REPUBLIC OF KENYA

MINISTRY OF HEALTH

48 Governments 1 Nation

MINISTRY OF HEALTH
STATE DEPARTMENT FOR MEDICAL SERVICES

P.O. BOX 30016 – 00100
NAIROBI
Email:procurement@health.go.ke

TENDER DOCUMENT

PROVISION OF SERVICES FOR MEDICAL EQUIPMENT AT A FIXED FEE FOR SERVICE IN PUBLIC HEALTH FACILITIES

TENDER NO: MOH/SDMS/HI/OT/001/2025-2026

OPEN TENDER

CLOSING/OPENING DATE: 16TH JULY, 2026 AT 11:00 AM

TABLE OF CONTENTS

INVITATION TO TENDER

PROVISION OF SERVICES FOR MEDICAL EQUIPMENT AT A FIXED FEE FOR SERVICE IN PUBLIC HEALTH FACILITIES - TENDER NO: MOH/SDMS/HI/OT/001/2025-2026

1. The State Department for Medical Services invites sealed bids for the above tender.
2. Tendering will be conducted under Open Tendering and tenderers will be allowed to tender for one or more lots.
3. Interested eligible candidates may obtain a complete set of tender documents with detailed qualification criteria at the State Department for Medical Services website: www.health.go.ke and the Public Procurement Information Portal www.tenders.go.ke
4. Interested eligible candidates may obtain further information and inspect the tender documents during office hours at the Supply Chain management Office, State Department for medical Services, Afya House, Cathedral Road 5th floor room 514B
5. Tenderers downloading the documents from the designated websites should forward their particulars including email addresses and telephone numbers immediately to the email address procurement@health.go.ke to facilitate any further clarifications or addenda.
6. Tenders shall be quoted in Kenya Shillings including all taxes and shall remain valid for 210 days from the date of opening.
7. Completed tenders must be delivered to Tender box located at Afya House, 1st Floor on or before **Thursday, 16th July, 2026 at 11:00 am**.
8. Tenders will be opened immediately thereafter in the presence of the bidders or their designated representatives who choose to attend at the State Department for Medical Services GTZ Boardroom Afya House, Cathedral Road, Nairobi.
9. All tenders must be accompanied by a ***tender security as provided in the tender documents***.
10. Late tenders will be rejected.

DR. OUMA OLUGA, OGW
PRINCIPAL SECRETARY

PART 1 - TENDERING PROCEDURES

SECTION I -INSTRUCTIONS TO TENDERERS

A. General

1. Scope of Tender

1.1 This tendering document is for the delivery of Non-Consulting Services, as specified in Section V, Procuring Entity's Requirements. The name, identification and number of this tender are specified in the **TDS.**

2. Throughout this tendering document:

2.1 The terms:

a) The term "in writing" means communicated in written form (e.g., by mail, e-mail, fax, including if specified **in the TDS**, distributed or received through the electronic- procurement system used by the Procuring Entity) with proof of receipt;

b) if the contexts or esquires, "singular" means "plural" and vice versa; and

c) "Day" means calendar day, unless otherwise specified as "Business Day". A Business Day is any day that is an official working day of the Procuring Entity. It excludes the Procuring Entity's official public holidays.

2.2 The successful Tenderer will be expected to complete the performance of the Services by the Intended Completion Date provided **in the TDS**.

3. Fraud and Corruption

3.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015 (the Act), Section 62 "Declaration not to engage in corruption". The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.

3.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the "Certificate of Independent Tender Determination" annexed to the Form of Tender.

3.3 **Unfair Competitive Advantage** - Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the **TDS** and make available to all the firms together with this tender document all Information that would in that respect gives such firm any unfair competitive advantage over competing firms.

3.4 Unfair Competitive Advantage-Fairness and transparency in the tender process require that the Firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. The Procuring Entity shall indicate in the **TDS** firms (if any) that provided consulting services for the contract being tendered for. The Procuring Entity shall check whether the owners or controllers of the Tenderer are same as those that provided consulting services. The Procuring Entity shall, upon request, make available to any tenderer information that would give such firm unfair competitive advantage over competing firms.

4. Eligible Tenderers

4.1 A Tenderer may be a firm that is a private entity, a state-owned entity or institution subject to ITT 4.6, or any combination of such entities in the form of a Joint Venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a Form of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Tendering process and, in the event the JV is awarded the Contract, during contract execution. Members of a joint venture may not also make an individual tender, be a sub contract or in a separate tender or be part of another joint venture for the purposes of the same Tender. The maximum number of JV members shall be specified in the **TDS.**

4.2 Public Officers, of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse in which they have a substantial or controlling interest shall not be eligible to tender or be awarded contract. Public Officers are also not allowed to participate in any procurement proceedings.

4.3 A Tenderer shall not have a conflict of interest. Any Tenderer found to have a conflict of interest shall be disqualified. A Tenderer may be considered to have a conflict of interest for the purpose of this Tendering process, if the Tenderer:

a Directly or indirectly controls, is controlled by or is under common control with another Tenderer; or

b Receives or has received any direct or indirect subsidy from another Tenderer; or

c has the same legal representative as another Tenderer; or

d has a relationship with another Tenderer, directly or through common third parties, that puts it in a position to influence the Tender of another Tenderer, or influence the decisions of the Procuring Entity regarding this Tendering process; or

e oranyofitsaffiliatesparticipatedasaconsultantinthepreparationoftheProcuringEntity'sRequirements (including Activities Schedules, Performance Specifications and Drawings) for the Non-Consulting Services that are the subject of the Tender; or

f or any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity or Procuring Entity for the Contract implementation; or

g would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the TDS ITT 2. 1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or

h has a close business or family relationship with a professional staff of the Procuring Entity or of the project implementing agency, who:

i. are directly or in directly involved in the preparation of the tendering document or specifications of the contract, and/or the Tender evaluation process of such contract; or

ii. Would be involved in the implementation or supervision of such contract unless the conflicts teeming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the procurement process and execution of the Contract.

4.4 A firm that is a Tenderer (either individually or as a JV member) shall not participate in more than one tender, except for permitted alternative Tenders. This includes participation as a subcontractor. Such participation shall result in the disqualification of all Tenders in which the firm is involved. A firm that is not a Tenderer or a JV member may participate as a sub-contractor in more than one Tender.

4.5 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT 4 .9.

4.6 A Tenderer that has been sanctioned by PPRA or are under a temporary suspension or a debarment imposed by any other entity of the Government of Kenya shall be ineligible to be pre-qualified for, initially selected for, tender for, propose for, or be awarded a contract during such period of sanctioning. The list of debarred firms and individuals is available at the PPRA Website www.ppra.go.ke

4.7 Tenderers that are state-owned enterprises or institutions in Kenya may be eligible to compete and be awarded a Contract(s) only if they can establish that they: (i) are legally and financially autonomous; (ii) operate under Commercial law; and (iii) are not under supervision of the Procuring Entity.

4.8 Firms and individuals may be ineligible if (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or (b) by an act of compliance with a decision of the United Nations

Security Council take under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person or entity in that country.

4.9 A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub consultants for any part of the Contract including related Services.

4.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, subcontracts and labor) from national suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided in for this purpose is be provided in *"SECTION III-EVALUATION AND QUALIFICATION CRITERIA, Item 9".*

4.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer, if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by Kenyan citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. The JV shall not sub contract to foreign firms more than 10 percent of the contract price, excluding provisional sums.

4.12 The Competition Act of Kenya requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Competition Act, 2010. JVs will be required to seek for exemption from the Competition Authority. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke

4.13 A Tenderer may be considered ineligible if he/she offers goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

4.14 A Kenyan tenderer shall be eligible to tender if it provides evidence of having fulfilled his/her tax obligations by producing a valid tax compliance certificate or tax exemption certificate is sued by the Kenya Revenue Authority.

5 Qualification of the Tenderer

5.1 All Tenderers shall provide in Section IV, Tendering Forms, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

5.2 In the event that pre-qualification of Tenderers has been undertaken as stated in ITT 18.3, the provisions on qualifications of the Section III, Evaluation and Qualification Criteria shall not apply.

B. Contents of Tendering Document

6 Sections of Tendering Document

6.1 The tendering document consists of Parts 1, 2, and 3, which include all the sections indicated below and should be read in conjunction with any Addenda issued in accordance with ITT 10.

PART 1: Tendering Procedures

i) Section I - Instructions to Tenderers (ITT)
ii) Section II - Tender Data Sheet (TDS)
iii) Section III - Evaluation and Qualification Criteria
iv) Section IV - Tendering Forms

PART 2: Procuring Entity's Requirements

v) Section V-Procuring Entity's Requirements

PART 3: Contract

vi) Section VI - General Conditions of Contract (GCC)

vii) Section VII - Special Conditions of Contract (SCC)

viii) Section VIII - Contract Forms

6.2 The Invitation to Tender (ITT) notice or the notice to pre-qualify Tenderers, as the case may be, issued by the Procuring Entity is not part of this tendering document.

6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Tender meeting (if any), or Addenda to the tendering document in accordance with ITT 10. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

6.4 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the tendering document and to furnish with its Tender all information or documentation as is required by the tendering document.

7. Site Visit

7.1 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the Site of the Required Services and its surroundings and obtain all information that may be necessary for preparing the Tender and entering in to a contract for the Services. The costs of visiting the Site shall beat the Tenderer's own expense.

8 Pre-Tender Meeting

8.1 The Procuring Entity shall specify in the **TDS** if a pre-tender conference will be held, when and where. The Procuring Entity shall also specify in the **TDS** if a pre-arranged pretender site visit will be held and when. The Tenderer's designated representative is invited to attend a pre-arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

8.2 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the **TDS** before the meeting.

8.3 Minutes of the pre-Tender meeting and the pre-arranged pre tender visit of the site of the service, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents in accordance with ITT6.3. Minutes shall not identify the source of the questions asked.

8.4 The Procuring Entity shall also promptly publish anonymized (*no names*) Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the service at the web page identified **in the TDS**. Any modification to the Tender Documents that may become necessary as a result of the pre-Tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT10 and not through the minutes of the pre-Tender meeting. Nonattendance at the pre-Tender meeting will not be a cause for disqualification of a Tenderer.

9 Clarification of Tender Documents

9.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the TDS or raise its enquiries during the pre-Tender meeting and the pre- arranged pretender visit of the site of the Service if provided for in accordance with ITT 8.4. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the **TDS** prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender Documents in accordance with ITT 6.3, including a description of the inquiry but without identifying its source. If so specified in the **TDS,** the Procuring Entity shall also promptly publish its response at the webpage identified in the **TDS.** Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents appropriately following the procedure under ITT 8.4.

10 Amendment of Tender Documents

10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.

10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT 6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's web page in accordance with ITT 8.4.

10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT 24.2 below.

C. Preparation of Tenders

11 Cost of Tendering

11.1 The Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering process.

12 Language of Tender

12.1 The Tender as well as all correspondence and documents relating to the Tender exchanged by the Tenderer and the Procuring Entity shall be written in the English language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate translation of the relevant passages into the English language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

13 Documents Comprising the Tender

13.1 The Tender shall comprise the following:

a **Form of Tender** prepared in accordance with ITT 14;

b **Schedules:** priced Activity Schedule completed in accordance with ITT 14 and ITT 16;

c **Tender Security or Tender-Securing Declaration** in accordance with ITT 21.1;

d **Alternative Tender**: if permissible in accordance with ITT 15;

e **Authorization:** written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 22.3;

f **Qualifications:** documentary evidence in accordance with ITT 19 establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted;

g **Tenderer's Eligibility**: documentary evidence in accordance with ITT 19 establishing the Tenderer's eligibility to Tender;

h **Conformity**: documentary evidence in accordance with ITT 18, that the Services conform to the tendering document; and

i Any other document required in the **TDS.**

The Tenderer shall chronologically serialize pages of all tender documents submitted.

13.2 In addition to the requirements under ITT 13.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a Form of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed Agreement.

13.3 The Tenderer shall furnish in the Form of Tender information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Tender.

14 Form of Tender and Activity Schedule

14.1 The Form of Tender and priced Activity Schedule shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITT 22.3. All blank spaces shall be filled in with the information requested.

14.2 The Tenderer shall furnish in the Form of Tender information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Tender.

15 Alternative Tenders

15.1 Unless otherwise indicated **in the TDS**, alternative Tenders shall not be considered. If alternatives are permitted, only the technical alternatives, if any, of the Best Evaluated Tender shall be considered by the Procuring Entity.

15.2 When alternative times for completion are explicitly invited, a statement to that effect will be included **in the TDS** and the method of evaluating different time schedules will be described in Section III, Evaluation and Qualification Criteria.

15.3 When specified **in the TDS**, Tenderers a reemitted to submit alternative technical solutions for specified parts of the Services, and such parts will be identified **in the TDS**, as will the method for their evaluating, and described in Section VII, Procuring Entity's Requirements.

16. Tender Prices and Discounts

16.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Activity Schedule (s) shall conform to the requirements specified below.

16.2 All lots (contracts) and items must be listed and priced separately in the Activity Schedule(s).

16.3 The Contract shall be for the Services, as described in Appendix A to the Contract and in the Specifications (or Terms of Reference), based on the priced Activity Schedule, sub mitted by the Tenderer.

16.4 The Tenderer shall quote any discounts and indicate the methodology for their application in the Form of Tender in accordance with ITT 16.1.

16.5 The Tenderer shall fill in rates and prices for all items of the Services described in the in Specifications (or Terms of Reference), and listed in the Activity Schedule in Section VII, Procuring Entity's Requirements. Items for which no rate or price is entered by the Tenderer will not be paid for by the Procuring Entity when executed and shall be deemed covered by the other rates and prices in the Activity Schedule.

16.6 All duties, taxes, and other levies payable by the Service Provider under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of Tenders, shall be included in the total Tender price submitted by the Tenderer.

16.7 If provided for **in the TDS**, the rates and prices quoted by the Tenderer shall be subject to adjustment during the performance of the Contract in accordance with and the provisions of Clause 6.6 of the General Conditions of Contract and / or Special Conditions of Contract. The Tenderer shall submit with the Tender all the information required under the Special Conditions of Contract and of the General Conditions of Contract.

16.8 For the purpose of determining the remuneration due for additional Services, a breakdown of the lump-sum price shall be provided by the Tenderer in the form of Appendices D and E to the Contract.

17 Currencies of Tender and Payment

17.1 The currency of the Tender and the currency of payments shall be Kenya Shillings.

18 Documents Establishing Conformity of Services

18.1 To establish the conformity of the Non-Consulting Services to the tendering document, the Tenderer shall

furnish as part of its Tender the documentary evidence that Services provided conform to the technical specifications and standards specified in Section VII, Procuring Entity's Requirements.

18.2 Standards for provision of the Non-Consulting Services are intended to be descriptive only and not restrictive. The Tenderer may offer other standards of quality provided that it demonstrates, to the Procuring Entity's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Procuring Entity's Requirements.

18.3 Tender to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a Service provider or group of service providers. qualifies for a margin of preference. Further the information will enable the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement processor contract management.

18.4 The purpose of the information described in ITT 18.3 above, overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

18.4 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT18.3. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

18.6 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.

18.7 If a tenderer fails to submit the information required by these requirements, its tenderer will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

18.8 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:

i) If the procurement process is still on going, the tenderer will be disqualified from the procurement process,

ii) if the contract has been awarded to that tenderer, the contract award will be set aside, pending the outcome of (iii),

iii) The tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.

18.9 If a tenderer submits information pursuant to these requirements that is in complete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 18.9 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material, or was due to genuine err or which was not attributable to the intentional act, negligence or recklessness of the tenderer.

19 Documents Establishing the Eligibility and Qualifications of the Tenderer

19.1 To establish Tenderer's their eligibility in accordance with ITT4, Tenderers shall complete the Form of Tender, included in Section IV, Tendering Forms.

19.2 The documentary evidence of the Tenderer's qualification stopper form the Contract if its Tender is accepted shall establish to the Procuring Entity's satisfaction that the Tenderer meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.

19.3 All Tenderers shall provide in Section IV, Tendering Forms, a preliminary description of the proposed

methodology, work plan and schedule.

19.4 In the event that pre-qualification of Tenderers has been undertaken, only Tenders from prequalified Tenderers shall be considered for award of Contract. These qualified Tenderers should submit with their Tenders any information updating their original pre-qualification applications or, alternatively, confirm in their Tenders that the originally submitted pre-qualification information remains essentially correct as of the date of Tender submission.

19.5 If pre-qualification has not taken place before Tendering, the qualification criteria for the Tenderers are specified- in Section III, Evaluation and Qualification Criteria.

20 Period of Validity of Tenders

20.1 Tenders shall remain valid for the Tender Validity period specified in the TDS. The Tender Validity period starts from the date fixed for the Tender submission deadline date (as prescribed by the Procuring Entity in accordance with ITT 24.1). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

20.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT20, it shall also be extended for a corresponding period. A Tenderer may refuse the request without forfeiting its Tender Security. A Tenderer granting the request shall not be required or permitted to modify its Tender.`1

21 Tender Security

21.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender security, as specified **in the TDS**, in original form and, in the case of a Tender Security, in the amount and currency specified **in the TDS**.

21.2 A Tender Securing Declaration shall use the form included in Section IV, Tendering Forms.

21.3 If a Tender Security is specified pursuant to ITT 21.1, from a reputable source, and an eligible country and shall be in any of the following forms at the Tenderer's option:

i) cash;

ii) a bank guarantee;

iii) a guarantee by an insurance company registered and licensed by the Insurance Regulatory Authority listed by the Authority; or

iv) a guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya,

21.4 If a Tender Security is specified pursuant to ITT 20.1, any Tender not accompanied by a substantially responsive Tender Security shall be rejected by the Procuring Entity as non-responsive.

21.5 If a Tender Security is specified pursuant to ITT 21.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the contract and furnishing the Performance Security pursuant to ITT 46. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined non-responsive or a bidder declines to extend tender validity period.

21.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security.

21.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:

a. If a Tenderer withdraw sits Tender during the period of Tender validity specified by the Tenderer in the Form of Tender, or any extension there to provide by the Tenderer; or

b. if the successful Tenderer fails to:

c. sign the Contract in accordance with ITT 46; or

d. Furnish a performance security in accordance with ITT 47.

21.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA that PPRA debars the Tenderer from participating in public procurement as provided in the law.

21.9 The Tender Security or Tender-Securing Declaration of a JV must be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of Tendering, the Tender security or Tender-Securing Declaration shall be in the names of all future members as named in the Form of intent referred to in ITT 4.1 and ITT 13.2.

21.10 A tenderer shall not issue a tender security to guarantee itself.

22 Format and Signing of Tender

22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13, bound with the volume containing the Form of Tender, and clearly marked "Original. "In addition, the Tenderer shall submit copies of the Tender, in the number specified **in the TDS**, and clearly marked as "Copies. "In the event of discrepancy between them, the original shall prevail.

22.2 Tenderers shall mark as "CONFIDENTIAL "information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

22.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified **in the TDS** and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.

22.4 In case the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

22.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

D. Submission and Opening of Tenders

23 Sealing and Marking of Tenders

23.1 Depending on the sizes or quantities or weight of the tender documents, a tenderer may use an envelope, package or container. The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

a. in an envelope or package or container marked "ORIGINAL", all documents comprising the Tender, as described in ITT13; and

b. in an envelope or package or container marked "COPIES", all required copies of the Tender; and

c. if alternative Tenders are permitted in accordance with ITT15, and if relevant:

i. in an envelope or package or container marked "ORIGINAL–ALTERNATIVE TENDER", the alternative Tender; and

ii. in the envelope or package or container marked "COPIES- ALTERNATIVE TENDER", all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

a) Bear the name and address of the Procuring Entity.

b) Bear the name and address of the Tenderer; and

c) Bear the name and Reference number of the Tender.

23.2 If an envelope or package or container is not sealed and marked as required, the *Procuring Entity* will assume no responsibility for the misplacement or premature opening of the Tender. Tenders misplaced or opened prematurely will not be accepted.

24 Deadline for Submission of Tenders

24.1 Tenders must be received by the Procuring Entity at the address and no later than the date and time specified **in the TDS**. When so specified **in the TDS**, Tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified **in the TDS**.

24.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the tendering document in accordance with ITT9, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

25 Late Tenders

25.1 The Procuring Entity shall not consider any Tender that arrives after the dead line for submission of Tenders, in accordance with ITT 24. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned un opened to the Tenderer.

26 Withdrawal, Substitution and Modification of Tenders

26.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by a n authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITT 21.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

a) Prepared and submitted in accordance with ITT 21 and ITT 22 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION;" and

b) Received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 23.

26.2 Tenders requested to be withdrawn in accordance with ITT 25.1 shall be returned unopened to the Tenderers.

26.3 No Tender may be withdrawn, substituted, or modified in the interval between the deadline for submission of Tenders and the expiration of the period of Tender validity specified by the Tenderer on the Form of Tender or any extension thereof.

27 Tender Opening

27.1 Except as in the cases specified in ITT 23 and ITT 25.2, the Procuring Entity shall, at the Tender opening, publicly open and read out all Tenders received by the deadline at the date, time and place specified **in the TDS** in the presence of Tenderers' designated representatives and anyone who choose to attend. Any specific electronic Tender opening procedures required if electronic tendering is permitted in accordance with ITT 23.1 shall be as specified **in the TDS.**

27.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Tender shall not be opened, but returned to the Tenderer. If the withdrawal envelope does not contain a copy of the "power of attorney" confirming the signature as a person duly authorized to sign on behalf of the Tenderer, the corresponding Tender will be opened. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.

27.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

27.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Tender opening.

27.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Prices, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

27.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further. The Form of Tender and the priced Activity Schedule are to be initialed by representatives

of the Procuring Entity attending Tender opening in the manner specified **in the TDS**.

27.7 The Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT25.1).

27.8 The Procuring Entity shall prepare are cord of the Tender opening that shall include, as a minimum:

a) The name of the Tenderer and whether there is a withdrawal, substitution, or modification;

b) The Tender Price, per lot (contract) if applicable, including any discounts; and

c) any alternative Tenders;

d) The presence or absence of a Tender Security or Tender-Securing Declaration, if one was required.

e) Number of pages of each tender document submitted

27.9 The Tenderers' representatives who a rep resent shall be requested to sign the record. The omission of a Tenderer's signature on the record shall not invalidate the contents and effect of the record. A copy of the tender opening register shall be distributed to Tenderer upon request.

E. Evaluation and Comparison of Tenders

28 Confidentiality

28.1 Information relating to the evaluation of Tenders and recommendation of contract award, shall not be disclosed to Tenderers or any other persons not officially concerned with the Tendering process until information on the Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 42.

28.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation or contract award decisions may result in the rejection of its Tender.

28.3 Notwithstanding ITT 28.2, from the time of Tender opening to the time of Contract Award, if any Tenderer wishes to contact the Procuring Entity on any matter related to the Tendering process, it should do so in writing.

29 Clarification of Tenders

29.1 To assist in the examination, evaluation, and comparison of Tenders, and qualification of the Tenderers, the Procuring Entity may, at the Procuring Entity's discretion, ask any tenderer for clarification of its Tender including break downs of the prices in the Activity Schedule, and other information that the Procuring Entity may require. Any clarification submitted by a Tenderer in respect to its Tender and that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the Tenders, in accordance with ITT32.

29.2 If a Tenderer does not provide clarifications of its Tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

30 Deviations, Reservations, and Omissions

30.1 During the evaluation of Tenders, the following definitions apply:

a) “Deviation” is a departure from the requirements specified in the tendering document;

b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the tendering document; and

c) “Omission” is the failure to submit part or all of the information or documentation required in the tendering document.

31 Determination of Responsiveness

31.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the Tender itself, as defined in ITT 12.

31.2 A substantially responsive Tender is one that meets the requirements of the tendering document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

a) If accepted, would:

i. affect in any substantial way the scope, quality, or performance of the Non-Consulting Services specified in the Contract; or

ii. limit in any substantial way, inconsistent with the tendering document, the Procuring Entity's rights or the Tenderer's obligations under the Contract; or

b) if rectified, would unfairly affect the competitive position of other Tenderers presenting substantially responsive Tenders.

31.3 The Procuring Entity shall examine the technical aspects of the Tender submitted in accordance with ITT 18and ITT 19, in particular, to confirm that all requirements of Section VII, Procuring Entity's Requirements have been met without any material deviation or reservation, or omission.

31.4 If a Tender is not substantially responsive to the requirements of tendering document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

31.5 Provided that a Tender is substantially responsive, the Procuring Entity may waive any non-conformity in the Tender.

31.6 Provided that a Tender is substantially responsive, the Procuring Entity may request that the Tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial non-conformities or omissions in the Tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the Tender. Failure of the Tenderer to comply with the request may result in the rejection of its Tender.

31.7 Provided that a Tender is substantially responsive, the Procuring Entity shall rectify quantifiable nonmaterial non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified **in the TDS**.

32 Arithmetical Errors

32.1 The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment or amendment in any way by any person or entity.

32.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis:

a) Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.

b) Any errors in the submitted tender arising from a miscalculation of unit price, quantity, subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive .and

c) If there is a discrepancy between words and figures, the amount in words shall prevail

32.3 Tenderers shall be notified of any error detected in their bid during the notification of a ward.

33 Conversion to Single Currency

33.1 For evaluation and comparison purposes, the currency(ies) of the Tender shall be converted into a single currency **as specified in the TDS**.

34 Margin of Preference and Reservations

34.1 Margin of preference on local service providers may be allowed if it is deemed that the services require participation of foreign tenderers. If so allowed, it will be indicated in the **TDS.**

34.2 Where it is intended to reserve the contract to specific groups under Small and Medium Enterprises, or enterprise of women, youth and /or persons living with disability, who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses/firms belonging to the specified group are eligible to tender as specified in the **TDS**. Otherwise, if not so stated, the invitation will be open to all tenderers.

35 Evaluation of Tenders

35.1 The Procuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies, the Procuring Entity shall determine the Best Evaluated Tender. This is the Tender of the Tenderer that meets the qualification criteria and whose Tender has been determined to be:

a) Substantially responsive to the tendering document; and

b) The lowest evaluated cost.

35.2 In evaluating the Tenders, the Procuring Entity will determine for each Tender the evaluated Tender cost by adjusting the Tender price as follows:

a) Price adjustment due to discounts offered in accordance with ITT 16.4;

b) price adjustment due to quantifiable non material non-conformities in accordance with ITT 31.3;

c) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance withITT33; and

d) any additional evaluation factors specified **in the TDS** and Section III, Evaluation and Qualification Criteria.

35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be considered in Tender evaluation.

35.4 In the case of multiple contracts or lots, Tenderers are allowed to tender for one or more lots and the methodology to determine the lowest evaluated cost of the lot (contract) and for combinations, including any discounts offered in the Form of Tender, is specified in Section III, Evaluation and Qualification Criteria. For one or more lots (contracts). Each lot or contract will be evaluated in accordance with ITT

35.5. The methodology to determine the lowest evaluated tenderer or tenderers based one lot (contract) or based on a combination of lots (contracts), will be specified in Section III, Evaluation and Qualification Criteria. In the case of multiple lots or contracts, tenderer will be will be required to prepare the Eligibility and Qualification Criteria Form for each Lot.

36 Comparison of Tenders

36.1 The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 35.2 to determine the Tender that has the lowest evaluated cost.

37 Abnormally Low Tenders and Abnormally High

Tenders Abnormally Low Tenders

37.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price.

37.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

37.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

Abnormally High Tenders

37.4 An abnormally high price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.

37.5 In case of an abnormally high price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if he specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:

i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.

ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case maybe.

37.6 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption or other manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent Government Agencies to institute an investigation on the cause of the compromise, before retendering.

38 Unbalanced and/or Front-Loaded Tenders

38.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or front loaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the tender prices with the scope of works, proposed methodology, schedule and any other requirements of the Tender document.

38.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may as appropriate:

a) Accept the Tender; or

b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding 10% of the Contract Price; or

c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works; or

d) Reject the Tender.

39 Qualification of the Tenderer

39.1 The Procuring Entity shall determine to its satisfaction whether the Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender is eligible and meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

39.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 18. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors or any other firm(s)different from the Tenderer that submitted the Tender.

39.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated cost to make a similar determination of that Tenderer's qualifications to perform satisfactorily.

