated materials.

D) The flow tube and shroud components should be made of clear, impact resistant polycarbonate.

E) Flow tube should have large and expanded 0-15 LPM range for improved readability at low flows.

F) Inlet filter of stainless steel wire mesh to prevent entry of foreign particles

G) The humidifier bottle is made of unbreakable & reusable polycarbonate /polysulfone material autoclavable at 121 degree centigrade.

H) Humidifier Bottle should be covered under warranty & CMC.

I) It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

2. NITROUS OXIDE SYSTEM

2.1 Fully Automatic Nitrous Oxide Control Panel

The fully automatic N2O control panel should comply with HTM 02-01/ NFPA 99 C/ EN /DIN /ISO 7396-1 STANDARD. **It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.**

The manifold assembly should provide two stages of pressure regulation. A single stage primary regulator, one for each cylinder bank should be used to initially reduce cylinder pressure and two single stage pressure regulators should be provided in the control cabinet for final delivery pressure regulation. One delivery pressure regulator in service and one should be ready for service in a Standby mode. The Manifold control panel should be digital, fully automatic type and switches from “Bank in Use” to “Reserve bank “ without fluctuation in delivery supply line pressure. Changeover should be performed by electrically/pneumatically operated valves contained in the control cabinet. In the event of an electrical power failure the valves should automatically open to provide an uninterrupted gas flow. The manifold should not require any manual resetting or adjustments after the replacements of the depleted cylinders.

All functional components should be enclosed on fire resistant, robust synthetic polymer/SS.

The Control Panel shall include two pressure relief valves, one high pressure approx.200psi and one low pressure approx.75 psi.

The control panel should also have heaters to prevent ice formation on the regulators at high flow rates.

The Control Panel should be made to provide Heavy Duty and have a flow capacity **of 500 LPM or more** at 50 to 60 psi.

The Automatic Control Panel should be installed in such a way to meet the peak flow requirement of the Hospital/Institute (If the requirement is more than flow capacity requirement automatic control panel the bidders has to supply 02 numbers of Automatic Control Panel and design the system in such a way to meet the flow requirement of respective institute)

Control panel should have Alarm reset switch/Mute /acknowledgement switch to control and monitor the alarm indications by the operator.

2.2 Nitrous Oxide Manifold (Without Cylinders)

The size of Manifolds should be (2x10 size) as mentioned in BOQ and it shall be compatible with Class-D type bulk cylinders.

Manifold shall consist of two high-pressure header bar assemblies to facilitate connection of primary and secondary cylinder supplies. Each header bar shall be provided with respective number of cylinder pigtail connections to suit cylinder valves as perIS.3224/ BS/ ASME incorporating a check valve at the header connection. The high-pressure header bar shall be designed in such a manner that it can be extended to facilitate additional cylinder connections. Each header bar assembly shall be provided with a high pressure shut off valve. The manifold should be hydraulically tested to 3500 psig. The manifold should be so designed that it shall suit easy cylinder changing and positioning. The cylinder should be locked with the help of cylinder brackets and fixing chains which should be galvanized.

It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

2.3 Emergency N2O Manifold (Without Cylinders)

The size of Manifolds should be (2x5 size) as mentioned in BOQ and it shall be compatible with Class-D type bulk cylinders.

Manifold shall consist of two high-pressure header bar assemblies to facilitate connection of primary and secondary cylinder supplies. Each header bar shall be provided with respective numbers of cylinder pigtail connections to suit cylinder valves as per IS 3224/ BS/ ASME incorporating a check valve at the header connection. The high-pressure header bar shall be designed in such a manner that it can be extended to facilitate additional cylinder connections. Each header bar assembly shall be provided with a high pressure shut off valve. Nitrous oxide manifold should consist of 2 rows of respective numbers of cylinders.

The manifold should be hydraulically tested to 3500 psig. The manifold should be so designed that it shall suit easy cylinder changing and positioning. The system should have non – return valves for easy changing of cylinders without closing the bank. The cylinder should be placed with the help of cylinder brackets and fixing chains which should be galvanized.

It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

3. CO2 MANIFOLD SYSTEM WITH AUTOMATIC CONTROL PANEL (Without Cylinder)

The CO2 System should consist of (2x6 size) Primary Manifold & (2x2 size) Emergency Manifold & Automatic Control Panel as mentioned in BOQ and Specification given below.

Cylinder shall be compatible with Class-D type bulk cylinders and cylinder valves as per IS 3224/ BS/ ASME.

The Modular Manifold supply system shall provide carbon dioxide piped distribution system.

The Modular Manifold system should be in such a way that it increases flexibility and allows easy enlargement of the manifold capacity in case of future expansion. Should be complies with HTM 02-01/ NFPA 99 C/EN/DIN/ ISO 7396-1 standard.

Fully Automatic Control panel for CO2 System

The Manifold Control System should supply any type of medical gas from both left and right hand manifold banks. Operation and performance criteria should fully satisfy the requirements of HTM 02-01/ NFPA 99 C/EN/DIN/ ISO 7396-1 standard. The fully automatic CO2 control panel should comply with the standard. Manifold & Control panels should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

The Manifold Control System shall supply on uninterrupted flow of 500 LPM or more to a 400 k Pa (4 bar) distribution system. Either the left or right hand manifold bank may be designated "Duty" and should automatically changeover to supply the distribution system from the "Standby" bank when pressure in the "Duty" bank falls to a predetermined level.

4. MEDICAL AND SURGICAL AIR SYSTEM (Package Unit)

Air-cooled **Oil-Less** compressors for continuous duty application with highest output of compressed air, low power consumption and very low vibration resulting in low noise level.

The medical air plant shall fully comply with the requirements of the HTM 02-01/ NFPA 99 C/EN/DIN/ISO 7396-1. It should be European CE with 4digit notified body number/USFDA/ UL listed. (In-case of NFPA 99c the control panel of plant must be UL Listed and Undertaking from manufacturer for this tender reference must be submitted for using the same control panel in the system offered)

4.1 Air Compressor Modules

It should be **Oil-Less Screw Compressors /Scroll Compressors** to produces the plant output of **plant having a capacity of minimum 7500 LPM as Primary & minimum 2000 LPM as standby or total minimum Plant Capacity of 10000 LPM.**

Medical quality air shall be delivered at a nominal pressure of 400 kPa (4 bar) and 700 kPa(7 bar) gauge for supply of the hospital medical air and surgical air.

Compressor plant should be designed in such a way that compressors will switch on in a sequential manner as per flow demand.

The compressors should be standalone ones with independent power supply. Each Compressor should be suitable for both continuous and frequent start/stop operation at a nominal plant pressure of 10bar or more.

The duty compressors shall be automatically rotated by the plant control system to ensure even wear. Compressors shall be supplied and installed in such a way so that after-cooler with a quiet running fan to maximize cooling and efficiency. Each desiccant dryer shall be provided with a dew point sensing switch that shall provide an alarm on the plant control panel and central hospital alarm system when the water concentration in the delivered air rises above the limit. Duplex desiccant dryer and filtration modules shall be provided with three or more individual stages of filtration as follows:

Stage 1: Coalescing filter upstream of the desiccant dryer for removing liquid water particles down to 1micron.

Stage 2: Particulate filter after the desiccant dryer for dust protection and removing particles down to 1 micron.

Stage 3: Bacteria filter for removing particles down to 0.01 micron.

Purity should be tested as per the **American Pharmacopeia/European Pharmacopeia** standard.

The plant control and power management system shall monitor the safe operation of the plant, providing signal into the alarm system as per the requirements of the standard.

Pressure Reducing Station: for 4 bar and 7 bar should fully comply and meet with the requirements of the standard. Simplex pressure reducing station shall comprise as in-line pressure regulator, with downstream pressure gauge. Isolation valves and pressure release valves should be provided as per the standard. Duplex pressure reducing station to have two branches, connected to the MGPS in parallel in order to allow maintenance on the components of one branch, while the gas flow is maintained in the other branch. Ball Valves - Full bore which operate from fully open to fully closed position with a quarter turn of the handle. Complete pressure reducing station with base plate mounted for ease of installation.

Padlocks available to allow locking of the valves in both open and closed positions and must have easy to read pressure gauges. Base plate mounted and supplied with copper stub pipes for ease of installation using inert jointing procedures.

The compressor system should have-

1. Intake filter Check Valve Delivery pipe
2. Mounting on air tank along with all standard fittings viz. safety valve, pressure gauge, delivery valve, drain valve etc.
3. Bidder shall provide all electric control panels, starters etc required for proper functioning of motor.
4. Desiccant Air Dryer – 2 nos.(Duplex)
5. 2-Stage or more Breathing Air Filters – 2 sets(Duplex)
6. Outlet pressures for drills/equipment and ventilators should be a minimum of 7 bar and 4 bar respectively.
7. Duplex pressure reducing station

The compressor should be heavy duty, reliable with long MTBF. Each compressor cylinder is to be protected by a temperature switch, which will stop the drive motor and provide an alarm signal in the event of abnormal discharge air temperature. Each compressor module should include an inline filter with particle retention of 10 microns, inlet isolation valve, discharge isolation valve, and pressure relief valve. The capacity should be capable to take care of total load of all the outlets.

4.2 Vertical Air Receiver

Total air receiver capacity shall be at least 50% of the **primary plant capacity** in 1 minute in terms of free air delivered at normal working pressure. Each air receiver shall be protected by a pressure relief valve, a fusible plug and include a pressure gauge with isolating valve and a drain cock.

The corrosion resistant coated receiver is to be equipped with tested safety pressure relief valve, sight glass pressure gauge, automatic drain, three-valve by-pass and source isolation valve. Should be fabricated as per ISO/ASME/BS

4.3 Air Treatment Module

The air treatment module should include dual dryers, dual filtration system and a dew point transmitter with local audible and visual signals and dry contacts for remote monitoring. The components should be mounted on a common base with interconnecting copper/brass piping and upstream and downstream isolation valves. The isolation valves must allow either set of components to be serviced without shutting down the system.

Dryers should be of heatless desiccant design and sized to provide for the peak calculated demand. The desiccant dryers should be equipped with dew point dependent switching feature to minimize the need for purge air.

The dual filtration system should remove liquid and particulate matter, consisting of 0.5micron coalescing filters with differential pressure indicators and automatic drain, airline pressure regulators with gauges, final pressure relief valve, and sampling valve.

Each bank should consist of three stage treatment. Digital dew point monitor is to be supplied with alarm contacts as per requirement of the standard.

4.4 System Controls

The "Continuous on Demand" feature will stop the operation of the motors during periods of low or no demand. The control include individual self-protected combination motor controls with short circuit protection, single phase and thermal overload protection, individual control circuit transformers with fuseless primary and secondary protection, pressure sensors, temperature switches with reset buttons, and an electronic controller to automatically change the operating sequence of the compressors. The cabinet shall have status display to include system pressure, dew point pump operation, accumulated time, maintenance interval, fault conditions, and silence button, lighted Hand-Off-Automatic selector switches and safety disconnect operating handles. All required local alarm functions shall be integrated in to the packaged system.

The system should be designed to function even if the programmable controller fails.

4.5 Accessories

Accessories including for job site installation such as inlet and discharge flexible connectors, vibration mounting pads, and source isolation valve should be supplied.

All the filters should be covered under warranty period and CMC Period.

5. VACUUM SYSTEMS (Package unit)

It should be European CE certified or UL listed. (In-case of NFPA 99c the control panel of Plant must be UL Listed and Undertaking from manufacturer must be submitted for using the same control panel in the system offered)and should comply with HTM 02-01/ NFPA 99 C/EN/DIN/ISO 7396-1

5.1 Vacuum Pump Module

It should be **Oil Sealed Rotary Vane or Claw Type** to produces the plant output **of 7000LPM as primary and 7000 LPM as standby as mentioned in BOQ as primary and same as standby**

Designed flow capacity should be minimum of LPM capacity as mentioned in BOQ. The vacuum plant shall comprise air-cooled, oil lubricated **rotary vane/ claw type** vacuum pumps suitable for both continuous and frequent start/stop operation at inlet vacuum levels between 500mmHg and 660 mmHg.

The control system should normally employ automatic rotation of the lead pump to maximize pump life and ensure even wear. Vacuum pump inlets shall include a wire mesh filter and integral non-return valve to prevent oil suck back and pressure increases in the vacuum system.

Each vacuum pump shall be fitted with anti-vibration pads between the pump foot and mounting frame. The plant shall be fitted with duplex bacteria filter system.

5.2 Vacuum Receiver

The vacuum receiver shall be made of rust free corrosion resistant steel and fabricated as per ASME/BS/ISO for a vacuum pressure of 760mmHg. It should include bypass valves, manual drain valves, vacuum gauge. Vacuum reservoir shall have total volume of **at least 100 % of plant output** in one minute in terms of free air aspired at normal working pressure.

5.3 System Controls

The control include individual self-protected combination motor controls with short circuit, single phase and thermal overload protection, individual control circuit transformers with fuse less primary and secondary protection, pressure sensors, temperature switches with reset buttons, and an electronic controller to automatically change the operating sequence of the compressors. The system should have a status display to show the system pressure, elapsed time, maintenance interval, fault conditions, and silence button, lighted Hand-Off-Automatic selector switches and safety disconnect operating handles.

All required local alarm functions should be integrated into the packaged system. The circuitry should be designed so that the audible signal can be silenced and the visual indicator will remain until the fault has been cleared and the reset button resets. Local alarm functions should be annunciated for reserve pump in use.

5.4 Bacterial Filters

The filters should be designed for removal of solid, liquid and bacterial contamination from the suction side of vacuum pump systems, preventing damage to the pump and the potential biological infection of the surrounding environment. The dryer should be particulate filter dryer with ability to remove particles as small as 1micron.

Each individual filter shall have the capacity to deliver full design flow such that one set is designated duty and the other will be standby. Bacteria filters shall have efficiency at least 99.999% when tested by the sodium flame method in accordance with BS 3928:1969/as per required standard utilizing particles in the 0.02 to 2 micron size range. The pressure drop across each clean filter at 50% of the system design flow should not exceed 25 mm Hg (3 kPa) at a vacuum of 475mm of Hg (63 kPa). Bacteria filters shall be marked with the legend 'Bio-Hazard'.

Each bacteria filter shall be provided with a transparent sterilizable collection jar to collect condensate. The total water capacity of the pressure vessels shall be at least 100% of the design flow rate of the plant in 1 minute in terms of free air aspired.

5.5 Accessories

Accessories included for job site installation are inlet and discharge flexible connectors, vibration mounting pads, and source isolation valve, inlet check valve, oil temperature gauge, thermal malfunction switch and vacuum control switch. Flexible connectors on inlet and exhaust of each pump, exhaust tee with union as well as copper tubing with Shut-off-cock for gauge and vacuum switch etc.

All the filters should be covered under warranty period and CMC Period.

6. Ward Vacuum Units

It must consist of the following:-

1. 1no of Suction Regulator and 1no of 1000 ml polysulfone /polycarbonate collection jar.
2. Suction Regulator: Suction regulator should be supplied with a safety jar, including and antibacterial filter and an anti-overflow safety device. Should have wide membrane continuous suction controller
3. Should have vacuum levels: 0-760 mm of Hg
4. Should have vacuum gauge fitted with a protective bumper device.
5. Should have on/off knob allowing for the quick restoration of a readjusted vacuum level.
6. Must have central adjustment knob with a color coded for 0 to 760 mm of Hg. Should have Polysulfone/polycarbonate 1000cc safety jar, autoclavable at 121° C at 5mins, unbreakable, fitted with an anti-overflow safety device and equipped with a plastic antibacterial filter. It should be totally transparent, to ensure perfect sucked liquid visibility.
7. **It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.**

7. Ward Vacuum Units (Low Flow)

a. **It should be US FDA/European CE Certified with 4 digit notified body number or American ETL/ American UL listed.**
b. Suction Regulator: Suction regulator should be supplied with a safety jar, including and antibacterial filter and an anti-overflow safety device. Should have wide membrane continuous suction controller
c. Should have on/off knob allowing for the quick restoration of a readjusted vacuum level.