40 Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders

40.1 The Procuring Entity reserves the right to accept or reject any Tender, and to annul the Tendering process and reject all Tenders at any time prior to Contract Award, without there by incurring any liability to Tenderers. In case of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the

Tenderers.

F. Award of Contract

43 Award Criteria

43.1 The Procuring Entity shall award the Contract to the successful tenderer whose tender has been determined to be the Lowest Evaluated Tender.

42 Notice of Intention to enter in to a Contract

42.1 Upon award of the contract and Prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract/Notification of a ward to all tenderers which shall contain, at a minimum, the following information:

a) The name and address of the Tenderer submitting the successful tender;

b) The Contract price of the successful tender;

c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in(c) above already reveals the reason;

d) the expiry date of the Stand still Period; and

e) instructions on how to request a debriefing and/or submit a complaint during the stand still period;

43 Stand still Period

43.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

43.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter in to a Contract with the successful Tenderer.

44 Debriefing by the Procuring Entity

44.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 42, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing with in five days of receipt of the request.

44.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending such a debriefing meeting.

45 Letter of Award

Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 43.1, upon addressing a complaint that has been filed within the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21 days of the date of the letter.

46 Signing of Contract

46.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.

46.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.

46.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period

47 Performance Security

47.1 Within twenty-one (21) days of the receipt of the Form of Acceptance from the Procuring Entity, the successful Tenderer, if required, shall furnish the Performance Security in accordance with the GCC 3.9, using for that purpose the Performance Security Form included in Section VIII, Contract Forms, or another Form acceptable to the Procuring Entity. If the Performance Security furnished by the successful Tenderer is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Tenderer to be acceptable to the Procuring Entity. A foreign institution providing a bond shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent financial institution is not required.

47.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.

48 Publication of Procurement Contract

48.1 Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

a) Name and address of the Procuring Entity;

b) Name and reference number of the contract being awarded, a summary of its scope and the selection method used;

c) The name of the successful Tenderer, the final total contract price, the contract duration.

d) Dates of signature, commencement and completion of contract;

e) Names of all Tenderers that submitted Tenders, and their Tender prices as read out at Tender opening.

49 Adjudicator

49.1 The Procuring Entity proposes the person named **in the TDS** to be appointed as adjudicator or under the Contract, at an hourly fee specified in **the TDS**, plus reimbursable expenses. If the Tenderer disagrees with this Tender, the Tenderer should so state in the Tender. If, in the Form of Acceptance, the Procuring Entity has not agreed on the appointment of the Adjudicator, the Adjudicator shall be appointed by the Appointing Authority designated in the Special Conditions of Contract at the request of either party.

50 Procurement Related Complaints and Administrative Review

50.1 The procedures for making a Procurement-related Complaint are as specified in the **TDS**.

50.2 A request for administrative review shall be made in the form provided under contract forms.

SECTION II - TENDER DATA SHEET (TDS)

The following specific data for the Non-Consulting Services to be procured shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT).Whenever there is a conflict, the provisions here in shall prevail over those in ITT.

[Where a new-procurement system is used, modify the relevant parts of the TDS accordingly to reflect thee-procurement process].

[Instructions for completing the Tender Data Sheet are provided, as needed, in the notes in italics mentioned for the relevant ITT].

<table>
<tr><td>ITT Reference</td><td>PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS</td></tr>
<tr><td></td><td>A. General</td></tr>
<tr><td>ITT 1.1</td><td>The reference number of the Request for Tenders (ITT) is: Provision of Services for Medical at a Fixed Fee for Service (FFS)-MOH/SDMS/HI/OT/001/2025-2026
The Procuring Entity is: State Department for Medical Services
The name of the ITT is: Provision of Services for Medical at a Fixed Fee for Service (FFS)
The number and identification of lots (contracts) comprising this ITT is:
Lots /Contracts
<table>
<tr><th>Category</th><th>FFS</th><th>LOT</th></tr>
<tr><td>Cancer Diagnostic and Therapeutics</td><td>FFS</td><td>Lot 24</td></tr>
<tr><td>Specialized Surgical Services</td><td>FFS</td><td>Lot 25</td></tr>
<tr><td>Specialized Laboratory Services for Cancer Diagnosis and Treatment</td><td>FFS</td><td>Lot 26</td></tr>
</table></td></tr>
<tr><td>ITT 2.1(a)</td><td>Online electronic procurement procedures will be used to manage the issuance of tender document and tender clarifications as follows;
Interested eligible candidates may obtain a complete set of tender documents at the Public Procurement Information Portal www.tenders.go.ke and at the Ministry of Health website: www.health.go.ke free of charge. Tenderers downloading documents from the designated websites should forward their particulars including email addresses and telephone numbers immediately to the email address procurement@health.go.ke to facilitate any further clarifications or addenda</td></tr>
<tr><td>ITT 2.2</td><td>The Intended Completion Date is Seven (7) Years upon contract Signing renewable for a further three (3) years subject to satisfactory performance</td></tr>
<tr><td>ITT 3.3</td><td>Information that any unfair competitive advantage over competing firms is as follow:
NONE</td></tr>
<tr><td>ITT 3.4</td><td>The firms that provided consulting services NONE</td></tr>
<tr><td>ITT 4.1</td><td>Maximum number of members in the Joint Venture (JV) shall be: Three (3)</td></tr>
<tr><td></td><td>B. Contents of Tendering Document</td></tr>
<tr><td>ITT 8.1</td><td>(a) A pre-tender conference will <u>will not be held</u>
(b) A pre-arranged pretender visit of the site of the works visit will <u>will not be held</u></td></tr>
<tr><td>ITT 8.2</td><td>The questions in writing, to reach the Procuring Entity not later than
_____N/A____(specify date and time)</td></tr>
</table>

<table>
<tr><td>ITT Reference</td><td>PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS</td></tr>
<tr><td></td><td></td></tr>
<tr><td>ITT 8.4</td><td>Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works shall be published on the website ____N/A_____</td></tr>
<tr><td>ITT 9.1</td><td>i) The Tenderer will submit any request for clarifications in writing at the Address procurement@health.go.ke to reach the Procuring Entity not later than Four (4) days before the deadline for submission of tenders

ii) The Procuring Entity shall publish its response at the website www.health.go.ke and www.tenders.go.ke

The Procuring Entity shall also promptly publish response at the website N/A</td></tr>
<tr><td></td><td>C. Preparation of Tenders</td></tr>
<tr><td>ITT 13.1 (i)</td><td>The Tenderer shall submit the following additional documents in its Tender: [See eligibility and Qualification Criteria

Other documents required are See above_____</td></tr>
<tr><td>ITT 15.1</td><td>Alternative Tenders “shall not be “considered.</td></tr>
<tr><td>ITT 15.2</td><td>Alternative times for completion “shall not be” permitted.</td></tr>
<tr><td>ITT 15.3</td><td>Alternative technical solutions shall be permitted for the following parts of the Services: _____NONE_____ [insert parts of the Services]:</td></tr>
<tr><td>ITT 16.7</td><td>The prices quoted by the Tenderer “shall not” be subject to adjustment during the performance of the Contract.</td></tr>
<tr><td>ITT 20.1</td><td>The Tender validity period shall be 210 days</td></tr>
<tr><td>ITT 21.1</td><td>A Tender Security “shall be” required in the amounts and currencies as indicated in each lot and must be in the form of a Demand Bank Guarantee from a commercial bank or Insurance guarantee from Insurance Regulatory Authority (IRA) approved company and listed by Public Procurement Regulatory Authority (PPRA) valid for 28 days beyond tender validity

Lots /Contracts
<table>
<tr><th>Category</th><th>LOT</th><th>Tender Security (KSHS)</th></tr>
<tr><td>Cancer Diagnostic and Therapeutics</td><td>FFS</td><td>Lot 24</td></tr>
<tr><td>Specialized Surgical Services</td><td>FFS</td><td>Lot 25</td></tr>
<tr><td>Specialized Laboratory Services for Cancer Diagnosis and Treatment</td><td>FFS</td><td>Lot 26</td></tr>
</table>
Note: Tender Security is required for each lot as per amounts indicated against each lot. Tenderers have the option of submitting one Tender Security for all lots (for the combined total amount of all lots) for which Tenders have been submitted, however if the amount of Tender Security is less than the total required amount, the Procuring Entity will determine for which lot or lots the Tender Security amount shall be applied.]</td></tr>
<tr><td>ITT 21.3 (a)</td><td>The Contract price shall be adjusted by N/A %.</td></tr>
</table>

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 22.1	In addition to the original of the Tender, the number of copies is**: One Copy**
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of**: Power of Attorney**
	D. Submission and Opening of Tenders
ITT 24.1	For **Tender submission purposes** only, the Procuring Entity's address is: Attention: *Principal Secretary, State Department for Medical Services* P.O Box 30016-00100 Nairobi Afya House, Cathedral Road
ITT 24.1	**The deadline for Tender submission is:** Date: ***Thursday, 16th July, 2026*** Time: ***11:00 a.m.]*** Tenderers ***"shall not"*** have the option of submitting their Tenders electronically.
ITT 27.1	The Tender opening shall take place at: Physical Address: *[Afya House, GTZ Boardroom* Date: ***Thursday, 16th July, 2026*** Time: ***11:00 a.m.***
ITT 27.1	The electronic Tender opening procedures shall be: _____***[insert a description of the electronic Tender opening procedures] N/A***
ITT 27.6	The Form of Tender and priced Activity Schedule shall be initialed by at least three (3) representatives of the Procuring Entity conducting Tender opening
	E. Evaluation and Comparison of Tenders
ITT 31.7	comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified as follows: The adjustment shall be based on the _____N/A_____ ***(insert "average" or "highest")*** price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 33.1	The currency that shall be used for Tender evaluation and comparison purposes only to convert at the selling exchange rate all Tender prices expressed in various currencies into a single currency is: ____Kshs._____ *[insert name of currency]* The source of exchange rate shall be: **The Central bank of Kenya** (mean rate) The date for the exchange rate shall be*:* **the deadline date for Submission of the Tenders.** *For comparison of Tenders, the Tender Price, corrected pursuant to ITT 31, shall first be broken down into the respective amounts payable in various currencies by using the selling exchange rates specified by the Tenderer in accordance with ITT 15.1.* *In the second step, the Procuring Entity will convert the amounts in various currencies in which the Tender Price is payable (excluding Provisional Sums but including Daywork where priced competitively) to the single currency identified above at the selling rates established for similar transactions by the authority specified and, on the date, stipulated*

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	above.
ITT 34.1	Margin of preference allowed or not allowed YES
ITT 34.2	The invitation to tender is extended to the following group that qualify for Reservations _____ _____NONE_____ *(These groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be; describe precisely which groups qualify).*
ITT 35.2 (d)	Additional evaluation factors shall be N/A
ITT 35.4	Tenderers shall **be <u>allowed</u>** to quote separate prices for different lots (contracts) and the methodology to determine the lowest tenderer is specified in Section III, Evaluation and Qualification Criteria.
	F. Award of Contract
ITT 49.1	The Adjudicator proposed by the Procuring Entity is _____N/A_____. The hourly fee for this proposed Adjudicator shall be ___N/A_____. The biographical data of the proposed Adjudicator is as follows: __N/A_____.
ITT 50.1	The procedures for making a Procurement-related Complaint are available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to: For the attention: *[insert full name of person receiving complaints]* Title/position: *[insert title/position]* Procuring Entity: *[insert name of Procuring Entity]* Email address*: [insert email address]* In summary, a Procurement-related Complaint may challenge any of the following: (i) the terms of the Tender Documents; and (ii) the Procuring Entity's decision to award the contract.

SECTION III – EVALUATION AND QUALIFICATION CRITERIA

1. General Provision

1.1 Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:

a) For construction turnover or financial data required for each year-Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year are to be converted) was originally established.

b) Value of single Contract-Exchange rate prevailing on the date of the contract signature.

c) Exchange rates shall be taken from the publicly available source identified in the ITT. Any error in determining the exchange rates in the Tender may be corrected by the Procuring Entity.

1.2 This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. The Procuring Entity should use **the Standard Tender Evaluation Report for Goods and Works** for evaluating Tenders.

1.3 Evaluation and contract award Criteria

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that (i) meets the qualification criteria,(ii)has been determined to be substantially responsive to the Tender Documents, and(iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

2 Preliminary examination for Determination of Responsiveness

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other mandatory requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements provided for in the preliminary evaluation criteria outlined below. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guide on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered non- responsive and will not be considered further.

Preliminary Evaluation Criteria

At the Preliminary Evaluation Stage, Bidders will be evaluated on the following Criteria

1. Provision of Certificate of Incorporation or Registration.
2. Copy of CR12 not more than 6 months from the date of tender opening or CR13 for Partnership or Proprietor IDs for Sole Proprietors.
3. Valid Tax Compliance Certificate.
4. Valid Single Business Permit.
5. Duly filled, signed and stamped Confidential Business Questionnaire Form -
6. Duly filled, signed and stamped Form of Tender
7. Dully filled, signed and stamped price schedules conforming to 100% of all items specified in the lot(Contract)
8. Duly filled, signed and stamped Certificate of Independent Tender Determination –
9. Duly filled, signed and stamped SD 1 and SD 2 forms provided
10. Duly filled, signed and stamped - Declaration and commitment to the Code of Ethics.
11. A tender security as **indicated in the Tender Data Sheet**
12. Submission of Power of Attorney issued to the authorized signatory of all documents and the contract
13. Detailed Company profile.
14. All pages of both original and copy of the tender documents submitted MUST be sequentially serialized by the tenderers.

In case of foreign entity, provide the equivalent document from their respective country of incorporation where applicable)

N/B: - Full compliance by the tenderers shall be required to proceed to the next stage of evaluation. Failure to provide any of the listed requirements shall lead to disqualification.

TECHNICAL EVALUATION CRITERIA

Financial Capability:

a. The Tenderer shall demonstrate that it has access to, or has available liquid assets, lines of credit, or other financial means from a financial institution, Fund, Private Equity or Banks to procure the equipment in each lot that they are bidding. The bidder should produce the proof of evidence to fund each LOT as follows:

Lots /Contracts

Category	LOT	Credit Line (KSHS)
Cancer Diagnostic and Therapeutics	Lot 24	300,000,000.00
Specialized Surgical Services	Lot 25	300,000,000.00
Specialized Laboratory Services for Cancer Diagnosis and Treatment	Lot 26	300,000,000.00

b. Minimum average annual turnover of Kenya Shillings One Billion (Ksh. 1,000,000,000.00) or equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 3 years, divided by 3 years for the lead bidder as shall be confirmed by audited accounts for the last 3 years

Experience:

The bidder or joint venture members or consortium members has satisfactorily and substantially completed at least Three (3 No) contract(s) of a similar nature, as a prime supplier, as a sub-contract, a joint venture/consortium member, or a sub-contract member each of a minimum value in Kenya shillings 150,000,000.00 or equivalent in the last five (5) years.

(Provide evidence to support)

The bidder or its partners must provide proof of at least 5 similar contracts of equipment maintenance for Hospitals whether private or public successfully completed in the last 5 years indicating contract sums and client reference letters.

Technical Staff Requirement

1. <u>Team Leader</u>

Minimum of ten (10) years' experience in the technical field and project management.

Holder of minimum Degree with 10 year and above relevant experience

Relevant experience and certificates must be provided

(The Staffs whose documents are provided must be part of the bidder or its subcontractors, partners or vendors organization and should be nominated by the bidder for this assignment)

2. Technicians

At least 2 No. minimum Diploma holders of technicians in relevant field

two (2No) Biomedical Engineering technologist -must have a Degree in biomedical engineering with at least 7 yrs. experience.

Relevant experience and certificates must be provided

(The Staffs whose documents are provided must be part of the bidder or its subcontractors, partners or vendors organization and should be nominated by the bidder for this assignment)

3. Technicians

Five (5No) Biomedical Engineering technicians -must have at least a diploma in Biomedical Engineering with 5 years' experience.

Holder of minimum Certificate with 10 years and above

(Must Attach CVS and certificates)

(The Staffs whose documents are provided must be part of the bidder or its subcontractors, partners or vendors organization and should be nominated by the bidder for this assignment)

Logistics Capability.

Bidders to demonstrate ability to offer logistics in delivering the goods to point of use safely and in good condition. Provide a proposal in terms of transport /courier services. The bidder to demonstrate ownership of transportation equipment or ability to hire as the case may be

(Provide documentary evidence)

Product Evaluation

a) Bidder to provide Original Manufacturers' Brochures containing technical data for all items quoted in the Lot where applicable and especially for equipment.

(Provide documentary evidence of any authorization or dealership agreement with manufacturers)

Manufacturer's Authorization

Tenderers shall be required to provide a Manufacturer's Authorization / Prove of Dealership/ Agreements with the authorized Dealers (dealership authorization letter) for the equipment based on the LOT(S) they are bidding for.

Certificate of Conformity

The tenderer shall be required to submit a letter of conformity to ensure the prescribed standards for each of the items offered within the prescribed turnaround time of 24hrs

The tenderer shall be required to submit a certificate of conformity for the Equipment in each lot they are bidding for,

Project Management Team and Timeline

Ability to put project management team and deliver the project within stipulated timelines.

Work plan and methodology of contract execution if awarded, including deployment of staff, repair and maintenance as per our service requirements, equipment and Tools owned by the firm to be used to undertake the repair and maintenance services.

A Detailed Operational Plan of the Project Implementation includingbut not limited to: -

a. Implementation Process
b. Plan to provide 95% uptime
c. Details of Equipment Planning
d. Delivery and Distribution Plan
e. Supply, Installation, Commissioning, Testing, and Maintenance plan
f. Inventory and Spare Parts Management Plan
g. Stakeholder Mapping and responsibilities
h. Complaint and Break down Management

Gantt Chart with the timeline to execute the project (supply, installation, testing and commissioning)	
Backup Support Tenderers or its subcontractors or partners must offer items with service and spare parts back up including a schedule of preventive servicing and maintenance. Documentary evidence and locations of such back up must be provided	
Training Plan and Schedule	
Provide a training and upskilling schedule for the staff involved in the Project on the medical equipment management. (Provide Training Schedule)	
Quality Management Certification for the bidder or the Equipment Manufacturer provided the bidder has been authorized by the Manufacturer. (Provide documentary evidence)	
Technical Specifications Compliance The proposed equipment is expected to meet the minimum technical specifications provided	

3 **Tender Evaluation (ITT 35)**

Price evaluation: in addition to the criteria listed in ITT 35.2 (a)–(d) the following criteria shall apply:

i) **Alternative Completion Times, i**f permitted under ITT 15.2, will be evaluated as follows: ……

ii) **Alternative Technical Solutions** for specified parts of the Works, if permitted under ITT 15.3, will be evaluated as follows:…….....……

iii) **Other Criteria; i**f permitted under ITT 35.2 (e): ……...……

4 Multiple Contracts

Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and the lowest evaluated tenderer identified for each Lot. The Procuring Entity will select one Option of the two Options listed below for award of Contracts.

OPTION1

i) If a tenderer wins only one Lot, the tenderer will be awarded a contract for that Lot, provided the tenderer meets the Eligibility and Qualification Criteria for that Lot.

ii) If a tenderer wins more than one Lot, the tender will be awarded contracts for all won Lots, provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the Lots. The tenderer will be awarded the combination of Lots for which the tenderer qualifies and the others will be considered for award to second lowest the tenderers.

OPTION 2

The Procuring Entity will consider all possible combinations of won Lots [contract(s)] and determine the combinationswiththelowestevaluatedprice.TenderswillthenbeawardedtotheTendererorTenderersinthe combinations provided the tenderer meets the aggregate Eligibility and Qualification Criteria for all the won Lots.

NOTE
Tenderers shall be allowed to quote for each lot or multiple LOTs separately, and the methodology to determine the lowest tenderer is specified in Section III, Evaluation and Qualification Criteria.

Prices quoted for each lot (contract) shall correspond at least to 100% percent of the items specified for each lot (contract). Incomplete lots will be rejected and will not be evaluated further. The Cost must be within the prevailing market rates for the equipment.

Awards in this tender will be placed on call off contracts by the procuring entity and the contracted rates will be adopted for the services/Procedures or test done.

5 Alternative Tenders (ITT 15.1)

An alternative if permitted under ITT 13.1, will be evaluated as follows:
The Procuring Entity shall consider Tenders offered for alternatives as specified in Part 2- Procuring Entity's requirements. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

6 **MARGIN OF PREFERENCE**

Apply Margin of Preference, if so allowed to all evaluated and accepted tender as

follows.

6.1 If the TDS so specifies, the Procuring Entity will grant a margin of preference of fifteen percent (15%) to be loaded on evaluated prices of foreign tenderers, where the percentage of shareholding of Kenyan citizens is less than fifty-one percent (51%).

6.2 Contractors applying for such preference shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a particular contractor or group of contractor's qualifies for a margin of preference.

6.3 After Tenders have been received and reviewed by the Procuring Entity, responsive Tenders shall be assessed to ascertain their percentage of shareholding of Kenyan citizens. Responsive tenders shall be classified into the following groups:

i) Group A: tenders offered by Kenyan Contractors and other Tenderers where Kenyan citizens hold shares of over fifty one percent (51%).
ii) Group B: tenders offered by foreign Contractors and other Tenderers where Kenyan citizens hold shares of less than fifty one percent (51%).

6.4 All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tender in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A is the lowest, it shall be selected for the award. If a tender from Group B is the lowest, an amount equal to the percentage indicated in Item 3.1 of the respective tender price, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each ender from Group B. All tenders shall then be compared using new prices with added prices to Group Band the lowest evaluated tender from Group A. If the tender from Group A is still the lowest tender, it shall be selected for award. If not, the lowest evaluated tender from Group B based on the first evaluation price shall be selected.

7 Post qualification and Contract ward (ITT 39), more specifically,

a) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.
b) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.

i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Kenya Shillings_____.

ii) Minimum average annual construction turnover of Kenya Shillings_____*[insert amount]*, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last_____*[insert of year]* years.

iii) At least_____(*insert number)* of contract(s) of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings _____equivalent.

iv) Contractor's Representative and Key Personnel, which are specified as _____
_____
_____

v) Contractors key equipment listed on the table "Contractor's Equipment" below and more specifically listed as *[specify requirements for each lot as applicable]* _____
_____
_____

vi) Other conditions depending on their seriousness.

a) **History of non-performing contracts**:

Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last_____(*specify years*). The required information shall be furnished in the appropriate form.

b) Pending Litigation

Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.

c) Litigation History

There shall be no consistent history of court/arbitral award decisions against the Tenderer, in the last _____(*Specify years*). All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the year's specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

SECTION IV - TENDERING FORMS

1. FORM OF TENDER
(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)

INSTRUCTIONS TO TENDERERS

i) All italicized text is to help the Tenderer in preparing this form.

ii) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address. Tenderers are reminded that this is a mandatory requirement.

iii) Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION FORMS OF THE TENDERER as listed under (s) below.

Date of this Tender submission:.....*[insert date (as day, month and year) of Tender submission]* **Tender Name and Identification**:.....*[insert identification]* **Alternative No.**:.....*[insert identification No if this is a Tender for an alternative]*

To: ..... *[Insert complete name of Procuring Entity]*

a) **No reservations:** We have examined and have no reservations to the tendering document, including Addenda issued in accordance with ITT9;

b) **Eligibility**: We meet the eligibility requirements and have no conflict of interest in accordance with ITT4;

c) **Tender-Securing Declaration:** We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing Declaration or Proposal-Securing Declaration in Kenya in accordance with ITT21;

d) **Conformity:** We offer to provide the Non-Consulting Services inconformity with the tendering document of the following:[*insert a brief description of the Non-Consulting Services*];

e) **Tender Price:** The total price of our Tender, excluding any discounts offered in item(f) below is: *[Insert one of the options below as appropriate]*

Option1,in case of one lot: Total price is:[*insert the total price of the Tender in words and figures, indicating the various amounts and the respective currencies*];
Or

Option 2, in case of multiple lots:(a)Total price of each lot[*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*]; and (b) Total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

f) **Discounts:** The discounts offered and the methodology for their application are:

i) The discounts offered are: [*Specify in detail each discount offered.*]

ii) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];

g) **Tender Validity Period:** Our Tender shall be valid for the period specified in TDS 19.1 (as amended if applicable) from the date fixed for the Tender submission deadline (specified in TDS 23.1(as amended if applicable),and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

h) **Performance Security:** If our Tender is accepted, we commit to obtain a Performance Security in accordance with the tendering document;

i) **One Tender Per Tenderer:** We are not submitting any other Tender(s) as an individual Tenderer, and we are not participating in any other Tender(s) a s a Joint Venture member or as a subcontractor, and meet the requirements of ITT4.3, other than alternative Tenders submitted in accordance with ITT14;

j) **Suspension and Debarment**: We, along with any of our subcontractors, suppliers, consultants, manufacturers,orserviceprovidersforanypartofthecontract,arenotsubjectto,and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the PPRA. Further, we are not ineligible under Kenya's official regulations or pursuant to a decision of the United Nations Security Council;

k) **State-owned enterprise or institution**: [*select the appropriate option and delete the other*] [*We are not a state-owned enterprise or institution*] / [*We are a state-owned enterprise or institution but meet the requirements of ITT 4.6*];

l) **Commissions, gratuities and fees**: We have paid, or will pay the following commissions, gratuities, or fees with respect to the Tendering process or execution of the Contract: *[insert complete name of each Recipient, its full address, r gratuity]*.

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

*a) [Delete if not appropriate, or amend to suit]*We confirm that we understand the provisions relating to Standstill Period as described in this tendering document and the Procurement Regulations.

m) **Binding Contract**: We understand that this Tender, together with your written acceptance thereof included in your Form of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

n) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated cost Tender, the Best Evaluated Tender or any other Tender that you may receive; and

o) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption.

p) **Collusive practices**: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the "Certificate of Independent tender Determination" attached below.

q) **Code of Ethical Conduct:** We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from_____(*specify website*) during the procurement process and the execution of any resulting contract.

r) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:

i) Tenderer's Eligibility; Confidential Business Questionnaire–to establish we are not in any conflict to interest.

ii) Certificate of Independent Tender Determination–to declare that we completed the tender without colluding with other tenderers.

iii) Self-Declaration of the Tenderer–to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.

iv) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal.

Further, we confirm that we have read and understood the full content and scope of fraud and corruption as informed in **"Appendix 1- Fraud and Corruption**" attached to the Form of Tender.

Name of the Tenderer:..... *[*insert complete name of person signing the Tender*]

Name of the person duly authorized to sign the Tender on behalf of the Tenderer:.....**[*insert complete name of person duly authorized to sign the Tender*]

Title of the person signing the Tender:..... [*insert complete title of the person signing the Tender*]

Signature of the person named above: .....[*insert signature of person whose name and capacity are shown above*]

Date signed..... [*insert date of signing*] **day of** .....[*insert month*], [*insert year*]

i) TENDERER'S ELIGIBILITY - CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

Tender is instructed to complete the particulars required in this Form, *one form for each entity if Tender is a JV*. Tenderer is further reminded that it is an offence to give false information on this Form.

a) Tenderer's details

	ITEM	DESCRIPTION
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and Contact Details of the Tenderer.	1. Country 2. City 3. Location 4. Building 5. Floor 6. Postal Address 7. Name and email of contact person.
6	Current Trade License Registration Number and Expiring date	
7	Name, country and full address (*postal and physical addresses, email, and telephone number*) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles.	
10	State if Tenders Company is listed in stock exchange, give name and full address (*postal and physical addresses, email, and telephone number*) of state which stock exchange	

General and Specific Details

b) **Sole Proprietor,** provide the following details.

Name in full_____Age_____

Nationality_____Country of Origin_____

Citizenship _____

c) **Partnership,** provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

d) **Registered Company,** provide the following details.

i) Private or public Company _____

ii) State the nominal and issued capital of the Company-

Nominal Kenya Shillings (Equivalent) …….....….....

Issued Kenya Shillings (Equivalent) …….....…

iii) Give details of Directors as follows.

	Names of Director	**Nationality**	**Citizenship**	**% Shares owned**
1				
2				
3				

e) DISCLOSURE OF INTEREST-Interest of the Firm in the Procuring Entity.

i) Are there any person/persons in…….....…… (*Name of Procuring Entity)* who has/have an interest or relationship in this firm? Yes/No…….....……

If yes, provide details as follows.