8. Theatre Vacuum unit for OT

It must consist of the following: -

1. 1no. Suction Regulator and 2nos. 1700ml or more polysulfone/ polycarbonate collection jar and both to be mounted on a trolley.
2. Suction Regulator: Suction regulator should be supplied with a safety jar, including an anti-bacterial filter and an anti-overflow safety device. Should have wide membrane continuous suction controller
3. Should have vacuum levels : 0-760 mm of Hg
4. Should have vacuum gauge fitted with a protective bumper device.
5. Should have on/off knob allowing for the quick restoration of a readjusted vacuum level.
6. Must have central adjustment knob with a color coded for 0-760 mm of Hg. Should have polysulfone/polycarbonate safety jar, autoclavable at 121° C, unbreakable, fitted with an anti-overflow safety device and equipped with a plastic antibacterial filter.
7. Collection jar should be totally transparent, to ensure perfect sucked liquid visibility.
8. **It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.**

9. AGSS (Anesthetic Gas Scavenging System) Plant (Package Unit)

Duplex Anesthetic Gas Scavenging System (AGSS) of minimum 2500 LPM Primary and 2500 LPM as standby. **It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed**. It shall confirm to HTM 02-01/ NFPA 99 C/EN/DIN/ISO 7396-1.

One pump working and one stand by and vice versa. The package should consist of two rotary vane vacuum pumps, a control panel, and mounted on a common base frame.

AGSS pump: AGSS pump shall operate completely dry permanently lubricated and sealed. Each pump should be completely air cooled and have absolutely no water requirements.

Duplex system in-line non-return values should allow individual pump servicing. Active anesthetic gas scavenging systems should be designed to safely remove exhaled anesthetic agents from the operating environment and dispose of them to atmosphere from the highest point of the hospital building, thus preventing contamination of the operating department and providing a safe and healthy workspace for the personal. AGSS design should be dependent upon flow rate and pressure drop characteristics of the individual components of systems. It is essential that terminal units, remote controls (If required) and pump units work in synchronized manner after connection of workstation to the AGSS System.

Installation should be on roof top/suitable location. Piping, Non-Return-Valves (NRVs), and inlet nozzle should be suitably placed. Connecting hose suitable to fit with anaesthesia workstation should be provided.

10. DISTRIBUTION PIPING

10.1 Piping specifications

Copper pipe should be as per standard BS: EN 13348:2008/ ASTM B819 standards, Solid drawn, seamless, deoxidized, non-arsenical, half hard (hard can be accepted only for sizes 54mm or more), tempered and degreased copper pipe conforming to the standard. All copper pipes should be degreased & delivered capped at both ends. The pipes should be accompanied with manufacturers test certificate for the physical properties & chemical composition.

Copper pipe must have reputed third party inspection certificate (Eg. Lloyd's or TUV or SGS).

Fittings should be made of copper and suitable for a working Pressure of up to 17bar and especially made for brazed socket type connections. The isolation valve body shall be made of chromium plated brass with non-lubricated ball-type. All valves shall be pneumatically tested for twice the working pressure and factory degreased for medical gas service.

Copper fittings should comply with EN 1254:1 factory degreased and brazing filler metals should comply with EN 1044. Fitting should be degreased, individually packed for medical use.

The minimum thickness of copper pipes of 35mm and above outer diameter, should be 1.2mm and the thickness of copper pipes less than 28mm outer diameter, should be 1mm as mentioned in BOQ.

10.2 Installation & testing

Installation of piping shall be carried out with utmost cleanliness. Only pipes, fittings and valves that have been degreased and fittings shall be used at site. Pipe fixing

clamps shall be of nonferrous or non-deteriorating plastic suitable for the diameter of the pipe.

Inert gas welding technique should be used by passing oxygen Free Nitrogen Gas inside the copper pipes during silver brazing, in order to avoid carbon deposition inside the copper pipes. Only copper-to-copper joints are permitted on site except threaded or flanged joints may be made where pipelines are connected to items such as valves and control equipment. No flux shall be used for joining Copper to Copper joints and on for joints made on site. Copper to copper joints shall be brazed using a 5% silver-copper phosphorous brazing alloy CP104. A total of 5 joints shall be cut out for examination to establish the quality of the joints being made on site. The insides shall be clean and free from oxides and particulate matter and the minimum penetration of the brazing alloy at any point shall be three times the wall thickness of the tube. If the joints examined do not conform to these requirements, then adjacent joints shall be cut out and examined until the extent of faulty workmanship has been made good. Copper-to-brass or gunmetal joints shall only be made under controlled conditions off site. The joints are ordinarily used to join short copper pipe tails to brass, gunmetal or bronze fittings to permit their connection into the pipeline. The sub-assemblies shall be degreased and individually sealed in bags or boxes before delivery to site.

Adequate supports should be provided while laying pipelines to ensure that the pipes do not sag. Suitable sleeves shall be provided wherever pipes cross through walls / slabs. All pipe clamps shall be non-reactive to copper.

After erection, the pipes are to be flushed with dry nitrogen gas and then pressure tested with dry nitrogen at a pressure equal to twice the working pressure or 150 psig, whichever is higher for a period of not less than 24 hours.

Length and quantity of individual items (Copper pipes, AVSUs, Alarm panels, Isolation valves, Outlets, pendants etc.) are mentioned. However quantity will be calculated and paid at actuals. Bidder should quote unit price for all the items as detailed

Maximum interval between supports (Horizontal and Vertical)

(12mm Pipe - 1.5m, 15mm pipe - 1.5m, 22mm pipe – 2m, 28mm pipe-2m, 35mm pipe-2.5m, 42mm pipe -2.5m, 54mm pipe - 2.5m, 76mm pipe – 3meter)

10.3 Painting

All the pipes from manifold/plant upto the outlets should be painted with two coats of synthetic enamel paint and colour codification should be as per standards followed and with consultation with competent authorities of the Institute.

11. GAS OUTLETS

Terminal Units (Gas Outlets) with probes/Adaptors for O2, N2O, Compressed Air 4, Air 7, AGSS, Vacuum & CO2 etc.

The Medical gas outlets shall confirm to HTM 02-01/ NFPA 99 C/EN/DIN/ ISO 7396-1. Front Loading Type Terminal Outlets should be designed to dispense medical gases (or an inlet for medical vacuum) to the secondary equipment (flow meters, Suction regulators, etc.) at the point of use and is gas specific so that secondary devices cannot be “attached” to the wrong gas. When not in use the gas in a non-flowing state within the Outlet (Terminal unit) sealed by “O” ring. The adapter when inserted pushes the poppet inside and the gas starts flowing and sealing is ensured by the “O” ring or a seat. The Outlets are Quick Connect Type and gas specificity is accomplished by "Pin indexing." The outlets should have following features:

- Push to insert and twist-to-release mechanism for probes.
- Allows plugging of probes from front.

• Self-sealing valve on disengaging the probe (Quick disconnect)

• Smooth quite action.

• Non return valve for on line servicing/ repairing

• Indexed to eliminate inter-changeability of gas services

• Color-coded gas specific front plate

• Totally leak proof, safe & easy to operate

• Configurations possible: surface, flush & Bead-head.

•Outlet should be European CE certified or American UL listed

•All outlets should have respective labels (i.e.O2/N2O/CO2/Air4/Air7/Vacuum/ AGSS/etc.) displayed accordingly. **It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.**

12. AREA VALVE SERVICE UNIT

Area valve service units should fully comply and meet with HTM 02-01/NFPA 99C/EN/DIN/ISO7396-1, It should provide a zone isolation facility for use either in an emergency or for maintenance purpose The Area Valve Service Unit should incorporate a ball valve with NIST connectors either side mounted in a lockable box with emergency access. It should be reliable and easy to operate and must have NIST connectors facilitate easy purge, sample & pressure testing and emergency supply system.

Medical gas/vacuum services should be fixed copper, piped to and from their respective area valve service units. A color coded service identity label should be fitted behind the valve handle. The unit should provide a zone isolation facility. Gas Flow direction should be indicated.

The box shall be made from extruded aluminum to prevent corrosion. All wetted parts (except seals and gaskets) should be brass or copper. Each unit assembly should be factory tested for gas tightness. Rubber pipe grommets should be provided to ensure any leaking gas does not escape from the unit into a wall cavity. All visible aluminum surfaces should be powder coated.

It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

13. ALARM SYSTEM

13.1 Master Alarm

It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.
Complies with HTM 02-01 / NFPA 99C/EN/DIN/ ISO 7396-1 Standards.

Master Alarm should be digital and be fitted with required number of master alarm modules. The master alarms should be capable to monitor minimum 40 Point.

Each point represents an alarm condition that the source equipment might have. When an alarm condition exists, a red light flashes and the audible alarm sounds. If several alarm conditions occur simultaneously, the most recent alarm light should flash, while the other alarm lights should remain lit. When an alarm condition is created, an audible alarm should be actuated. A dry contact module should be available to interface with a building management system.

The box material should be of gauge steel of requisite thickness and equipped with mounting brackets. The emissions from alarms should conform with EMC standards.

Master alarm management system should be designed to display alarm conditions from the source supply units indicating the broad status of the source equipment and manifolds as well as the master distribution status from the source supplies. Depending on the alarm priority, a visual and audible alarm should be initiated to indicate an alarm condition.

Each panel shall display and/or input up to forty point alarms. Panel should be ready to use with BMS system.

The master alarm must be able to monitor the following source alarm conditions.

- Oxygen Source Empty/Fault
- Oxygen Cylinder Bank Empty/Fault
- Oxygen Emergency Bank Empty/Fault
- Air Compressor Faulty/Operation
- Vacuum Pump Faulty/Operational
- Vacuum Deficiency Vacuum Reservoir
- And Other MGPS Signals & Alarms

Bidder shall be responsible for all cabling from local alarm panels to master alarm panel.

13.2 Medical Gas Area Alarm

The medical gas alarms should be digital and capable of monitoring up to 6/7 medical gas services (As specified in BOQ of institute) by means of pressure sensors which detect deviations from the normal operating limits of either pressure or medical vacuum. The area alarm should have a digital display of pressures. The medical gas area alarm should fully satisfy the HTM 02-01/ NFPA 99 C/EN/DIN/ISO 7396-1 requirements and **it should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.**

An audible warning should sound simultaneously with any failure indication and a mute facility should be provided. it should be ready to use with BMS system.

Note: Bidder may offer Area Alarm + Area Valve combined unit but they have to match the BOQ quantities of higher number for alarm/valve whichever quantities will be higher.

14. Line Isolation Valves Degreased

The Lockable line valves must European CE mark/UL listed and complies with HTM 02-01/ NFPA 99 C/EN/DIN/ISO 7396-1 standard.

15. Supply of O2 Cylinders – Class D Type

Should be as per BIS/IS/ASME Standard

16. Supply of N2O Cylinders – Class D Type

Should be as per BIS/IS/ASME Standard

17. Supply of CO2 Cylinders – Class D Type

Should be as per BIS/IS/ASME Standard

18. Bed Head Panel & Ceiling Suspended Columns

It shall confirm to HTM 02-01/ NFPA 99 C/EN/DIN/ISO 7396-1. The design should be approved by the respective institute before installation and it is responsibility of the bidder after getting order they have to discuss with respective institute and finalized the Bed Head Panel (Vertical/Horizontal) and Ceiling Suspended Columns as per site condition & requirement of the institute.

It should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

A: Bed head Panels (Vertical/Horizontal):-

Efficient, Safe & Robust design in extruded aluminium section.

Smooth curved surfaces, and choice of base colour and fascia plates.

Unit should have integrated rail system to mount accessories

The headwall system should be constructed of aluminium extrusions joined together to form a carcass to suit the particular application. Unit should be factory assembled for electrical and mechanical components.

Segregation of services i.e. Low voltage supplies, High Voltage supply and Medical gases should be maintained throughout.

Surfaces should be antibacterial paint which ensures 100% shield against infectious agent

Front fascia plate should be removable individually to access for respective service.

Bed space management system with equipment rail. With all Equipment Rail mount

Holder for vacuum collection jar –1

Nurse call switch – 1 (not in the scope of MGPS Vendor only space for same has to provide)

Lamp with flexible LED lighting – 1

5 /15A combined Electrical outlets – 8 Nos. or more

RJ-45 socket/ Ethernet -01

Two spare spaces

B: Ceiling Suspended Columns

The frame shall be constructed from extruded aluminum alloy. The end caps should replicate the profile of the vertical head. The aluminum extrusions thickness not less than 3.5 mm. The external surfaces should be antibacterial paint which ensures 100% shield against infectious agent. The lids shall be removable to allow access to the aluminum sections. Segregation.
The arms should have ABS head with LED backlighting signaling.
It shall have possibility to mount directly on the body rails for accessories if needed at least two joints of the arms with electromagnetic brakes released. The construction of the brakes shall provide a stable retention of the column in the absence of air, however, also permit movement of the column in this case with increased strength (resistance brakes shall be possible to adjust the by service).
It should be swiveling 0-300° movement with electromagnetic brake joints and LED, load capacity minimum150Kg.
It should have vertical column H 1200mm.
It should have pre-piped with NIST connections and pre wired
It should have ceiling base plate, flange tube and all hardware accessories from principal company.

It should have two shelf of solid material for ceiling pendant with handle and 2 rails (approx L470xW450mm)
It should have one drawer. It should have swiveling vertical pole stainless steel telescopic H=1000mm D25 for accessories with IV stand with 4 hooks (capacity load minimum 20Kg)
It should have pre wired 10 multi-pin 6/16amp electrical sockets of Indian standards.
It should have 1 data sockets & 1 Telephone socket of Indian standards.

Common points for Bed Head Panels & Ceiling Suspended Units -
Each bed-head/Ceiling suspended unit shall be supplied with electrical and electrical outlets pre-fitted, wired and certified. (Wiring up to the distribution box should be provided with leakage protection & proper earthling arrangements)
Each bed-head/Ceiling suspended unit shall be supplied with pre-fitted gas outlets as per location requirement given below.
Note: Gas Outlets quantities are already taken in consideration of quantities of respective outlets in BOQ The outlets requirement into (bed-head panel/Ceiling suspended/wall) -

1. **Following outlets for each ICU bed**
   Oxygen outlets – 2
   Vacuum outlets – 2
   Medical Air Outlets – 2
2. **Following outlets for each HDU bed**
   Oxygen outlets – 2
   Vacuum outlets – 2
   Medical Air Outlets – 1
3. **In wards following outlets for every bed**
   Oxygen outlets – 1
   Vacuum outlets – 1
4. **For each Pre-OP bed**
   Oxygen outlets – 1
   Vacuum outlets – 1
   Medical Air Outlets – 1
   N2O Outlets – 1
5. **For each Post-OP bed**
   Oxygen outlets – 2
   Vacuum outlets – 2
   Medical Air Outlets – 2
6. **For Physiotherapy Facility**
   Oxygen outlets – 2
   Vacuum outlets – 2
   Medical Air Outlets – 2
7. **For Single bedded Private rooms**
   Oxygen outlets – 2
   Vacuum outlets –2
   Medical Air Outlets– 1
8. **For Two bedded Semi Private rooms**
   Oxygen outlets – 2
   Vacuum outlets – 2
   Medical Air Outlets – 2

19. High pressure tubes for O2, N2O, Compressed Air & Vacuum
It should be colour coded for individual services i.e. white for Oxygen, Blue for N2O and Yellow for Vacuum, Black for air & Grey for CO2. Antistatic rubber tube should be as per ISO standards. It should be European CE marked/ETL/UL Listed.

20. Emergency Oxygen Inlet Station – It should be installed on each floor at suitable location and also one dedicated for OTs & ICUs areas. It should be as per standard

followed and should be European CE marked/ETL/UL Listed. These Emergency Oxygen Inlet Stations should be supplied with dedicated cylinders D type at each station.

21. Electrical Wiring with Electrical Panels –

All wiring inside the Manifold Room and Plant room required for MGPS equipment and General electrification. Institute will provide one point supply only, rest other like fans, lighting, exhaust, switch-socket, etc under the scope of bidder. All the work should be as per BIS/CE standard and material used should be reputed make only.

22. Interconnection to LMO

Price to be quoted per meter basis for inclusive of all installation, material (Copper Pipes, all Valves, fittings, etc), trenches and labour etc. charges as per site condition. The payment will be made on actual meter consumption for interconnection from LMO tank to Gas Manifold room. Rate for 50m will be considered for ranking purpose and payment will be done as per actual requirement.

23. Site Modification Works –

i. Bidder should be responsible for antistatic rubber flooring in the manifold room and thickness of flooring not less than 1inch.
ii. Bidder should be responsible for foundation of Plant Room (If required) for Medical Air Plant, Vacuum Pant & AGSS Plant.
iii. Minor modification work which is required for successful installation of the complete system.

24. Trenching for Gas Pipelines (Separate Price should be quoted)

Unit rate for trenching approx. size 1.5m x 0.5m for crossing the road, buildings etc to run the gas supply lines from one building to another. Trenching may be underground and overhead as per the requirement. It should be as per PWD/CPWD norms.

25. Running & operation of MGPS

The primary objective of the bidder is to ensure safe and reliable MGPSs and their efficient operation and use as per HTM/NFPA/ISO/DIN standards. Bidder will be responsible for operational management and maintenance of:

- Medical oxygen System -Liquid oxygen system , Manifold and Control panels
- Nitrous oxide System-Manifold and Control Panel
- Medical and Surgical Air System-Compressor systems , Control panel, Dryers, Reservoir, Filters etc
- Medical vacuum System- Vacuum pumps, Control panel, Reservoir, Filters etc.
- Waste anesthetic gas scavenging systems (AGSS)
- Carbon dioxide manifold system
- Nitrogen manifold system (if Available)
- Copper pipelines
- Area Valve Service Units
- Isolation Valves/Line Valves
- Area Alarm panels and Master alarm panels
- Gas Outlets
- Bed Head Panels/Ceiling Suspended Units
- Pendants/OT's MGPS

Staff responsible for plant operation should be aware of the activities necessary to ensure the continued safe operation of the system and what action should be taken in an emergency. The authorized person (MGPS) in particular should take a lead in explaining to users the function of the system and will have to be adequately trained and informed about the system. Operator will be responsible for safe cylinder handling,

storage and transportation. Any work involving alterations, extensions or maintenance work on the system should be subject to the permit-to-work procedure as per HTM standards.

Operation of Medical Gas

The bidder should provide manpower to operate the plant throughout the day,365 days in an year. The duty of the worker should be limited to 8 hous per day. Minimum manpower requirement will be as be

Sl. No.	Designation	Shift-1 6AM-2PM	Shift-2 2-10 PM	Shift-3 10PM-6AM	General Shift 8-4 PM	Leave Substitutes	Total
1	Supervisor (Biomedical Engineer) With 3 years' experience in installation, maintenance & operation of MGPS				1	1	1
2	Medical Gas Technicians (Diploma in Mechanical/ Electrical) With 2 year Experience in installation, maintenance & operation of MGPS				1		1+1
3	Plant operator (SSLC with minimum 2 years' experience or ITI with electrical/ fitting/ plumbing) With Experience in installation maintenance & operation of MGPS	1	1	1		1	4
4	Helpers (8th Standard or more) with minimum 1 year experience in installation, maintenance & operation of MGPS	1	1	1		1	4
	Salary-Per Month As per minimum wages act of Govt.						

MGPS BOQ

Sl. No.	Item Description	Unit	Quantity			Reqd. MAF: Ex/ Non-Ex/NR
			TOTAL	Phase-1	Phase-2	
1.1	Fully Automatic Oxygen Control System: Supply, Installation, testing and commissioning of Fully Automatic Oxygen Control System. As per specification.	Nos	1	1	0	Ex
1.2	Oxygen Manifold (2x20) : Supply, Installation, testing and commissioning of (2x20size) class D cylinder Oxygen Supply System. As per specification.	Nos	1	1	0	Ex
1.3	Emergency Oxygen Supply System : Supply, Installation, testing and commissioning of (2x10 size) class D cylinder Emergency Oxygen Supply System. As per specification.	Nos	1	1	0	Ex
1.4	Oxygen Flow meter with Humidifier Bottle: Supply, installation, testing and commissioning of oxygen flow meter with humidifier bottle 0-15Litres. As per specification.	Nos	934	421	513	Non-Ex
2.1	Fully Automatic Manifold Control Panel for Nitrous Oxide: Supply, installation testing and commission of fully automatic control panel for Nitrous Oxide. As per specification.	Nos	1	1	0	Ex
2.2	Nitrous Oxide Manifold System, (2x10 size): Supply, installation, testing and commissioning of (2x10 size) Nitrous Oxide Manifold system. As per specification.	Nos	1	1	0	Ex
2.3	Emergency Nitrous Oxide Manifold System, 2x5 size: Supply, installation, testing and commissioning of (2x5 size) cylinder Emergency Nitrous Oxide supply System. As per specification.	Nos	1	1	0	Ex
3	Medical Air Plant (Package Unit) including electrical control panel: Supply, Installation, testing and commissioning as per specification.	Nos	1	1	0	Ex
4	Medical Vacuum Plant (Package unit): Supply, Installation, testing and commissioning as per specification.	Nos	1	1	0	Ex
4.1	Ward Vacuum Unit: Suply, installation, testing and commissiong of Ward Vacuum Unit as per tender technical specifications.	Nos	934	421	513	Non-Ex
4.2	Theater Vaccum Unit for Operation Theaters: Suply, installation, testing and commissiong of Theater Vacuum Unit as per tender technical specifications.	Nos	26	13	13	Non-Ex
5.1	Fully Automatic Manifold Control Panel for CO2: Supply,installation testing and commission of fully automatic control panel for CO2. As per specification.	Nos	1	1	0	Ex
5.2	CO2 Manifold System, (2x6 size): Supply, installation, testing and commissioning of (2x6 size) CO2 Manifold system. As per	Nos	1	1	0	Ex

	specification.					
5.3	Emergency CO2 Manifold System, 2x2 size: Supply, installation, testing and commissioning of (2x2 size) cylinder Emergency CO2 supply System. As per specification.	Nos	1	1	0	Ex
6	Duplex AGSS System: Supply installation and commissioning of Duplex AGSS system. As per specification.	Nos	1	1	0	Ex
7	Copper Pipes					Non-Ex
7.1	As per tender technical specifications					
7.2	108mm OD X 2mm thick	Mtr	100	80	20	
7.3	76mm OD X 1.5mm thick	Mtr	500	400	100	
7.4	54mm OD X 1.2mm thick	Mtr	1200	700	500	
7.5	42mm OD X 1.2mm thick	Mtr	1500	800	700	
7.6	35mm OD X 1.2mm thick	Mtr	1250	900	350	
7.7	28mm OD X 1 mm thick	Mtr	1200	800	400	
7.8	22mm OD X 1 mm thick	Mtr	10000	5300	4700	
7.9	15mm OD X 1 mm thick	Mtr	11200	5700	5500	
7.10	12mm OD X 1 mm thick	Mtr	3000	1500	1500	
8	Gas Outlet Points/ Terminal Units with probe: Supply,Installation,testing and commissioning of Gas outlet points for Oxygen,Vacuum, Medical Air 4 Bar, Nitrous Oxide, Medical Air 7 Bar, CO2 and AGSS .					Ex
8.1	Oxygen outlet with probe	Nos	1156	540	616	
8.2	Vacuum outlet with probe	Nos	1156	540	616	
8.3	Medical Air 4 outlet with probe	Nos	647	350	297	
8.4	Medical Air 7 outlet with probe	Nos	5	4	1	
8.5	Nitrous Oxide outlet with probe	Nos	46	30	16	
8.6	CO2 outlet with probe	Nos	2	2	0	
8.7	AGSS outlet with probe and **remote(if Required)**	Nos	2	2	0	
9	AREA VALVE BOX (WITHOUT VALVES) : Supply,Installation, testing and commissioning of Area Valve Boxes. as per specification.					Non-Ex
9.1	Valve Box - 2 Gas Service with NIST Connection	Nos	58	23	35	
9.2	Valve Box - 3 Gas Service with NIST Connection	Nos	62	44	18	
9.3	Valve Box - 4 Gas Service with NIST Connection	Nos	7	5	2	
9.4	Valve Box - **6/7 Gas Service** with NIST Connection	Nos	26	13	13	
10	MEDICAL GAS ALARM PANEL : Supply, Installation, testing and commissioning of Medical Gas Alarm Panel. As per specification.					Ex
10.1	Medical Gas Area Alarm 2 services (Oxygen, Vacuum)	Nos	3	2	1	

10.2	Medical Gas Area Alarm 3 services (Oxygen, Vacuum, & MA4 bar)	Nos	62	41	21	
10.3	Medical Gas Area Alarm 4 services (Oxygen, Vacuum, MA4 bar, & N2O)	Nos	7	5	2	
10.4	Medical Gas **Area Alarm 6/7 services** (Oxygen, Vacuum, MA4 bar, N2O, SA7,CO2 & AGSS)	Nos	26	13	13	
10.5	Master Gas Alarm as per specification	Nos	1	1	0	
11	LINE ISOLATION VALVES					Non-Ex
11.1	15 mm ball valve	Nos	361	228	133	
11.2	22 mm ball valve	Nos	181	119	62	
11.3	28 mm ball valve	Nos	16	16	0	
11.4	35 mm ball valve	Nos	7	7	0	
11.5	42 mm ball valve	Nos	22	22	0	
11.6	54 mm ball valve	Nos	1	1	0	
11.7	76 mm ball valve	Nos	12	12	0	
11.8	108 mm ball valve	Nos	1	1	0	
12	Supply of O2 cylinders-Class D cylinders	Nos	80	80	0	NR
13	Supply of Nitrous Oxide cylinders-Class D cylinders	Nos	40	40	0	NR
14	Supply of CO2 cylinders-Class D cylinders	Nos	20	20	0	NR
15	Bed Head Horizontal/ vertical Wall Panel (Without outlets) as per specification	Nos	745	305	440	NR
16	Supply installation testing and commissioning of Medical gas hose assemblies as per standard followed(200m -O2, 200m-Vc, 100m-Air, 100m -Any as per Institute requirement)	Mtr	600	600	0	NR
17	Interconnection to LMO as per specification. per meter rate should be quoted	Mtr	50	50	0	NR
18	Emergency Oxygen Inlet Station	Nos	20	10	10	Ex
19	Electrical Wiring with Electrical Panels as per specs	Ls	1	1	0	NR
20	Ceiling Suspended Columns	No	50	25	25	Non-Ex
21	Site modification as per Specification	Ls	1	1	0	NR
22	Low Flow vacuum Unit	Nos	20	20	0	Non-Ex

Abbreviations:

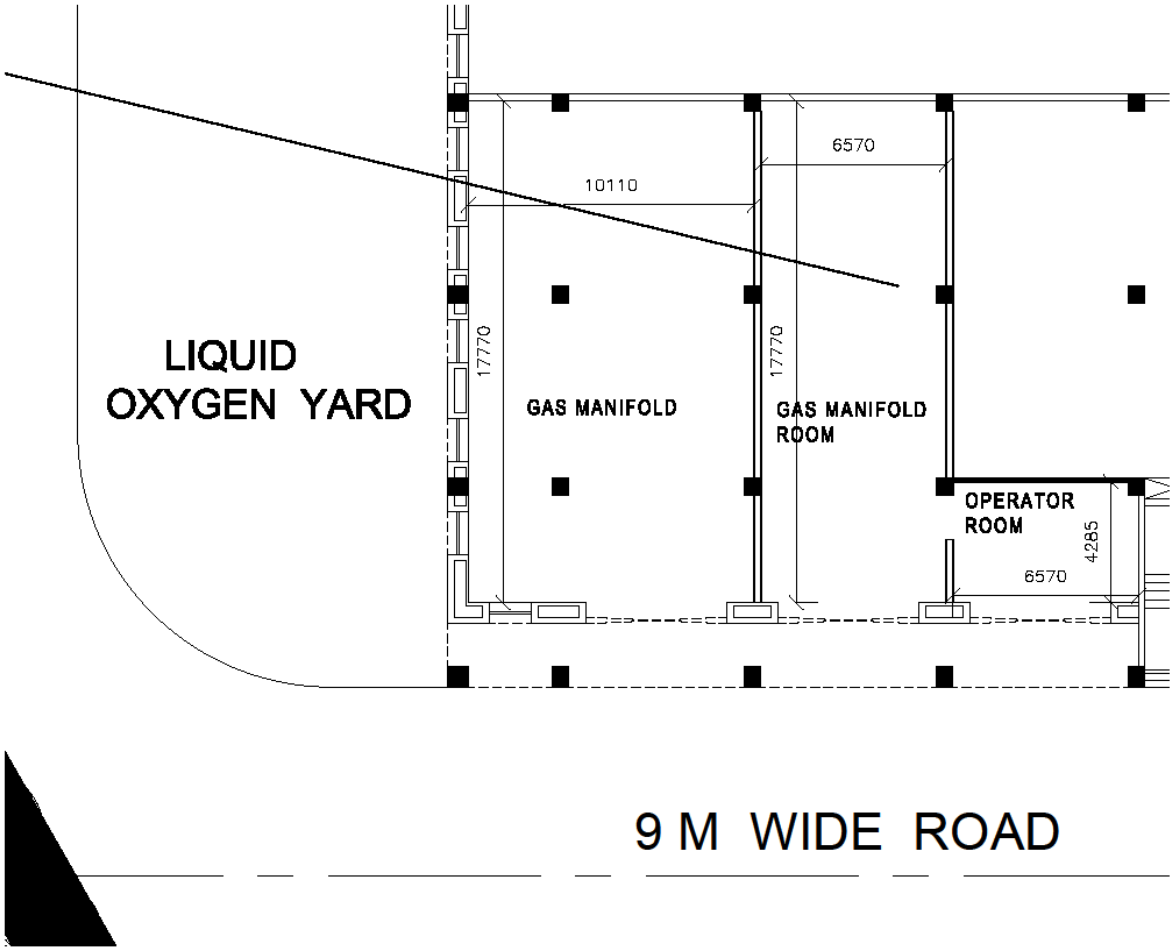
MAF: Manufacturer Authorisation Form as per Bidding Document

Ex: Exclusive (i.e. One OEM can authorise only one agent for its product in a specific tender).

Non-Ex: Non Exclusive.(i.e. One OEM can authorise multiple agents for its product in a specific tender).

NR: Not Required.

Layout of MGPS Manifold & Plant Room



Item sl. no. 04

Modular Operation Theater (MOT)

RESPONSIBILITY OF BIDDER

1. Bidder shall be responsible for complete design, fabrication, construction, testing and commissioning of modular operation theatres based on seamless integration with modular concept.
2. Bidder shall execute all required civil, electrical and peripheral lighting, plumbing, air-conditioning system (Ducting inside the OT), demolition and other works as may be required for complete installation and trouble-free functioning of the operation theatres as a part of the "**Site Modification"**. Necessary coordination with fire-safety vendor for the installation of fire safety sensor/instrument inside the MOT and also other necessary coordination with civil contractor to be done by the MOT bidder.
3. The bidder shall be responsible for the complete works including the submission of Working Drawings, and walk through view.
4. Bidder shall be responsible for installation and commissioning of medical equipment for MOT in coordination with respective institute/hospital authorities.
5. Bidder shall be responsible for free maintenance with spares & consumables of modular operation theatres during warranty period and shall provide separate rate for consumables for CMC period, if bidder has not offered price for consumable it is assumed that consumable will be supplied free of cost during CMC also.
6. Bidder shall be responsible for commissioning of Medical Gas pipe lines, Pendants, LED OT Light and Gas outlets for the OTs and other associated works to make MOT fully functional. MOT Bidder should coordinate with MGPS, Integration and other vendors for the successful completion of MOTs.
7. Bidder shall be responsible for suitable air conditioning duct inside the operation theatre and connect it to the main air-conditioning system outside the MOT. Setting and monitoring of temperature and RH should be in the scope of the MOT. (Necessary coordination with HVAC vendor to be done by the MOT bidder). Hospital will provide independent AHUs for each MOT.
8. Bidder should provide factory test certificates from authorizes Govt. lab for the material used for the construction of modular theatres.
9. Bidder should supply complete set of part manuals, service manuals for all the systems and subsystems supplied.
10. Training should be provided at site for two week by the factory trained engineers /Original Equipment Manufacturer (OEM).
11. Final electrical safety test, system test, and calibration should be done by authorized persons using calibrated test equipment.
12. Total 9Nos. of MOT has to construct in 1st phase. Out of 9, one MOT will be for IORT, which will be built as per AERB norms without any constructional change in approved AERB layout. Modular and Integrations work should be in accordance with AERB guidelines. Bidder has to quote suitable radiation protection Doors/Windows/etc. as per AERB.
13. Out of 9MOT, Two MOT will be used for Minimal Invasive Surgeries (MIS) for VATs/LAP/Endo-Surgeries. These MOTs has to equipped with basic integration(as per integration specs) + Advance Integration(Total Device Control- complete integration with MIS Towers with control)

14. OEM or his authorized agent should post a trained engineer who should be available at site **or** should reach the site within 12 hrs of raising a service call.
15. Regarding Outlets of the Anesthesia & surgeon Pendants, bidders have to supply same outlets as per the MGPS standard installed in the hospital. Before shipment of the Pendants, bidders should take necessary action for selecting the same outlets.