	Names of Person	**Designation in the Procuring Entity**	**Interest or Relationship with Tenderer**
1			
2			
3			

ii) Conflict of interest disclosure

	Type of Conflict	**Disclosure YES OR NO**	**If YES provide details of the relationship with Tenderer**
1	Tenderer is directly or indirectly controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be		

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
	involved in the implementation or supervision of the Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract?		

f) Certification

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name_____

Title or Designation_____

_____ _____

(Signature) *(Date)*

ii) CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the_____ *[Name of Procuring Entity]* for:_____ *[Name and number of tender]* in response to the request for tenders made by:_____ *[Name of Tenderer]* do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of_____ *[Name of Tenderer]* that:

1. I have read and I understand the contents of this Certificate;

2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;

4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
   a) Has been requested to submit a Tender in response to this request for tenders;
   b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;

5. The Tenderer discloses that [check one of the following, a s applicable]:
   a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
   b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;

6. In particular, without limiting the generality of paragraphs(5)(a) or (5)(b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   a) prices;
   b) methods, factors or formulas used to calculate prices;
   c) the intention or decision to submit, or not to submit, a tender; or
   d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5) (b) above;

7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph (5)(b) above;

8. The terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, which ever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5) (b) above.

Name_____

Title_____

Date

_____

[Name, title and signature of authorized agent of Tenderer and Date]

iii) SELF-DECLARATION FORMS

FORM SD1

SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015

I, ……., of Post Office Box ……. being a resident of…… ……... in the Republic of ……. do hereby make a statement as follows:-

1. THAT I am the Company Secretary/ Chief Executive/ Managing Director /Principal Officer/Director of …….. ……...…….. *(insert name of the Company)* who is a Bidder in respect of **Tender No.** …….. for.....*(insert tender title/description)* for ……..*(insert name of the Procuring entity)* and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.

3. THAT what is deponed to herein above is true to the best of my knowledge, information and belief.

…….	…….	……
(Title)	(Signature)	(Date)

Bidder Official Stamp

FORM SD2

SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE

I, ……of P. O. Box.....being a resident of ……. …….. in the Republic of ……..... do hereby make a statement as follows:-

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of ……..... ……..... *(insert name of the Company)* who is a Bidder in respect of Tender No…… …….. for ……..*(insert tender title/description)* for ……*(insert name of the Procuring entity)* and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of……. *(insert name of the Procuring entity)* which is the procuring entity.

3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of……. *(name of the procuring entity)*

4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders participating in the subject tender

5. THAT what is deponed to here in above is true to the best of my knowledge information and belief.

…… ……..…… .....

(Title) (Signature) (Date)

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I, ... (person) on behalf of ***(Name of the Business/ Company/Firm***) ….....……. declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurement and Asset Disposal and my responsibilities under the Code.

I do hereby commit to abide by the provisions of the Code of Ethics for persons participating in Public Procurement and Asset Disposal.

Name of Authorized signatory.....

Sign…….....….....

Position…….....

Office address……. Telephone…….....

E-mail…….....

Name of the Firm/Company…….....

Date…….....

(Company Seal/ Rubber Stamp where applicable)

Witness

Name…….....

Sign…….....

Date…….....

iv) APPENDIX1-FRAUDANDCORRUPTION

(Appendix 1 shall not be modified)

1. Purpose

1.1 The Government of Kenya's Anti-Corruption and Economic Crime laws and their sanction's policies and procedures, Public Procurement and Asset Disposal Act *(no. 33 of 2015)* and its Regulation, and any other Kenya's Acts or Regulations related to Fraud and Corruption, and similar offences, shall apply with respect to Public Procurement Processes and Contracts that are governed by the laws of Kenya.

2. Requirements

2.1 The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1above.

2.2 Kenya's public procurement and asset disposal act *(no. 33 of 2015)* under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted be low highlight Kenya's policy of no tolerance for such practices and behavior:

1) A person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or asset disposal proceeding;

2) A person referred to under sub section (1) who contravenes the provisions of that sub-section commits an offence;

3) Without limiting the generality of the subsection (1) and (2), the person shall be: -

   a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or

   b) if a contract has already been entered into with the person, the contract shall be voidable;

4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;

3. An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity who has a conflict of interest with respect to a procurement: -

a) Shall not take part in the procurement proceedings;

b) shall not, after a procurement contract has been entered into, take part in any decision relating to the procurement or contract; and

c) Shall not be a subcontractor for the tender to whom was awarded contract, or a member of the group of tenders to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.

4. An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflict of interest to the procuring entity;

4.1 If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5) (a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the a warding officer. etc.

In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:

a) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows:

   i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v) "obstructive practice" is:

a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

b) acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3e. below.

c) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:

"fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive he procuring entity of the benefits of free and open competition.

c) Rejects a proposal for award[1] of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

d) Pursuant to the Kenya's above stated Acts and Regulations, may sanction or recommend to appropriate authority(ies) for sanctioning and debarment of a firm or individual, as applicable under the Act sand Regulations;

e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring (i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect[2] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and

f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a "Self-Declaration Form" as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

---

[1] *For the avoidance of doubt, a party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in*
A consultancy, and rendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

[2] *Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/ audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format)deemed relevant for the investigation/ audit, and making copies there of as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.*

2. TENDERER INFORMATION FORM

[The Tenderer shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date:.....*[insert date (as day, month and year) of Tender submission*]

ITT No.:..... *[insert number of Tendering process]*

Alternative No:..... *[insert identification No if this is a Tender for an alternative]*

1. Tenderer's Name: .....*[insert Tenderer's legal name]*

2. In case of JV, legal name of each member: .....*[insert legal name of each member in JV]*

3. Tenderer's actual or intended country of registration: .....*[insert actual or intended country of registration]*

4. Tenderer's year of registration: .....*[insert Tenderer's year of registration]*

5. Tenderer's Address in country of registration: .....*[insert Tenderer's legal address in country of registration]*

6. Tenderer's Authorized Representative Information

   Name: .....*[insert Authorized Representative's name]*

   Address.....*[insert Authorized Representative's Address]*

   Telephone:.....*[insert Authorized Representative's telephone/fax numbers]*

   Email Address:.....*[insert Authorized Representative's email address]*

7. Attached are copies of original documents of..... *[check the box(es) of the attached original documents]*

   ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 4.4.

   ☐ In case of JV, Form of intent to form JV or JV agreement, in accordance with ITT 4.1.

   In case of state-owned enterprise or institution, in accordance with ITT4.6 documents

   establishing:

   i) Legal and financial autonomy

   ii) Operation under commercial law

   iii) Establishing that the Tenderer is not under the supervision of the agency of the Procuring Entity

   ☐ A current tax clearance certificate or tax exemption certificate in case of Kenyan tenderers issued by the Kenya Revenue Authority in accordance with ITT 4.14.

8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

OTHER FORMS

3. TENDERER'S JV MEMBERS INFORMATION FORM

[The Tenderers hall fill in this Form in accordance with the instructions indicated below. The following table shall be filled in for the Tenderer and for each member of a Joint Venture]].

Date: .....*[insert date (as day, month and year) of Tender submission*]

ITT No.: ..... *[insert number of Tendering process]*

Alternative No.: ..... *[insert identification No if this is a Tender for an alternative]*

1. Tenderer's Name: *[insert Tenderer's legal name]*
2. Tenderer's JV Member's name: *[insert JV's Member legal name]*
3. Tenderer's JV Member's country of registration: *[insert JV's Member country of registration]*
4. Tenderer's JV Member's year of registration: *[insert JV's Member year of registration]*
5. Tenderer's JV Member's legal address in country of registration: *[insert JV's Member legal address in country of registration]*
6. Tenderer's JV Member's authorized representative information Name: *[insert name of JV's Member authorized representative]* Address: *[insert address of JV's Member authorized representative]* Telephone/Fax numbers: *[insert telephone/fax numbers of JV's Member authorized representative]* Email Address: *[insert email address of JV's Member authorized representative]*
7. Attached are copies of original documents of *[check the box(es) of the attached original documents]* ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 4.4. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 4.6.
8. Included are the organizational chart and a list of Board of Directors.

FORM OF TENDER SECURITY-[Option 1–Demand Bank Guarantee]

Beneficiary:_____

Request forTenders No:

_____

Date:_____

TENDER GUARANTEE No.:_____

Guarantor: _____

1. We have been informed that_____(here inafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (here inafter called" the Tender") for the execution of_____ under Request for Tenders No._____("the ITT").

2. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

3. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or

b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) thirty days after the end of the Tender Validity Period.

5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above onor before that date.

_____

[signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

1. Whereas …… [*Name of the tenderer]* (hereinafter called "the tenderer") has submitted its tender dated …… [*Date of submission of tender]* for the …… *[Name and/or description of the tender]* (hereinafter called "the Tender") for the execution of__under Request for Tenders No._____("the ITT").

2. KNOW ALL PEOPLE by these presents that WE …… of …… [**Name of Insurance Company**] having our registered office at …… (hereinafter called "the Guarantor"), are bound unto …….. [*Name of Procuring Entity*] (hereinafter called "the Procuring Entity") in the sum of …… (Currency and guarantee amount) for which payment well and truly to be made to the said Procuring Entity, the Guarantor binds itself, its successors and assigns, jointly and severally, firmly by these presents.

   Sealed with the Common Seal of the said Guarantor this ___day of _____ 20 __.

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Applicant:

   a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Principal; or

   b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tendering document.

   then the guarantee undertakes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii)twenty-eight days after the end of the Tender Validity Period.

5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

_____	_____
[Date]	*[Signature of the Guarantor]*
_____	_____
[Witness]	*[Seal]*

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

TENDER-SECURING DECLARATION FORM

[The Bidder shall complete this Form in accordance with the instructions indicated]

Date:.....*[insert date(as day, month and year) of Tender Submission]*

Tender No.:.....*[insert number of tendering process]*

To:.....*[insert complete name of Purchaser]* I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.

2. I/We accept that I / we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation (s) under the bid conditions, because we – (a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or(ii) fail or refuse to furnish he Performance Security, in accordance with the instructions to tenders.

3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:

   a) Our receipt of a copy of your notification of the name of the successful Tenderer; or

   b) thirty days after the expiration of our Tender.

4. I / We understand that if I am / we are / in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid , and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:……..…….....

Capacity / title (director or partner or sole proprietor, etc.) ……..…….....

Name: …….....

Duly authorized to sign the bid for and on behalf of: ……*[insert complete name of Tenderer]*

Dated on …….....…. day of…… *[Insert date of signing]*

Seal or stamp

QUALIFICATION FORMS

6. FOREIGN TENDERERS 40% RULE

Pursuant to ITT 4.10, a foreign tenderer must complete this form to demonstrate that the tender fulfils this condition.

Item	Description of Work Item	Describe location of Source	COST in K. shillings	Comments, if any
A	Local Labor			
1				
2				
3				
4				
5				
B	Sub contracts from Local sources			
1				
2				
3				
4				
5				
C	Local materials			
1				
2				
3				
4				
5				
D	Use of Local Plant and Equipment			
1				
2				
3				
4				
5				
E	Add any other items			
1				
2				
3				
4				
5				
6				
	TOTAL COST LOCAL CONTENT		XXXXX	
	PERCENTAGE OF CONTRACT PRICE			

7. FORM EQU: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment **Error! Reference source not found.** Owned **Error! Reference source not found.** Rented **Error! Reference source not found.** Leased**Error! Reference sour**	

Omit the following information for equipment owned by the Tenderer.

Owner	**Name of owner**	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

8. FORM PER - 1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

1.	**Title of position:** Contractor's Representative	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
2.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
3.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
4.	**Title of position:** *[_____]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
5.	**Title of position:** *[insert title]*	
	Name of candidate	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

9. FORM PER-2:

Resume and Declaration - Contractor's Representative and Key Personnel.

Name of Tenderer

Position [*#1*]: [*title of position from Form PER-1*]		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: *[language and levels of speaking, reading and writing skills]*	
Details		
	Address of Procuring Entity:	
	Telephone:	Contact (manager / personnel officer):
	Fax:	
	Job title:	Years with present Procuring Entity:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	**Role**	**Duration of involvement**	**Relevant experience**
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

DECLARATION

I, the undersigned.....*[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Tender:-

Commitment	**Details**
Commitment to duration of contract:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*
Time commitment:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*

I understand that any misrepresentation or omission in this Form may:

a) be taken into consideration during Tender evaluation;

b) result in my disqualification from participating in the Tender;

c) result in my dismissal from the contract.

Name of Contractor's Representative or Key Personnel:_____[*insert name*]

Signature:_____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature:_____

Date: (day month year): _____

TENDERERS QUALIFICATION WITHOUT PRE-QUALIFICATION

To establish its qualifications to perform the contract in accordance with Section III, Evaluation and Qualification Criteria the Tenderer shall provide the information requested in the corresponding Information Sheets included hereunder.

10 FORM ELI -1.1

Tenderer Information

Form

Date:_____

ITT No. and title:_____

Tenderer's name
In case of Joint Venture (JV), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 4.4 ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 4.1 ☐ In case of state-owned enterprise or institution, in accordance with ITT 4.6, documents establishing: • Legal and financial autonomy • Operation under commercial law • Establishing that the Tenderer is not under the supervision of the Procuring Entity 2. Included are the organizational chart and a list of Board of Directors.

11. FORM ELI -1.2

Tenderer's JV Information Form
(to be completed for each member of Tenderer's JV)

Date:_____

ITT No. and title:_____

Tenderer’s JV name:
JV member’s name:
JV member’s country of registration:
JV member’s year of constitution:
JV member’s legal address in country of constitution:
JV member’s authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 4.4. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 4.6. 2. Included are the organizational chart and a list of Board of Directors.

12. FORM CON –2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name:_____

Date:_____

JV Member's Name_____

ITT No. and title:_____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
☐ Contract non-performance did not occur since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1. ☐ Contract(s) not performed since 1st January *[insert year]* specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	**Non- performed portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and Kenya Shilling equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country]* Reason(s) for nonperformance: *[indicate main reason(s)]*	*[insert amount]*
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
☐ No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3. ☐ Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	**Amount in dispute (currency)**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
		Contract Identification: _____ Name of Procuring Entity: _____ Address of Procuring Entity: _____ Matter in dispute: _____ Party who initiated the dispute: ____ Status of dispute: _____	
		Contract Identification: Name of Procuring Entity: Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
Litigation History in accordance with Section III, Evaluation and Qualification Criteria			

Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)
☐ No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4. ☐ Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			
Year of award	**Outcome as percentage of Net Worth**	**Contract Identification**	**Total Contract Amount (currency), Kenya Shilling Equivalent (exchange rate)**
[insert year]	*[insert percentage]*	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Procuring Entity: *[insert full name]* Address of Procuring Entity: *[insert street/city/country]* Matter in dispute: *[indicate main issues in dispute]* Party who initiated the dispute: *[indicate "Procuring Entity" or "Contractor"]* Reason(s) for Litigation and award decision *[indicate main reason(s)]*	*[insert amount]*

Financial Situation and Performance

Tenderer's Name:_____

Date:_____

JV Member's Name_____

ITT No. and title:

_____

Financial Data

Type of Financial information in_____ (currency)	**Historic information for previous _____*years*, _____ (amount in currency, currency, exchange rate*, USD equivalent)**				
	Year 1	Year 2	Year 3	Year 4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*Refer to ITT 15 for the exchange rate

Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (Kenya Shilling equivalent)
1		
2		
3		

Financial documents

The Tenderer and its parties shall provide copies of financial statements for_____years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor3.1.The financial statements shall:

a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).

b) Be independently audited or certified in accordance with local legislation.

c) Be complete, including all notes to the financial statements.

d) Correspond to accounting periods already completed and audited.

Attached are copies of financial statements[1] for the_____years required above; and complying with the requirements

[2] *If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.*

Average Annual Construction Turnover

Tenderer's Name:_____

Date:_____

JV Member's Name_____

ITT No. and title:_____

	Annual turnover data (construction only)		
Year	**Amount Currency**	**Exchange rate**	**Kenya Shilling equivalent**
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Construction Turnover *			

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.

15. FORM FIN–3.3:

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contractor contracts as specified in Section III, Evaluation and Qualification Criteria.

Financial Resources		
No.	**Source of financing**	**Amount (Kenya Shilling equivalent)**
1		
2		
3		

16. FORMFIN–3.4:

Current Contract Commitments / Works in Progress

Tenderers and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

No.	Name of Contract	Procuring Entity's Contact Address, Tel,	Value of Outstanding Work [Current Kenya Shilling /month Equivalent]	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [Kenya Shilling /month)]
1					
2					
3					
4					
5					

17. FORM EXP-4.1

General Construction Experience

Tenderer's Name:_____

Date:_____

JV Member's Name_____

ITT No. and title:_____

_____Page_____of

_____pages

Starting Year	**Ending Year**	**Contract Identification**	**Role of Tenderer**
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	

18. FORM EXP -4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name:_____

Date:_____

JV Member's Name_____

ITT No. and title:_____

Similar Contract No.	**Information**			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:				
1. Amount				
2. Physical size of required works items				
3. Complexity				
4. Methods/Technology				
5. Construction rate for key activities				
6. Other Characteristics				

19. FORMEXP-4.2(b)

Construction Experience in Key Activities

Tenderer's Name:_____

Date:_____

Tenderer's JV Member Name:_____

Sub-contractor's Name[3] (as perITT35):_____

ITT No. and title:_____

All Sub-contractors for key activities must complete the information in this form as per ITT 34 and Section III, Evaluation and Qualification Criteria, Sub-Factor 4.2.

1. Key Activity No One:_____

	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**Kenya Shilling**	
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)	Percentage participation (ii)		Actual Quantity Performed (i) x (ii)
Year 1				
Year 2				
Year 3				
Year 4				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				

[3] *If applicable*

	Information
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:	
1	
2	
3	
4	
5	

2 Activity No. Two

3. ……

SCHEDULE FORMS

*[The Tenderer shall fill in these Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Activity Schedules** shall coincide with the List of Non-Consulting Services specified in the Procuring Entity's Requirements.]*

SCHEDULES OF REQUIREMENTS

List of Lots

CATEGORY	FFS	LOT
Cancer Diagnostic and Therapeutics	FFS	Lot 24
Specialized Surgical Services	FFS	Lot 25
Specialized Laboratory Services for Cancer Diagnosis and Treatment	FFS	Lot 26

Schedule of Services Required Under Each Lot

LOT		SERVICE
LOT 24 CANCER DIAGNOSTIC AND THERAPEUTICS	MRI	MRI Scan
	Radiation oncology	Radionuclide scan
		Brachytherapy
		SBRT/SBRS
		Radiotherapy
	Nuclear medicine	Position emmission tomograpy(PET) Scan
		Single photon emission computed tomography(SPECT)
		Thyroid scans
		HIDA Scan-Hepatobiliary
		Bone scan
		Radioactive iodine (1-131) therapy
		Radioembolozation
		Radioligand therapy
LOT 25 SPECIALIZED SURGICAL SERVICES	Cardiology	Aortic Valvuloplasty
	Cardiology	ASD percutaneous device closure
	Cardiology	Atrial Septostomy
	Cardiology	Cardiac Resynchronization Therapy Defibrillator (CRT- D) device
	Cardiology	Cardiac Resynchronization Therapy Pacemaker (CRT-P)
	Cardiology	Coronary angiography (diagnostic)
	Cardiology	Coronary Angioplasty (with single or Multiple Stents)
	Cardiology	Diagnostic catheterization
	Cardiology	Dual Chamber pacemaker insertion (permanent)

	Cardiology	Implantable Converter Defibrillator (ICD) Dual chamber insertion
	Cardiology	Implantable Converter Defibrillator (ICD) Single chamber insertion
	Cardiology	Intra- Aortic Balloon Pump
	Cardiology	IVC Filter insertion
	Cardiology	Loop recorder - reveal link
	Cardiology	Loop recorder-reveal xt
	Cardiology	Mitral Valvoplasty
	Cardiology	PDA percutaneous device closure
	Cardiology	Peripheral Angiography
	Cardiology	Peripheral Angioplasty
	Cardiology	Pulmonary artery catheterization
	Cardiology	Pulmonary Valvoplasty
	Cardiology	Renal artery stenting
	Cardiology	Retrival of Foreign bodies
	Cardiology	Right and Left Catheterization
	Cardiology	Single Chamber pacemaker insertion (permanent)
	Cardiology	Single pacemaker insertion (temporary)
	Cardiology	Thoracic endovascular aortic repair (TEVAR)
	Cardiology	VSD percutanoeus device closure
	Cardiothoracic and Vascular	Abdominal Aortic Aneurym Repair (Open)
	Cardiothoracic and Vascular	Achalasia cardia/Diverticulum
	Cardiothoracic and Vascular	Anterior Chest Wall Mass Excision and Reconstruction
	Cardiothoracic and Vascular	Anterior Mediastinal Mass Resection
	Cardiothoracic and Vascular	Aortic Valve Replacement (AVR)
	Cardiothoracic and Vascular	Arteriovenous Malformation Resection
	Cardiothoracic and Vascular	Atrial Septal Defect Closure
	Cardiothoracic and Vascular	AV Fistula Take down
	Cardiothoracic and Vascular	Bentall's Procedure
	Cardiothoracic and Vascular	Bidirectional Glenn Shunt
	Cardiothoracic and	Blalock Taussig (BT) Shunt

	Vascular	
	Cardiothoracic and Vascular	Bronchopleural fistula repair
	Cardiothoracic and Vascular	Bronchoscopy and removal of FB
	Cardiothoracic and Vascular	CABG + Double Valve Replacement
	Cardiothoracic and Vascular	CABG + MWR/AVR
	Cardiothoracic and Vascular	Carotid Artery Endarterectomy
	Cardiothoracic and Vascular	Carotid Body Tumour Excision
	Cardiothoracic and Vascular	Carotid Body Tumour Redo Surgery
	Cardiothoracic and Vascular	Closed valvotomy
	Cardiothoracic and Vascular	Coarctation of Aorta repair with graft
	Cardiothoracic and Vascular	Coarctation of Aorta repair without graft
	Cardiothoracic and Vascular	Complete Atrioventricular Canal Defect Repair
	Cardiothoracic and Vascular	Complex repair for congenital heart disease
	Cardiothoracic and Vascular	Congenital AV fistula malformation Resection
	Cardiothoracic and Vascular	Conventional Elephant Trunk (CET) Procedure
	Cardiothoracic and Vascular	Coronary artery Bypass Grafting (CABG)
	Cardiothoracic and Vascular	Cox Maze IV Procedure
	Cardiothoracic and Vascular	Diaphragmatic Hernia Repair
	Cardiothoracic and Vascular	Dissected Aortic Aneurysm Repair (Open)
	Cardiothoracic and Vascular	Double Valve Replacement
	Cardiothoracic and Vascular	Endovascular Aneurysm Repair (EVAR)
	Cardiothoracic and Vascular	Esophagostomy
	Cardiothoracic and Vascular	ESRD AV Fistula Creation

	Cardiothoracic and Vascular	ESRD AV Graft Surgery
	Cardiothoracic and Vascular	Excision of Mediastinal Tumour
	Cardiothoracic and Vascular	Fontan procedure
	Cardiothoracic and Vascular	Frozen Elephant Trunk (FET) Procedure
	Cardiothoracic and Vascular	Gastrostomy/Jejunostomy
	Cardiothoracic and Vascular	Heller's myotomy
	Cardiothoracic and Vascular	Insertion of MB tube
	Cardiothoracic and Vascular	Lung decortication
	Cardiothoracic and Vascular	Mitral Valve Replacement (MVR)
	Cardiothoracic and Vascular	Mitral Valvotomy / Balloon
	Cardiothoracic and Vascular	Myocardial Biopsy
	Cardiothoracic and Vascular	Oesophageal perforation Repair
	Cardiothoracic and Vascular	Oesophagectomy
	Cardiothoracic and Vascular	Open Lobectomy
	Cardiothoracic and Vascular	Open Lung Biopsy
	Cardiothoracic and Vascular	Open Patent Ductus Arteriosus (PDA) surgery
	Cardiothoracic and Vascular	Open Pneumonectomy
	Cardiothoracic and Vascular	Open Removal of Esophageal Foreign Body
	Cardiothoracic and Vascular	Open Removal of Tracheal/Bronchial Foreign Body
	Cardiothoracic and Vascular	Other aneurysms repair
	Cardiothoracic and Vascular	Pacemaker Change of battery
	Cardiothoracic and Vascular	Partial Atrioventricular Canal Defect Repair
	Cardiothoracic and	Pericardial Catheterization

	Vascular	
	Cardiothoracic and Vascular	Pericardial Window
	Cardiothoracic and Vascular	Pericardiectomy
	Cardiothoracic and Vascular	Pericardiocentesis
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Bypass Grafting
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Embolectomy
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Endovascular Balloon Angioplasty
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Endovascular Stenting
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Vascular Amputation
	Cardiothoracic and Vascular	Pleurodesis
	Cardiothoracic and Vascular	Primary Open Pacemaker implantation
	Cardiothoracic and Vascular	Pulmonary Artery Banding
	Cardiothoracic and Vascular	Repair of Ruptured Diaphragm
	Cardiothoracic and Vascular	Simple Thoracotomy-Retained Haemothrax /Duct ligation/pleurodesis/FB removal
	Cardiothoracic and Vascular	Simple tracheal/Bronchial fistula repairs
	Cardiothoracic and Vascular	Splenorenal shunt
	Cardiothoracic and Vascular	Subfascial DVT ligation + skin graft
	Cardiothoracic and Vascular	Tetralogy of Fallot Repair
	Cardiothoracic and Vascular	Thoracic Aortic Aneurysm Repair (Open)
	Cardiothoracic and Vascular	Thoracic Endovascular Aneurysm Repair (TEVAR)
	Cardiothoracic and Vascular	Thoracotomy
	Cardiothoracic and Vascular	Tracheal Stenosis Resection and Anastomosis
	Cardiothoracic and Vascular	Tracheal/Bronchial Reconstruction

	Cardiothoracic and Vascular	Transcatheter percutaneous device PDA closure
	Cardiothoracic and Vascular	Traumatic Tracheal/Bronchial Disruption repair and anastomosis
	Cardiothoracic and Vascular	Traumatic Vascular Injury Repair
	Cardiothoracic and Vascular	Tube Thoracostomy
	Cardiothoracic and Vascular	Vascular Exposure and Safeguarding for Anterior Lumbar Interbody Fusion
	Cardiothoracic and Vascular	Venous Insufficiency Laser Ablation
	Cardiothoracic and Vascular	Venous Insufficiency Perforator Ligation
	Cardiothoracic and Vascular	Venous Insufficiency Radiofrequency Ablation
	Cardiothoracic and Vascular	Venous Insufficiency Stripping
	Cardiothoracic and Vascular	Ventricular Septal Defect Closure
	Cardiothoracic and Vascular	Vessel bypass Surgery
	Cardiothoracic and Vascular	Video Assisted Thoracoscopic Surgery (VATS) Decortication
	Cardiothoracic and Vascular	Video Assisted Thoracoscopic Surgery (VATS) Lobectomy
	Cardiothoracic and Vascular	Video Assisted Thoracoscopic Surgery (VATS) Pneumonectomy
	Ear Nose & Throat	Block dissection of the neck
	Ear Nose & Throat	Cochlea operations
	Ear Nose & Throat	Excision and reconstruction of head and neck tumours
	Ear Nose & Throat	Excision of pharyngeal diverticulum
	Ear Nose & Throat	Facial nerve decompression
	Ear Nose & Throat	Laryngectomy (Partial)
	Ear Nose & Throat	Laryngectomy (Total)
	Ear Nose & Throat	Laryngectomy with radical neck dissection
	Ear Nose & Throat	Middle ear tumour excision
	Ear Nose & Throat	Total/ Radical parotidectomy
	Ear Nose & Throat	EUA and biopsy of nasopharynx, ears, nose
	Ear Nose & Throat	Frontal sinus trephination
	Ear Nose & Throat	Maxillary Artery Ligation
	Ear Nose & Throat	MUA # nose

	Ear Nose & Throat	Removal of FB in ear or nose (paediatrics under GA)
	Ear Nose & Throat	Adenoidectomy
	Ear Nose & Throat	Adenotonsillectomy (Ts 7 As)
	Ear Nose & Throat	Cricotracheal reconstruction
	Ear Nose & Throat	Direct laryngoscopy and biopsy
	Ear Nose & Throat	Excision of submandibular gland
	Ear Nose & Throat	Frontal mucocele
	Ear Nose & Throat	Functional endoscopic sinus surgery (FESS)
	Ear Nose & Throat	Hemiglossectomy
	Ear Nose & Throat	Intranasal ethmoidectomy
	Ear Nose & Throat	Laryngocele excision
	Ear Nose & Throat	Lateral Rhinotomy (due to tumour, scars or congenital)
	Ear Nose & Throat	Maxillectomy
	Ear Nose & Throat	Myringoplasty
	Ear Nose & Throat	Myringotomy
	Ear Nose & Throat	Nasal polypectomy
	Ear Nose & Throat	Radical mastoidectomy
	Ear Nose & Throat	Rhinoplasty: Soft and bony tissue (Tumours, congenital, trauma)
	Ear Nose & Throat	Rhinoplasty: Soft tissue (Tumors, congenital, trauma)
	Ear Nose & Throat	Septoplasty (Tumors, congenital, trauma)
	Ear Nose & Throat	Simple mastoidectomy
	Ear Nose & Throat	Submucous resection of nasal septum
	Ear Nose & Throat	Superficial Parotidectomy
	Ear Nose & Throat	T.I.T. and Intranasal Antrostomy
	Ear Nose & Throat	T.I.T. and Turbinoplasty
	Ear Nose & Throat	Tonsillectomy
	Ear Nose & Throat	Transplatatal excision of Choanal atresia
	Ear Nose & Throat	Tympanoplasty
	Ear Nose & Throat	Uvulopalatopharyngoplasty
	Ear Nose & Throat	Vocal Cord lateralisation
	Interventional Radiology	Embolization/Carotid/Renal/Hepatic (no micro catheter)
	Interventional Radiology	Fallopian tube Catheterization
	Interventional Radiology	Flush Aortogram/Renal Artery/Hepatic (with embolization material and microcatheter
	Interventional Radiology	Image guided chemo port insertion (adult)

	Interventional Radiology	Image guided chemo port insertion (paediatric)
	Interventional Radiology	Image guided CVC insertion
	Interventional Radiology	Image guided dialysis catheter insertion
	Interventional Radiology	Image guided gastrotomy tube/nasojejunal tube insertion (without tube)
	Interventional Radiology	Image guided PICC line insertion
	Interventional Radiology	Internalization of biliary tube
	Interventional Radiology	Lower limb/ upper limb arteriogram bilateral
	Interventional Radiology	Lower limb/ upper limb arteriogram unilateral
	Interventional Radiology	Neuro-embolization
	Interventional Radiology	PTC/Biliary drainage
	Interventional Radiology	PTC/Biliary drainage (tubes not available)
	Interventional Radiology	PTC/Biliary drainage and stenting (stent available)
	Interventional Radiology	Ultrasound guided abdominal and peripheral biopsies
	Interventional Radiology	Ultrasound guided ascites drainage/abscess drainage
	Interventional Radiology	Ultrasound guided bilateral pleural effusion drainage
	Interventional Radiology	Ultrasound guided breast/prostate biopsies
	Interventional Radiology	Ultrasound guided unilateral pleural effusion drainage
	Interventional Radiology	Unilateral nephrostomy tube insertion
	Maxillofacial	Bilateral Open Joint Arthroplasty with condylar add-on
	Maxillofacial	Bilateral Open Joint Arthroplasty with costochondral graft+/- Temporalis fascia
	Maxillofacial	Cheiloplasty without Flap closure
	Maxillofacial	Closed reduction # Mandible/ Maxilla/MMF
	Maxillofacial	Closed Rhinoplasty
	Maxillofacial	Closure Cleft Oronasal Fistula + Bone graft
	Maxillofacial	Closure Cleft Oronasal Fistula with no Bone graft

	Maxillofacial	Closure Oro- Antral fistula without flap
	Maxillofacial	Complex nerve exploration+microsurgical repair
	Maxillofacial	Complex Salivary gland Sialedenectomy/Tumours excision+/- RMND
	Maxillofacial	ComplexFacial STR+Viin/Parotid Duct Repair
	Maxillofacial	Coronoidectomy
	Maxillofacial	Costocondral graft to Mandible post Tumour resection and implant
	Maxillofacial	Debridement of Necrotising Orofacial infections per theatre encounter
	Maxillofacial	Elevation # Zygoma: ORIF
	Maxillofacial	Elevation #Zygoma: Closed
	Maxillofacial	Enucleation Mandibular/ Maxillary cyst
	Maxillofacial	EUA Diagnostic for Oro-facial / Biopsy
	Maxillofacial	Excision of Complex facial Hemangioma/Lymphangioma
	Maxillofacial	Excision of Head / Neck lipoma >8cm
	Maxillofacial	Excision Of Oral / Facial Odontogenic tumors
	Maxillofacial	Excision of Scalp lesion +/- Wolfe graft
	Maxillofacial	Excision of Simple facial Hemangioma/Lymphangioma
	Maxillofacial	Excision/ Revision Facial scar
	Maxillofacial	Excisionof Oral/ Facial BCC + Local Flap Reconstruction
	Maxillofacial	Exploration of Submandibular/ Parotid Gland duct w/ stent
	Maxillofacial	Exploration/ removal Cranio- Facial Foreign bodies
	Maxillofacial	Exploration/ removal Cranio- Facial Foreign bodies (minor)
	Maxillofacial	Exploration/Graft orbital fracture
	Maxillofacial	Facial Soft tissue Repair
	Maxillofacial	Fractures of Upper face and cranioplasty
	Maxillofacial	Full thickness skin graft to oral defect-
	Maxillofacial	Functional Orthognathic surgeries of the Maxilla/Mandible
	Maxillofacial	Lip shave and mucosal advancement flap
	Maxillofacial	Mandibular fractures (ORIF)
	Maxillofacial	Mandibular/Maxillary Autogenous bone graft
	Maxillofacial	Mandibulectomy plus Reconstruction/Plating
	Maxillofacial	Mandibulectomy/Maxillectomy plus Microvascular Bone graft
	Maxillofacial	Maxillectomy + Obturator
	Maxillofacial	Mid face fractures
	Maxillofacial	Oral/ facial/ Catilage Onlay graft
	Maxillofacial	Panfacial fractures

	Maxillofacial	Post condylar cartilage Bilateral graft
	Maxillofacial	Reduction of Alveolar fracture closed
	Maxillofacial	Reduction of Alveolar fracture Open
	Maxillofacial	Removal of Bone plates
	Maxillofacial	Removal of branchial cyst/sinus/Ranula
	Maxillofacial	Revision Cleft Lip/ Nose
	Maxillofacial	Revision Palatoplasty- MicroVascular and Donor site graft
	Maxillofacial	Revision Palatoplasty-Rotational Flap
	Maxillofacial	Revision Vestibulopalsty + Skin graft
	Maxillofacial	RMND+ Mandibulectomy/Maxillectomy with Microvascular Free Flap
	Maxillofacial	RMND+Pedicled Flap Mandibulectomy/Maxillectomy +/- Implant
	Maxillofacial	Salivary Duct Redirection (Wilkie procedure)
	Maxillofacial	Secondary Craniofacial Reconstruction
	Maxillofacial	Segmental Osteotomy Mandible/Maxilla
	Maxillofacial	Sequestrectomy/ Decortication Mandible Maxilla
	Maxillofacial	Simple Nerve exploration + repair
	Maxillofacial	Simple Salivary Gland Sialedonectomy /Sialolithectomy
	Maxillofacial	Simple Vestibulopalsty + Skin graft
	Maxillofacial	Superficial Parotidectomy
	Maxillofacial	Temporalis/ Masseter Myotomy
	Maxillofacial	TMJ Arthroscopy
	Maxillofacial	Torticollis / Fibromatosis Colli Correction
	Neurosurgery	Acrylic Cranioplasty
	Neurosurgery	Anterior cervical fusion - AO plating/POSTERIOR DECOMPRESSION
	Neurosurgery	Application of skull calipers
	Neurosurgery	Brain abscess
	Neurosurgery	Brain Biopsy procedure
	Neurosurgery	Clipping of cerebral artery
	Neurosurgery	Craniotomy for Aneurysm
	Neurosurgery	Craniotomy for AV malformation
	Neurosurgery	Craniotomy for Intracelebral haematoma
	Neurosurgery	Craniotomy for Brain Tumour
	Neurosurgery	Elevation of depressed skull fracture
	Neurosurgery	Endoscopic Third Ventriculostomy w Choroid Plexux Cauterization (ETV/CPC)
	Neurosurgery	EVD Insertion/ICP Monitoring

	Neurosurgery	Excision of intracranial nerve lesions
	Neurosurgery	Excision of spinal tumours
	Neurosurgery	Extradural haematoma
	Neurosurgery	Laminectomy for cervical / thoracic / or lumbar spine
	Neurosurgery	Microdiscectomy
	Neurosurgery	Microsurgical nerve graft / Nerve repair / exploration/microsurgical anastomosis
	Neurosurgery	Posterior fossa surgery
	Neurosurgery	Repair of Dura for non-trauma/non cancer related
	Neurosurgery	Spina Bifida Surgery/encephalocoele
	Neurosurgery	Spinal fusions with implants II level
	Neurosurgery	Spinal fusions with implants III level
	Neurosurgery	Spinal fusions with implants IV level
	Neurosurgery	Surgical Toilet and repair of major scalp wounds under GA
	Neurosurgery	Surgical Toilet for scalp tumour under GA
	Neurosurgery	Ventriculoperitoneal (VP) shunting
	Neurosurgery	VP shunting
	Obs & Gyn	AP colpoperineorrhaphy
	Obs & Gyn	bilateral tubal ligation
	Obs & Gyn	Cerclage
	Obs & Gyn	Colposuspension + D&C
	Obs & Gyn	Cornual Wedge resection for Interstitial Ectopic Pregnancy
	Obs & Gyn	D & C + Cone biopsy
	Obs & Gyn	Diagnostic / Dye Laparoscopy
	Obs & Gyn	Dilation and Curettage for incomplete abortion/miscarriage
	Obs & Gyn	Laparotomy: Endometriosis Surgery
	Obs & Gyn	Laparotomy: Exploratory / Adhesiolysis
	Obs & Gyn	Laparotomy: Hysterectomy (Abdominal)
	Obs & Gyn	Laparotomy: Metroplasty / Uteroplasty
	Obs & Gyn	Laparotomy: Myomectomy
	Obs & Gyn	Laparotomy: Ovarian cystectomy
	Obs & Gyn	Laparotomy: Pelvic Abscess
	Obs & Gyn	Laparotomy: Ruptured ectopic pregnancy
	Obs & Gyn	Laparotomy: Salpingo – oopherectomy
	Obs & Gyn	Laparotomy: Tuboplasty
	Obs & Gyn	Laparotomy: Vaginal Hysterectomy
	Obs & Gyn	LLETZ (Loop excision)
	Obs & Gyn	Manchester Repair

	Obs & Gyn	Manual Vaccum Aspiriation
	Obs & Gyn	Marsupialisation of Batholins Cyst / Abscess
	Obs & Gyn	Obstetric Examination under GA
	Obs & Gyn	Operative Hysteroscopy: Avulsion of Endometrial Polyps
	Obs & Gyn	Operative Hysteroscopy: Biopsy
	Obs & Gyn	Operative Hysteroscopy: Endometrial Ablation
	Obs & Gyn	Operative Hysteroscopy: Resection of Submucous Fibroid
	Obs & Gyn	Operative Hysteroscopy: Retrieval of lost/ fragmented IUCD
	Obs & Gyn	Operative Hysteroscopy: Synechiolysis / Septolysis
	Obs & Gyn	Operative Laparoscopy: Adhesiolysis
	Obs & Gyn	Operative Laparoscopy: Ectopic Pregnancy
	Obs & Gyn	Operative Laparoscopy: Endometriosis Surgery
	Obs & Gyn	Operative Laparoscopy: Hysterectomy
	Obs & Gyn	Operative Laparoscopy: Myomectomy
	Obs & Gyn	Operative Laparoscopy: Ovarian Cystectomy / Drilling
	Obs & Gyn	Operative Laparoscopy: Tuboplasty
	Obs & Gyn	Ovarian cancer resection (Pelvic clearance)
	Obs & Gyn	Radical Vulvectomy
	Obs & Gyn	removal of retained placenta under GA
	Obs & Gyn	Repair of rectovaginal fistula
	Obs & Gyn	Repair of ruptured uterus/Caesarian Hysterectomy
	Obs & Gyn	Repair of vesicovaginal fistula
	Obs & Gyn	Resuturing of burst abdomen
	Obs & Gyn	Simple Vulvectomy
	Obs & Gyn	Wertheim’s Hysterectomy (Oncology only)
	Ophthalmic	A/B Scan
	Ophthalmic	Ahmed Valve
	Ophthalmic	Amniotic Membrane grafting (Large)
	Ophthalmic	Anterior Chamber reformation and bandage contact lens
	Ophthalmic	Anterior Chamber Tap
	Ophthalmic	Anterior Chamber Washout
	Ophthalmic	Anterior Stromal Puncture with Bandage Contact Lens
	Ophthalmic	Anterior Vitrectomy + Lensectomy
	Ophthalmic	Biometry
	Ophthalmic	Bleb revision
	Ophthalmic	Blepharoplasty/Blepharotomy
	Ophthalmic	Bullae Rupture with Bandage Contact Lens
	Ophthalmic	Canthus Procedures (Cantholysis, Canthoplasty, Canthotomy)

	Ophthalmic	Cataract extraction SICS
	Ophthalmic	Cataract extraction with implant -Phaco ALCON
	Ophthalmic	Cataract extraction with implant-Phaco IOL
	Ophthalmic	Conjunctival DCR plus tube
	Ophthalmic	Conjunctival Excision + Major Reconstruction
	Ophthalmic	Conjunctival Incision biopsy (including histopathology)
	Ophthalmic	Corneal Tomo/Topography
	Ophthalmic	Corneal transplant + Cataract Extraction + Intraocular lens implant
	Ophthalmic	Corneal/Scleral Perforation repair
	Ophthalmic	Crosslinking
	Ophthalmic	Cyclocryotherapy
	Ophthalmic	Cyclophotocoagulation
	Ophthalmic	DCR revision
	Ophthalmic	DCR/Fistulectomy
	Ophthalmic	Ectropion repair minor and major
	Ophthalmic	Entropion repair minor and major
	Ophthalmic	Epiblepharon repair
	Ophthalmic	Evisceration + implant
	Ophthalmic	Flourescein Angiography
	Ophthalmic	Intraocular lens exchange
	Ophthalmic	Intraocular lens redialing
	Ophthalmic	Intravitreal Antibiotics/Steroid
	Ophthalmic	Intravitreal AntiFungal Injection
	Ophthalmic	Intravitreal Bevazicumab
	Ophthalmic	Intravitreal Dexamethasone implant
	Ophthalmic	Intravitreal Triamcinolone
	Ophthalmic	Iridolysis
	Ophthalmic	Lacrimal glands prolapse repair
	Ophthalmic	Lacrimal Probing and Syringing (adults)
	Ophthalmic	Lacrimal Probing and Syringing (pediatrics)
	Ophthalmic	Laser suturelysis
	Ophthalmic	Lash electrolysis
	Ophthalmic	Lid splitting +cryotherapy
	Ophthalmic	Lid tumour Excision + major reconstruction
	Ophthalmic	Lid tumour Excision biopsy
	Ophthalmic	Lid tumour Incision biopsy
	Ophthalmic	Macula Hole Surgery

	Ophthalmic	OCT Angiography
	Ophthalmic	OCT Anterior
	Ophthalmic	OCT Posterior
	Ophthalmic	Ocular prosthesis
	Ophthalmic	Orbital implant removal
	Ophthalmic	Orbitotomy (lateral/anterior)
	Ophthalmic	Penetrating Keratoplasty (PKP)
	Ophthalmic	Photodocumentation
	Ophthalmic	Posterior Victrectomy - Foreign Body
	Ophthalmic	Posterior Victrectomy - Sunk Nucleus
	Ophthalmic	Posterior Vitrectomy
	Ophthalmic	Posterior Vitrectomy + band/buckle
	Ophthalmic	Posterior Vitrectomy + band/buckle + Cataract surgery
	Ophthalmic	Posterior Vitrectomy + Cataract surgery
	Ophthalmic	Posterior Vitrectomy + Delamination + Oil
	Ophthalmic	Pre-Descemets EndothelialKeratoplasty (DALK, DSAEK, DMEK)
	Ophthalmic	Pterygium excision with conjunctival autograft
	Ophthalmic	Ptosis repair/revision
	Ophthalmic	Ptosis Surgery: Anterior levator repair/resection, frontalis sling susp
	Ophthalmic	Punctoplasty/canaliculoplasty
	Ophthalmic	Pupiloplasty
	Ophthalmic	Retinopexy (Silicon Oil/Gas Insertion)
	Ophthalmic	Scleral buckle + Cyrotherapy or Laser
	Ophthalmic	Scleral buckle removal
	Ophthalmic	Socket reconstruction minor
	Ophthalmic	Specular Microscopy
	Ophthalmic	Squint Surgeries (all)
	Ophthalmic	Surgical Peripheral Iridectomy
	Ophthalmic	Tarsorrhaphy temporary
	Ophthalmic	Trabeculectomy + Phacoemulsification cataract surgery
	Ophthalmic	Trabeculectomy + Small Incision Cataract surgery
	Ophthalmic	Trabeculectomy with Mitomycin C
	Ophthalmic	Trabeculotomy/Goniotomy
	Ophthalmic	Ultrasound Biomicrcopy (UBM)
	Ophthalmic	YAG Iridotomy
	Orthopaedic	Above elbow Amputation

	Orthopaedic	Above knees Amputation
	Orthopaedic	ACL/PCL repair
	Orthopaedic	Angle plating fracture neck of femur
	Orthopaedic	Arthrodesis Hip, Knee, Ankle or Elbow with implants
	Orthopaedic	Arthrodesis vertebral joints
	Orthopaedic	Arthroscopic Bankart repair
	Orthopaedic	Arthroscopic Synovectomy
	Orthopaedic	Arthrotomy
	Orthopaedic	Below elbow Amputation
	Orthopaedic	Below knees Amputation
	Orthopaedic	Bone grafting
	Orthopaedic	Carpal tunnel decompression
	Orthopaedic	Cervical rib resection
	Orthopaedic	Chondroplasty
	Orthopaedic	Closed manipulation of dislocations/fractures under GA
	Orthopaedic	Contracture release without flaps
	Orthopaedic	Excision head of fibula
	Orthopaedic	Excision head of radius
	Orthopaedic	Excision of Bunion (simple and bilateral under GA)
	Orthopaedic	Excision of calcaneal spurs
	Orthopaedic	Excision of intervertebral disc
	Orthopaedic	Exploration of Osteomyelitis / sequestrectomy
	Orthopaedic	External clamp application and Debridement
	Orthopaedic	Extra articular repair of joint ligament and implants
	Orthopaedic	Fasciectomy
	Orthopaedic	Femoral epiphysis reduction / fixation (SUFE)with implants
	Orthopaedic	Hallux valgus operation
	Orthopaedic	Ilizarov procedure
	Orthopaedic	Insertion of Steinmann pin
	Orthopaedic	Intra articular Surgery (large joints)
	Orthopaedic	Intra articular Surgery (medium joints)
	Orthopaedic	Intra articular Surgery (small joints)
	Orthopaedic	Joint aspirations under GA
	Orthopaedic	Meniscus repair
	Orthopaedic	Menisectomy
	Orthopaedic	Mild club foot correction
	Orthopaedic	Moderate / severe club foot correction
	Orthopaedic	Open bone biopsy

	Orthopaedic	Open reduction and internal fixation: Clavicle
	Orthopaedic	Open reduction and internal fixation: Femur
	Orthopaedic	Open reduction and internal fixation: Humerus
	Orthopaedic	Open reduction and internal fixation: Pelvis
	Orthopaedic	Open reduction and internal fixation: Radius / Ulna
	Orthopaedic	Open Synovectomy
	Orthopaedic	Operative Arthroscopy with implants
	Orthopaedic	Osteotomy and implants
	Orthopaedic	Puttiplatt procedure for shoulder dislocation / Weber Osteotomy
	Orthopaedic	Removal of hardware (plates & nails)
	Orthopaedic	Removal of hardware (wires)
	Orthopaedic	Removal of Steinmann pin
	Orthopaedic	Revision of Total Hip or Knee (Including implants)
	Orthopaedic	Rotator cuff repair
	Orthopaedic	Scoliosis correction
	Orthopaedic	Stabilisation of Patella
	Orthopaedic	Subacromial decompression
	Orthopaedic	Syndactyly / polydactyly correction
	Orthopaedic	Synovectomy: Small joints
	Orthopaedic	Tendon repair (others)
	Orthopaedic	Tendon repair: Achiles tendon/Patella tendons/Quadriceps
	Orthopaedic	Tendon transfer
	Orthopaedic	Toes and fingers Disarticulation
	Orthopaedic	Total hipreplacement (THR) (Including implants)
	Orthopaedic	Total knee replacement (TKR) (Including implants)
	Orthopaedic	Wedge tarsectomy
	Paediatric	Hirschsprung's disease procedure a) Laparotomy, biopsy, colostomy
	Paediatric	Hirschsprung's disease procedure b) Abdominoperineal pull through (Soave, Swenson)
	Paediatric	Hirschsprung's disease procedure c) Closure of Colostomy
	Paediatric	Insertion of CAPD catheter
	Paediatric	Insertion of underwater seal drainage (Paediatric under GA)
	Paediatric	Laparotomy: Intestinal resection + anastomasis
	Paediatric	Laparotomy: Intussusception
	Paediatric	Laparotomy: Tumours
	Paediatric	Laparotomy: Volvulus
	Paediatric	Rectosigmoidectomy

	Paediatric	Resection of posterior / anterior urethral valves
	Paediatric	Urethroplasty for hypospadies and epispadies
	Plastic	Advancement flaps (CANCERS/TRAUMA)
	Plastic	Cleft lip and palate repair (Unilateral/Bilateral)
	Plastic	Cleft lip repair (Unilateral/Bilateral)
	Plastic	Cleft palate repair
	Plastic	Insertion of tissue expander
	Plastic	Lip reconstruction (ONLY for RTA and Tumors)
	Plastic	Posterior Sagittal Anorectalplasty (PSARP) for anorectal malformation (High ARM)
	Plastic	Posterior Sagittal Anorectalplasty (PSARP) for anorectal malformation (Low ARM)
	Plastic	Reduction Mammoplasty (bilateral)
	Plastic	Removal of tissue expander
	Plastic	Rotation flaps
	Plastic	Skin graft <10 % TBSA
	Plastic	Skin graft > 10% TBSA
	Urological	Anastomotic urethroplasty
	Urological	Anatrophic nephrolithotomy
	Urological	Anterior exenteration and ileal conduit
	Urological	Ascending urethrography
	Urological	Aspiration of hydrocele
	Urological	Bilateral modified inguinal node dissection
	Urological	Bilateral ochidectomy
	Urological	Bilateral radical inguinal node dissection
	Urological	Bipolar fulgration of genital and perineal warts
	Urological	Bipolar fulgration of urethral warts
	Urological	Bladder augmentation surgery
	Urological	Bladder biopsy
	Urological	Bladder diverticulectomy
	Urological	Bladder injury repair
	Urological	Bladder washout
	Urological	Bricker's ileal conduit
	Urological	Combined ascending and descending urethrography
	Urological	Creation of instestinal continent catherizable pouch
	Urological	Cutaneous ureterostomy
	Urological	Direct visual urethrotomy
	Urological	Epispadia urethroplasty

	Urological	Excision and graft peyronies repair
	Urological	Excision of epididymal cyst
	Urological	Excision of patent urachus
	Urological	Female urethral diverticulectomy
	Urological	Femoral hernia repair
	Urological	Flexible cystoscopy and removal of JJ stent
	Urological	Flexible cystoscopy and surveillance for bladder cancer
	Urological	Flexible ureterorenoscopy and laser ablation of ureteric or renal neoplasm
	Urological	Flexible ureterorenoscopy and laser lithotripsy
	Urological	Flexible ureteroscopy
	Urological	Flexible urethrocystoscopy
	Urological	Fournier's gangrene necrosectomy
	Urological	Graft urethroplasty
	Urological	Hydrocelectomy
	Urological	Hypospadia urethroplasty
	Urological	Ileal replacement of ureter
	Urological	Inguinal hernia repair
	Urological	Inguinal ochidopexy
	Urological	Insertion of artificial urethral sphincter
	Urological	Insertion of female urethral sling
	Urological	Intravesical instillation of chemotherapy for bladder cancer
	Urological	JJ stent placement
	Urological	Laparoscopic ablation of renal cyst
	Urological	Laparoscopic adrenalectomy
	Urological	Laparoscopic donor nephrectomy
	Urological	Laparoscopic ochidopexy
	Urological	Laparoscopic partial nephrectomy
	Urological	Laparoscopic pyelolithotomy
	Urological	Laparoscopic pyeloplasty
	Urological	Laparoscopic radical nephrectomy
	Urological	Laparoscopic radical nephroureterectomy
	Urological	Laparoscopic radical ochidectomy
	Urological	Laparoscopic radical prostatectomy
	Urological	Laparoscopic simple nephrectomy
	Urological	Laparoscopic ureterolithotomy
	Urological	Laparoscopic varicocelectomy
	Urological	Laser cystolithotripsy

	Urological	Laser urethrolithotripsy
	Urological	Laser urethrotomy
	Urological	Mainz II urinary diversion
	Urological	Meatoplasty
	Urological	Micturating cystourethrography
	Urological	Mitrofanoff's appendicovesicostomy
	Urological	Open adrenalectomy
	Urological	Open cystolithotomy
	Urological	Open decortication of renal cyst
	Urological	Open donor nephrectomy
	Urological	Open drainage of renal abscess
	Urological	Open nephrolithotomy
	Urological	Open partial nephrectomy
	Urological	Open pyelolithotomy
	Urological	Open pyeloplasty
	Urological	Open radical nephrectomy
	Urological	Open radical nephrectomy with IVC thrombectomy
	Urological	Open radical nephroureterectomy with bladder cuff
	Urological	Open radical prostatectomy
	Urological	Open Renorrhaphy
	Urological	Open simple nephroureterectomy
	Urological	Open simple prostatectomy
	Urological	Open suprapubic catheterization
	Urological	Open ureterolithotomy
	Urological	Open varicocelectomy
	Urological	Orthotopic neobladder reconstruction
	Urological	Partial cystectomy
	Urological	Partial glansectomy
	Urological	Partial penectomy
	Urological	Pelvic fracture urethral defect (PFUD) urethroplasty
	Urological	Percutaneous ablation of renal cyst
	Urological	Percutaneous cystolithotripsy
	Urological	Percutaneous drainage of renal abscess
	Urological	Percutaneous nephrolithotomy (PCNL)
	Urological	Percutaneous nephrostomy
	Urological	Percutaneous prograde JJ stenting
	Urological	Percutaneous prograde nephrostogram
	Urological	Percutaneous removal of retained JJ stent

	Urological	Percutaneous resection and ablation of urothelial tumors
	Urological	Percutaneous suprapubic catheterization
	Urological	Pericatheter urethrography
	Urological	Perineal urethrostomy
	Urological	Plication Peyronie's repair
	Urological	Post circumcision repair
	Urological	Posterior urethral valve ablation
	Urological	Prostate biopsy
	Urological	Proximal shunt of priapism
	Urological	Radical cystoprostatectomy and ileal conduit INC ICU stay
	Urological	Radical inguinal ochidectomy
	Urological	Radical penectomy with perineal urethrostomy
	Urological	Radical urethrectomy
	Urological	Recipient kidney transplantation
	Urological	Repair of bladder extrophy
	Urological	Repair of colovesical fistula
	Urological	Repair of cystocele with mesh
	Urological	Repair of fracture penis
	Urological	Repair of ligated ureter
	Urological	Repair of penile injury
	Urological	Repair of ureter injury
	Urological	Repair of urethral injury
	Urological	Retrograde pyelography
	Urological	Retroperitoneal lymph node dissection
	Urological	Rigid Cystoscopy and Removal of JJ stent
	Urological	Robotic radical prostatectomy
	Urological	Scrotal exploration and ochidopexy of testicular torsion
	Urological	Semi rigid ureteroscopy and laser ureterolithotripsy
	Urological	Semi rigid ureteroscopy and removal of retained JJ stent
	Urological	Semirigid ureteroscopy
	Urological	Sentinel inguinal node biopsy
	Urological	Simple cystectomy and ileal conduit
	Urological	Simple nephrectomy
	Urological	Simple ochidectomy
	Urological	Testicular/penile biopsy
	Urological	Total penectomy with perineal urethrostomy
	Urological	Trasurethral resection of prostate (TURP)
	Urological	Trauma nephrectomy