SCOPE OF WORK

The site modification work includes all modifications to the built up space provided at the hospital site including Installation of Medical Equipment, Communication Systems, civil modifications, electrical works, plumbing works, interior decoration, air conditioning ducting inside MOT, Medical Gas Pipe Lines & interconnection with HVAC and other related works of the Operation Theatre required for the smooth and efficient functioning of the center. These works shall comply with all relevant safety and standards guidelines. The vendor is fully responsible for installation, testing and commissioning of all equipment mentioned in the tender.

Integration Co-ordination & Works –

a. MOT vendor has to share the MOT layout drawings to OT Integration vendor for superimposing the OT integration system components and cables, before the commencement of manufacturing of MOT walls, ceilings, Pendants, etc.
b. MOT vendor has to provide required cutouts for power socket/Data cables/Patch Panel/Etc. wherever marked by Integration vendor in approved drawings by consignee/institute.
c. MOT vendor has to make provision in ceiling for installation of OT Light as per approved drawings provided institute with dedicated electrical supply from DB to Ceiling.

Bidders are strongly advised to visit the site for assessment before the submission of tender offer. However the layout of the OT floor area is attached herewith for reference.

Site Modification Job to be provided by the Bidder

1. Commissioning and installation of wall & ceiling paneling, Frame Structures & substructure, PVC flooring, Lighting, Touch Screen Control Panel, laminar flow, pendants, OT Light, Painting (if any), electrical work, ups(If any) , windows (if any)and Doors, etc. as per technical specification.
2. All cable conduit, trenches and railings wherever required.
3. All electrical accessories like cable wire, electrical outlets, switches, Control panels, etc should be fire proof, of reputed make, certified for electrical safety.
4. Bidder has to provide hatch box, storage shelves, scrub basins and other service areas as mentioned in the tender.
5. Testing, Installation and commissioning of all equipment/services.
6. Any other necessary work required for satisfactory working/performance of the modular OT and not mentioned/specified.

Technical Specification:

1. WALL & CEILING SYSTEM (SMS)

The wall system should be based on a technological modular unit designed to clad and to divide interior space in controlled bacteria environments in a flexible and functional manner for MOT including Ante-Room.

The design ensures that the unique self-loading and free standing substructure can be clad with all types of engineered finishing panels without use of screws and any other fixed mechanical joints (SCREWLEES TECHNOLOGY)

The outer surface of a wall surface should be created with high –tech materials such as Solid Mineral Composite Sheet (SMS) with backing of Aluminum frame/panel.

System should offer total ease of cleaning and sanitization of the partitions. It should have no corners and adjacent surfaces should be molded flush by means of connecting elements. System should afford the maximum versatility at the planning stage and flexibility during erection, ensuring openness to future alternations and trouble–free maintenance. During the installation, first the structural parts and subsequently the finishing elements to be installed. The system should ensure perfect integration of technical networks and allow ample operational flexibility on the construction site.

The clean, dry installation method should enable optimum programming of the various work phases, allowing optimization of the installation of technical systems and any necessary alterations to be made–right up to checking and final testing of the installed systems – before the modules are sealed.

All component of Wall & Ceiling System should be from the same manufacturer for the following and undertaking/declaration from the manufacturer should be submitted along with bid:

i. Sub frame/Support Structure
ii. Wall Panels
iii. Wall corners
iv. Sealing gaskets
v. Ceiling Panels
vi. Laminar flow system

i) Sub Frame/Structure:

Sub Structure frame made of galvanized steel pillars with broad cross section and dual cavity, with geometry designed to achieve exceptional rigidity. The substructure, with its FREE-STANDING technology, minimize the interference with all electro mechanical systems to be installed. Possible to adjust and secure the profiles, ensuring the maximum rigidity and self-loading capacity of the sub frame system.

ii) Wall panels:

Cladding shall be with composite panels the finishing of which should be Solid Mineral

Composite Sheet (SMS) minimum thickness of 03mm.

a. External facing should be bacteriostatic, dense and non-porous material
b. The panel should be made of a durable and uniform material that should be easy to clean and extremely hygienic.
c. Internal balancing core with suitable geometry to ensure the maximum rigidity
d. The total thickness of panel including Aluminum backing should not be less than 18mm.
e. Panels should be resistant to water and detergents normally used in hospital.
f. Reaction to fire class 1 norm

In order to create a smooth uninterrupted surface between adjacent panels, thereby preventing the risk of the accumulation of dust and bacteria in gaps, the panel should be produced in a single full height floor-to ceiling piece.
The wall modules should be individually dismountable independently from ceiling and floor system to allow inspectability, maintenance of technical systems, and any variations that may become necessary for future alteration, modification and repair.

One wall of every MOT should have provision of aesthetic scenery view/picture. Panels should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

iii) Wall Corners:

Angular corners made with a 130°-140° angular modular element with the same finish of the wall panels. Such unit is internally completed by a stainless-steel recovery duct formed by a single sheet/SMS, perfectly integrated and shelled in order to allow the correct element sanitization. A removable front panel allows both access to the canal behind either the regulation of the air flow between the lower and upper opening.

iv) Sealing Gaskets/Material:

Should be non-toxic silicone rubber/material around all the contact perimeters between the various materials, and the hermetically sealed gaps between modules, should ensure optimum space segregation and ensure that sterile air pressure values are maintained in the protected environment, this be being a fundamental prerequisite for guaranteed sterility. Should be seamlessly connected surface.

v) Ceiling Panels:

The hermetic suspended ceiling should be a loading structure in heavy gauge material forming the grid on which the ceiling panels made of Solid Mineral Composite Sheet (SMS) thickness of 03mm.

The total thickness of panel including Aluminum backing should not be less than 18mm.The integration of sealed lighting fixtures, air anemostats and /or various service units. The variable module grid should make it possible to adapt the size of the ceiling module to match the equipment to be mounted. It should also allow the use of different module sizes within the same room.

The grid should be formed of loading profiles, suspended from the ceiling slab, to which the crossbar profiles are secured by means of rigid mechanical couplings. The thus formed grid should be rigid and remains perfectly stable during all the subsequent site operations.

The suspended ceiling should be hermetically sealed by means of nontoxic silicon gasket application and it should be durable and non-degradable & resistant to microorganism attack.

Ceiling should be accessible to provide access to ceiling suspended equipment for installation and services in future.

Ceiling Panel should be US FDA / European CE Certified with 4 digit notified body number or American ETL/ American UL listed.

Color & view of inner surface wall & Ceiling of MOT shall be finalized after approval of consignee.

2. PVC FLOORING

i. It should be with 2mm antistatic seamless PVC flooring
ii. Floor should be smooth, non-slip, impervious material conductive enough to dissipate static electricity but not conductive enough to endanger personnel from electric shock.
iii. Electrostatic charge dissipation combat PVC seamless flooring of very high quality should be provided.

iv. Thickness not less than 2 mm **Tile** (**2'x2'**) should be used and joints should be welded by special PVC thermal welding units using PVC welding bars of same colour.

v. The sheets should be highly durable with resistance to shock and indentation. It should be scratchproof also. The conductive material should be uniformly impregnated as grains.

vi. It should be inert to body fluids, chemicals and disinfectants. Should not be affected by temperature variation within the OT.

vii. The floor should efficiently discharge electric charges up to 2 kV

viii. Flooring should be done by skilled workers of accredited agencies authorized by the supplier of PVC sheets. The electrical resistance (point to ground) should be within $2.5x10^4$ to $5x10^6$ ohms. The floor should not allow buildup of electrical charge beyond 100 volts due to antistatic effect. The corners should not be terminated sharply and concealed cove- former (aluminum) should be used to overlap the wall panel to a height of approx.25mm and sealed perfectly and uniformly. Self-leveling compounds should be used.

ix. The conductive copper grid laid underneath the PVC sheet should be supported by liquid epoxy compounds allowed to set as a uniform and level surface. The copper strips to be made visible by grinding and no copper strip should project more than 0.5mm above level surface to avoid damage to the PVC sheet. One earthing lead should be brought out from every 150sq.ft area and attaching it to the main earthing strip/ground.

x. Copper grounding strips (0.05 mm thick, 50 mm width) should be laid flat on the floor in the conductive adhesive and connected to copper strip of grounding. The connection from copper grid should be brought out uniformly at places to form equipotential grid.

xi. Flooring should be mechanically shock proof, scratch proof, flame retardant and anti-microbial

xii. Corners should be uniformly curved

xiii. Final surface should be non-corrosive to biological fluids and detergents.

xiv. Color should be uniform pleasant and matching with ambience

3. (A) LAMINAR AIR FLOW SYSTEM

i. The ceiling filtration system should be designed to ensure unidirectional distribution of sterile air of the surgical theatre to ensure the cleanliness of all the area covered by the air flow.

ii. The Laminar flow system should comprise of thick extruded aluminum**/SS** profiles frame and sealed gasket. The filters installed in the plenum should be suitable for application for laminar flow and clean rooms.
These filters should meet following specification -
Separators : continuous thermo plastic chord
Sealant : Polyurethane
Gasket : One piece polyurethane
MPPS average efficiency: > 99.95%
3 Micron DOP efficiency > 99.99%
Final Pressure drop : 600 pa (max)
Maximum Operating Temp: 60 degree Celsius
Maximum RH : 40-50 %

iii. The ceiling system should be equipped with "H 14" class HEPA filters position in the ceiling to achieve 0.25m/sec flow at the diffuser.

iv. Filtration Ceiling System holding structure, Filter frames and top plenum should be made of Aluminium/Stainless Steel.
v. The filtration ceiling system should have diffuser/flow equalizer to achieve uniform & constant air distribution over the whole surface. It should be CE/UL certified
vi. The air management system should be designed to achieve class 100 with the following parameters:
    a. Bacteriological class =B (5 CFU/m3)
    b. Particle decontamination kinetics CP =5 min
    c. ISO 14644/1 classification = ISO 5
vii. The positive pressure should be maintained inside the OT to prevent contamination due to air from outside the OT.
viii. The supplier should provide test certificate for HEPA filter and laminar air flow systems from the original manufactures.
ix. Size of laminar airflow system minimum 8 feet X 8 feet or more.
x. **Should be European CE/USFDA/ETL/UL certified.**
xi. **HEPA Filter should be covered under warranty & CMC Period.**

Note: Prospective bidders are advised to collect information regarding CFM and AHU capacity from the institute site. Total flow rate of filter bank shall match the CFM of AHU.

(B) EXHAUST AIR CABINETS/Grill

i. Return air exhaust grill should be provided in the OT.
ii. The exhaust air cabinets should be openable and cleanable.
iii. These cabinets should have suction from bottom and top also.
iv. Designed flow rate should not be less than 1000 m3/hr. Distribution of exhaust air volume should be divided between fluff strainers to maintain the required pressure within the theatre without causing turbulence.
v. Return air exhaust cabinet should be made from SS304/Aluminum/SMS as per followed material of walls.

(C) Air Conditioning Duct inside the MOT

i. All the ducting inside the MOT shall be in the scope of the MOT bidder
ii. All necessary HVAC interconnection for supply and return air shall be the scope of bidder (the institute will provide the duct upto outside of the MOT)
iii. All the ducting should be as per industry standard and sheet should be Aluminum of appropriate thickness and insulated as per industry standard.
iv. **The Ducting for the Ante-room should be responsibility of MOT vendor and ante-room should be relative –ve pressure from the OT pressure. Provision for the same shall be done by MOT vendor.**

4. PERIPHERAL LIGHTING AND CLEAN ROOM LUMINARIES

i. To provide peripheral lighting and clean room luminaries **LED light** with intensity min 500 Lux, it should be minimum 8 in numbers for each OT. Should be with highly specular anodized aluminum reflectors and optical antiglare system.
ii. Luminaries cover should be made of highly resistant, disinfectant proof laminated safety glass with stylish fine grained surface, glass pane with white coated steel frame.
iii. The reflectors should be of high quality, cleanable and non-deteriorating.

iv. The white luminaries body should be made of sheet steel/ perfectly powder coated, supplied ready for connection optionally for individual or series circuit with digital electronic control gear in multilamp technology.
v. Recess frames should be gas tight. The fitting should be flush with the ceiling and should be removable from top or bottom. The light fitting should be uniformly and aesthetically distributed on the ceiling to provide uniform illumination in the OT. Light should not interfere when green mode endoscopy is performed
vi. Peripheral lighting should be done according to IP65 (international protection rating 65) / IP 54 regulations.
vii. Control equipment for the general lighting and the light dimming should be provided in the theatre control panel
viii. The LED Bulbs should be from these make - Philips/ GE/ Crompton/ Wipro/ Syska.
ix. Two nos. of Lights are considered for Ante Rooms, However it will be installed as per the institute requirement and payment will be made on actual basis.

5. TOUCH SCREEN CONTROL PANEL

i. The control panel should be touch screen panel. This control panel should work as the central control panel for the HVAC controls, instruction board, light control, gas alarms, etc.
ii. **Screen sized should not be less than 32 inches.**
iii. The touch screen should be wall mounted, stationed in the visibility line of the surgeon and OT staff. The access height should be convenient for the nurse to operate and help/assistant when in need.
iv. The panel should accommodate digital clock and the elapsed time indicator.
v. The medical gas alarm should indicate high and low gas pressures for each gas service present in the OT including vacuum. This should be supported by audible alarm also. The panel should have an alarm mute (fault annunciation) facility. The sensors (pressure switches) should be at the nearest isolation valve.
vi. Control for general lighting: ON/OFF and dimming controls organized in groups to provide uniform illumination.
vii. Control of the operating light (major and satellite and camera control (on/off and intensity control) should be provided.
viii. Hand free telephone set with memory should be located at one side.
ix. Temperature and humidity control for the room connected to the AHU. (Adjustable from the panel) The controller should be capable of adjusting the temp adjustment of +/- 5 Deg with in 5Minutes wherever separate AHU is provided for each OT . "
x. Digital room pressure indicator in cm of H2O or equivalent (signal from pressure sensor shall be provided to indicate pressure differential between OT and outside)
xi. HEPA filter bank differential pressure indicator.
xii. It should be European CE / USFDA approved/UL.

6. X RAY FILM VIEWER

i. LED type flat panel X-ray viewing panel should be supplied.
ii. This should comply with relevant electrical safely codes.
iii. This should be 2 Numbers of dual panel viewing screen for each MOT; it may be on one wall panel or two adjacent panels.
iv. Mounting should be flush with the wall to avoid dust accumulation and growth or organisms between wall and panel.

v. Body should be of extruded aluminum powder coated black with bacteria resistant and disinfectant resistant finish.
vi. The diffuser on the front panel should be a uniformly lit screen.
vii. Dimming electronic control should be enclosed at the bottom of the cabinet.
viii. Proper spring loaded film clip with rollers should be provided to hold the films firmly and to remove the film without scratches.
ix. Each panel should be able to illuminate films up to 14"x17" size.

6A. PACS Monitor: (For Non-Integrated MOT) –

i. Medical grade monitor size should be minimum 32inch.
ii. Should be integrated with Hospital PACS. Vendor has to do the necessary coordination with Hospital Authorities for connecting the PACS monitor to Hospital PACS.
iii. Monitor should be flush mounted with suitable frame. frame should be openable /serviceable for service.

7. STORAGE UNIT

i. The storage unit should be made with minimum 1 mm thick **stainless steel 304 or SMS backing with aluminum** panels and should be with same finish of OT Walls
ii. The storage unit should be divided 2 or more parts and should have glass doors with high quality locking system
iii. The overall size should be minimum 200 cm X 120 cm X 40 cm
iv. Should be flush mounted/built-in to MOT wall.

8. HATCH BOX

i) A hatch should be provided in each operation theater to remove waste materials from the operation theater to dirty linen area/corridor just adjacent to Operation Theater.
ii) Each hatch box should be equipped with two doors and the door should be operated electrically/motorized.
iii) The hatch should be designed in such a way that only one door should be opened at one time.
iv) The UV light should be so installed that it is kept on while both the doors are closed. This UV light has to be automatically turned off in case of opening of either of the doors.
v) Indicators should be provided on both sides of the OT so that door open / close status can be monitored from both sides.
vi) Hatch Box material should be SS304
vii) Size of the Hatch box minimum: 600mm x 600mm.

9. PRESSURE RELIEF DAMPERS

Pressure relief dampers or Over flow ports should be provided in each room to prevent contamination of air from clean and dirty areas.

Suitably sized air pressure relief damper should be strategically placed, enabling differential room pressure to be maintained and ensure that when doors are opened between clean and dirty areas.

Counter- weight balancing system should be provided in the PRD to maintain positive pressure inside the operation room.

Air pressure stabilizers should have unique capability of controlling differential pressure to close tolerance. The PRD should remain closed at pressure below the set pressure and should open fully at a pressure only fractionally above the threshold pressure.