	Urological	Ultrasound guided biopsy of renal masses
	Urological	Unilateral modified inguinal node dissection
	Urological	Unilateral radical inguinal node dissection
	Urological	Ureter reimplantation
	Urological	Ureteral dilation
	Urological	Ureterolysis
	Urological	Ureteroscopy and laser ablation of ureteric tumor
	Urological	Ureteroscopy and laser incision of ureter stricture
	Urological	Ureteroureterostomy
	Urological	Urethral dilation
	Urological	Urethroscopy and ablation of bleeding prostatic hemangioma
	Urological	Vesicostomy
LOT 26 Specialized laboratory services for cancer diagnosis and treatment		Bone Marrow Aspiration and Biopsy
		Coombs Test (Direct and Indirect)
		Hemoglobin Electrophoresis
		Flow Cytometry for Immunophenotyping
		Insulin Assay
		Cortisol Assay
		Parathyroid Hormone Assay
		Vitamin D Levels
		Homocysteine Levels
		Serum Osmolality
		Protein Electrophoresis (Serum and Urine)
		Adrenal Function Tests (e.g., ACTH Stimulation Test)
		Dynamic Function Tests (e.g., Glucose Tolerance Test for Acromegaly)
		Gonadotropin Levels (LH, FSH)
		Sex Hormone Binding Globulin (SHBG)
		ANA (Antinuclear Antibody)
		Anti-ds DNA (Anti-double- stranded DNA Antibody)
		ANCA (Antineutrophil Cytoplasmic Antibodies)
		IgA (Immunoglobulin A)
		IgG (Immunoglobulin G)
		IgM (lmmunoglobulin M)
		IgE (Immunoglobulin E)
		Allergy Testing (e.g., RAST, Specific IgE)

		Complement Levels (C3, C4)
		HLA Typing
		Polymerase Chain Reaction (PCR) for Pathogen Detection
		Mycobacterial Culture and Sensitivity
		Fungal Culture and Sensitivity
		Stool for Clostridium difficile Toxin
		Urine Protein Electrophoresis
		24-Hour Urine Collection for Specific Analytes (e.g., cortisol,catecholamines)
		Factor VIII
		Factor IX
		D-Dimer
		Thrombophilia Screen (e.g., Protein C, Protein S, Antithrombin)
		Alpha-Fetoprotein (AFP)
		CA 19-9 (Pancreatic Cancer)
		Beta-HCG (Human Chorionic Gonadotropin)
		BRCA1 and BRCA2 Gene Testing
		LDH (Lactate Dehydrogenase) for Hematologic Malignancies
		Serology for Parasitic Infections (e.g., Toxoplasma, Echinococcus)
		Thick and Thin Blood Smear for Malaria
		Stool Antigen Tests (e.g., Giardia, Entamoeba)

NOTE: The successful service provider(s) will be required to provide the services listed, against each of the lots using the provided minimum equipement specifications including the provision of the consumables and reagents required for the provision of the service(s)

List of Itemized Equipment, Consumables, and Reagents for the Services

LOT 24	SERVICE	EQUIPMENT	CONSUMABLES/REAGENTS/IMPLANTS
Cancer diagnostic and therapeutics	**1. MRI**	MRI (1.5T)	**Contrast & Injection Consumables** • Gadolinium-based contrast agents (GBCAs) • Pre-filled contrast syringes / injector syringes • High-pressure tubing for power injectors • Normal saline (flush solution) • IV cannulas (various gauges)

			• Extension lines and 3-way stopcocks • Alcohol swabs and antiseptic wipes **Patient Preparation Consumables** • Disposable patient gowns • Earplugs / headphones covers (noise protection) • Skin markers (MRI-safe) • Disposable ECG electrodes (MRI-compatible for cardiac MRI) • Patient identification wristbands **Infection Prevention & Hygiene** • Disposable gloves (latex/nitrile) • Face masks • Hand sanitizers • Disinfectant wipes/solutions (MRI-safe, non-corrosive) • Disposable couch/bed sheets • Cleaning cloths **Positioning & Comfort Items** • Disposable pillow covers • Sheets and blankets • Positioning pads/cushions • Immobilization straps (where applicable)
	2. Radiation Oncology	External Beam Radiotherapy • Linear Accelerators (LINACs) – for 3D-CRT, IMRT, VMAT, IGRT • Cobalt-60 Teletherapy Units (older / low-resource settings) • CyberKnife® / Robotic Radiosurgery Systems • Tomotherapy Units • Proton Therapy Systems (cyclotron/synchrotron) • Stereotactic	Patient-Related Consumables • Skin markers • Radio-opaque markers • Fiducial markers (gold seeds) • Contrast media (CT/MRI) • Disposable immobilization sheets • Medical tapes • Skin care products (radiation dermatitis creams) Brachytherapy Consumables • Single-use applicators • Guide wires • Catheters • Sterile drapes • Source transfer tubes

		Radiosurgery (SRS) Systems – Gamma Knife®
		
		Brachytherapy Equipment
		
		• High-Dose Rate (HDR) Brachytherapy Afterloaders
		• Low-Dose Rate (LDR) Brachytherapy Systems
		• Pulsed Dose Rate (PDR) Systems
		• Applicators & Catheters
		  o Tandem & ovoids (gynecologic)
		  o Interstitial needles
		  o Prostate seed applicators
		  o Vaginal cylinders
		• Shielded Storage Containers
		• Radioactive Sources
		  o Iridium-192
		  o Cesium-137
		  o Iodine-125
		  o Palladium-103
		
		Treatment Planning & Imaging Equipment
		
		• CT Simulator
		• MRI (for soft-tissue delineation)
		• PET-CT Scanner
		• Treatment Planning System
			Dosimetry Consumables
			
			• Radiographic films
			• Dosimetry gels
			• TLD chips
			• OSL badges
			• Detector cables (limited-life)
			
			Infection Control
			
			• Sterile gloves
			• Gowns
			• Face masks
			• Disinfectants
			• Alcohol swabs

		(TPS) Workstations
		• Image-Guided Radiotherapy (IGRT) Systems
		  o Cone Beam CT (CBCT)
		  o Portal Imaging Devices (EPID)
		• Laser Positioning Systems
		
		Patient Positioning & Immobilization Equipment
		
		• Carbon fiber treatment couches
		• Thermoplastic masks (head & neck)
		• Vacuum immobilization bags
		• Breast boards
		• Wing boards
		• Knee & foot supports
		• Bite blocks
		• Stereotactic frames
		
		Dosimetry & Quality Assurance Equipment
		
		• Ionization Chambers
		• Electrometers
		• Solid-state Detectors
		• Phantoms
		  o Water phantoms
		  o Anthropomorphic phantoms
		• Film Dosimetry	

		Systems • TLD / OSL Dosimeters • Beam Scanning Systems • Radiation Survey Meters Radiation Safety & Protection Equipment • Lead aprons • Lead thyroid shields • Lead glasses • Lead barriers & shielding doors • Personal dosimeters (TLD badges) • Area radiation monitors • Warning lights & interlock systems • Emergency source retrieval tools --- 8. IT & Support Systems • Oncology Information System (OIS) • Record & Verify Systems • PACS integration • Treatment delivery software • Backup power systems (UPS & generators)	
	3. Nuclear Medicine	Imaging Systems • Gamma Camera (Scintillation Camera)	Radiopharmaceuticals Diagnostic Radiopharmaceuticals • Technetium-99m (Tc-99m)

		○ Single-head, dual-head, or triple-head • SPECT Camera (Single Photon Emission Computed Tomography) • SPECT/CT System • PET Scanner (Positron Emission Tomography) • PET/CT System • PET/MRI System (advanced centers) Radiopharmacy & Hot Lab Equipment • Dose Calibrator • Radioisotope Elution System (e.g. Tc-99m generator) • Shielded Fume Hood / Laminar Flow Hood • Lead-lined Hot Cells • Shielded Syringe and Vial Containers • Automatic Radiopharmaceutical Dispensing System • Refrigerator (radioisotope-dedicated) Radiation Safety & Monitoring • Geiger-Müller Survey Meter • Contamination Monitors • Personal Dosimeters (TLD, OSL, electronic) • Area Radiation	labeled compounds: ○ MDP (Bone scans) ○ MIBI (Cardiac imaging) ○ DTPA / MAG3 (Renal scans) ○ HIDA agents • Fluorine-18 (FDG) – PET scans • Iodine-123 • Gallium-67 • Thallium-201 Therapeutic Radiopharmaceuticals • Iodine-131 • Lutetium-177 • Yttrium-90 • Samarium-153 • Radium-223 --- Radiopharmaceutical Preparation Consumables • Cold kits (lyophilized reagent kits) • Sterile syringes (various sizes) • Shielded syringes • Vials and shielded vials • Needles and cannulas • Alcohol swabs • Saline for injection • Labels (radioactive warning labels) Patient-Related Consumables • IV cannulas • Normal saline • Contrast agents (for SPECT/CT or PET/CT) • Disposable gloves • Face masks • Drapes and gauze • Absorbent pads • Patient positioning aids

		Monitors • Lead Shields, Lead Glass, Lead Bricks • Waste Storage Containers (shielded) IT & Image Processing • Nuclear Medicine Workstations • Image Processing & Quantification Software • PACS & RIS Integration • Dose Management Software	Quality Control Consumables • Chromatography strips (ITLC-SG) • Solvents for radiochemical purity testing • pH indicator strips • Calibration sources • Test phantoms (flood phantoms, PET phantoms) Radiation Protection Consumables • Disposable protective gowns • Shoe covers • Lead syringe shields (consumable wear items) • Contamination wipes • Radioactive waste bags • Sharps containers (shielded)
LOT 25	**SERVICE**	**EQUIPMENT**	**CONSUMABLES/REAGENTS/IMPLANTS**
Specialized Surgical Services	**1. Cardiology**	Perfusion & Circulation • Heart-lung machine (cardiopulmonary bypass machine) — supports circulation & oxygenation during surgery. • Oxygenator and tubing sets — oxygenate blood outside the body. • Hemoconcentrator — concentrates the patient's blood during bypass. • Cardioplegia delivery system — delivers solution to arrest the heart safely.	Consumables • ACT cartridges (for anticoagulation testing). • Surgical sutures and specialty cardiac suture packs. • Disposable tubing sets (e.g., for suction, perfusion circuits). Surgical Consumables & Implantables Bypass & Cannulation • Aortic and venous cannulae (various sizes). • Double-stage cannulae and angled cannulae. Implants & Prosthetics • Composite aortic valves and tissue valves (for valve

		Support Devices • Intra-aortic balloon pump (IABP) — temporarily supports cardiac output. • Mechanical circulatory support (e.g., Impella devices) — short-term ventricular support during high-risk procedures or shock. Imaging & OR Support • Fluoroscopy/C-arm units (often in hybrid ORs) for real-time imaging. • Surgical tables with imaging-compatible accessories (radiolucent extensions, arm boards). Cardiac Surgery Instruments • Vascular clamps (arterial/venous clamps) and forceps for vessel control/manipulation. • Hemostatic forceps and needle holders for suturing and bleeding control. • Scissors (e.g., coronary artery scissors). • Sternotomy	replacement). • Sternum closure wires. Interventional Consumables & Support Items Fluid & Pressure Control • Manifolds (2-way/3-way) for controlled contrast and drug delivery. • High-pressure tubing sets compatible with contrast injectors. • Pressure monitoring lines and connection kits. Additional Essentials • Transseptal needles (for left atrial access). • Extension lines, stopcocks, and connectors. • Disposable diagnostic kits (contrast syringes, flush syringes). Other Essential Consumables • Sterile drapes, gowns, gloves, masks, and PPE. • Syringes and IV cannulae (various sizes). • Personal protective equipment and sterile field supplies. • Contrast media (radiopaque agents for imaging). (Standard cath lab item) • Suction systems and canisters. (General OR equipment)

		instruments and sternal closure sets (including sternum wires). • Retractors and tissue handling tools optimized for deep thoracic access. Interventional Cardiology — Cath Lab Equipment & Consumables Catheterization Lab Systems • Cath lab imaging system with high-resolution fluoroscopy. • Pressure and flow monitoring systems. Guidance & Navigation • Guidewires — for navigating vasculature. • Introducer sheaths — access ports into the artery/vein. • Diagnostic and guiding catheters — various shapes/sizes. • Balloon catheter systems — expand narrowed vessels during angioplasty. Stents • Bare-metal stents — structural scaffolds for arteries. • Drug-eluting stents (DES) —	

		reduce restenosis risk. Atherectomy & Thrombectomy • Atherectomy devices — remove plaque from vessel walls. • Thrombectomy systems — aspirate clots. Supporting Clinical & Monitoring Equipment Diagnostic & Monitoring Systems • ECG/EKG machines with electrodes & cables. • Echocardiography (echo) systems — transthoracic, transesophageal (TEE). • Holter and event monitors for long-term rhythm tracking. • Defibrillators (manual and AED). • Blood pressure and hemodynamic monitors.	
	2. Specialized cardiothoracic & vascular	Core Surgical Equipment (Capital & Large Devices) Cardiopulmonary & Life-Support Systems • Heart-lung	Sterile Operating Consumables • Sterile drapes, gowns, gloves, caps, masks – protect patient & staff. • Sutures & staplers – absorbable/non-absorbable sutures

		(cardiopulmonary bypass) machine — for open heart procedures. • Oxygenator (often disposable membrane component of bypass circuit) for gas exchange during cardiopulmonary bypass. • ECMO (Extracorporeal Membrane Oxygenation) – for extended cardiopulmonary support. • Cell saver / blood recovery system — recovers and returns patient's blood during heavy bleeding cases. • Ventilators (ICU and OT monitored). • Intra-aortic balloon pump (IABP) — for circulatory support. Operating Theatre Support • Central monitoring systems for ECG, pressures, SpO_2, invasive lines, etc. • High-intensity surgical lights and OT tables with tilt/adjust functions. • Anesthesia workstation with ventilator, vaporizers, and	(including microvascular sizes), and surgical staples for closure. • Cannulas & lines: IV cannulas, arterial lines, central venous catheters. • Endotracheal tubes & breathing circuits – anesthesia airway management. • Suction tubing and Yankauer tips – surgical field fluid management. • Hemostatic agents & sponges – assist bleeding control. Interventional & Vascular Supplies • Guidewires, balloons, stents (including drug-eluting stents) – for angioplasty/endovascular interventions. • Catheters/introducers – various sizes for access, placement, drainage. • Contrast injection sets – used during imaging-guided intervention. Ancillary Equipment & Consumables Essential monitoring & emergency gear • Multi-parameter monitors (ECG, NIBP, SpO_2, $EtCO_2$). • Defibrillators & pacing pads. • Infusion pumps / syringe drivers – precise drug/fluid delivery. • Crash cart with emergency drugs & airway tools. Sterilisation & Instrument care • Autoclave trays & containers, instrument sterilisation wraps. • Instrument trays and

		monitoring. Surgical Instrument Sets Cardiothoracic Surgical Instruments • Sternal saw / oscillating bone saw – to open chest. • Sternal retractors (e.g., Rultract, Finochietto) – spread chest. • Needle holders (standard and fine Castro types) – suturing vessels & grafts. • Forceps & picks: o DeBakey atraumatic vascular forceps – gentle tissue handling. o Gerald, Russian forceps – fine tissue grasping. • Scissors: coronary scissors, Potts scissors (angled), Metzenbaum – precise cutting. • Retractors & cardiac hooks – surgical exposure of heart & vessels. Vascular Surgery Instruments • Vascular clamps: Satinsky, Cooley, Bulldog clamps – control blood flow. • Vessel dilators & probes – facilitate	organizers – easy access during procedures.

		lumen access. • Tibbs arterial cannula set – for arterial access in vascular cases. • Fine dissecting instruments – Microscissors, Iris scissors, fine forceps. • Sutures & suture catchers – for precise vessel closure.	
	3. Specialized urology	Core Equipment • Cystoscopes (rigid and flexible) – for bladder and urethral inspection. • Ureteroscopes & nephroscopes – for ureter and kidney access in stone and other interventions. • Endovision systems (light source, camera heads, monitors) – for high-definition visualization. • Bladder scanners – point-of-care ultrasound for residual urine volume assessment. Endoscopic & Scope-based Tools • Biopsy forceps and graspers • Stone baskets, stone graspers and extraction forceps • Guide sheaths and bridges	Catheters & Drainage • Foley/indwelling urinary catheters (various sizes) – for bladder drainage. • Straight/intermittent catheters • Suprapubic catheters • Urine drainage bags & leg bags • Sterile catheter insertion kits Endoscopic Consumables • Access sheaths • Guidewires (hydrophilic, nitinol) • Dilatation balloons • Retrieval baskets for stone capture • Laser fibers (for lithotripsy) • Connecting tubes, clamps, irrigation syringes Sterilization & Field Maintenance • Sterile drapes and gloves • Sterile lubricating jelly • Antiseptic solutions and saline irrigation sets • Specimen containers/traps Monitoring & OR Support • Pulse oximeter, ECG monitors • Suction & fluid

		• Dilators and urethral bougies Open & General Surgical Tools • Urethral dilators • Needle holders and scissors (e.g., Metzenbaum, Potts) • Retractors (bladder and prostate) • TURP (transurethral resection) instrument sets • Prostatectomy and urethrotome instruments • Catheter introducers • Standard surgical instruments (scalpels, clamps, forceps) Specialized Urology Procedure Equipment • Lithotripters (pneumatic or laser, e.g., holmium:YAG fibers) – for stone fragmentation • Resectoscopes – for transurethral resections (e.g., TURP) • Endoscopy fluid management/insufflators – for irrigation control • Artificial urinary sphincter devices – implantable devices for incontinence management	management systems • Sterile surgical gowns/masks

	4. Specialized maxillofacial	Surgical & Operating Room Equipment • Operating table with head & neck support • Surgical overhead lights / head-mounted light • Anesthesia machine with ventilator • Patient monitors (ECG, SpO_2, NIBP, $EtCO_2$) • Suction machines (primary & backup) • Electrosurgical unit (diathermy) • Tourniquet (for graft sites if needed) --- Maxillofacial Surgical Instruments • Basic surgical instrument set (scalpels, forceps, needle holders, scissors) • Mouth gags (Dingman, Boyle-Davis) • Cheek retractors (Langenbeck, Minnesota) • Periosteal elevators (Freer, Molt) • Bone rongeurs • Osteotomes and chisels • Bone files • Mallete • Wire twisters & cutters • Needle drivers (long) • Maxillofacial	Sterile Supplies • Sterile surgical gloves • Surgical drapes & gowns • Face masks, caps • Sterile towels • Sterile gauze & swabs • Surgical blades (#10, #11, #15) Sutures & Fixation Consumables • Absorbable sutures (Vicryl, Chromic catgut) • Non-absorbable sutures (Nylon, Prolene) • Bone wax • Stainless steel wires • Intermaxillary fixation (IMF) wires / elastics • Arch bars Fixation & Implant Consumables • Titanium plates (miniplates, reconstruction plates) • Titanium screws (various lengths) • Resorbable plates & screws (pediatric cases) • Dental implants (where applicable) Anesthesia & Airway Consumables • Endotracheal tubes (nasal & oral) • Laryngeal masks • Suction catheters • IV cannulas • Syringes & needles • Oxygen tubing • Local anesthetic agents Wound Care & Post-Op Items • Saline irrigation fluids • Antiseptic solutions (povidone-iodine, chlorhexidine) • Pressure dressings • Elastoplast & bandages • Antibiotic ointments

		retractors Power & Bone Handling Equipment • High-speed surgical drill system • Drill handpieces & foot pedal • Drill bits (various sizes) • Bone saw (reciprocating or oscillating) • Irrigation system (saline cooling) Fixation & Reconstruction Equipment • Titanium plate and screw system • Miniplate bending instruments • Screwdrivers (manual or powered) • Plate cutters • Depth gauge • Bone graft harvesting set • Microvascular instrument set (for free flaps) --- Imaging & Navigation (Advanced Centers) • C-arm fluoroscopy • 3D navigation systems • Intraoperative imaging system	• Ice packs Dental & Oral Procedure Consumables • Dental burs • Impression materials • Temporary splints • Bite blocks • Mouth props
	5. Specialized orthopaedic	General Theatre Equipment • Operating table with traction	Implants • Bone plates (DCP, LC-DCP, LCP) • Screws (cortical,

		attachments • C-arm fluoroscopy machine • Anaesthesia machine & patient monitors • Surgical lights • Suction machines • Tourniquet machie (pneumatic) Orthopaedic Instrument Sets • Basic orthopaedic instrument set (periosteal elevators, bone levers, bone hooks) • Bone holding forceps (Lane, Lowman) • Reduction forceps • Osteotomes & chisels • Mallets (nylon/metal) • Rongeurs (Kerrison, Lempert) • Bone nibblers • Bone curettes • Hand rasps & files Power & Cutting Equipment • Orthopaedic drill machine • Drill bits (various sizes) • Reamers (acetabular, intramedullary) • Oscillating saw • Gigli saw • Burrs (high-speed) Fracture Fixation	cancellous, locking) • Intramedullary nails • K-wires • Steinmann pins • External fixator pins • Joint prostheses (hip, knee, shoulder) • Spinal implants (pedicle screws, rods) Bone & Soft Tissue Materials • Bone cement (PMMA) • Antibiotic-loaded cement • Bone grafts (autograft/allograft/synthetic) • Bone substitutes (calcium sulfate/phosphate) Wound Closure & Dressing • Sutures (Vicryl, Nylon, Prolene) • Skin staples • Staple removers • Sterile dressings • Pressure bandages • Plaster of Paris (POP) • Fiberglass casting material • Padding (cotton wool, synthetic) Disposable Surgical Supplies • Sterile drapes • Gowns • Gloves • Surgical blades • Syringes & needles • Suction tubing • Diathermy tips • Irrigation fluids (normal saline) Infection Control & Support Items • Antiseptic solutions (chlorhexidine, povidone-iodine) • Antibiotics (peri-operative prophylaxis)

		Equipment
		
		• Plate benders
		• Screwdrivers (manual & powered)
		• Depth gauges
		• Tap sets
		• Wire tighteners
		• K-wire drivers
		• External fixator systems
		
		Joint Replacement Equipment
		
		• Joint replacement instrument trays:
		  ◦ Hip
		  ◦ Knee
		  ◦ Shoulder
		• Alignment jigs
		• Trial components
		• Cement guns & mixers
		
		Arthroscopy Equipment
		
		• Arthroscopy tower
		  ◦ Camera
		  ◦ Light source
		  ◦ Monitor
		• Arthroscope (2.7mm, 4.0mm)
		• Shaver system
		• Fluid pump
		• Radiofrequency probe
			• Tourniquet cuffs
			• Drain tubes (Redivac, Hemovac)
			
			Orthopaedic Ward & Procedure Room Items
			
			• Traction weights & pulleys
			• Crutches, walkers, frames
			• Splints & braces
			• Continuous Passive Motion (CPM) machines
			• Backslabs

	6. Specialized neurosurgery	Operating Room & Visualization • Operating microscope (e.g., Zeiss, Leica) • Neuro-endoscope & endoscopy tower • High-definition monitors	Consumables & Single-Use Items Sutures & Closure • Absorbable & non-absorbable sutures • Dural sutures • Skin staples • Staple removers Hemostasis & Dural Repair

		• Surgical headlights • Neuronavigation system (image-guided surgery) • Intraoperative MRI / CT (where available) • C-arm fluoroscopy Patient Positioning & Safety • Neurosurgical operating table • Mayfield skull clamp / head fixation system • Headrests (horseshoe, gel pads) • Pressure-relief pads • Patient warming system Cutting & Bone Work • High-speed cranial drill system • Drill bits & perforators • Craniotome • Ultrasonic bone scalpel • Kerrison rongeurs • Bone punches Tissue Handling & Dissection • Bipolar electrosurgical unit • Micro-dissectors • Micro-scissors • Micro-forceps • Ultrasonic aspirator (CUSA) • Laser system (selected cases)	• Hemostatic agents (Surgicel, Gelfoam, Floseal) • Bone wax • Dural substitutes (synthetic or collagen) • Fibrin sealants Drains & Catheters • External ventricular drains (EVD) • Lumbar drains • Subgaleal drains • Suction drains Implants & Fixation • Cranial plates & screws (titanium) • Burr hole covers • Aneurysm clips • Spinal cages • Pedicle screws & rods Monitoring & Access • ICP transducers • EEG electrodes • EMG needles • Arterial and central venous lines --- Neuro-Anesthesia & ICU Support Items • Endotracheal tubes • Anesthesia circuits • Infusion pumps • Ventilators • Syringes & IV cannulas • Sedation & neuro-protective drugs --- Sterile & Theatre Consumables • Sterile drapes & gowns • Surgical gloves • Sterile covers for microscope & C-arm • Suction tubing & canisters

		Hemostasis & Monitoring • Bipolar forceps • Electrosurgical generator • Neurophysiological monitoring system (EEG, EMG, SSEPs) • Intracranial pressure (ICP) monitor Neurosurgical Instruments (Reusable Sets) Craniotomy Set • Scalpels & handles • Periosteal elevators • Retractors (Leyla, Greenberg) • Dural hooks • Bone elevators Microsurgical Instrument Set • Micro needle holders • Micro forceps • Aneurysm clips & appliers • Temporary clips Spine Surgery Instrument Set • Pedicle screw system • Rod benders & holders • Disc rongeurs • Nerve root retractors	• Irrigation fluids (normal saline, Ringer's)
	7. Specialized ENT	Major Surgical Equipment	Consumables • Sterile gloves, gowns,

		• Operating microscope (high-magnification) • Ear microsurgical instrument sets • High-speed otologic drill with attachments • Suction units (variable vacuum) • Sterile headlight or surgical headlights • Tympanoplasty/endaural sets • Ossicular chain prosthesis tools □ Instruments • Microsurgical forceps (various fine tips) • Micro scissors • Canal speculums (various sizes) • Curettes (middle ear & canal) • Picks & hooks • Rosen needle • Suction tips (Frazier, fine) Eye (Ophthalmic) Surgery & Procedures Major Surgical Equipment • Ophthalmic operating microscope • Phacoemulsification machine (for cataract surgery) • Vitrectomy machine • Laser systems (YAG, SLT, PRP) • Ophthalmic ultrasound (A-	drapes • Ear specula (disposable or autoclavable) • Sterile normal saline & irrigation fluids • Hemostatic agents (e.g., Gelfoam) • Bone wax • Sutures (vicryl, nylon; micro sizes) • Sterile cottonoids, sponges • Packing materials (e.g., Merocel) • Antibiotic ear drops • Tympanostomy tubes & grommets Consumables (Eye) • Sterile ophthalmic drapes • Eye irrigation fluid (BSS) • Ophthalmic viscoelastic devices • Sutures (10-0 nylon, etc.) • Intraocular lenses (IOLs) • Disposable blades • Sterile syringes/needles for anesthesia • Antibiotic/steroid eye drops • Silicone oil, gas (e.g., C3F8, SF6 for retina) Consumables (Nose) • Endoscope sheaths/covers • Sterile saline irrigation • Nasal packing (absorbable & non-absorbable) • Hemostatic agents (oxidized cellulose, Surgicel) • Throat packs • Sutures (vicryl, chromic) Dressing materials

		scan/B-scan) □ Instruments • Eyelid speculum • Corneal shields • Keratomes & crescent knives • Micro scissors, forceps (various) • Needle holders (ophthalmic) • Vitreoretinal forceps • Cryo probes (when applicable) Nose (Rhinology & Endoscopic Nasal) Surgery Major Surgical Equipment • Endoscopic tower (camera + monitor + light source) • Sinus endoscopes (0°, 30°, 45°) • Foot-pedal-controlled microdebrider • Suction cautery system • Powered instruments set □ Instruments • Nasal speculum • Blakesley forceps • Through-cutting forceps • Sickle knives • Ballenger swivel knife • Freer elevators • Suction tips (Yankauer, Frazier)	

		General OR Equipment Shared Across ENT & Ophthalmic Support Equipment • Electrosurgical unit (monopolar/bipolar) • Suction & smoke evacuator • Sterilization trays & indicators • Procedure carts • Patient positioning aids □ Consumables • Sterilization wraps & indicators • Surgical marking pens • Antiseptic prep solutions • IV fluids & tubing • Oxygen & anesthesia supplies • Syringes, infusion sets • Biohazard waste bags Office/Minor Procedure Consumables (for clinic ear tube placements, foreign body removals, office rhinolaryngoscopy) • Disposable ear curettes • Alligator forceps • Suction tips (disposable) • Local anesthetic & needles • Topical anesthetic	

		sprays/gels • Diagnostic otoscope/ophthalmoscope tips • Specula sizes • Sterile gauze, swabs	
	8. Specialized OBS/GYNAE	Theatre Equipment • Operating table with lithotomy attachments • Overhead theatre lights • Anesthesia machine with monitors • Multiparameter patient monitor • Suction machines (electric/manual) • Electrosurgical unit (diathermy) • Infusion pumps & syringe pumps • Ultrasound machine (portable / transabdominal / transvaginal) • Fetal monitor (CTG machine) • Baby resuscitaire / neonatal warmer • Instrument trolleys & Mayo stands Obstetric Equipment (Labour & Delivery) Delivery & Labour • Delivery beds • Dopplers / Fetoscopes • Episiotomy scissors • Umbilical cord clamps • Vacuum extractor (Ventouse) • Forceps (Wrigley,	OB/GYN Consumables Sterile Consumables • Surgical gloves (sterile & non-sterile) • Drapes & gowns • Swabs & gauze • Sutures (Vicryl, Chromic, PDS, Nylon) • Needles & blades • Syringes & IV cannulas • Catheters (Foley) • Suction tubing • Urine bags Obstetric Consumables • Oxytocin • Misoprostol • Magnesium sulphate • Tranexamic acid • IV fluids • Neonatal suction catheters • Cord clamps Gynaecology Consumables • Pap smear brushes & slides • Endometrial sampling devices • IUCDs & implants • Contraceptive supplies • Lubricating jelly • Antiseptic solutions

		Simpson) • Perineal repair instruments • Manual vacuum aspiration (MVA) kits Caesarean Section Equipment • C-section instrument set • Abdominal retractors (Deaver, Doyen) • Bladder retractor • Sponge holding forceps • Needle holders • Suction tubing & Yankauer • Baby resuscitation equipment Gynaecological Surgical Equipment Open & Minor Procedures • Gynecology instrument set • Vaginal speculums (Cusco, Sims) • Uterine sound • Tenaculum forceps • Dilators (Hegar, Pratt) • Curettes (sharp & blunt) • Biopsy forceps • Polypectomy forceps Endoscopic & Advanced Procedures • Laparoscopy tower o Camera, light source,	

		monitor ○ CO_2 insufflator • Laparoscopic instruments (graspers, scissors, trocars) • Hysteroscope • Endometrial ablation systems • Morcellator (where applicable) Diagnostic & Monitoring Equipment • Pregnancy test kits • Colposcope • Pap smear collection tools • Ultrasound probes (TVS & TAS) • Blood pressure machines • Fetal heart rate monitors • Weighing scales (mother & baby) Emergency & Support Equipment • Oxygen cylinders / concentrators • Bag-valve masks (adult & neonatal) • Defibrillator • Emergency drug trolley • Blood transfusion sets	
	9. Specialized Paediatric	General Surgical Instruments (Paediatric Sizes) • Paediatric surgical instrument sets	Consumables • Breathing circuits (neonatal/paediatric) • CO_2 sampling lines • Suction catheters (5–12 Fr) • Syringes (1–10 ml)

		○ Forceps (atraumatic, micro) ○ Needle holders (fine jaws) ○ Scissors (Metzenbaum, iris) ○ Retractors (small self-retaining, handheld) • Micro-instrument sets • Magnifying loupes / operating microscope • Paediatric electrosurgical units (low-energy settings) • Suction apparatus with low-pressure regulators • Paediatric warming devices (forced-air warmers) • Infant surgical tables & positioning aids Paediatric Anaesthesia & Airway Equipment Airway & Ventilation • Neonatal & paediatric anesthesia machines • Infant ventilators • Laryngoscopes (Miller, Macintosh – paediatric sizes) • Endotracheal tubes (uncuffed & cuffed, neonatal–paediatric) • Laryngeal mask	• IV cannulas (24G, 22G, 20G) Consumables • Absorbable sutures (Vicryl, PDS – fine gauges) • Non-absorbable sutures (Prolene) • Surgical meshes (paediatric hernia) • Laparoscopic clips • Specimen retrieval bags • Surgical gloves (small sizes) • Sterile drapes (paediatric)

		airways (paediatric sizes) • Supraglottic airway devices • Oxygen masks (neonatal & paediatric) • CPAP & HFNC systems Monitoring • Paediatric patient monitors • Neonatal pulse oximeter probes • NIBP cuffs (neonate, infant, child) • Capnography modules • Temperature probes Paediatric General Surgery Equipment Equipment • Paediatric laparoscopic towers • Insufflators (low-pressure CO_2) • Paediatric trocars (3–5 mm) • Paediatric graspers, scissors, clip appliers • Stapling devices (paediatric compatible) • Hernia repair instrument sets • Bowel anastomosis instruments Paediatric Urology	Consumables • Foley catheters (6–12 Fr) • Feeding tubes • Double-J stents (paediatric) • Guidewires (fine) • Irrigation fluids • Fine sutures (6-0, 7-0) Consumables • K-wires (small diameter) • Paediatric plates & screws • Orthopaedic pins • Plaster of Paris & fiberglass casts • Sterile dressings • Bone cement (where applicable) Consumables

		Surgery Equipment • Paediatric cystoscopes • Paediatric ureteroscopes • Mini nephroscopes • Hypospadias repair instrument sets • Endoscopic camera systems Paediatric Orthopaedic Surgery Equipment • Paediatric orthopaedic instrument sets • Mini C-arm fluoroscopy • Paediatric power drills & saws • External fixation systems (paediatric) • Traction systems • Casting tables Paediatric Neurosurgery Equipment • Paediatric neurosurgical microscope • Cranial drills (low-torque) • Paediatric craniotomy sets • Ventricular endoscopy systems • ICP monitoring devices	• Ventriculoperitoneal (VP) shunts • External ventricular drain kits • Dural substitutes • Haemostatic agents (Surgicel, Gelfoam) • Fine sutures (6-0 to 8-0) Consumables • Vascular grafts (small diameter) • Paediatric cannulae • Cardiac sutures • Chest tubes (small bore) • Pacing wires Consumables • Ear tubes (grommets) • Nasal packs • Fine suction tips • Sutures (absorbable) • Local anesthetic agents Consumables • Skin graft meshes • Fine sutures (6-0 to 8-0) • Tissue adhesives • Dressing materials (silicone, foam) Infection Control & Safety

		Paediatric Cardiothoracic Surgery Equipment • Paediatric heart–lung machine • Neonatal oxygenators • Paediatric sternotomy sets • Cardiac retractors (small) • Transesophageal echocardiography probes (paediatric) Paediatric ENT Surgery Equipment • Paediatric ENT operating microscope • Tonsillectomy & adenoidectomy sets • Paediatric endoscopes • Microdebriders • Hearing assessment equipment Paediatric Plastic & Reconstructive Surgery Equipment • Microvascular surgery sets • Operating microscope • Skin grafting instruments • Dermatomes (paediatric	Consumables • Sterile gloves (neonatal & paediatric) • Surgical gowns • Face masks • Sterile drapes • Antiseptic solutions • Sharps containers • Paediatric crash cart supplies Consumables • Endotracheal tubes (uncuffed & micro-cuffed, sizes 2.5–6.0) • Laryngeal mask airways (neonatal to paediatric sizes) • Face masks (neonate, infant, child) • Nasal cannulae & oxygen masks • Anaesthetic circuits (paediatric) • CO_2 sampling lines

		settings)	Consumables • Absorbable sutures (5/0–7/0 Vicryl, PDS, Monocryl) • Non-absorbable sutures (5/0–6/0 Prolene, Nylon) • Surgical gloves (small sizes) • Sterile drapes (paediatric) • Wound dressings (non-adherent)
		Operating Theatre & General Paediatric Surgical Equipment • Paediatric operating table (with warming mattress) • Infant and neonatal warming devices • Paediatric surgical instrument sets (miniaturized) • Head rings and paediatric positioning devices • Suction machines with low-pressure regulators • Paediatric electrosurgical unit (diathermy) with safety limits • Paediatric surgical lights • Infusion pumps (micro-infusion capable)	Consumables • CO_2 insufflation tubing • Disposable trocars • Laparoscopic sutures • Specimen retrieval bags (small) • Disposable electrosurgical tips
		Anaesthesia & Airway Equipment (Paediatric-Specific) Equipment	Consumables • Feeding tubes (used as urinary catheters) • Foley catheters (6–12 Fr) • Double-J stents (paediatric sizes) • Contrast media • Irrigation fluids

		• Paediatric anaesthesia workstation • Infant and neonatal ventilators • Laryngoscopes (Miller & Macintosh blades – neonatal to adolescent sizes) • Video laryngoscope (paediatric blades) • Paediatric bronchoscopes • Suction catheters (6–12 Fr) • Paediatric resuscitation trolley Paediatric General Surgery Equipment • Paediatric retractors (small Deaver, Langenbeck) • Fine tissue forceps (atraumatic) • Needle holders (micro and small) • Paediatric bowel clamps • Paediatric suction tips (Yankauer – paediatric) • Paediatric staplers (where applicable) Paediatric Laparoscopic & Minimal Access Surgery Equipment	Consumables • K-wires (small diameter) • Bone screws and plates (paediatric) • Plaster of Paris & fiberglass casts • Orthopaedic drapes • Bone wax Consumables • Paediatric cannulae • Vascular sutures (6/0–8/0) • Chest tubes (8–16 Fr) • Hemostatic agents • Pericardial patches Consumables • Ventricular shunt systems • Dural substitutes • Haemostatic agents • Micro sutures (6/0–8/0) Consumables • Split-thickness skin graft blades

		• Paediatric laparoscopic tower • Insufflator with low-pressure settings • Paediatric trocars (3 mm, 5 mm) • Paediatric laparoscopes (3–5 mm) • Micro laparoscopic instruments • Camera and light source Paediatric Urology Surgery Equipment • Paediatric cystoscope & ureteroscope • Paediatric resectoscope • Paediatric nephroscope • Dilators (small caliber) Paediatric Orthopaedic Surgery Equipment • Paediatric orthopaedic drill system • Mini-plates and screws • Paediatric traction devices • External fixators (paediatric) • Paediatric C-arm compatible instruments	• Burn dressings (silver-impregnated) • Foam and silicone dressings • Topical antimicrobials Infection Control & Safety Consumables • Sterile gloves (paediatric sizes) • Surgical masks & gowns • Sterile suction tubing • Syringes (1–10 ml) • IV cannulas (24G–18G) • Antiseptic solutions Consumables • ECG electrodes (paediatric) • IV fluids (paediatric formulations) • Nasogastric tubes (6–10 Fr) • Urine bags (paediatric)

		Paediatric Cardiothoracic Surgery Equipment • Paediatric heart–lung machine • Paediatric surgical retractors • Neonatal cardiac instruments • Paediatric chest spreaders Paediatric Neurosurgery Equipment • Paediatric operating microscope • Paediatric cranial drill • Micro-neurosurgical instruments • Paediatric head fixation devices Burns & Reconstructive Paediatric Surgery Equipment • Dermatome (paediatric compatible) • Skin graft mesher • Warming devices Monitoring & Post-operative Care Equipment	

		• Multi-parameter monitors (paediatric settings) • Pulse oximeters (neonate & child probes) • Blood pressure cuffs (neonatal to child) • Paediatric ICU beds	
	10. Specialized plastic surgery	General Operating Theatre Equipment • Operating table (radiolucent, adjustable) • Surgical lights (shadow-free LED) • Anesthesia machine with ventilator • Patient monitors (ECG, SpO_2, NIBP, $ETCO_2$) • Suction machines • Electrosurgical unit (diathermy – mono & bipolar) • Surgical microscope (for microsurgery) • Loupes (2.5×–6× magnification) • Headlights • Warming devices (forced-air warmers) Basic Plastic Surgery Instrument Sets • Scalpel handles (No. 3, 4, 7) • Fine scissors (Metzenbaum, Iris, tenotomy) • Forceps (Adson, Adson with teeth,	Consumables (Single-Use Items) Sutures • Absorbable: Vicryl, Monocryl, PDS • Non-absorbable: Nylon, Prolene, Silk • Microsutures (8-0 to 11-0) Dressings & Wound Care • Sterile gauze • Paraffin gauze • Foam dressings • Hydrocolloids • Silicone sheets (scar management) • Compression bandages • Elastic garments (post-liposuction, burns) Fluids & Drugs • Normal saline • Tumescent solution • Local anesthetics (Lidocaine, Bupivacaine) • Adrenaline • Antibiotics • Tranexamic acid • Steroids (for scar management) Infection Control & Disposables • Surgical gloves • Gowns and drapes • Masks and caps

		Debakey, jewelers)
		• Needle holders (Castroviejo, Mayo-Hegar)
		• Skin hooks (single & double prong)
		• Retractors (Senn, Army-Navy, Aufricht, Ragnell)
		• Hemostats (mosquito, Kelly)
		• Towel clips
		
		Microsurgery & Reconstructive Equipment
		
		• Operating microscope
		• Micro-instrument set:
		  o Micro forceps
		  o Micro scissors
		  o Micro needle holders
		  o Vessel dilators
		• Microvascular clamps
		• Anastomosis couplers
		• Doppler probe (handheld or implantable)
		• Nerve stimulators
		• Tourniquet system
		
		Aesthetic (Cosmetic) Surgery Equipment
		
		• Liposuction machine
		• Cannulas (tumescent, infiltration,
			• Sterile suction tubing
			• Yankauer suction tips
			• Syringes and needles
			• Electrocautery tips
			• Sterile marking pens

		aspiration) • Fat grafting systems • Power-assisted liposuction (PAL) • Ultrasound-assisted liposuction (VASER) • Laser systems (CO_2, Nd:YAG, diode) • Radiofrequency skin tightening devices • Dermabrasion unit • Chemical peel kits Implant-Based Surgery Equipment • Breast implant sizers • Keller funnel • Implant inserters • Calipers for symmetry measurement • Sizers for facial implants • Implant sterilization trays Burns & Wound Care Equipment • Dermatome (manual or electric) • Mesh graft expanders • Skin graft carriers • Negative pressure wound therapy (VAC) • Burn dressing trolleys • Hydrotherapy	

		equipment (where available) Scar & Post-Operative Management • Silicone gel sheets • Pressure garments • Scar massage tools • Laser scar treatment devices • Steroid injection kits Emergency & Support Equipment • Difficult airway trolley • Crash cart • Blood warming devices • Infusion pumps	
LOT 26	**SERVICE**	**EQUIPMENT**	**CONSUMABLES/REAGENTS/IMPLANTS**
Specialized Laboratory Services for Cancer Diagnosis and Treatment	**TESTS**	**EQUIPMENT**	**REAGENT**
	1. Bone Marrow Aspiration and Biopsy	Microtome, microscope	Reagents in scope of histology: e.g strainers and fixative
	2. Coombs Test (Direct and Indirect)	Centrifuge , Incubator Microscope	Anti-human globulin
	3. Hemoglobin Electrophoresis	electrophoresis analyzing system	Cellulose strip
	4. Flow Cytometry for Immunophenotyping	Flow cytometer	Specified antibody
	5. Insulin Assay	Incubator, Microscope	anti-insulin antibodies
	6. Cortisol Assay	ELISA Washer, ELISA Reader	Human, Bovine and Ovine quantified in plasma, serum, urine, saliva, fecal extract.
	7. Parathyroid Hormone Assay	TSH/ T3/T4 Immuno assay Analyser	Monoclonal antibodies, calibrators and controls
	8. Vitamin D Levels	Immunoassay analyser e.g Cobas, centrifuge	VDBP-Vitamin D Binding Protein

	9. Homocysteine Levels	LC-MS Analyser(Liquid Chromatography- Mass Spectrophotometry)	**Enzymes:CBS, CBL,LDH,ADA, Monoclonal antibodies**
	10. Serum Osmolality	Osmometer	Instrument calibration standards
	11. Protein Electrophoresis (Serum and Urine)	Electrophoresis Chamber-Gel tank and accessories	**Acrylamide and Bis-acrylamide**. **Ammonium Persulfate (APS)**: **TEMED Catalyst**
	12. Adrenal Function Tests (e.g., ACTH Stimulation Test)	ELISA Washer, ELISA Reader Hormone analyser	**Cosyntropin** / **Tetracosactide**
	13. Dynamic Function Tests (e.g., Glucose Tolerance Test for Acromegaly)	ELISA Washer, ELISA Reader Hormone analyser	Humulin, Novolin
	14. Gonadotropin Levels (LH, FSH)	**Automated Immunoassay Analyser/CLIA Chemiluminescence Analyzer**	**Monoclonal antibodies**
	15. Sex Hormone Binding Globulin (SHBG)	**Mass Spectrometry / Immunoassay Analyzers**	Antibodies: (**Paired, goat poly clonal, monoclonal)** Calibrators and Standards
	16. ANA (Antinuclear Antibody)	Fluorescence microscope, incubator	**Antigen Substrate**: **HEp-2 cells** **Detection Antibody (Conjugate)**: **Fluorescein Isothiocyanate (FITC)**
	17. Anti-ds DNA (Anti-double-stranded DNA Antibody)	Microplate reader, Fluorescence microscope, automated analyser	**Antigen-Coated Plate, Enzyme Conjugate: Horseradish Peroxidase (HRP). Chromogenic Substrate: TMB (3,3',5,5'-Tetramethylbenzidine)**
	18. ANCA (Antineutrophil Cytoplasmic Antibodies)	**Fluorescence Microscope**, **Incubation Chamber, Substrate Slides**: Glass slides pre-coated with human neutrophils	**Fluorescent Conjugate**: **Fluorescein Isothiocyanate (FITC)** Wash buffer, mounting media and controls
	19. IgA (Immunoglobul	ELISA immunoassay analyser: Washer and	Capture antibodies anti-human IgA, IgG, IgM, or IgE).

	in A)	Reader	Detection Conjugates: Horseradish Peroxidase (HRP) or Alkaline Phosphatase (AP), Sbstrates and buffers
	20. IgG (Immunoglobulin G)		
	21. IgM (Immunoglobulin M)		
	22. IgE (Immunoglobulin E)		
	23. Allergy Testing (e.g., RAST, Specific IgE)	Standardized Allergen Panels, reading plates	Dependent on allergen: Eg Metals, Fragrances, Adhesives, Chemicals
	24. Complement Levels (C3, C4)	Chemistry analyzer	Specific polyclonal antibodies, buffers, calibrators and controls
	25. HLA Typing	Microscope, Incubator, Autoclave, Refrigerator	Culture media, Sensitivity discs
	26. Polymerase Chain Reaction (PCR) for Pathogen Detection		
	27. Mycobacterial Culture and Sensitivity	GeneXpert	Strips/Cartridges, Diluents, wash buffers, conjugates, and substrates Controls
	28. Fungal Culture and Sensitivity	Electrophoresis Chamber-Gel tank and accessories	Acrylamide and Bis-acrylamide. Ammonium Persulfate (APS):. TEMED Catalyst
	29. Stool for Clostridium difficile Toxin	ELISA Washer, ELISA Reader	Human, Bovine and Ovine quantified in urine
	30. Urine Protein Electrophoresis		Factor deficient plasma, contact activator, calcium chloride, buffer and control
	31. 24-Hour Urine Collection for Specific Analytes (e.g., cortisol,catecholamines)	Coagulation Analyzer	
	32. Factor VIII	Rapid point-of-care (POC) Equipment	Rapid point-of-care (POC) test kit
	33. Factor IX	Automated Coagulation Analyzer	Antithrombin ATIII

	34. D-Dimer	Automated Immunoassay Analyser/CLIA Chemiluminescence Analyzer	Capture antibodies AFP Detection Conjugates Substrates and buffers
	35. Thrombophilia Screen (e.g., Protein C, Protein S, Antithrombin)	Multi-Detector Computed Tomography (MDCT), MRCP (Magnetic Resonance Cholangiopancreatography), Endoscopic Ultrasound (EUS)	CEA (Carcinoembryonic Antigen) Liver Function Panel: CA 19-9 (Carbohydrate Antigen 19-9)
	36. Alpha-Fetoprotein (AFP)	Automated Immunoassay Analyser/CLIA Chemiluminescence Analyzer	Monoclonal antibodies And Enzyme conjugate B-specific
	37. CA 19-9 (Pancreatic Cancer)	Next-Generation Sequencing (NGS) Platform, Illumina MiSeq: Ion Torrent PGM (Personal Genome Machine Sanger Sequencer (Genetic analyser)	BRCA Panels and associated mixes and purification beads
	38. Beta-HCG (Human Chorionic Gonadotropin)	Chemistry Analyser, centrifuge, microplate reader, incubator	Substrate (L-Lactate or Pyruvate) Coenzyme (NAD+ or NADH) Buffer Solution
	39. BRCA1 and BRCA2 Gene Testing	ELISA Washer and Reader	Antigen specific for Toxoplasma, Echinococcus
	40. LDH (Lactate Dehydrogenase) for Hematologic Malignancies	Microscope	Choice stains e.g Field A&B
	41. Serology for Parasitic Infections (e.g., Toxoplasma, Echinococcus)		Antigen specific for Giardia, Entamoeba
	42. Thick and Thin Blood Smear for Malaria		
	43. Stool Antigen Tests (e.g., Giardia,	ELISA Washer and Reader	

	Entamoeba)		

SPECIFICATIONS FOR LOTS

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**

1.5T Superconducting Magnetic Resonance Imaging System (MRI)

Operational requirements

Whole Body 1.5T Magnetic Resonance Imaging system optimized for higher performance in Cardiac and Neuro-radiological examinations with shorter superconducting magnet, high performance gradients and digital Radio Frequency. All capabilities as detailed below should be integral part of the quotation.

Technical Specifications

Magnet System

1. 1.5 Tesla active shielded super conductive magnet.
2. Should state the magnet length preferred Ultrashort of at least 1.56 m
3. It should have at least 60cm patient bore with flared opening; larger patient bore is preferable. The magnet should have facilities of better illumination, ventilation and designed to avoid patient claustrophobia
4. The magnet should be shielded from the external interferences.
5. The homogeneity of the magnet should be ≤ 0.5 ppm and minimum of 40 cm DSV or equivalent. Give details of the number of the planes plots and number of measurements per plane to measure the homogeneity.
6. Specify maximum FOV in all 3 axis (FOV to scan the largest possible human) 40 cm minimum or more preferred)
7. Specify Homogeneity at 50 (z) X 50 (x,y) cm DSV
8. Specify the weight of the magnet including the gradient and covers etc.
9. The front panel display at the magnet should display coil table position and also remote selection of coil elements,

Gradient System

1. Actively shielded Gradient system with strength of at least 40 mT/m or more with the slew rate of 160 T/m/s or more. This slew rate of 160 T/m/s at 40 mT/m should be available in each axis independent, for overall better duty cycle performance of the gradient.
2. The duty cycle should be 100 percent. Please give details.
3. The Gradient system should have provision for eddy current compensation. (Bidder should demonstrate how they've compensated for the loss)
4. Largest Field of View should be at least 50 cm in all three axis. Higher viable FOV will be preferred.
5. Minimum TE in Gradient Echo 2D / 3D should be specified for all sequences. Minimum of 0.9 msec
6. Minimum Slice Thickness in 2D should be specified. Minimum of 0.05 mm
7. Minimum Slice Thickness in 3D should be specified. Minimum of 0.03 mm
8. Maximum Echo Tr' Length in both Spin Echo and Gradient Echo should be at least 256 or more.
9. The measurement matrix should be from128x128 to 1024x1024 in both 2D and 3D imaging as well.

RF System

1. RF system should be fully digital with transmit power of at least 18 Kw

2. RF system should have at least minimum of 24 true independent RF receiving channels with each having independent ADC with bandwidth of 250KHz or more.
3. Should have necessary hardware to support Phased array coils.
4. Specify frequency stability and amplifier resolution.
5. RF system should be compatible with parallel imaging techniques. It should be able to support time reductions with compatible coils in 2D/3D imaging in Body/ Neuro imaging up to factor of 2 or more
6. RF amplifier should be solid state for overall better performance
RF Coils - All coils are needed/ essential for advanced detail of the MRI studies
1. The main body coil integrated to the magnet must be Quadrature/ CP. In addition to this coil following coils should be quoted.
2. Phased Array Head coil with mirror. It should be at least 24 Elements or more. Higher element coil will be preferred.
3. Phased Array Neck Coil.
4. In case above two coils do not suffice in combination for complete Neuro-vascular study from Aortic arch to Circle of Willis, please quote separate coil in addition to above two coils for this study. Please specify the max parallel imaging time reduction
5. Phased Array Spine Coil for thoracic and Lumber spine imaging. Mention the number of coil elements available.
6. It should be possible to do Head and Spine imaging together without changing the coil and the patient. It should be possible to do the same either with combination-of coils or a dedicated coil to achieve the same should be quoted
7. Phased Array Body coil, capable of doing abdomen, pelvic, MRCP and peripheral imaging. It should have at least 12 elements and 45 cm FOV should be achievable.
8. Flexible Coil -Large for imaging of large regions such as shoulder, hip and knee etc. 9. Flexible Coil -small for imaging of small regions such as shoulders, wrist, elbow and ankle. 10. Quadrature Extremity Coil for Knee Imaging
11. Dedicated Shoulder Phased Array coil.
12. Coil for Knee Imaging with 8 channels or more. Please specify the time reduction factor with parallel acquisition techniques.
13. Dedicated 8 channel Brain Coil for High resolution Brain Images. Please specify the time reduction factor with parallel acquisition techniques.
14. Bilateral Breast Coil, specify type and channel
15. A coil for Neurovascular Application.
Patient Handling System: Dockable trolley/ stretcher system to limit lifting of patients into the examination couch and for safety of patients
1. Please specify the table type whether it's conventional trolley type or incorporates new (dockable trolley system) design principles. If fixed table, quote MRI compatible stretcher trolley.
2. The table should be fully motorized, computer-controlled table movements in up and down) (vertical) and horizontal directions. The position accuracy should be at least +/ - 1mm or better for higher reproducibility' in advanced applications.
3. The patient table should be able to withstand patient load of at least 200 kg
4. The table should have facility for emergency manual traction in case of emergency. The table should have patient auto alarm system. .
5. The CCTV/ Intercom system with LCD display to observe the patient.
6. The table should deliver the protocols for automatic bolus chasing in peripheral angio with the automatic table movement.
Host Computer /Main Console and Image Processor (Consideration for RIS and PACS to enable image

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**

transfer and archiving with enough storage capacity to archive images) consider cloud storage for unlimited space)
1. Computer system should be latest in the industry, fast and efficient. It should have at least 16GB RAM.
2. The main computer should have all the main processing software available in the Advanced workstation for quick review
3. The system should have image storage capacity of at least 1 TB for at least 500,000 images in 256 x 256 matrix.
4. The reconstruction speed should be at least 800 images per sec or more for full FOV 256 matrix and the image processor should have high RAM capacity of at least 16 GB for faster processing for advanced applications.
5. The main Host computer should have at least 18-inch TFT type Color monitor. The main console should have integrated music system for the patient
6. The system should have DVD and CD archiving facility (can add USB/ External drive) on the main console for storage of 50,000 images or more in 256 x 256 matrix. Additionally, 500 high storage DVD's to be provided with external hard drives.
7. One additional workstation with Color monitor to be provided for the applications as listed and 4 Additional workstations for concurrent interpretation (radiologists and academic
Application Software / Hardware (The range of purchased software will determine the capability of the machine e.g Diffusion, Perfusion, Spectroscopy, Tractography, BOLD, Cardiac, CSF flow studies, DWIBS
1. The system should have basic sequences package with Spin Echo, Inversion Recovery, Turbo Spin Echo with high turbo factor of 256 or more, Gradient Echo with echo train length of 256 or more
2. The application software for image smoothing and edge sharpness etc. for improvement in image resolution should be quoted and it should apply for major imaging applications.
3. Single and Multi-shot EPI imaging techniques with ETI factor of 256 or more
4. Fat and water excitation, please specify the application package
5. Diffusion Weighted Imaging, with at least b value of 7000 (b-value used in diagnostics are 2000 or less. Higher b-values lead to loss in image resolution or more. The system (? Software) should have facility for ON Line automated calculation of ADC maps.
6. Please specify the motion correction algorithm/package for high-resolution motion free diffusion weighed imaging with multishot/ segmented EPI techniques.
7. It should be also possible to do 3D motion correction, please specify the application
8. BOLD imaging: BOLD. technique with automated 3D motion correction, z- score, and correlation analysis with color overlay on anatomical images. It should be possible to have Real Time Processing of BOLD imaging data on the main console for the complete reconstruction. ? software purchase
9. The perfusion and the BOLD imaging should be possible for the whole brain with motion correction techniques. Please specify the application package and the motion correction technique.
10. Parallel Acquisition Techniques: Please specify the name of the package. It should have applications in abdomen, neuroimaging including diffusion and perfusion etc., free breathing abdomen imaging and Cardiac imaging. The scan reduction time should be mentioned.
11. Bolus chasing with automatic moving table should be offered and should be available with fluoro triggered MR angiography for manual and fast switchover in less than 1 sec for ceMRA results.
12. The system should have prospective ECG triggering and retrospective gating with navigator pulses, interactive or automatic definition of the ventricular and myocardial contours, cine imaging, grid tagging etc. Besides this comprehensive set of all post processing
13. The system should be supplied with ECG Trigger; respiratory trigger, peripheral pulse trigger and external trigger Electrodes
14. The system should have facility to do Head to Toe imaging without shifting the patient at one go for metastases study (DWIBS) and without any loss of SNR.
15. The system should be available to perform Multi Direction Diffusion weighted imaging /Diffusion Tensor Imaging and the same should be possible on the main console.