The body should be of SS 304 as per standard. High grade electrolyzed steel plate should be used for body and high grade SS304 stainless steel for blades

10. HERMETICALLY SEALED DOORS

The door should be a hermetically sealed, single sliding of following sizes.

A. **Door of 2.1 (H) X 1.8 m (W) (For OTs & Ante Rooms)**

B. Door of 2.1 (H) X 1.0 m (W) (Optional)

C. **Door of 2.1 (H) X 1.8 m (W) (with Lead Lining For IORT)**

Note: The quantities should be as per BOQ of institute and separate price should be quoted for both the doors.

The controller should be capable of being operated by elbow switches/foot switches as well as touch less sensor.

The track should be of stainless steel/Aluminum and the running surface for the top rollers should be suitably angled to reduce resistance to movement

Opening and closing of the door should be microprocessor controlled electromechanical movement.

The door material should be of SS 304, thickness of SS not less than 1mm or SMS thickness not less than 2mm with suitable Aluminum backing and Color should match the interior and care should be taken to make the leaf strong and light weight.

Door leaf should have high quality synthetic rubber gasket with long life to ensure hermetic sealing (to maintain air pressure differential). Air tightness 99.99% at a pressure of 100Pa.

The door and controls should comply with IEE regulation. All motors used should be DC brushless motors with essential isolation from mains.

Doors should be made as sandwich-type – from two plates, the space between them should be filled with particle board or CFC free polyurethane or honeycomb, glued to the plates. In installation places of hinges and locks, strengthening components must be used.

Thickness of door wings should range in between 40 and 50mm.

Frames should be integrated into the panel system and should be prepared individually for each type of door, made of stainless steel 1.5 mm thick.

Fixtures should be made of stainless steel and adapted to requirements – size and weight of door wings, shape of door handles prevents form hooking the aprons.

Door should be with vision window **of minimum 400 mm x 400 mm** with double glazed panels and hermetically sealed.

Door movement should have minimum noise.

The Door of Ante-room and OT room should be synchronized in such a way that only one door should open at a time. MOT Vendor has to coordinate with IORT vendor for door synchronization with IORT machines as per guideline.

The starting time after receiving the signal should be adjustable between 0.5 to 20 seconds.

The door controller should be CE marked.

D : VIEW WINDOW (WITH MOTORIZED BLINDS) – Optional

View window with motorized horizontal Venetian blinds sandwiched in two parallel toughened

glasses of thickness 5 mm should be complete with FHP Motor Control for 90° rotation. The

Window frame should be powder coated Aluminum of approved shape flush mounted to wall paneling material with proper sealing. The entire assembly should be completely sealed and fitted with proper Aluminum/**SS** /**SMS** profile. The assembled thickness of the Window should be minimum 33 mm. The window blinds should be operated with Remote Control and manually.

11. OPERATING LIST BOARD

i. One operating list board should be provided in each operating theater.
ii. It should be made of ceramic having magnetic properties and should be flushed to the wall of the operating room.

12. SCRUB STATION (Three Bay)

i. Compact surgical scrub sink should be designed for use in OT complex providing for pre procedural scrub up.(**Triple** sink combination as suitable)
ii. Each fixture should be fabricated from heavy gauge type 304 stainless steel (minimum thickness 1.5mm) **or SMS** and should be seamless welded construction, polished to a satin finish
iii. The scrub sink should be provided with a front access panel which should be easily removed for access to the water controlled valve, waste connections, stoppers and strainers.
iv. Hands free operation should include infra-red sensors with programmable adjustment.
v. Thermostatic mixing, valve control should be located behind the access panel and maintain constant water temperature.
vi. Timing should be adjustable to meet individual application requirements.
vii. Provided with infrared sensors, thermostatic control taps with fail safe temperature controls.
viii. All units should have reduced anti- splash fronts.
ix. Should have provision for soap/disinfection scrub solutions.
x. Knee/foot operated switch should be provided additionally.

13. Scrub Suite Vending Machine:

i. It should be capable of vending all sizes like Small, Medium & Large etc.
ii. Should be installed in change rooms.

14. ELECTRICAL INSTALLATIONS (Distribution Board, Internal wiring, cable tray, conduit, etc.)

i. Distribution box, leakage relays, cable tray, etc and all internal wiring and earthling inside the OT should be under the scope of MOT bidder. Institute will provide dedicated copper Earthling outside of each OTs.
ii. Power distribution within the OT should be "provided' from distribution boards located to each theatre. Sub mains power to these panels should be by the general

electrical contractor. From these panels all distribution services within the departments should be run. Isolated power supply, insulation measuring and protection as per IEC standards should be provided. All components should be EN/CE/UL/FDA/IEC certified

iii. Each OT wall should have minimum 4 nos. switch & socket of 6/16A dual type and 2 nos. industrial socket of 32A should be provided to any 2 parallel walls of each OTs.

iv. **DISTRIBUTION BOARD**

a) All high voltage equipment should be installed in a separate enclosure.
b) The remote cabinet should house the operating lamp transformers, mains failure relays, UPS, electrical distribution equipment & circuit protection equipment for all circuits within the operating theatre.
c) All internal wiring should terminate in connectors with screw & clamp spring.
d) Connections of the clip- on type mounted, on a CE approved rail & labeled with indelible proprietary labels.
e) Individual fuses or miniature circuit breakers should protect all internal circuits.
f) Complete schematic drawing with description should be enclosed with the equipment.

v. Earthed equipment bonding of all exposed metalwork should be provided.
vi. Power sockets within the Operating Theatres ancillary areas should be matched to the rest of the hospital.
vii. Light fittings within the clinical areas should be recessed LED type with control gear
viii. Fittings should be sealed In accordance with the standard IP54.
ix. All equipment should be fully and permanently labeled to identify and describe the function, operation and voltage of the apparatus concerned. Throughout and upon completion of the electrical installation, tests in accordance with relevant sections of the local wiring regulations should be carried out and the results recorded.
x. All necessary interconnection of LAN cables, Telephone/intercom, copper strip, etc. to MOT from hospital source is the responsibility of the bidder.
xi. Minimum 2Nos of extra MCCBs/MCBs in DBs should be provided for integration equipment or future expenses.

14A. Isolation Panel - Isolation Panel of suitable capacity (20KVA) should be provided for every operation theatre which ensures the safety of staff, patient & equipment. System should have isolators provided through leakage relays etc according to IEC recommendation. This unit should be EN/CE/UL/FDA/IEC certified. These systems are to be commissioned by specialists. It should be integrated with BMS.
Should be medical grade Insolation panel
Should have fault detection feature
Should be compliant to CEI 64-8 Standard
Should be mountable on wall & compact and it will be installed at dirty corridor.

14B. Online UPS –

Bidder should provide sine wave based UPS to support all modular theatre equipment. UPS load should be minimum 20 KVA for each OT (8 MOTs on 3rd floor). One 10KVA(for Emergency OT at ground floor) UPS.

Standby UPS should be provided in addition to the above mentioned UPS of minimum capacity of 20KVA for 3rd floor and 10KVA for Emergency OT of GF.

Institute will provide UPS room on the same MOT floor with one point raw electrical supply (DG supply) and bidder has to provide **electrical panel at UPS room** which will supply raw power & UPS power to each MOTs. All necessary cabling and fittings from UPS room to all MOTs at same floor should be responsibility of the bidder as per electrical standard. Bidder has to provide suitable DB for UPS Power and raw power to each MOT at dirty corridor. Maintenance free batteries should be provided with back up time of at-least 15min and battery bank will be at UPS room or suitable location provided by the institute at same floor.
UPS should be provided with automatic bypass switch to raw power, which will act when USP will fail.
The room for the UPS will be provided by the institute at all OTs floor and one point electric supply will be provided to the UPS Room by the Institute.

15. DEMOLISHING, RECONCONSTRUCTING, WATER PROOFING, PLUMBING, REPAINTING AND REPLACEMENT as "SITE MODIFICATION"

i. Any demolition, reconstruction, plastering, water proofing, repairing, necessary plumbing, anti-microbial painting, etc for installation the MOTs equipment like PRD, Hatch Box, etc.
ii. Replacement of any door or windows to provide structured design for modular OT should be carried out by the bidder for smooth and fast installation & commissioning.
iii. Disposal of demolished waste at appropriate places as suggested by the competent authorities of respective institute/hospital.

16. PENDANTS FOR ANESTHETIST AND SURGEON

16.1 Double arm moveable Pendant for Anesthetist

The Pendants should comply with NFPA 99C/HTM 02-01/ISO 7396-1/DIN. The support arms should be extremely robust and revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position

The Pendant should have the following specification:

i. Double moveable arms (any combination) with total coverage of **2000mm +/- 5%** and 330 deg. Horizontal movements for each arm. Vertical movement should be motorized and the arm height should remain to a height greater than 6 feet above floor level.
ii. Weight carrying capacity of the arm should not be less than 220 Kgs. should have electromagnetic brakes.
iii. Each arm should be capable of 300-340 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.
iv. The Pendant Service Heads should be modular with minimum **1200mm head**. The heads should be capable of accepting a range of shelves, and infusion poles or other accessories. The Pendant Heads should support the range of Physiological Monitor Mounting Solutions.
v. The Pendant Service Heads should be supplied with medical gas terminal units and 5/15 or 6/16 Amps dual Sockets.
vi. Double arm pendant anesthetists : Each pendant should be supplied with pre-fitted outlets and probes as mentioned below –
Oxygen Outlets – 2 nos.,

Vacuum Outlets – 2 nos.,
Nitrous oxide – 2 nos.,
Air(4 bar) Outlets - 2 nos.,
AGSS outlet - 1 no
Electrical sockets - 12 nos.
Adjustable Shelf with two rails one on each side – 3 no.
IV Fluid Pole with 4 hooks – 1No.
Data socket RJ-45/CAT6 -2 nos.

vii. The pendants should be European CE with 4 digit notified body number or USFDA certified for the offered model.

viii. Pendant supplier should provide cutouts for Patch Panels in Integrated OTs. (only for integrated OT)

ix. The pendant should be supplied with necessary docking accessories for anesthesia machine.

16.2 Double arm moveable Pendant for Surgeon

The Pendants should comply with NFPA 99C/HTM 02-01/ISO7396-1/DIN. The support arms should be extremely robust and revolve on high quality bearings, so that the pendant head glides smoothly and quickly to any desired position

The Pendant should have the following specification:

i) Double moveable arms (any combination) with total coverage of **2000mm +/- 5%** and 330 deg. Horizontal movements for each arm. Vertical movement should be motorized and the arm height should remain to a height greater than 6 feet above floor level.

ii) Weight carrying capacity of the arm should not be less than 200 Kgs. Should have electromagnetic brakes.

iii) Each arm should be capable of 300 - 340 degrees of rotation, which can be easily adjusted to suit the desired mode of operation.

iv) The Pendant Service Heads should be modular with minimum 1200mm head. The heads should be capable of accepting a range of shelves, and infusion poles or other accessories. The Pendant Heads should support the range of Physiological Monitor Mounting Solutions.

v) The Pendant Service Heads should be supplied with medical gas terminal units and 5/15 or 6/16 Amps dual Sockets.
Each pendant should be supplied with pre-fitted outlets and probes as mentioned below –

Vacuum Outlets – 2nos,
Air (7bar) Outlet- 02nos,
Air (4bar) Outlet – 01no.
CO2 Outlet - 02 nos.,
Electrical sockets - 12 Nos. (6/16A)
Adjustable Shelf with two rails one on each side – 5 no.
Data socket RJ-45 -2 no.
IV Fluid Pole with 2 hooks – 1No. (Pole should be capable of stacking 4 nos of syringe pumps)

vi) The pendants should be European CE with 4 digit notified body number or USFDA certified for the offered model.

vii) Pendant supplier should provide cutouts for Patch Panels in Integrated OTs (only for integrated OTs).

17. Medical Gas Pipe Line Interconnection (MGPS Lines to Pendants etc)

i) The bidder should ensure that all works carried out as per HTM 02-01 /NFPA 99C / DIN/ISO 7396-1 standard

ii) Bidder should provide Oxygen, Air4, Air7, Co2, Vacuum, AGSS, and Nitrous Oxide, etc. supply to Operation Theatres from the existing lines terminated outside the MOT.

iii) Bidder shall be responsible for supply, installation, testing and commissioning of complete MGPS system inside the operation theatre including Distribution piping, connection to Pendants, outlets and other essential accessories.

iv) Copper pipes should be of solid drawn, seamless, deoxidized, non-arsenical, half hard, tempered and degreased copper pipe. All copper pipes should be degreased & delivered capped at both ends. The pipes should be accompanied with manufacturers test certificate for the physical properties & chemical composition. The copper pipe should comply with EN 13348

v) Copper pipe must have reputed third party inspection certificate (Eg. Lloyd's, TUV, SGS).

vi) Fittings should be made of copper and suitable for a working Pressure of up to 17bar and especially made for brazed socket type connections.

vii) The copper fitting should comply with EN 1254-1

viii) The Brazing filler material should comply with EN 1044

BOQ FOR 9 NOS OF MODULAR OT'S

SN.	Item Description	Quantity	Unit	Reqd. MAF: Ex/ Non-Ex/NR
1A	Wall Paneling System Complete as per tender Specification	Sq M	1525	Panel including Ante-room paneling / Non-Ex
1B	Ceiling Paneling System Complete as per tender Specification	Sq M	525	Panel including Ante-room paneling / Non-Ex
2	PVC Flooring as per tender Specification	Sq M	630	Including ante room/ NR
3	Self-Leveling Compound	Nos	9	NR
4	Laminar Flow Air System, Exhaust Cabinets and AC Ducting(Inside MOT) as per tender Specification	Nos	9	Non-Ex
5	Peripheral Lighting and Clean Room Luminaries as per tender Specification	Nos	100	Including ante room peripheral light/ NR
6	Touch screen control panel as per tender Specification	Nos	9	Non-Ex
7	X Ray Film Viewer as per tender Specification	Nos	9	NR
7A	PACS Viewer as per specs (for Non Integrated MOT)	Nos	1	NR
8	Storage Shelves as per tender Specification	Nos	18	NR
9	Hatch Boxes as per tender Specification	Nos	8	NR
10	Pressure Relief Dampers as per tender Specification	Nos	9	NR
11A	Hermetically Sealed Door{Size 2.1m(H)x1.8m(W)} as per tender Specification	Nos	8	Non-Ex
11B	Hermetically Sealed Door {Size 2.1m(H)x1.8m(W)} as per tender Specification -	Nos	7	Non-Ex

	Door for Anti-Room			
11C	Hermetically Sealed Door {Size 2.1m(H)x1.8m(W)} as per tender Specification - Door with Lead Lining for IORT	Nos	2	Non-Ex
12	Hermetically Sealed Door {Size 2.1m(H)x1m(W)} as per tender Specification – **Optional**	Nos	1	Non-Ex
13	View Window (With Motorized Blinds) - **Optional**	Nos	1	NR
14	Operating List Board as per tender Specification	Nos	9	NR
15	Scrub Station as per tender specification	Nos	5	NR
15A	Scrub Suite Vending Machine as per tender specification	Nos	4	Non-Ex
16	Electrical Installations(Distribution Board, Internal wiring, cable tray, etc) as per tender specification	Nos	9	NR
17	Isolation Panel as per specification -	Nos	9	Non-Ex
18	UPS as per Specification (20KVA X 8 + 20KVA standby)	Nos.	1	For Main MOT 3rd Floor/NR
19	UPS as per Specification (10KVA X 1 + 10KVA standby)	Nos.	1	For Emergency MOT GF/NR
20	Demolition, Reconstruction, Water Proofing, Plumbing, Repainting and Replacement as site “modification work”	**Ls**	1	**NR**
21	Double Arm Moveable Pendent for Anesthetists as per specification	Nos	9	Ex
22	Double Arm Moveable Pendent for Surgeon as per specification	Nos	9	Ex
23	Medical Gas Pipeline Interconnection as per specification	Ls	9	NR

Abbreviations:

MAF: Manufacturer Authorisation Form as per Bidding Document

Ex: Exclusive (i.e. One OEM can authorise only one agent for its product in a specific tender).

Non-Ex: Non Exclusive.(i.e. One OEM can authorise multiple agents for its product in a specific tender).

NR: Not Required.