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**

16. The system quoted should have image pasting software on the main console for ease of use.
17. The system should be quoted with motion correction software for uncooperative Head patients, It should be possible to have the same routine in T1, T2 and FLAIR imaging.
18. The system quoted should have the software for Whole Body Diffusion weighted imaging (DWIBS)
19. The system should have acoustic reduction techniques to reduce acoustic noise to the lowest level. Please specify noise reduction technology and reduction amount.
20. The system quoted should be able to do multi contrasts in a single image to save time.

Workstation and documentation

1. The additional 5 workstations in number with parallel licences for concurrent use by more than one radiologist and also for academic use by students. The workstations should be vendor neutral to integrate with any modality with preferably the same user interface as of the main console with the availability of MPR, MIP etc. It should have 18-inch LCD monitor, with hard disk of at least 50 GB for at least 95000 image storage in 256 x 256 matrix, and 2 GB RAM.
2. Image documentation should be possible from the main as well as the workstation(s).
3. The workstation should have display of Cardiac cine images in movie mode with rapid avi creation.
4. The workstation should have availability of Cardiac post processing capabilities: calculation of ventricular area/volume, stroke volume, ejection fraction, relative ejection fraction, calculation of myocardial thickness, Time volume diagram generation.
5. The perfusion analysis should have capability to calculate color display
6. Processing of 2D/3D CSI data with color metabolite mapping, if not offered/available on the main console as mentioned in point 3.7.14 should be quoted here.
7. Processing of Real Time BOLD imaging data sets for color overlay of functional and anatomic data, if not available on the main console should be quoted here. It should be possible to have Real Time BOLD image processing for the complete brain.
8. The system should facility for quantification of the CSF flow data on the main console, if not offered/available on the main console as mentioned in point 3.7.13 should be quoted here.
9. The post processing workstation should have software package for analysis of the vessel disease with the possibility of detection of vessel segments and to quantify the changes in vessel size.
10. Volume Rendering Techniques software for visualization of complex anatomy.

Multiformat Dry Laser Imager

1. Dry imager - DICOM 3.0 (or newer version) compatible, Dry chemistry. 600 DPI or more, with at least two film drawers. 14 x 17 "(35 x 45 cm) and 14 x14" (35 x 35 cm) size.
2. System must provide complete batch filming with means to adjust image contrast and density.
3. Imager must be controlled for exposure from the operator's console and any workstation. An interlock/indicator system must be provided to prevent image production from one console, being intermixed with images from other consoles.
4. Automatic transport system.
5. Remote keypad, contrast inversion, 35mm adaptability.
6. Should be connectable to multiple modalities like CT, MRI, Angiographic systems, Ultrasonography, with online PACS necessary interface provided. Filming must be possible with all modalities mixed on a film.
7. Must be able to do serial processing imaging system wise when multiple systems are connected to the processor.
8. All needed software and hardware must be provided

Accessories

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**
1. MRI Compatible O2 patient monitor		
2. Patient Comfort Kit for different body parts (head, knee, shoulder etc) two for each to provide adequate support)		
3. Portable metal detector with battery loader? entry metal detector vs handheld metal detector		
4. MR compatible Injector (Dual head): Must have Independent dual Syringe power head and console must have full color touch screen with user-defined protocols with programmable interscan delay.		
Environmental factors		
1. The unit shall be capable of operating continuously in ambient temperature of 30° C and relative humidity of 80%		
2. Chiller System		
3. All the shielding requirements of the room will have to be done by the supplier.		
UPS and Power supply		
1. Power input to be 220-240VAC, 50Hz, /440 V 3 Phase		
2. UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup		
3. Voltage stabilizer with suitable rating will be supplied		
Standards and safety		
1. Should be FDA and/or CE approved product		
2. Electrical safety conforms to standards for electrical safety IEC-60601 / ISO-13450		
Warranty		
1. 24 months from the date of satisfactory installation & handing over to the department.		
Maintenance		
Comprehensive maintenance contract (CMC) for the complete system will start after expiry of the warranty period. This will include replacement of spares including all consumables and sealed units, liquid Helium and labour. The contract will also include the recommissioning of the system in the event of magnet quench for whatsoever reasons. The maintenance contract will also cover comprehensive maintenance (Labour + spares) for UPS including batteries. Note that any Liquid Helium lost due to quenching or due to any other causes during the guarantee period shall be borne by the firm. System spare parts availability should be guaranteed for at least 10 years from the delivery of the system.		
Documentation		
1. Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
2. Detailed documentation on various sequences, spectroscopy, application software and evaluation software etc. are to be provided and the same must be updated regularly for next 10 years as and when these are released. (Timely software updates are key)		
3. Supplier is required to ensure mailing of product/research newsletters (on MRI and MRS) released from their R&D sites to the Hospital on a regular basis. This is to keep this centre abreast of the latest developments taking place in system technology and research techniques.		
4. The vendor is to provide a tender compliance sheet by giving all the necessary specifications, which should be supported by printed documentation sheets and certification of each item. In the absence of such documentation, a letter from the principals of the company should be provided.		
Software up gradation		
Software upgrades for the core system and all related applications for next 10 years to be		

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**
provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
Linear Accelerator (LINAC)		
Description: - A Linear Accelerator (Linac) is a complex device used for external beam radiation therapy, designed to accelerate electrons to high speeds using microwave technology to produce therapeutic X-rays or electron beams. **Operational requirements** For a radiation therapy equipment with an accurate image guidance system, and it includes 1 set of radiation therapy planning systems. The planning system consists of: 1 physiotherapist workstations (for treatment plan design and calculation), 1 doctor workstations, as well as the software and hardware necessary for the operation of this system, and 1 set of tumor radiation therapy network management systems, as well as the software and hardware required to support this system. The bidding products must have the following functions: conventional radiotherapy, 3D CRT conformal radiotherapy, static/dynamic intensity-modulated radiotherapy, image-guided intensity-modulated radiotherapy, and volumetric rotation intensity-modulated radiotherapy.		
Technical Specifications		
High-speed large-aperture O-ring gantry system		
1. Gantry structure: O-ring gantry		
2. Gantry features: The gantry and kV CBCT imaging system are enclosed in the cover, without potential collision		
3. The on-board kV CBCT or FBCT system should be equipped, and the kV CBCT or FBCT should be isocenter with the accelerator to reduce the setup error		
4. The kV CBCT imaging system adopts a fixed design, which can save time without stretching motion, and has good repeatability and high accuracy		
5. MV imaging system adopts fixed design, no need for telescopic movement, saving time, good position repeatability, high precision		
6. Treatment system and kV imaging system gantry aperture: ≥95cm		
7. Maximum gantry rotation speed: ≥6RPM		
8. Isocenter accuracy: ≤±0.5mm		
9. Gantry structure: O-ring gantry		
Integrated design		
10. Laser light indication system: the gantry should be built with laser light to improve the positioning accuracy		
11. Touch control system: indoor dual touch screen operating system		
12. Patient voice communication system: active noise reduction microphone and audio transmission		
13. Silent cooling system: efficient silent water-cooling system, high cooling efficiency, low noise		

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
14. Quality control system: built-in equipment performance check module		
15. Intelligent positioning system: light-guided operation and automatic positioning		
16. Patient verification system: identification of patient identity and positioning information in the treatment room		
17. Self-shielding system: built-in self-shielding system shields the main beam of the treatment room and reduces the thickness of the main protective wall of the bunker		
Beam system		
1. X-ray energy: > 4 MV		
2. Beam mode: flattening filter free (FFF) and dynamic flattening filter mode		
3. Equipped with Three-stage grid-controlled electron gun, easy to start and stop the beam quickly		
4. The maximum dose rate of X-ray: ≥ 1200MU/min		
5. Output dose error: 1% or 1MU		
6. Ionization chamber requirements: Fully closed ionization chamber		
Multi-leaf collimation system		
1. System structure: double-layer staggered collimator structure, can effectively reduce radiation leakage.		
2. Effective resolution of all leaves at isocentric: ≤0.5cm		
3. Total number of leaves: ≥120		
4. Leaf travel length: ≥30cm		
5. The leaf should support Interdigitating movement		
6. Radiation field size: 0.5×0.5cm~30cm×30cm		
7. The fastest independent movement speed of leaves: ≥5cm/s		
Treatment positioning system		
1. Intelligent positioning function		
2. Guided operation: standardized treatment process and guided operation		
3. In-room touch screen displays setup photos and notes		
4. Light prompt system to assist in guiding positioning		
5. Treatment table for kV IGRT		
6. Treatment table surface material: full carbon fiber		
7. Should with manual control		
8. Treatment table capacity: ≥230kg		
9. Positioning accuracy of treatment table: ≤0.05cm		
kV(kilovoltage) image guidance system		
1. High speed kV cone-beam CT scan		

2.	kV imaging system scanning aperture: ≥95cm
3.	kV detector structure: amorphous silicon flat panel detector
4.	The kV imaging, MV imaging and MV beam systems should designed in the same isocenter
5.	The fastest scan & reconstruction time: ≤14s
6.	Consistency between kV imaging center and MV beam center: ≤±0.5mm
7.	Imaging and treatment comprehensive isocenter accuracy: ≤±0.5mm (Please provide Brochure or Instruction Manual or Datasheet)
8.	4D image guidance system
9.	4D CBCT images can be acquired when the patient is breathing freely
Electronic Portal Imaging System (EPID)	
1.	Imaging hardware: using amorphous silicon flat panel detector
2.	The MV imaging center, kV imaging center and treatment center should in the same isocenter to ensure the accuracy and repeatability of setup
3.	The MV imaging system does not require unfold operation and supports fast imaging
4.	Effective image sensing area: ≥43×43cm.
5.	Built-in machine performance check program
Self-shielding system	
1.	Self-shielding system: the system comes with a shielding system to shield the main ray
2.	Self-shielding system transmittance (1 meter behind the shielding layer) : ≤0.1%
Automatic quality control system	
1.	With integrated equipment automatic quality control function: ≥24 items
2.	Automatic quality control should be completed in a few minutes, including: image, mechanical, beam performance
3.	Automatic quality control duration: ≤5 minutes
Radiotherapy planning system	
1.	Brief Description of functions: It should have the functions of patient and treatment equipment data management, patient modeling, photon volume modulated radiation therapy plan design optimization, automatic organ delineation, multimodal image elastic registration, dose calculation, plan evaluation and quality assurance, report and output, etc. It is used for the design and analysis of photon radiotherapy plans.
2.	Algorithm: CPU + GPU acceleration, Monte Carlo dose calculation (providing the manufacturer's patent certificate for the Monte Carlo algorithm)
3.	System language: English interface
4.	System network: Network connection cards with a connection speed of 1GB/s or above, capable of handling GB network transmission data.
5.	Device Data management

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
6. Patient Data management		
7. Automatic delineation (Auto contouring)		
8. Treatment plan design and optimization		
9. Plan Evaluation		
10. QA Preparation		
11. Backup plan		
12. Automatic planning		
13. system		
14. Database system		
Dedicated network system for radiotherapy		
1. General Requirements		
2. Task management		
3. Appointment management		
4. Plan Management		
5. Quality control management		
6. Comprehensive statistics		
7. Form management		
8. System administration		
Power & Utility Requirements:		
Voltage: 415 V AC, 3-phase 50/60Hz		
Standby power supply: At least 15KVA		
Cooling systems: Dedicated chiller units or water-cooling channels		
Installation and testing: Complete installation and testing as per the manufacturer's instructions.		

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**
Radiotherapy Simulator A machine that mimics a linear accelerator but is used for planning radiation treatment, not for treating.		
Operational requirements Radiotherapy simulation systems that perform radiographic and/or fluoroscopic imaging to determine, document, and externally mark the area to be treated. These systems combine technologies from both therapeutic and diagnostic radiology; they consist of a radiographic CT fluoroscopic simulator that includes an x-ray system and a mechanical system (collimator, gantry, table, controls) that mimics the movement of a linear accelerator and/or a cobalt unit CT scanner.		
Technical Specifications		
10. Whole body		
11. Multi-slice scanner with very fast scanning time (minimum 128 slices at a time)		

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**
12. Ability to perform large studies with narrow slice thickness for production of good quality DRR		
13. High heat capacity anode liquid metal bearing X-Ray tube for larger data sets		
14. Directly cooled anode preferable (to eliminate delay in anode heating & enable fast acquisition scans)		
15. Wide aperture preferably 85 cm or more		
16. Scanned Field of View (SFOV) > 51 cm		
17. Number of detectors in the x-y plane to scan the full 51 cm field of view		
18. Extended reconstructed FOV (RFOV) of >80cm		
10. True SFOV to be provided		
Gantry		
1. Should have tilt of ± 30 degrees		
2. Gantry must support rotations of ≤ 0.35 second to 5 seconds per 360°.		
3. Provide Internal-positioning lights		
4. Provide facility for voice and visual breathing instructions		
5. The gantry must have laser positioning lights with a positioning accuracy of ± 1mm or better.		
6. Effective and accurate connectivity between CT simulator and RTPS (Radiotherapy treatment planning system) - essential		
X-ray System		
High frequency X-ray generator with power rating of at least 60kW or more.		
1. The tube voltage should in the range of 70 kV to 140 kV or better.		
2. The mA range must be from 5 mA to 667mA or better depending on kV		
3. Heat capacity: > 10 MHU		
4. Peak Anode heat dissipation rate of at least 1100 kHU / min or better.		
5. X-ray tube should have dual focal spot. Please mention the size of the focal spots		
6. X-Ray tube with anode heat storage capacity of at least 22 MHU		
7. Automatic selection of the focal spot should be possible		
8. Optimizing x-ray tube voltage (kV) to patient size and shape should be possible.		
9. The adjustment of tube current to patient attenuation, but the adjustment of kV protocol optimization.		
Detectors		
1. The detector system should be a high performance, low noise, high data density, active response data acquisition system.		
2. The detectors should be solid state.		
3. It should be free from repeated calibrations.		

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**

4. Number of Detector elements: to be specified (number per row to be mentioned)
Scan parameters
1. Slice thickness should be user selectable from 0.375 mm to 10 mm.
2. KV: 70 - 140kV or better
3. mA: 5 - 667mA in increments of 5mA or better.
4. Scan time of 0.35 second or less for full 360 degree rotation.
5. Retrospective reconstruction should be possible on raw data files with change in parameters such as FOV.
6. The following scanning modes should be possible: Scano-gram, Axial,Spiral.
7. The scanogram length should be more than 2080mm long
8. It must be possible to obtain the scanogram from AP or PA
9. The accuracy of slice prescription from the scanogram should be ± 0.375mm or better.
10. Accuracy of slice location < 1mm.
11. Reference scan should be possible on an arbitrary slice with the proposed treatment volume.
12. High contrast spatial resolution: It should be at least 23.5 lp/cm maximum at 0%MTF.
13. Low contrast detestability: 2mm or less @ 0.3%
14. The CT number accuracy must be better than ± 4 HU for water.
Image Quality
1. The reconstruction matrix must be 1024 x 1024 or higher. The reconstruction time should be as less as possible. Simultaneous scanning and reconstruction should be possible.
2. Simultaneous scanning & routine analysis.
3. Simultaneous scanning and transfer to workstation.
4. The system must have automatic mA control software that automatically adjusts mA for patient size
Spiral Parameters
1. Different selection of pitch should be possible, in 0.1 increments. Please mention the pitch available. Mention the single run coverage and the table scannable range.
2. The following scanning modes should be possible: Scanogram, Axial, Spiral, Cine and biopsy mode Pilot scan: The pilot scan field size should be more than 2000 mm long.
3. Reference scan should be possible on an arbitrary slice within the proposed treatment volume Specify the table speed to the scan in terms of Z-axis coverage.
Couch
1. The couch top must be a carbon fibre, flatbed type. It must be a State of the Art; indexed couch top matching the Medical College's linear accelerators' couch tops to facilitate accurate treatment delivery with ease and convenience.
2. The couch top material must be carbon fibre, having horizontal moving range of 200 cm or more

3. The speed of horizontal movement must be variable with a maximum speed of at least 400mm per second.
4. The accuracy (reproducibility) of the table tope must be better than ±0.25mm.
5. The scannable horizontal range should be at least 200cm or more.
6. The couch must meet the following vertical movement ranges: 48 to 1030 cm
7. It must be able to take a maximum weight of 200kg or more without any change in stated performance specifications (like the positioning accuracy).
8. Couch should be suitable for all kinds of radiotherapy immobilization system
9. Laser system facility for radiation therapy placement of treatment fields and marking of radiation field portals on patient's skin is required without moving the couch.
10. The CT-simulator should have at least three laser sets for marking the field reference points, consists of a single overhead moving laser to project the sagittal plane, two moving lasers to project coronal plane and two moving lasers to project the axial plane. This should eliminate the need for manual couch movements.
11. The CT scanner should also have conventional in-built lasers for positioning the patient along with all positional devices.
Support for respiratory management system:
1. Seam less integration to the interface of the linear accelerator respiratory management system.
2. The CT scanner firm is required to provide all licenses and necessary interface hardware for seamless integration for the purpose of gated.
Computer Hardware
1. Computer System for the CT scanner State-of-the-Art, high end main computer system, must be provided.
2. The system must have parallel processors; RAM size must be at least 16 GB or better.
3. There must be two monitors in the console and they must be 19" TFT flat screen LCD monitors. One of these will be used for acquisition and the other will be used for review and processing.
4. The hard disk capacity of the main computer system must be at least 1TB or more.
5. In the hard disk meant for image storage, the number of uncompressed 512 x 512 images that can be stored should be at least 1,920,000 or more. The maximum possible hard disk capacity must be provided.
6. All necessary accessory hard ware like UPS for computers, printers to be specified and provided.
7. Dicom 3.0 Print service class as a user.
8. Dicom 3.0 Storage class as a user.
9. Dicom 3.0 Storage class as a provider.
10. Dicom 3.0 Send / Receive
11. Dicom 3.0 Query / Retrieve service class as a user.
12. Dicom 3.0 Query / Retrieve service class as a provider.

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**

13. Dicom compliance statement should be provided.

14. A bi-directional speaker communication must be provided between the operator and the patient.

Computer System for Moving Laser System

1. The laser system provided must be 3 moving lasers for marking the isocenter without moving the table top.
2. Following the isocenter localization in the CT simulator workstation, the isocenter coordinate will be sent directly to the computer system that is controlling the movements of the lasers. This computer in turn should drive all the lasers, so that without moving the table top, the lasers point to the isocenter.
3. Complete quality assurance tool (as stated above) must be provided.
4. The control computer system must be latest Windows based system with Pentium 4 processor or higher.

Connectivity

1. The entire CT Simulation system must be interconnected (all the workstations, laser systems, printers etc.) and must be integrated into the department's treatment planning system for smooth transferring of images

Quality Assurance and Acceptance tests:

1. All QA and Acceptance to be done before commissioning as per radiation board guidelines
2. All QA & Dosimeter, Maintenance tools (Hardware and software) to be provided
3. DRR accuracy: Ray line angular displacement < 0.1 degree tolerance
4. Last man out switch to be provided to ensure safety.

Power & Utility Requirements:

Voltage: 415 V AC, 3-phase 50/60Hz

Standby/backup power supply: UPS of at least 15KVA

Air conditioning systems: Dedicated units to maintain the temperature at about 22°C

Installation and testing: Complete installation and testing as per the manufacturer's instructions.

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**PCR Thermal Cycler**

PCR Thermal Cycler

General description: A laboratory equipment that runs the polymerase chain reaction.

Operational requirements

All capabilities as detailed below should be integral part of the quotation and none of these essential requirements should be quoted as optional. If a supplier has any additional advanced applications or technique available with them, the same may be quoted as options.

1. Technical specifications

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**PCR Thermal Cycler**
1.Sample Capacity: 96×0.2ml		
2.Applicable Consumables: 0.2ml single tube, 8×0.2ml strip tube, 96-well plate		
3. Reaction System: 10ul-120ul		
4.Operating Ambient Temperature: 15-30℃		
5.Storage Temperature: -20-55℃		
6.Relative Ambient Humidity: ≤85%		
7.Dimensions and Weight: 600*390*320mm (W*D*H), 23kg		
8. Heating Mode: Peltier heating mode, with 6 independent temperature control zones and intelligent temperature control technology		
9. Temperature Control Range: 4℃-100℃		
10. Temperature Control Accuracy: ±0.1℃		
11. Temperature Uniformity: ±0.2℃		
12. Number of Temperature Control Zones: 6 independent temperature control zones, equipped with thermal compensation technology to reduce temperature edge effect		
14. Gradient Temperature Function: Available		
14. Number of Gradient Temperature Columns: 12		
15. Gradient Temperature Variation Range: 1℃-32℃		
16. Gradient Temperature Zones: 6		
17. Gradient Temperature Selection Range: 30℃-100℃ (ambient temperature below 28℃)		
18. Excitation Light Source: Tungsten halogen lamp		
19. Detection Component: Cold-state -20℃ low-temperature CCD		
20. Transmission Medium for Excitation/Detection Channels: 96 high-temperature resistant professional optical fibers in bidirectional arrangement		
21. Number of Excitation/Detection Channels: 5 (expandable to 6 channels)		
22. Excitation Wavelength: Channel 1: 470nm±10nm; Channel 2: 525nm±10nm; Channel 3: 570nm±10nm; Channel 4: 620nm±10nm; Channel 5: 670nm±10nm; Channel 6: User-customizable. Detection Wavelength: Channel 1: 512nm-528nm; Channel 2: 562nm-578nm; Channel 3: 612nm-628nm; Channel 4: 662nm-678nm; Channel 5: 702nm-718nm; Channel 6: User-customizable		
23. Applicable Dyes and Probes: FAM/SYBR Green/Eva Green/LC Green/Fluorescein; VIC/HEX/TET/CY3/JOE/Alexa555; ROX/Cy3.5/Texas Red; Cy5/LC Red640; Cy5.5/LC Red705; Tamara		
23. Detection Sensitivity: ≥1 copy		
24. Resolution: As low as 1.5-fold change in single reaction		
25. Sample Repeatability: CV≤1%		
26. Linear Range: 1-10^{10}		
27. Sample Linearity: R≥0.99		

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**PCR Thermal Cycler**
28. Software Language: English		
29. Control Mode: External computer connection via USB interface, multi-unit connection supported, compatible with LIMS/LIS system		
30. Software Functions: Real-time monitoring, automatic identification and calculation of positive/negative results, automatic standard curve establishment, absolute/relative quantification, multiplex quantification, melting curve analysis, gene mutation detection, end-point genotyping (Taqman probe method), Tm value measurement, quality control graphic analysis, PCR amplification efficiency analysis, etc.		
31. Data Output Format: EXCEL/WORD/PDF		
Power supply		
2. Power input to be AC 110-220V, 50/60Hz		
3. **Standards and safety**		
Should be FDA and/or CE approved product		
Conforms to standards for ISO13485 Medical Device Registration Certificate No.: NMPA Registration No. 20173221410		
4. Warranty		
24 months from the date of satisfactory installation & commissioning.		
5. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
6. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Hemoglobin Electrophoresis**
Automatic Capillary Electrophoresis General description: A Lab equipment that separates charged molecules like proteins, DNA, or Hb variants by running them through a capillary tube using high voltage.		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
1. Detection Method: Capillary high-performance liquid electrophoresis		
2. Detection Items: Serum protein, immunotyping, glycated hemoglobin, hemoglobin		
3. Sample Types: Serum, whole blood, cord blood, etc.		
4. Throughput: Serum protein electrophoresis ≥ 90 tests/h; hemoglobin electrophoresis ≥ 50 tests/h		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Hemoglobin Electrophoresis**
5. Sensitivity: The minimum detectable concentration of monoclonal protein ＜ 27mg/dL		
6. Repeatability: CV of serum albumin ＜ 2%, CV of other serum proteins ＜ 10%		
7. Light Source: Built-in dual light sources. The deuterium lamp with 200nm wavelength improves detection sensitivity; the LED with 415nm wavelength is applicable to the detection of glycated hemoglobin and hemoglobin		
8. Capillary Material 8.1 Adopts standardized finished quartz material, no manual cutting required for replacement; 8.2 Capillary length ≦ 175mm; 8.3 Inner diameter of capillary analysis section ≥ 25μm; 8.4 Inner diameter of capillary detection section ≥ 120μm		
9. Detection Channels: ≥ 8 channels		
10. Electric Field Strength: ＞ 45V/mm		
11. Voltage: Adjustable from 0 to 20kV		
12. Reagent Compartments: ≥ 7 compartments		
13. Reagent Bottle Capacity: ≥ 900mL per bottle		
14. Sample Loading Volume: Minimum sample volume ≦ 1μL		
15. Sample Loading Capacity: 6 sample racks can be placed at one time, with a maximum single injection of 48 blood collection tubes. Continuous rack loading is supported, and an external autosampler can be connected to expand sample quantity		
16. Sampling Mode: Continuous sampling from original tubes; in-machine aspiration, dilution and electrophoresis are fully automatic		
17. Injection Mode: Lever type injection (superior to belt transmission injection to avoid sampling jamming)		
18. Identification Function: Equipped with sample barcode recognition and RFID for buffer and reagent bottles; real-time reagent remaining volume display on the instrument		
19. Full Automation: Needle piercing & cap-free testing to minimize biohazard; built-in automatic upside-down mixing ensures thorough sample mixing and accurate results		
20. Control Unit: Automatic liquid level monitoring, temperature, gas circuit and optical circuit detection, as well as automatic flushing. The software is equipped with an automatic capillary maintenance program to clean sampling needles and capillaries automatically		
21. Electrophoresis Temperature Control: Peltier bonded precise temperature control system; adjustable temperature range: ≤5℃ (min) to ≥50℃ (max)		
22. Internal Refrigeration: Built-in reagent refrigeration function		
23. Operation Mode: Built-in touch screen for independent operation without external computer; independent data and electrophoretogram analysis, real-time result viewing offline		
24. Onboard Touch Screen: ≥ 13.3 inches, resolution: 1600×900		
25. Software System: Chinese UI; automatic band identification, percentage and quantitative calculation; results can be transmitted to hospital LIS/HIS via network		
26. Automatic Maintenance: Independent automatic maintenance function; maintenance solution installed on the instrument for unattended automatic operation		
27. Quality Control System: Compatible with conventional QC materials; L-J quality control chart statistical function to ensure detection accuracy		
3. Power supply		
Power voltage: 220V±10%~ 50Hz		
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Hemoglobin Electrophoresis**
Voltage stabilizer with suitable rating will be supplied		
4. Warranty		
24 months from the date of satisfactory installation & handing over to the department.		
5. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
6. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests Tumor Markers Endocrinology Tests**	**Chemiluminescence Immunoassay Analyzer**
Chemiluminescence Immunoassay Analyzer		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
Principle: Direct chemiluminescence, acridinium ester platform		
Solid phase: superparamagnetism nano magnetic microbead		
The reagent carousel has 25 positions with on-board cooling temperature 2~8°C.		
The analyzer is using vortexer non-touch mixing		
Onboard sample capacity: 90		
The analyzer throughput is up to 180 tests/h.		
Sample volume: 10μL~150μL. Reagent volume: 20μL~200μL		
Use single long life metal probe to aspirate sample and reagent		
The analyzer has 55 incubation position in reaction disk		
The analyzer has 25 reagent positions, with on-board cooling temperature 2~8°C.		
Supply 50T/kit and 100T/kit reagent package		
The analyzer can load 2 cuvette box on board and onboard cuvette capacity: 180		
The operation system can be installed on Window 10.		
Concentrated wash buffer should be applied to reduce the cost of storage.		
The reagent shall use paramagenetic particles which diameter is micrometer level.		
No more than 2 calibrator to calibrate.		
The calibrator and control is ready to use.		