[Layout of OTs along is furnished at page no. 110 & 111 for reference]

Item sl. no. 05

Integration and Data Management System for Modular OT with OT Light

1. Installation Requirement & Scope –

a) Bidder has to provide all required hardware & software to complete the work all in accordance with international standard & norms.
b) All communication should be through fiber-optic cable only.
c) All required fiber-optic cabling inside MOT and upto IT rack present outside of each MOTs are under bidder scope and Institute will provide OFC (Fiber Optic Communication) from each IT racks to server room/control room, doctor's lounges & auditorium, etc.
d) Bidder should be responsible for all cut-outs, patch-panels, flushing of monitors, etc. and repairing & repainting of OTs thereafter (If required)
e) Bidder has to provide all required tranches/ trays, PVC conduits for fiber optic cables, electrical cables, data cables, etc. with all necessary cabling required for integration system. MOT vendor will provide necessary cutouts as per approved drawing provided by institute/consignee. MOT vendor will also provide dedicated MCBs/MCCBs minimum 2Nos for integration equipment in MOT Distribution Board(DB) rest cabling will be in the scope of integration vendor for integration equipment's.
f) Bidder has to provide all required convertors/transducers to integrate signal from different sources/equipment. The integration system should be capable of sending & receiving of all kind of audio & video signals(VGA, RGB, HDMI, DVI, USB, S-Video, etc)

2. 2D & 3D Medical Grade Monitors -

a. 32 inch or more Full High Definition (1920X1080p) medical grade monitor, flat panel LED/LCD Color screen to display both 2D & 3D images and mounted on spring boom arm and second monitor should be mounted on OT Light 3rd arm.
b. 42 inch FHD (1920X1080p) medical grade color monitor should be flush mounted on OT wall with all necessary frames with glass should be provided by bidder.
c. Patch panel for power & signal to be laid down for LCD Monitor at Wall/Pendent/boom/OT Light 3rd arm.
d. Ceiling Boom Arm – Should be capable of holding 32inch monitors and all fixation related work for the same should be responsibility of bidder
e. All medical grade monitors offered should be European CE with 4digit notified body/US FDA certified

3. Audio Video Communication System

a. The MOT should be connected to Conference room/Other MOT/Doctors lounge/Etc. for video conferencing and live transmissions as per the requirement.
b. The Audio-Video system should have the minimum 12 x 12 Digital with open architecture. The routing/Switch system should be able to integrate Full HD signal (e.g. Room Camera/OT Light Camera/Etc)
c. 12 Number of Decoders and 12 Numbers of Encoder or converters should be supplied as per the institute requirement.(how many HD/3D/4K quantities)
d. Audio – Visual system should receive the signal from different sources like Room camera, Endoscopy camera, Overhead camera, Archiving System, Auxiliary devices like C-Arm, Video Microscope, Mobile ultrasound, microphones, AUX-IN, 3.5mm(Audio) in & video conferencing.

e. The routing system should allow selection of multiple views for simultaneous transmission in QUAD or PIP format.
f. It should be capable to route the 3D & 4K data also all necessary hardware & software should be supplied.
g. The System should be able to receive and transmit the PACS Data from source MOT.
h. Patient and image data(Endoscopic or open procedure) should be able to call up and distributed to required monitors in the operating room
i. All the patch panel work required for Hardware of OT Integration system should be in the bidder's scope of work and also necessary co-ordination with consignee, MOT Vendor, construction vendor and HLL/HITES will be the responsibility of the bidder for successful completion of the all associated works.
j. Audio-Video bidirectional Conferencing system should be offered and the system should be able to transfer high quality real time images and audio signals from multipoint at a minimum speed of 2Mbps. The system should be compatible to 1080p full HD resolution for transmission over the ISDN lines or IP Service.
k. Suitable HD camera & wireless mic should be provided.
l. The conferencing system should be controlled via the touch screen of the integration system from the OT. Suitable Number / Sets of Transmitters, Receivers and Cables, connectors and accessories should be offered as per the requirement.

4. Control System cum Digital Documentation System for MOT

a. Full High Definition 19" or more Medical grade LED/LCD monitor should be wall mounted or mounted on extended arm on surgical Pendant for the display of live transmission of images and video sequences from the Operating Room (eg. images from C arm, endoscope, OR light camera and Microscope)
b. Should have provision to record the images and video sequences in OT.
c. The Full High-Definition Digital Documentation System should be a high-end computer system based on Windows 7/8 or better embedded platform (for security purposes) designed specifically for recording, managing, and archiving surgical images and video in native full HD resolution. The captured full high-definition images & videos can be accessed from the hard drive for printing or saving onto USB Flash Drive & Hospital network.
d. Integration of equipment/Signals/Sources with the Central Control System in such a way that the central control system is capable to route any running high-definition surgical videos, which is being recorded in it, onto any display device in an operating room.
e. It should have at least 500 GB or more internal Hard Disk Drive (HDD) for in-system archiving. Also, it should have a feature of real time in-procedure DVD burning besides at-the-end procedure DVD burning. Also able to automatically transfer the data to Integration control room for optimum use. It should be able to preview and simultaneously record views from two video sources parallel and archive as single patient file.
f. Patient and image data should be able to call up and distributed to required monitors in the operating room
g. All cabling including audio, video, communication, power, etc in the scope of bidder and it is responsibility of the bidder to provide all necessary connectors/convertors to integrate the external OT equipment to integration system.
h. **Integration system should be able to control the following equipment -**
    1. OT Light
    2. Routing of video sources to display destination required
    3. Room audio & music
    4. Advance Integration –For MIS MOTs (Complete device control for LAPs, Endo Scopic, VATs, etc.)

i. The Control system rack should be flush mounted into the wall or mounted on dedicated rack of pendent.

j. System should able to document patient data and user configurable options for different procedure.

5. Monitoring & Control Room for OR Integration System –

a. It should able to control all incoming & outgoing audio from MOTs to MOTs/Conference/Auditorium with all necessary software Hardware.

b. It should be able to route all video-audio through IP technology to anywhere as per requirement for example the Operator can connect any MOT to Auditorium/MOT/Conference Room and route the desire source audio & Video anywhere as per the institute requirement.

c. Should be supplied with dedicated monitoring screen of minimum 42 inches for viewing all MOTs procedures and another monitor of min. 32 inch for controls of Integration system from monitoring and control room.

d. It should have dedicated server with 30TB of local online storage and able to integrate with main hospital IT server room, PACS and HIS. It should be DICOM and HL7 compliant.

e. Control Room should be able to perform below type of bidirectional Audio-Video communications –
   - OT to OT
   - OT to Doctors Lounge/Doctor's office
   - OT to Auditorium
   - OT to Outer World (through Internet)

f. The System should be supplied with minimum 50 User License to simultaneously remotely view of video sources of OTs.

6. Extra Hardware for Audio-Visual Conferencing (Optional Price Should be offered) The bidder should supply all the necessary equipment required for Audio visual conference from the MOT to MOT/Auditorium / Conference Room/Doctors lounges/Etc. for two communications.

a. Room Camera/ Camera Inside MOT-The bidder should install the room camera inside OTs. Camera should be HD. It should be high speed cameras, with 20X or more zoom lens, with pan tilt with power supply and reliable strong mounting assembly. It should be integrated and controlled via the central control system should be from reputed make and covered under warranty & CMC as per tender terms.

b. Video Projector –Minimum resolution should be 1080p and should be supplied with Motorized Screen with remote. Projector should be capable to take input & output from all commonly use medium.Should be from reputed make and covered under warranty & CMC as per tender terms.

c. PA System (for Audio Communication 2-Way) – High speed multi-channel PA system as per the institute requirement, capable to integrate with main integration system. Should be from reputed make and covered under warranty & CMC as per tender terms.

d. Cabling for 2way conferencing –Bidder should quote rate Per meter basis and payment will be made on actual consumption.

e. Any Extra Works –Bidder should describe if any other item required for two-way audio video conferencing required other than specified. Bidder must quote Unit Rate for such items otherwise it will be presumed that all parts which are not specified is inclusive in the offer.

7. OT LIGHT WITH CAMERA

A. OT Light – LED

Operating Room Surgical Lighting System should provide an ideal combination of brightness, maneuverability, and shadow resolution without sacrificing color accuracy through a consistent LED technology.

Such Lighting System should have the following technical specifications:

i. Number of Light heads : Two per suspension
ii. Colour Temperature range: 3800 k -5000 (±10 %) - Variable colour temperature.
iii. Field Size Diameter: 20 to 28cm (+/- 10%)
iv. Working Range: 750 to 1100mm (+/- 10%) or better
v. Illumination Level : 160000Lux (Major Dome & Minor dome)
vi. Controls : Control Panel (wall and on dome)
vii. Rotation : 360 -330degrees
viii. Sterilizable Handle: 02 Nos.
ix. Mounting Type : Ceiling
x. Supply Voltage : 230 VAC 50 Hz
xi. Bulb Type : LED
xii. Dimming Range : 30% - 100%
xiii. Life of Light Source : >40,000 Hrs
xiv. Should be supplied with 3rd arm for Monitor(32inch)
xv. Surgical Light System Should be European CE with 4digit notified body/US FDA certified and certificate should be submitted for offered model

B. **HD Camera System – 1080 p/i**

Integrated In-Light Camera System should be in one of the domes of this lighting system.

Such an autofocus – camera should have the following specifications

i. Signal to Noise Ratio (S/N Ratio) : >50 dB
ii. CCD/CMOS : 1/3" or 1/2.8"
iii. Optical Zoom : 10X
iv. Digital Zoom : 12-15X
v. Video Output: HD and S-Video / Composite Video (Integrated / through Convertor)
vi. White Balance & Gain: Automatic/Manual
vii. Light and Integrated Camera should have a control through Touch Panel of the control equipment placed inside the operating room

C. HD LED FLAT PANEL MEDICAL GRADE MONITOR (for Non Integrated MOTs)

Should be 30-32" High Definition Progressive Scan Flat-panel Medical Grade Monitors with ceiling mounted spring arm suspension to support high definition/HDTV progressive Scan images and should be able to support and display DVI/HDTV, RGBHV, S-Video, Composite video signals. Aspect ratio 16:9/16:10. Resolution – 1920X1080 or more

The flat Panel suspension should be ready with the cables for integration of High Definition Digital (DVI/HDTV), RGBHV (High Resolution), SVHS (S-Video), Composite video signals to travel from the various sources of video like endoscopic camera, room camera, in light camera, high definition flat panel monitors, while assuring native resolution / signal.

D. Recording System (Price to be offered separately - For Non-Integrated MOT)

Recording system to be offered separately. Recording system should be full HD monitor LCD 21" touch screen or more and having the one TB storage space. USB port should be available for archiving the procedures.

Data cable for communication from both pendants and monitors should be laid down upto outside of OT in a patch port for future expansion for all OT's.

BOQ for Integration

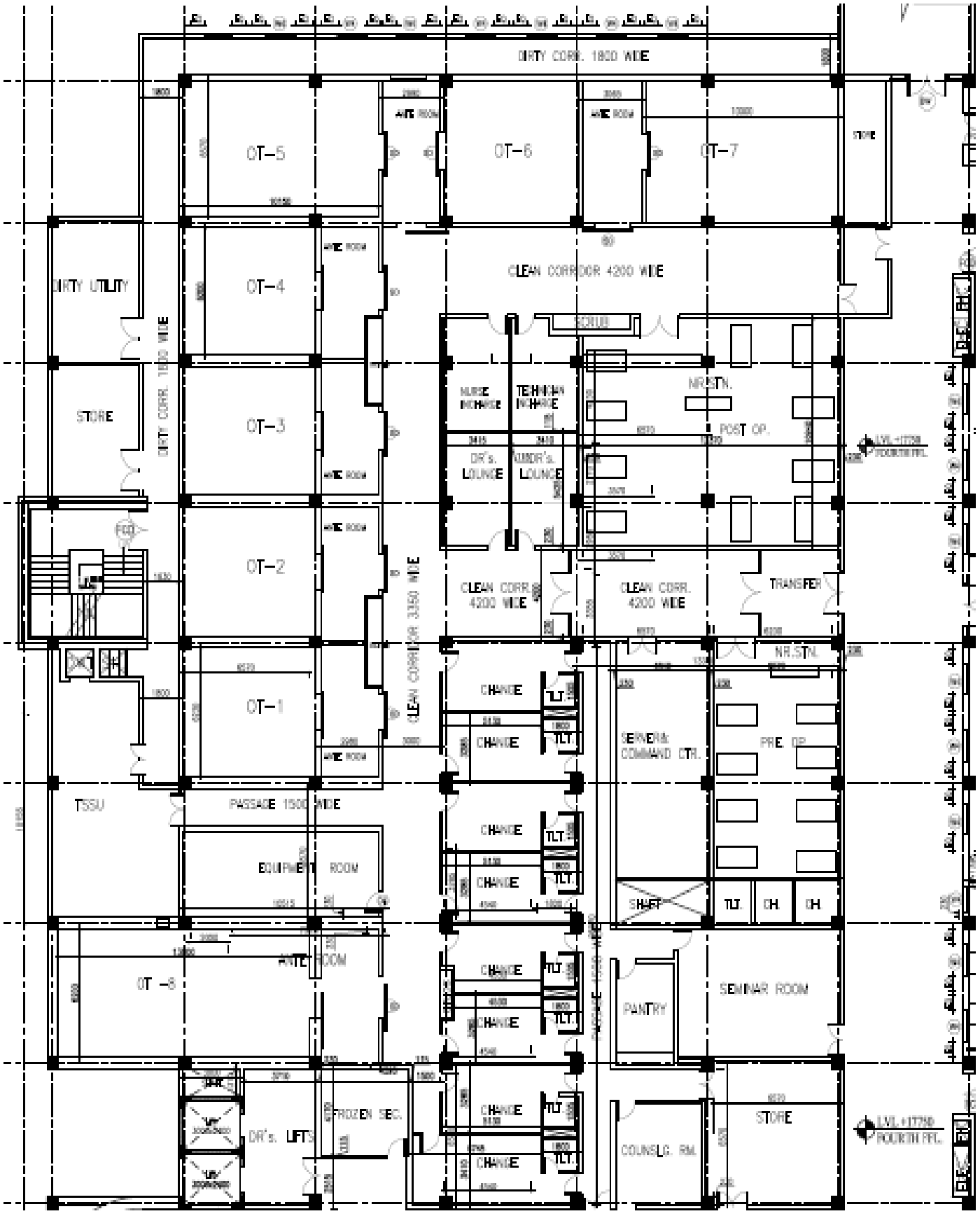
S.N	NAME OF THE ITEMS (Item description as per specification)	UNIT	Qty. for Each MOT	Total Qty. for 8 MOT	MAF- Ex/ NON-Ex/NR
1	**Monitors - Medical Grade**				
A	Digital 32 inch Medical Grade monitor	Nos.	1	8	Non-Ex
B	2D & 3D Medical Grade Monitor	Nos.	1	8	Non-Ex
C	4K Medical Grade Monitor 32 inch (Optional)	Nos.	1	0	Non-Ex
D	42 inch Medical Grade Monitor (flushed in MOT Wall)	Nos.	1	8	Non-Ex
E	Ceiling boom arm to mount 32" monitor	Nos.	1	8	NR
2	**Audio Visual Communication System as per tender Specification**	Nos.	1	8	Ex
A	**HD 1 Encoder and 1 Decoder Set (As per requirement of institute)**	**Nos.**	**8**	**64**	Ex
B	**3D 1 Encoder and 1 Decoder Set (As per requirement of institute)**	**Nos.**	**1**	**8**	Ex
C	**4K 1 Encoder and 1 Decoder Set (As per requirement of institute)**	**Nos.**	**1**	**8**	Ex
3	**Control System cum Digital Documentation System for MOT as per specification**	Nos.	1	8	Ex
4	**Monitoring & Control Room for OR Integration System as per specification**				
A	Monitoring & Conrtol system (Hardware & Software) with server as per specification	Nos.	1	1	Ex
B	42 inch Monitor	Nos.	1	1	NR
C	32 inch monitor	Nos.	1	1	NR
5	**Extra Hardware for Audio-Visual Conferencing – As per specification**				
A	Room Camera/Camera Inside MOT(Optional)	Nos.	2	0	
B	Video Projector(Optional)	Nos.	1	0	
C	PA System (Optional)	Nos.	1	0	
D	Cabling for 2Way Conferencing(Optional)	Meter	1	0	
E	Any Extra works	Ls	1	0	
6	**(A+B) OT LIGHT WITH CAMERA**	Nos.	9	9	Ex
	C) HD LED FLAT PANEL MEDICAL GRADE MONITOR	Nos.	1	1	Non-Ex
	D) Recording System	Nos.	1	1	NR

Abbreviations:

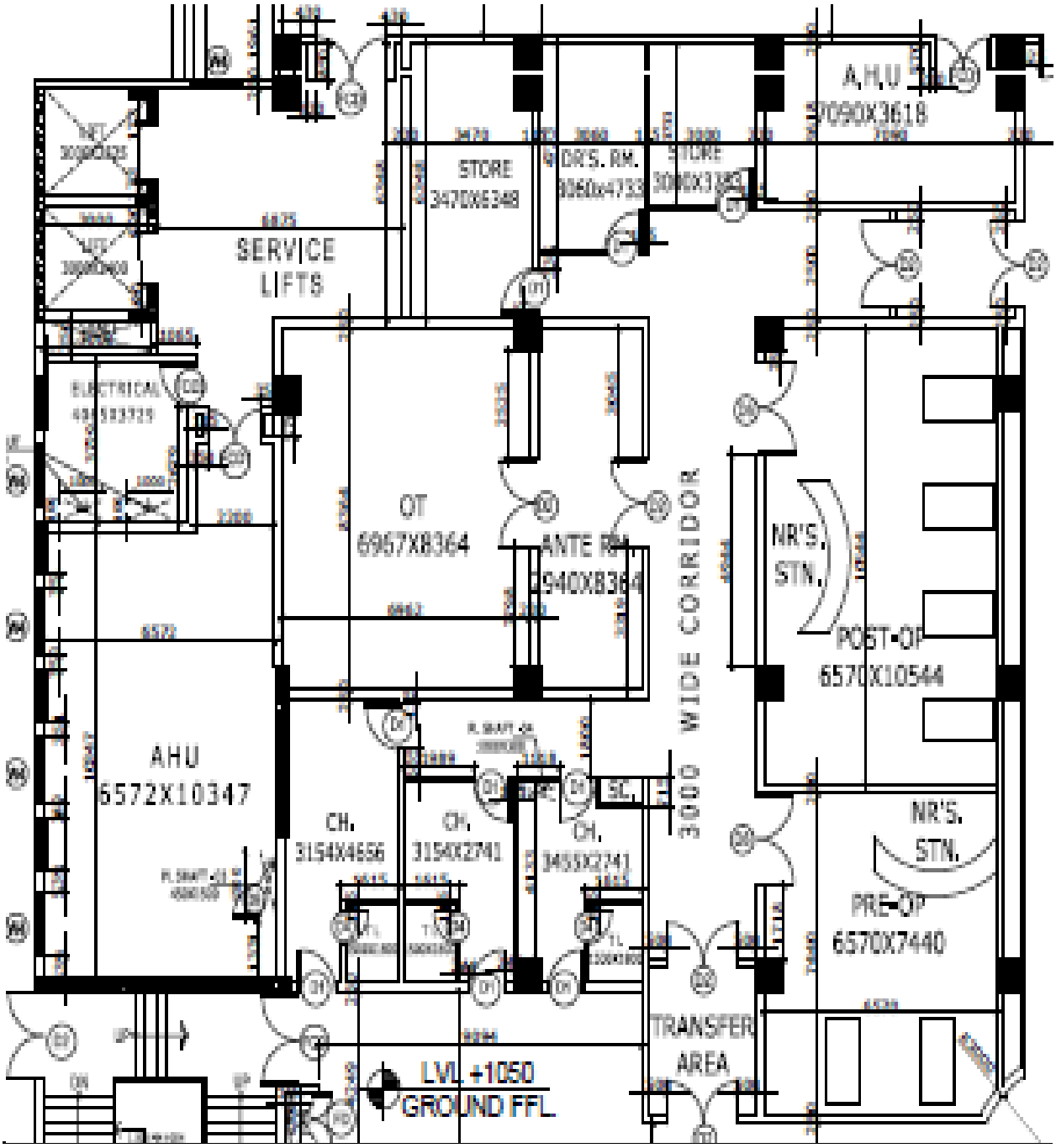
MAF: Manufacturer Authorisation Form as per Bidding Document
Ex: Exclusive (i.e. One OEM can authorise only one agent for its product in a specific tender).
Non-Ex: Non Exclusive.(i.e. One OEM can authorise multiple agents for its product in a specific tender).
NR: Not Required.

Note: Evaluation will be done on the tendered BOQ, Institute may vary the quantities of BOQ items as per the institute requirement and final payment will be done as per actual consumption

OT's on 3rd floor of Hospital Block



OT on Ground floor of Hospital Block



B. GENERAL POINTS

1. Warranty:

a) The bidders must quote for Five years Comprehensive Warranty as per Conditions of Contract of the bidding document for complete equipment (Including all spares, labour and third party items) and Turnkey Work (if required) from the date of satisfactory installation, commissioning, trial run, handing over and acceptance of the goodsby the User Department.

b) The warranty charges shall not be quoted separately.

c) During the Warranty period, desired Uptime of 95% of 365/366 (Leap Year) days (24 hrs), if downtime more than 5%, the warranty period/CAMC period will be extended by double the downtime period. In addition a penalty equal to amount of 0.25 % of the total cost of equipment per day will be liveable for the excess downtime period. Complaints should be attended properly, maximum within 8 hrs.

d) All software updates should be provided free of cost during Comprehensive Warranty period.

2. After Sales Service:

After sales service centre should be available at the city of Institution on 24 (hrs) X 7 (days) X 365 (days) basis. Complaints should be attended properly, maximum within 8 hrs. The service should be provided directly by Bidder/Indian Agent. Undertaking by the Principals in the "Manufacturer Authorisation Form" that the spares for the equipment shall be available for at least 10 years from the date of supply of equipment.

3. Training:

On Site training to Doctors/ Technicians/ staff is to be provided by Principal/Indian Agents (if they have the requisite know-how) for operation and maintenance of the equipment to the satisfaction of the User Department.

4. Comprehensive Annual Maintenance Contract (CAMC) of subject equipment:

a) The cost of Comprehensive Annual Maintenance Contract (CAMC) which shall include preventive maintenance including testing & calibration as per technical/service/ operational manual of the manufacturer, labour and all spares, after satisfactory completion of Warranty period may be quoted for next five years on yearly basis for complete equipment including third party items as per Price Schedule.

b) The cost of CAMC may be quoted along with GST applicable on the date of Bid Opening.

c) Cost of CAMC will be added for Ranking/Evaluation purpose on NPB basis.

d) Before commencement of CAMC period, the suppliers shall furnish a Performance Bank Guarantee for 2.5% of the cost of the equipment (as per Performa given in bidding document) valid till 3 months extra after expiry of entire CAMC period. The Performance Bank Guarantee for CAMC will be applicable in case of equipment cost is more than Rs.10 lakh.

e) During the CAMC period, desired Uptime of 95% of 365/366 (Leap Year) days (24 hrs), if downtime more than 5%, the warranty period/CAMC period will be extended by double the downtime period. In addition a penalty equal to amount of 0.25% of the

total cost of equipment per day will be liveable for the excess downtime period. Complaints should be attended properly, maximum within 8 hrs.

f) All software updates should be provided free of cost during CAMC. In case of failure by the supplier, the Bank Guarantee of CAMC will be forfeited.

g) The payment of CAMC will be made on half yearly basis after satisfactory completion of said period duly certified by end User.

5. Uptime & Downtime Penalty Clause:

a) The firm should provide uptime guarantee of 95% during warranty period and CAMC period.

b) During the Warranty period and CAMC period, desired Uptime of 95% of 365/366 (Leap Year) days (24 hrs), if downtime more than 5%, the warranty period/CAMC period will be extended by double the downtime period. In addition a penalty equal to amount of 0.25 % of the total cost of equipment per day will be liveable for the excess downtime period. Complaints should be attended properly, maximum within 8 hrs.

6. Turnkey Work:

Turnkey Work is to be indicated in the Technical Specification wherever required. The Bidder shall examine the existing site where the equipment is to be installed, in consultation with User Department. The Bidders are required to quote separately for the equipment and Turnkey Work as per Price Schedule. The Turnkey Work costs may be quoted in Indian Rupee and the same will be added for Ranking Purpose.

The Turnkey Work should completely comply with AERB requirement, wherever required.

SECTION - VIII

QUALIFICATION CRITERIA

a. APPLICABLE FOR ITEMS AT SL. NO. 1 & 2 OF THIS BIDDING DOCUMENT

1. The bidders must be a manufacturer. In case the manufacturer does not quote directly, they may authorise their authorized agent as per proforma of "Manufacturer Authorization Form" as given in the bidding document to quote and enter into a contractual obligation.

2. The Manufacturer should have supplied and installed in last Five years from the date of Bid Opening, similar equipment meeting major parameters of technical specification which is functioning satisfactorily.

3. In support of 2, the Bidder shall furnish Performance statement in the enclosed Proforma 'A'.

   The Bidder shall furnish Satisfactory Performance Certificate in respect of above, duly translated in English and duly signed alongwith the bid.

4. The Purchaser reserves the right to ask for a free demonstration of the quoted equipment after giving reasonable time to the bidder at a pre-determined place acceptable to the purchaser or at site (in case of non portable and heavy equipment) for technical acceptability as per the bidding document specifications, before the opening of the Price Bid.

PROFORMA 'A'

PROFORMA FOR PERFORMANCE STATEMENT

(For the period of last five years)

TE No. : _____

Date of Bid Opening : _____

Name and address of the Bidder : _____

Name and address of the Manufacturer : _____

Order placed by (full address)	Order no. and date ##	Description (Model no.) and quantity	Value of order (Rs.)	Consignee	Date of Delivery Period			Have the goods been functioning satisfactorily (attach documentary proof)**
					Contract	Actual	Reasons for Delay if Any	
1	2	3	4	5	6	7	8	9

We hereby certify that the details of all orders received in last 5 years of quoted equipment (including AIIMS, PGIMER, JIPMER, RML Hospital, Safdarjung Hospital, Institute of National importance) has been furnished. We hereby further certify that if at any time, information furnished by us is proved to be false or incorrect; we are liable for any action as deemed fit by the purchaser in addition to forfeiture of the Bid Security.

Name_____

Business Address_____

Signature of Bidder_____

Place: _____ Seal of the Bidder_____

** The documentary proof will be a latest certificate from the consignee/end user with cross-reference of order no. and date

The bidders are requested to submit the purchase order copies for the specific model quoted along with the Techno-commercial Bid.

QUALIFICATION CRITERIA

b. APPLICABLE FOR ITEMS AT SL. NO. 3, 4 & 5 OF THIS BIDDING DOCUMENT

1. **Status:** The Bidder should be a Manufacturer or its authorized Agent.

2. **Turnover:** Eligible Bidders should have an average annual turnover in the consequetive past three financial years (2014-15, 2015-16, 2016-17) at least 80% of the estimated cost**.**

3. **Minimum Work of Similar Nature:**

   Eligible bidder(s) should have in the past five years ending 31st March 2017 successfully completed similar project for Modular OT/MGPS/OT-Integration (as the case may be) works in India as stated below:

   a. One single order of similar nature of project for a minimum value of 80% of the estimated cost.

   or

   b. Two single orders of similar nature of project for minimum value of 60% of the estimated cost.

   or

   c. Three single orders of similar nature of project for minimum value of 40% of the estimated cost.

   The copies of order(s) alongwith the completion certificate(s) from end user(s) indicating that the specified works have been completed shall be submitted with bid.

4. **Financial Status:** Eligible Bidders should not have incurred any loss in more than 2 years during the last five years ending 30th June 2016 or 30th September 2016 or 30th December 2016 or 31st March 2017. Audited Profit & Loss account and Balance Sheet (duly self certified) for the immediate last five consecutive financial years should be submitted along with the bid.

NB:

Estimated Cost for items at sl. no. 3, 4 & 5 for meeting the Criteria at point 3 above

Sl. no.	Rfx/ Event number	Short Description of goods	Quantity	Total Estimated Cost (Rs. in cr.)
3	3000002186	Centralised Medical Gas Pipeline System	1	12.00
4	3000002187	Modular Operation Theater (MOT)	9	9.00
5	3000002188	Integration and Data Management System for Modular OT with OT Light	8	8.00

SECTION – IX

BID FORM

To
CEO
HLL Infra Tech Services Limited
B-14A, Sector-62
Noida – 201 307

Ref. Your TE No. _____due for opening on _____

We, the undersigned have examined the above mentioned bidding document, including amendment/corrigendum (*if any*), the receipt of which is hereby confirmed. We now offer to supply and deliver _____ in conformity with your above referred document for the sum as shown in the Price Schedules attached herewith and made part of this bid. If our bid is accepted, we undertake to supply the goods and perform the services as mentioned in the bidding documents, in accordance with the delivery schedule specified in the List of Requirements.

We further confirm that, if our bid is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of "General Conditions Contract", Section - IV read with modification, if any "Special Conditions of Contract", in Section - V, for due performance of the contract.

We agree to keep our bid valid for acceptance as required in the "General Instruction to Bidders", read with modification, if any in "Special Instructions to Bidders", Section – III or for subsequently extended period, if any, agreed to by us. We also accordingly confirm to abide by this bid up to the aforesaid period and this bid may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this bid read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

We further understand that you are not bound to accept the lowest or any bid you may receive against your above-referred advertised tender enquiry.

We confirm that we do not stand deregistered/banned/blacklisted by any Central Govt. Ministries/Departments/Hospitals/Institutes.

We confirm that we fully agree to the terms and conditions specified in above mentioned bidding document, including amendment/ corrigendum if any**.**

"We hereby certify that if at any time, information furnished by us is proved to be false or incorrect, we are liable for any action as deemed fit by the purchaser in addition to forfeiture of the bid security."

Name_____

Business Address_____

Place: _____ Signature of Bidder_____

Date: _____ Seal of the Bidder_____

SECTION - X

PRICE SCHEDULE

A) PRICE SCHEDULE FOR DOMESTIC GOODS OR GOODS OF FOREIGN ORIGIN LOCATED WITHIN INDIA

1	2	3	4	5					6
				Price per unit (Rs.)					
Item Sr. No./ RFx no.	Brief Description of Goods	Country of Origin	Quantity (Nos.)	Ex - factory/ Ex -warehouse /Ex-showroom /Off - the shelf including packing charges (a)	GST (if any) Value (%age] (b)	Inland Transportation, Insurance for a period including 3 months beyond date of delivery, loading/ unloading and Incidental costs till consignee's site (c)	Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training) at the Consignee's site (d)	Unit Price (at Consignee Site) basis (e) =a+b+c+d	Total Price (at Consignee Site) basis (Rs.) 4 x 5(e)

Total Bid price in Rupees: _____ (in figures)

_____ (in words)

Note: -

1. If there is a discrepancy in prices the same will be evaluated as per clause 29 of GIB.
2. The charges for Annual CAMC after warranty shall be quoted separately as per Section-X – Price Schedule C

Name_____

Business Address_____

Place: _____

Signature of Bidder_____

Date: _____

Seal of the Bidder_____

B) PRICE SCHEDULE FOR GOODS TO BE IMPORTED FROM ABROAD

1	2	3	4	5							6
				Price per unit (Currency)							Total price on CIP Named Port of Destination + Insurance (local transportation and storage)
Item Sr. No./ RFx no.	Brief Description of Goods	Country of Origin	Qty (Nos.)	FOB price at port of Lading /FCA price at airport (a)	Indian Agency Commission (% of FOB)**	Net FOB	Freight &Insurance (port of loading to port of entry) and other Incidental costs (b)	Incidental Services (including Installation & Commissioning, Supervision, Demonstration and Training) at the Consignee's site (c)	Extended Insurance (local transportation and storage) from port of entry to the consignee site for a period including 3 months beyond date of delivery (d)	Unit Price on CIP Named Port of Destination + Extended Insurance (local transportation and storage) (e) = a+b+c+d	4X 5 (e)

** To be paid in Indian Currency (Rs.)

Total Bid price in _____ (currency to be mentioned) _____ (in figures)
_____ (in words)

Note: -

1. If there is a discrepancy in prices the same will be evaluated as per clause 29 of GIB.
2. The charges for Annual CMC after warranty shall be quoted separately as per Section – X – Price Schedule C
3. The Bidder will be fully responsible for the safe arrival of the goods at the named port of entry in good condition as per terms of CIP as per INCOTERMS, if applicable
4. Actual Custom duty applicable on the date of bid opening and 2% C& F charges will be added to the CIP price to arrive at free delivery at consignee site for evaluation purpose.

Indian Agent (Name and Address) :_____

Indian Agency Commission - ___% of FOB

Name_____

Business Address_____

Place: _____ Signature of Bidder_____

Date: _____ Seal of the Bidder _____

C) PRICE SCHEDULE FOR COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMS) AFTER WARRANTY PERIOD

1	2	3	4					5	6	7
Item Sr. No./ RFx no.	BRIEF DESCRIPTION OF GOODS	QTY (Nos.)	Annual Comprehensive Maintenance Contract Cost for Each Unit year wise*.					Total Annual Comprehensive Maintenance Contract Cost for Each Unit for 5 years (4a+4b+4c+4d+4e)	GST (if any) Value (%age]	Total Annual Comprehensive Maintenance Contract Cost (inclusive of GST) for 05 years 3 x (5+6)
			1st	2nd	3rd	4th	5th			
			a	b	c	d	e			

* After completion of Warranty period

Total CAMC price in Rupees: _____(in figures)

_____ (in words)

NOTE:-

1. If there is a discrepancy in prices the same will be evaluated as per clause 29 of GIB.
2. The cost of Comprehensive Annual Maintenance Contract (CAMC) which includes preventive maintenance including testing & calibration as per technical/ service /operational manual, labour and spares, after satisfactory completion of Warranty period may be quoted for next 5 years or the period as mentioned in the bidding document on yearly basis for complete equipment and Turnkey (if any).
3. The cost of CAMC may be quoted along with GST applicable on the date of Bid Opening.
4. Cost of CAMC will be added for Ranking/Evaluation purpose based on NPB as stipulated in the bidding document.
5. The payment of CAMC will be madeas stipulated in GCC.
6. The uptime warranty will be 95 % on 24 (hrs) X 7 (days) X 365 (days) basis or as stated in Technical Specification of the Bidding document.The stipulations in Technical Specification will supersede above provisions.
7. All software updates should be provided free of cost during CAMC period.
8. The supplier shall keep sufficient stock of spares required during Comprehensive Annual Maintenance Contract (CAMC) 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.

Name_____

Business Address_____

Place: _____ Signature of Bidder_____

Date: _____ Seal of the Bidder_____

D) PRICE SCHEDULE FOR TURNKEY WORK

Schedule No.	TURNKEY WORK	Turnkey Work price (in Rs.)	GST (if any) Value (%age]	Turnkey Work price (in Rs.) (including GST)

Total turnkey work price in Rupees: _____ (in figures)

_____ (in words)

Note: -

1. The cost of Turnkey Work (Civil/Electrical/Mechanical Engineering work) as per Technical Specification (Section VII) may be quoted on lump sum along with GST applicable on the date of Bid Opening.
2. Cost of Turnkey Work will be added for Ranking/Evaluation purpose.
3. The payment of Turnkey Work will be madeas per GCC.

Name_____

Business Address_____

Place: _____ Signature of Bidder_____

Date: _____ Seal of the Bidder_____

SECTION – XI

CHECK LIST

The bidders should furnish specific answers to all the questions/issues mentioned in the Checklist detailed below:

CHECK LIST

Name of Bidder: _____

Name of Manufacturer: _____

Sl. No.	Activity	Yes/ No/ NA	Page No. of the Bids submitted	Remarks
1. a.	Have you enclosed Bid Security of required amount for the quoted schedules?			
b.	In case Bid Security is furnished in the form of Bank Guarantee, has it been furnished as per standard format of the bidding document?			
c.	In case Bank Guarantee is furnished, have you kept its validity 60 days beyond validity from Techno Commercial Bid Opening date?			
2.a.	Are you exempted for furnishing bid security being MSE as defined in MSE procurement policy issued by department of MSME.			
b.	If yes, have you enclosed certificate of registration issued by department of MSME.			
c.	Does such certificate clearly mention the quoted item?			
3. a.	Have you enclosed duly filled bid form as per bidding document?			
b.	Have you enclosed Power of Attorney in favour of the signatory?			
4. a.	Have you enclosed clause-by-clause technical compliance statement for the quoted goods vis-à-vis the Technical specifications?			
b.	In case of Technical deviations in the compliance statement, have you identified and marked the deviations?			
5. a.	Have you submitted satisfactory performance certificate as per the Proforma for performance statement given in the bidding document?			

Sl. No.	Activity	Yes/ No/ NA	Page No. of the Bids submitted	Remarks
b.	Have you submitted the documentary proof that goods have been functioning Satisfactorily?			
c.	Have you submitted latest purchase order copies?			
6.	Have you submitted Manufacturer's Authorization Certificate as per bidding document?			
7.a.	Have you quoted prices of goods, turnkey (if any), CAMC etc. in the Price Schedule as per bidding document?			
b.	If the ATE calls for buy back, have you quoted buy back prices along with applicable GST?			
8.	Have you kept validity of 270 days from the Techno Commercial Bid Opening date as per the bidding document?			
9. a.	In case of Indian Bidder, have you furnished GST No.?			
b.	In case of Foreign Bidder, have you furnished GST No. of your Indian Agent?			
10.	Have you intimated the name and full address of your Banker (s) along with your Account Number, IFSC Code etc.?			
11.	Have you furnished documents establishing your eligibility & qualification criteria as per bidding documents?			

N.B.

1. All pages of the Bid should be page numbered and indexed.
2. The Bidder may go through the checklist and ensure that all the documents/ confirmations listed above are enclosed in the bid and no column is left blank. If any column is not applicable, it may be filled up as NA.
2. It is the responsibility of bidder to go through the bidding document to ensure furnishing all required documents in addition to above, if any.
3. Wherever necessary and applicable, the bidders shall enclose certified copy as documentary proof/ evidence to substantiate the corresponding statement.
4. In case a bidders furnishes a wrong or evasive answer against any of the question/issues mentioned in the Checklist, its bids will be liable to be ignored.

Name_____

Business Address_____

Place: _____ Signature of Bidder_____

Date: _____ Seal of the Bidder_____

SECTION – XII

BANK GUARANTEE FORM FOR BID SECURITY

Whereas _____ (Name and address of the Bidder)
(*Hereinafter called the "Bidders"*)
Has submitted its Bid dated _____ for the supply of _____
(Hereinafter called the "Bid")
Against the purchaser's ATE No. _____

Know all persons by these presents that we _____ having our registered office at _____
(Hereinafter called the "Bank")
Are bound unto HLL Infra Tech Services Ltd., Noida (for and on behalf of AIIMS)
(Hereinafter called the "Purchaser)
In the sum of _____ for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this _____day of _____ 20____.

The conditions of this obligation are:

1) If the Bidder withdraws or amends, impairs or derogates from the bid in any respect within the period of validity of this Bid.
2) If the Bidder having been notified of the acceptance of his Bid by the Purchaser during the period of its validity:-

    a. if the bidder fails or refuses to furnish the performance security for the due performance of the contract or
    b. if the bidder fails or refuses to accept/execute the contract or
    c. if it comes to notice at any time, that the information/documents furnished in its Bid are false or incorrect or misleading or forged.

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or more the three conditions, specifying the occurred condition(s).

This guarantee will remain in force upto _____ *(insert date of additional forty-five days after Bid validity)* and any demand in respect thereof should reach the Bank not later than the above date.

.....
(Signature with date of the authorized officer of the Bank)
.....
(Name and designation of the Officer)
.....
.....
(Seal, name & address of the Bank and address of the Branch)

SECTION – XIII

MANUFACTURER'S AUTHORISATION FORM

The CEO
HLL Infra Tech Services Limited
B-14A Sector-62
Noida, Uttar Pradesh-201307

Dear Sir,

Ref: Your TE document No _____ dated _____

We, _____ who are proven and reputable manufacturers of_____(*name and description of the goods offered in the bid*) having factories at_____, hereby authorise Messrs_____(*name and address of the agent*) to submit a bid, 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 also state that we are not participating directly in this bid for the following reason(s):
_____*(please provide reason here).*

We further confirm that no supplier or firm or individual other than Messrs. _____ (*name and address of the above agent*) is authorised to submit a bid, 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 also hereby extend our full warranty, CAMC as applicable as per clause 15 of the General Conditions of Contract, read with modification, if any, in the Special Conditions of Contract for the goods and services offered for supply by the above firm against this TE document.

We also hereby confirm that we would be responsible for the satisfactory execution of contract placed on the authorized agent and the spares for the equipment shall be available for at least 10 years from the date of supply of equipment.

We also confirm that the price quoted by our agent shall not exceed the price which we would have quoted directly"

Yours faithfully,

[*Signature with date, name and designation*]
for and on behalf of Messrs_____
[*Name & address of the manufacturers*]

Note:

1. *This letter of authorisation 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.*

SECTION – XIV

BANK GUARANTEE FORM FOR PERFORMANCE SECURITY/CAMC SECURITY

WHEREAS _____ (Name and address of the supplier) (Hereinafter called "the supplier")

has undertaken, in pursuance of Purchase Order/ Contract no_____ dated _____ to supply _____ (*insert description of goods and services*) (Hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of _____ (insert *Amount of the guarantee in words and figures)*, and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee will remain in force upto _____*(insert date of additional Ninety days after completion of satisfactorily warranty period in case of Performance Security and additional Ninety days after completion of satisfactorily CAMC period in case of CAMC security)* and any demand in respect thereof should reach the Bank not later than the above date.

.....
(Signature with date of the authorised officer of the Bank)
.....
Name and designation of the officer
.....
.....
Seal, name & address of the Bank and address of the Branch

SECTION – XV

CONTRACT FORM - A

CONTRACT FORM FOR SUPPLY, INSTALLATION, COMMISSIONING, HANDING OVER, TRIAL RUN, TRAINING OF OPERATORS & WARRANTY OF GOODS

ALL INDIA INSTITUTE OF MEDICAL SCIENCES
(Insert Name of concerned Centre/ Hospital/ Department/ Section)
ANSARI NAGAR, NEW DELHI-110 029

Contract No_____ dated_____

To

(*insert name of Supplier with address*)

This is in continuation to this office's Notification of Award No_____ dated _____

1. Name & address of the Supplier: _____
2. ATE No of Bidding Documents: _____and subsequent Amendment No_____, dated_____ (if any), issued by the Purchaser
3. Supplier's Bid No_____ dated_____ and subsequent communication(s) No_____ dated _____ (if any), exchanged between the supplier and the purchaser in connection with this Bidding Document.
4. In addition to this Contract Form, the following documents etc, which are included in the Bidding Documents mentioned under paragraphs 2 and 3 above, shall also be deemed to form and be read and construed as integral part of this contract:

   (i) General Conditions of Contract;
   (ii) Special Conditions of Contract;
   (iii) List of Requirements;
   (iv) Technical Specifications;
   (v) Quality Control Requirements;
   (vi) Bid Form furnished by the supplier;
   (vii) Price Schedule(s) furnished by the supplier in its Bid;
   (viii) Manufacturers' Authorisation Form (if applicable);
   (ix) Purchaser's Notification of Award

   Note: The words and expressions used in this contract shall have the same meanings as are respectively assigned to them in the conditions of contract referred to above. Further, the definitions and abbreviations incorporated under clause 1 of Section II – "General Instructions to Bidders" of the Bidding Document shall also apply to this contract.

5. Some terms, conditions, stipulations etc. out of the above-referred documents are reproduced below for ready reference:

   (i) Brief particulars of the goods and services which shall be supplied/ provided by the supplier are as under:

Schedule No.	Brief description of of goods/services	Accounting unit	Quantity to be supplied	Unit Price	Total price	Terms of delivery

Any other additional services (if applicable) and cost thereof: _____
Total value (in figure) _____ (In words) _____

(ii) Delivery schedule:_____

(iii) Details of Performance Security required:_____

(v) Destination and despatch instructions:_____

(vi) Consignee: _____

6. Warranty clause:

7. Payment terms:

_____
(Signature, name and designation of the Purchaser authorised official)
For and on behalf of Director, AIIMS

Received and accepted this contract

(Signature, name and address of the supplier's executive duly authorised to sign on behalf of the supplier)

For and on behalf of _____
(*Insert Name and address of the supplier*)

(Seal of the Supplier)
Date: _____
Place: _____

CONTRACT FORM – B

CONTRACT FORM FOR COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC)

Comprehensive Annual Maintenance Contract No._____
Dated_____

Between

Director, AIIMS

And

(*insert Name & Address of the Supplier*)

Reference: Contract/ Purchase Order No_____ dated_____ for supply, installation& commissioning, Training and CAMC of goods& services.

In continuation to the above referred Contract/Purchase Order, the Contract of Comprehensive Annual Maintenance Contract is hereby concluded as under: -

1	2	3	4					5	6
Items Sr. No./ RFx no.	Brief description of goods	Quantity (Nos.)	CAMC Cost for Each Unit year wise in Rs					GST Value in Rs (___ %)	Total CAMC Cost for 5 Years with GST (3) X[(4a+4b+4c+4d+4e) + (5)]
			1st	2nd	3rd	4th	5th		
			a	b	c	d	e		

Total value (in figure) _____ (In words) _____

b) The CAMC commence from the date of expiry of all obligations under Warranty i.e. from_____ (date of expiry of Warranty) and will expire on _____ (date of expiry of CAMC)

c) The cost of Comprehensive Annual Maintenance Contract (CAMC) which includes preventive maintenance, labour and spares, after satisfactory completion of Warranty period as contained in the above referred contract on yearly basis for complete equipment as per contract including Turnkey Work(if any).

d) There will be 95% uptime warranty during CAMC period on 24 (hrs) X 7 (days) X 365 (days) basis, with penalty, to extend CAMC period by double the downtime period and other penalty as per contract.

e) During CAMC period, the supplier shall visit at each consignee's site for preventive maintenance including testing and calibration as per the manufacturer's service/ technical/operational manual. The supplier shall visit each consignee site as recommended in the manufacturer's manual, but at least once in 3 months

commencing from the date of the successful completion of warranty period for preventive maintenance of the goods.

f) All software updates should be provided free of cost during CAMC period.

g) The Bank Guarantee valid till _____ [(fill the date) 3 months after expiry of entire CAMC period] for an amount of Rs. _____ [(fill amount) equivalent to 2.5% of the cost of the equipment as per contract] shall be furnished in the prescribed format given in Section XIV of the Bidding Document, along with the signed copy of CAMC within a period of 21 (twenty one) days of start of CAMC failing which the Performance Security (10% of the contract value) submitted shall be en-cashed payable to the Purchaser/Consignee.

h) If there is any lapse in the performance of the CAMC as per contract, the proceeds Annual CAMC Bank Guarantee shall be forfeited and their bad performance will be considered while awarding future contracts.

i) Payment terms: The payment of CAMC will be made against the bills raised by the supplier on six monthly basis after satisfactory completion of said period, duly certified by the concerned User Department. The payment will be made in Indian Rupees.

_____
(Signature, name and designation of the Store Officer/ASO of the Purchaser**)**

_____
(Signature, name and designation of the F&CAO of the Purchaser)
For and on behalf of Director, AIIMS

(Seal of the Purchaser)
Date: _____
Place: _____

Received and accepted this contract

(Signature, name and address of the supplier's executive duly authorised to sign on behalf of the supplier)

For and on behalf of _____
(*Insert Name and address of the supplier*)

(Seal of the Supplier)
Date: _____
Place: _____

Note:- The contract will be prepared on Non-judicial Stamp paper(currently of value of Rs. 100).

SECTION – XVI

CONSIGNEE RECEIPT CERTIFICATE

(To be given by consignee's authorized representative)

The following store(s) has/have been received in good condition:

1) Contract/Purchase Order No. & date: _____

2) Supplier's Name: _____

3) Consignee's Name & Address: _____

4) Name of the item supplied: _____

5) Quantity Supplied: _____

6) Date of Receipt by the Consignee: _____

7) Signature of Authorized Representative of Consignee with date:_____

8) Name and designation of Authorized Representative of Consignee:_____

9) Seal of the Consignee:_____

SECTION – XVII

CONSIGNEE ACCEPTANCE CERTIFICATE

(To be given by consignee's authorized representative)

This is to certify that the goods as detailed below have been received in good conditions along with all the standard and special accessories in accordance with the contract. The same has been installed and accepted.

1) Contract/Purchase Order No. & date:_____

2) Supplier's Name:_____

3) Consignee's Name & Address: _____

4) Name of the item Supplied :_____

5) Quantity Supplied :_____

6) Date of Receipt by the Consignee :_____

7) Date of Installation/Commissioning and Acceptance of Equipment: _____

8) The supplier has fulfilled its contractual obligations satisfactorily

OR

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

i)
ii)
iii)
iv)

9) The amount of recovery on account of failure of the supplier to meet his contractual obligations is_____ (here indicate the amount).

10) Signature of Authorized Representative of Consignee with date:_____

11) Name and designation of Authorized Representative of Consignee:_____

12) Seal of the Consignee:_____