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests Tumor Markers Endocrinology Tests**	**Chemiluminescence Immunoassay Analyzer**

3. **Environmental factors**
Environmental temperature: 10℃~30℃;
Relative humidity: not more than 70%
Atmospheric pressure: 75kPa~106kPa
Be away from strong electromagnetic interference sources;
4. UPS and Power supply
Power input to be Supply voltage: 220/230V~, 50/60Hz
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup
Voltage stabilizer with suitable rating will be supplied
5. **Standards and safety**
Should be FDA and/or CE approved
6. Warranty
24 months from the date of satisfactory installation & commissioning.
7. Documentation
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.
8. **Software up gradation**
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Laboratory	Immunology and Serology Tests	Chemiluminescence Immunoassay Analyzer

Chemiluminescence Immunoassay Analyzer for Allergy Testo and Autoimmune Test General description: A fully automated laboratory equipment that measures hormones, tumor markers, cardiac markers, infectious disease, and vitamins by detecting light produced from a chemical reaction.
Operational requirements All capabilities as detailed below should be integral part of the quotation.
1. Technical Specifications
Throughput: Single-step method ≥150 tests/h
Reagent Positions: ≥12 positions
Sample Positions: 40 samples loaded at one time; supports automatic dilution and STAT emergency testing
Reaction Cups: Automatic cup loading; maximum 200 disposable cups loaded at one time, online replenishment available at any time
Carryover Contamination Rate: ≤1 ppm

Department	Section	Item Description
Specialised Laboratory	Immunology and Serology Tests	Chemiluminescence Immunoassay Analyzer

Intelligent System: Automatic sample barcode scanning Probe with liquid level detection, collision prevention, clot detection and aspiration error alarm functions Unattended running time ＞2 hours Supports reflex testing
Software System: 10.1-inch touch screen, integrated design with the instrument
Assay Types: Supports total allergen IgE detection, allergen-specific IgE antibody detection, and component-resolved allergen detection.
Can independently detect 3 ANCA items: MPO, PR3 and GBM
Specific IgE items ≥ 70, including ≥ 10 mixed allergen screening items and ≥ 10 component-resolved allergen detection items, covering Blomia tropicalis and Latex testing.
2. UPS and Power supply
Power input to be AC 220V/240V±22V, 50/60Hz±1Hz
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup
Voltage stabilizer with suitable rating will be supplied
3. Installation and testing: Complete installation and testing as per the manufacturer's instructions.
4. Standards and safety
Should be FDA and/or CE approved
5. Warranty
24 months from the date of satisfactory installation & handing over to the department.
6. Documentation
sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.
7. **Software upgradation**
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**

Fully Automated Feces Analyzer General description: A fully automated laboratory equipment that processes stool samples to detect blood, parasites, inflammation markers, and other pathology.
Operational requirements All capabilities as detailed below should be integral part of the quotation.
1. Technical Specifications
Instrument Function
Automatic detection of physical indicators and formed elements microscopic examination indicators in human stool samples, used in conjunction with detection kits for chemical and immunological indicators.
Physical Indicators

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**

Automatic recognition of color, characteristics, etc.
Formed Elements
All pathological formed elements visible under the microscope in stool specimens.
Fecal Occult Blood
Supports hemoglobin immunoassay, transferrin immunoassay, hemoglobin-transferrin immune duplex method, and hemoglobin-chemical-immune duplex method.
Other Items
Rotavirus, adenovirus, Helicobacter pylori, calprotectin, lactoferrin, etc.
Intelligent Mixing Control Technology
During specimen pre-processing, real-time monitoring of mixing effect, automatic adjustment of mixing intensity and time, personalized processing of specimens to fully release pathological components, avoid destruction of pathological components, and obtain the best processed sample suspension.
Intelligent Image Acquisition Technology
Using high-speed microscope combined with high-speed imaging, applying multi-layer automatic focusing technology, photographing specimens at different layers and collecting target feature parameters to prevent omission of formed elements.
Intelligent Recognition Technology
Applying artificial intelligence, simulating the human brain, with autonomous learning and deep learning functions, through massive image acquisition training, automatic recognition and classification of formed elements to ensure recognition accuracy.
Parasite Egg locating & Tracking technology
Utilizing advanced algorithms, the system rapidly scans the entire sample field at LP, and automatically flagging suspected parasite eggs. Upon detection, it intelligently prioritizes these targets for HP reconnaissance, capturing detailed, high-resolution images centered on each finding. This two-stage process ensures precise analysis of all potential targets with uncompromised image clarity.
Multi-point Sampling
Multi-contact design of sampling spoon, convenient for patients to take multi-point samples.
Sample Mixing
Double-sided propeller design, forming turbine water flow during mixing process, more thorough mixing, fully releasing pathological components.
Dynamic Filter
Dynamic filter design, active capture of pathological components, through filters distributed on both sides, can effectively filter food residues and enrich pathological components (especially eggs).
Biosafety
Stool sampling cup covered with "cross" silicone membrane sealing design, preventing stool suspension from leaking, ensuring the specimen is fully sealed before, during, and after detection, reducing biological infection risk, can meet pneumatic transmission requirements.
Sample Delivery Device
Track-type sample delivery, can batch process 50 specimens.
Barcode Scanning
Can automatically scan and recognize barcodes on specimen tubes.

Department	Section	Item Description
Specialised Laboratory	Parasitology Tests	Feces Analyzer

Specimen Pre-processing
Rotary mixing, during mixing process, real-time monitoring of mixing effect based on specimen characteristics, automatic adjustment of mixing time and intensity, low intensity for loose stools, short time for soft stools, long time and high intensity for hard stools, personalized pre-processing of specimens, ensuring full release of pathological components without destroying cell morphology.
Closed-cap Sampling
Closed-cap puncture sampling, shortening specimen turnaround time, avoiding aerosol generation from opening cap causing personnel infection, ensuring biosafety.
Rapid Test Kit cassette Loading
Adopts "magazine-style" design, moisture-proof and easy to load, plug and play, can load without stopping, detection items can be freely selected and combined, supports single and double cards, can detect 1~10 different items at once.
Cell Counting Slide
Uses high-precision disposable counting board, can prevent cross-contamination between specimens, avoid equipment failure caused by pipeline or counting pool blockage, ensure instrument stability and biosafety.
Counting Slide Queuing Sedimentation Device
Disposable can accommodate 6 samples for simultaneous queuing sedimentation, ensuring sufficient sedimentation time for stool specimens, improving image clarity and overall detection speed.
Intelligent Recognition
Using Hough transform detection and recognition method, algorithm continuously optimized, based on massive database training from thousands of users, through autonomous learning, deep learning, precise recognition of red blood cells, white blood cells, fungi, starch granules, eggs and other pathological components.
Centralized Review
Instrument automatically captures images of individual formed elements from CCD photos, classifies and arranges them centrally, convenient for review.
Emergency Function
Has dedicated position for emergency insertion, can insert emergency analysis at any time during testing.
Quality Control Function
Equipped with original factory matching CFDA-certified stool formed elements quality control materials (including negative, sensitivity and precision three types) and fecal occult blood, transferrin quality control products (containing normal, low, medium and high four concentrations respectively).
Report Method
Provides comprehensive physical, chemical, immunological and formed elements detection report with illustrations, providing comprehensive reference information for clinical diagnosis.
Detection Card Incubation
Equipped with 37°C constant temperature incubation system, ≥100 incubation positions, ensuring full reaction of detection cards, accurate and reliable results.
Alarm Function
Has fault alarm function.
Scan Code Repair

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**

Direct scan code repair, simple and convenient, after-sales personnel respond quickly and eliminate faults in time, ensure normal operation of the instrument.

Printer

Laser printer

Data Interface

Bidirectional communication interface, convenient for data transmission.

Speed: ≥60 specimens/hour

Detection Rate

Detection rate for detection limit samples (quality control sensitivity or simulated samples) ≥95%

Formed Elements Gathering Rate: ≥80%

Accuracy Deviation

Comprehensive recognition and counting accuracy deviation of formed elements ≤5%; 2) Chemical-immune detection items: Automatic recognition of color development through dedicated stool detection cards, recognition accuracy deviation ≤1%.

Repeatability

Concentration 20～100/μL: CV≤20%; Concentration 500～1000/μL: CV≤12%; Concentration 5000/μL: CV≤8%.

Detection Compliance Rate

Red blood cells compliance rate 97.5%; White blood cells compliance rate 95.3%; Eggs (liver fluke eggs) compliance rate 92.3%; Fungi compliance rate 100%.

Carry-over Contamination Rate

Concentration (4600~5400)/uL: ≤1/uL; Concentration (9200~10800)/uL: ≤2/uL.

2. UPS and Power supply

Power input to be AC 100-240V, 50/60Hz

- UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup
- Voltage stabilizer with suitable rating will be supplied

3. **Installation and testing**:

Complete installation and testing as per the manufacturer's instructions.

4. **Standards and safety**

- Should be FDA and/or CE approved product
- Conforms to standards for ISO13485

5. Warranty

24 months from the date of satisfactory installation & handing over to the department.

6. Documentation

Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**

7. **Software up gradation**

Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests** **Tumor Markers** **Immunology and Serology Tests**	**Fully Automated Chemistry Analyzer**

Fully Automated Chemistry Analyzer

General description: A fully automated laboratory equipment that runs blood and urine biochemistry tests like glucose, urea, creatinine, liver enzymes, electrolytes, lipids, proteins from start-to-finish with almost no manual steps.

Operational requirements

All capabilities as detailed below should be integral part of the quotation.

1. Technical Specifications

Wavelength coverage: Flat field grating type beam-splitting system, simultaneous photometric data collection and processing of 12 wavelengths; The specific wavelengths are 340nm,380nm, 405nm, 450nm, 480nm, 505nm, 546nm, 570nm, 600nm, 660nm, 700nm,800nm.

Reaction temperature 37℃

Fluctuation of temperature ±0.1℃

Test items 80 colorimetric items, 3 ISE items (optional), K+, Na+ and Cl- can be tested

Test speed Colorimetric items: Constant-speed 240 tests/ hour,ISE items (optional): Maximum 480 tests/ hour.

reagent position: Maximum 80 reagent positions, with refrigeration

Reagent volume :10μL~300μL, step 0.1μL

Volume of reagent bottle :20mL, 35mL,70mL

Sample and reagent storage temperature: 2℃～12℃

Sample and reagent bar code recognition system: 1 built-in bar code reader (optional)

Probe liquid level sensor: Integrated with probe

Sample loading capacity at one time: Alt least 80 sample positions, with refrigeration

Sample type: Serum, plasma, urine, ascites, cerebrospinal fluid

Sample volume: 2μL~35μL, step 0.1μL

Interface: RJ45 network interface

Connected system: Can be connected to LIS/HIS

Equipped with an advanced intelligent software system to ensure accurate and reliable test results, and improve laboratory operation convenience and quality control level: Serum Index Function, Hook Effect Monitor Function, Substrate Depletion Monitor & Enzymatic Linear Expansion Function, Water Quality Monitoring Function

Cuvette type: Discrete type

Optical path of cuvette: 5mm

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests** **Tumor Markers** **Immunology and Serology Tests**	**Fully Automated Chemistry Analyzer**

Absorbance range 0~5.7Abs
Absorbance linear Range 0~3.5Abs
QC: Real-time QC, daily QC, inter-day QC and analysis on losing control with double-concentration method
Automatic rinsing: Automatic rinsing of cuvette, Sample and reagent probe, mixing bar
Mixing system: Independent mixing after reagent dispensing
2. Environmental factors
Environmental temperature: 10℃~30℃;
Relative humidity: not more than 70%
Atmospheric pressure: 75kPa~106kPa
Be away from strong electromagnetic interference sources;
3. UPS and Power supply
Power voltage: 100V-240V~ 50/60Hz
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup
Voltage stabilizer with suitable rating will be supplied
4. Installation and testing: Complete installation and testing as per the manufacturer's instructions.
5. Standards and safety
Should be FDA and/or CE approved product
Conforms to standards for ISO13485
5. Warranty
24 months from the date of satisfactory installation & handing over to the department.
7. Documentation
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.
8. **Software up gradation**
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**Nucleic Acid Extractor**

Nucleic Acid Extractor General description: An automated laboratory equipment that purifies DNA and/or RNA from blood, swabs, sputum, etc.
Operational requirements All capabilities as detailed below should be integral part of the quotation.

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**Nucleic Acid Extractor**

1. Technical Specifications
Processing Volume
30 μL ～ 1000 μL (32 throughputs, standard 96 deep well plate)
Capacity
95% (Conditions: 96 deep well plate & magnetic rod covers from XATL Co., Ltd.; 1 μm magnetic beads; 1× recycle in 6 mol/L guanidine hydrochloride; 2× recycle in neutral washing liquid)
Inter-well Purification Accuracy
CV < 3% (for identical concentration samples extracted in identical process)
Magnetic Rods
Magnetic rod frame for 32 magnetic rods
Mixing Mode
Multi-modes and multi-gears for mixing
Heating Temperature
Heating modes: Lysis heating: room temperature ～ 120°C Elution heating: room temperature ～ 120°C
Diversified operation modes:
Remote control via mobile phone/tablet (Android system) On-board screen key operation
Network communication
Supports WiFi remote control via mobile phones and tablets, with expandable Ethernet remote control function.
Program Storage
Firmware system can store up to 15 experimental programs
Power Failure Protection
Can continue unfinished experiment after restart following unexpected power failure
Disinfection
Equipped with UV lamp in experiment cabin; disinfection time can be manually or automatically controlled
Plates Forms
Dedicated plates, 6-strip tubes, and 96 deep well plates available (depending on throughput)
2. Standards and safety
Should be FDA and/or CE approved
Conforms to standards for ISO13485
Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz
3. **Installation and testing**: Complete installation and testing as per the manufacturer's instructions.
Warranty: One year after commissioning.

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**Nucleic Acid Extractor**

4. Warranty

24 months from the date of satisfactory installation & commissioning.

5. Documentation

Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.

6. **Software up gradation**

Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Medical Centrifuge**

Medical Centrifuge for Coombs Tests
General description: A motor-driven laboratory device that uses centrifugal force to separate components of biological mixtures—such as blood, urine, or saliva—based on their density.

Operational requirements
All capabilities as detailed below should be integral part of the quotation.

1. Technical Specifications

Centrifugation Speed

Maximum speed: 3500rpm, speed relative deviation: ±2.5%

Centrifuge for 5 minutes (automatically, 900 rpm for 2 minutes, 1500 rpm for 3 minutes)

2. Accessories

Centrifuge rotor * 1 set

Fuse T2A, 250VAC（2pcs）

3. Environmental factors

4. Indoors, temperature range 5℃~40℃;
5. relative humidity ≤80%;
6. Atmospheric pressure 860hPa~1060hPa;
7. No conductive dust, explosive gases, or corrosive gases in the surrounding environment.

4. UPS and Power supply

Power input to be AC 220/240V±22V， 50/60Hz±1Hz

8. **Quality standards**:

IEC 60601-1, or any other internationally recognized standards
Conformity to standards: CE marked or any other internationally recognized documents

9. **Installation and testing**:
Complete installation and testing as per the manufacturer's instructions.

10. Warranty

24 months from the date of satisfactory installation & handing over to the department.

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Medical Centrifuge**

11. Documentation

Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.

12. **Software up gradation**

Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Incubator**

Reagent Card Incubator for Coombs Tests
General description: A bench top laboratory equipment that heats and holds gel cards or column agglutination cards at precise temperature for blood bank testing.

Operational requirements
All capabilities as detailed below should be integral part of the quotation.

1. Technical Specifications

Incubator Temperature: 37℃ ±1℃ (incubation for antigen-antibody reactions inside gel cards before centrifugation)

2. Accessories

Card holder 5 sets to fit the Coombs Reagent Card

Fuse T2A, 250VAC（2pcs）

3. **Environmental factors**

8. Indoors, temperature range 5℃~40℃;

9. relative humidity ≤80%;

10. Atmospheric pressure 860hPa~1060hPa;

11. No conductive dust, explosive gases, or corrosive gases in the surrounding environment.

4. UPS and Power supply

Power input to be AC 220/240V±22V， 50/60Hz±1Hz

5. Installation and testing:

Complete installation and testing as per the manufacturer's instructions.

6. Warranty

24 months from the date of satisfactory installation & commissioning.

7. Documentation

Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.

8. **Software up gradation**

Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialist Laboratory	**Microbiology Tests**	**Fungal Culture and Sensitivity**

Auto Fungus identification and antimicrobial susceptibility testing system

1. Technical Specifications

1.Intended use: Used for automated identification detection and quantitative or qualitative susceptibility testing of isolated colonies for clinical bacteria and fungi.

2.Test Principle:
Identification: Colorimetry
Susceptibility testing: Turbidimetry

3.Identification & susceptibility test range: Covering 11 common clinical categories, more than 300 kinds of pathogenic bacteria, including Enterobacteriaceae, non-fermentative bacteria, Streptococcus (Enterococcus), Staphylococcus (micrococcus), fungi, Corynebacterium, Neisseria/Haemophilus, etc.

4. Throughput: ≥50 pcs/hr

5. Size: Instrument size: 215mm* 258mm *215mm

6.Weight:4.4 kg (N.W); 6.2 (G.W)

7.Condition: Temperature:5-40℃, Humidity: ≤80%, Power supply:AC100-240V, 50/60Hz

8.Construction: Built in pinhole lens, built in barcode scanner, Integrated fuselage including computer system and identification/antimicrobial susceptibility testing system

9.Working Station, Windows 10, 8-inch touch screen, 128GB

1. Function:
Auto self-checking at startup, uses image recognition to analyze the test card, and uploads the data to a database for automated analysis.
Advanced expert system presents testing results with high accuracy and instructive interpretation for over 200 kinds of antibiotics.
LIS and WHONET support
According to CLSI or EUCAST regulation
Multiple drug-resistant monitoring: MRSA, BETA-lac, VRE, VRSA, HLAR, ESBLs and so on Customized report format
Equipped with statistic function for analyzing the data in different aspects

2. Test card(consumable):
The test cards can be rechecked by naked eyes.
*Fungus AST card should contain Amphotericin B, Flucytosine, Micafungin, Caspofungin, Fluconazole, Isavuconazole, Voriconazole, Posaconazole, Itraconazole *The test cards should be 96 wells or above.
Advanced expert system presents testing results with high accuracy and instructive interpretation for over 200 kinds of antibiotics.

13.SCAN-10: Throughput 1-2 minutes per cards
14.Auto sampling instrument (Optional): Size Instrument size: 496mm* 365mm *443mm, Capability:96-well cards & 120-well cards
15.Turbidimeter (Standard): Size Instrument size: 215mm* 258mm *215mm
16.Detection range:0-6 McF
2. **Environmental factors**
1. Environmental temperature: 10℃~30℃;
2. Relative humidity: not more than 70%
3. **UPS and Power supply**
1. Power voltage: 1`0V-220V~ 50/60Hz
2. UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup
3. Voltage stabilizer with suitable rating will be supplied
4. **Standards and safety**
1. Should be FDA and/or CE approved product
2. Conforms to standards for ISO13485
5. **Warranty**
24 months from the date of satisfactory installation & handing over to the department.
6. **Documentation**
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.
7. **Software up gradation**
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Infusion Pump**

General description: An infusion pump is designed for precise, safe delivery of fluids, medications, or nutrition in hospitals, clinics, and home-care settings.
Operational requirements
1. Technical Specifications
An infusion pump with a screen size ≥3.0 inches, convenient and fast human-machine operation interface.
Flow rate range: 0.10mL/h～2000mL/h (minimum step 0.01mL/h).
Bolus flow rate range: 0.10mL/h～2000mL/h (minimum step 0.01mL/h).
Infusion accuracy ≤±4.5%.
KVO (Keep Vein Open) rate setting range: 0.1mL/h～30mL/h adjustable.
≥10 infusion modes: rate mode, time mode, weight mode, micro mode, sequence mode, loading dose mode, gradient mode, dose-time mode, intermittent administration mode, drip mode.
Dynamic Pressure Detection (DPS), can display current pressure value in real time.
Automatic pressure release (Anti-Bolus) function: when line occlusion alarm is triggered, it automatically retracts line pressure to avoid accidental bolus injury to patients.
≥15 adjustable occlusion pressure thresholds, minimum 75mmHg.
Equipped with priming function to remove air bubbles in the infusion line.
Online titration function, no need to interrupt infusion when changing flow rate.
Air bubble detection: can detect single air bubble ≥20μL, 7 adjustable levels for single bubble size.
Night mode: automatically reduces screen brightness and volume, automatically resumes original settings after the set time ends.
Drug library function, can store ≥3000 drugs.
Log recording function, can store ≥2000 operation records.
Automatically calculates four types of cumulative volumes: 24-hour cumulative volume, latest cumulative volume, cumulative volume in custom time period, cumulative volume at fixed time intervals, for easy management of total infused fluid volume.
Battery operating time ≥5 hours @25mL/h; can be upgraded to ≥10 hours @25mL/h.
Dustproof and waterproof rating: IP44.
Complete unit weight ≤1.6kg (including battery), host is equipped with built-in handle for easy carrying.
Certified to EN1789 ambulance standard, suitable for use in outdoor first aid and on-board scenarios.
Can be equipped with wireless module to realize wireless network communication.
2. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz
3. Installation and testing: Complete installation and testing as per the manufacturer's instructions.

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Neurosurgery Operating Suite / Ophthalmology Operating Suite**	**Operating Light**

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Neurosurgery Operating Suite / Ophthalmology Operating Suite**	**Operating Light**

General description: A surgical light (Operating lamp) ceiling mounting type. The surgical light should consist of two lamp head, main and auxiliary (dual type). It should be constructed from light weight material preferable aluminum, and easily to disinfect. It should have emergency backup power supply to last for at least 2 hours.

Operational requirements

1. Technical Specifications

The operating light adopts medical-grade LED cold light source, number of LED beads in main lamp ≥36, number of LED beads in satellite lamp ≥15.

The Lamp housing is made of aluminum alloy for good heat dissipation, surface is treated with environmental-friendly powder coating, and the powder has passed antibacterial test.

When the base frame is loaded with 10000N·m force for 10 minutes, the horizontal tilt angle of the flange is less than 0.6°; the rotation life of the rotating shaft under 300kg load ≥100,000 cycles. (Third-party test reports for the above two items shall be provided)

The main lamp is equipped with LCD touch panel located at the lamp head rotating shaft, with adjustable angle of 60° for convenient operation and observation by doctors. It has normal lighting, bright lighting, endoscopic lighting modes, and optional automatic mode.

The main lamp has customizable clinical modes, allowing the department to save 3 different lighting parameters according to clinical usage habits for one-click switching.

Adopts circular rotating balance arm suspension system with six sets of joint linkage, light movement, stable positioning, and 340° omnidirectional design, which can meet the needs of different heights and angles during surgery.

The main lamp is equipped with illuminance stabilization technology. When adjusting the spot size, the illuminance is automatically compensated to keep the central illuminance constant.

The main lamp can be equipped with auto-focus function. After enabling the automatic function, it can adapt to different wound distances, and the illuminance remains unchanged when moving the lamp head position. (Third-party test report shall be provided)

Sterile handle design, made of PPSU material, resistant to high temperature and high-pressure steam sterilization ≥134℃, easy to install, disassemble, clean and disinfect. The handle also has illuminance adjustment function, which can change the illuminance by rotating clockwise/counterclockwise.

Adopts DC dimming technology, which directly controls the current of LED beads to realize illuminance adjustment, no PWM dimming for the light source, avoiding visual fatigue and discomfort to medical staff caused by low-frequency flicker, and eliminating water ripples during video recording. (Third-party test report shall be provided)

The surgical lamp is light and convenient to move. The force required for vertical movement of the main and satellite lamps ≤40N, and the force required for horizontal displacement ≤20N. (Third-party test report shall be provided)

The main lamp can be equipped with intelligent shadow management system. After activation, the measured shadowless rate of the main lamp under single obstruction ≥95%.

The measured color rendering index Ra of the main lamp ≥97, ensuring that the light source can most realistically restore the actual appearance of the wound surface. (Third-party test report shall be provided)

The main lamp has 10-level adjustable spot size: minimum spot ≤180mm, maximum spot ≥300mm. Satellite lamp spot size is 230mm±10mm.

The measured illumination depth of the main lamp ≥1400mm, which can provide excellent illumination for deep cavity surgery. (Third-party test report shall be provided)

The ratio of irradiance Ee to illuminance Ec shall not exceed 3.7±10% mW/ (m^2 lux).

10-level adjustable illuminance: main lamp 40000-160000lux / satellite lamp 40000-130000lux.

The main and satellite lamps can be switched to endoscopic mode with one click. The endoscopic illuminance of the main lamp ≤8500lux, and the endoscopic illuminance of the satellite lamp ≤500lux. The satellite lamp can be set to white light or green light. (Third-party test report shall be provided)

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Neurosurgery Operating Suite / Ophthalmology Operating Suite**	**Operating Light**
The measured color rendering index R9 of both main and satellite lamps ≥95. (Third-party test report shall be provided)		
2. Power & Utility Requirements: Voltage: 415 V AC, 3-phase 50/60Hz		
3. Standby/backup power supply: UPS of at least 15KVA		
4. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Theatre**	**Anaesthesia workstation with monitor**
General description: Inhalation anaesthetic machine with electronic ventilator complete with all accessories for low and high flow anaesthesia, adult, paediatric and infant application. It should include a patient monitor unit.		
Operational requirements Anaesthesia Workstation inclusive of ventilator, Anaesthesia Monitoring systems, complete with all accessories for low and high flow anesthesia, adult, pediatric and infant application.		
1. Technical Specifications		
LCD ≥12.1-inch color resistive touchscreen with rotatable external design		
Operating system with cascading menu structure, all setting operations completed within 2 steps		
Integrated electromechanical power switch, equipped with power-on self-test (POST), quick start, standby mode, and delayed shutdown function		
Backup lithium battery with continuous operation duration ≥120 minute		
Equipped with ≥3 auxiliary mains power sockets to provide power support for perioperative equipment		
3 module slots on the front panel of the host, supporting module sharing with the same brand of plug-in patient monitors. Capable of monitoring parameters including CO_2, AG (Anesthetic Gas), BIS (Bispectral Index), O_2, etc., with maximum 5 waveforms displayed simultaneously on the same screen		
AGSS (Anesthesia Gas Scavenging System) with active suction for waste gas discharge, while effectively preventing unnecessary waste of anesthetic gas during the process		
Gas Supply Section		
Three gas sources (Oxygen, Nitrous Oxide, Air) with operating pressure range of 0.28~0.6MPa		
Equipped with 6-tube mechanical flowmeters for quick and intuitive reading, with adjustment range of 0-10L/min, adjustment accuracy of 0.05L/min, adjustment resolution of 10%, suitable for low and micro-flow anesthesia procedures		
Equipped with mechanical nitrous oxide-oxygen protection device, independent of power supply, ensuring oxygen concentration ≥25% at any flow rate		
Oxygen flush function with flow rate range of 25-75L/min		
Anesthesia Ventilator		
1. Pneumatically driven, electronically controlled ventilator Application scope: Adults, pediatrics and infants.		
Equipped with automatic compensation functions for circuit leakage, compliance and fresh gas, ensuring the set tidal volume is accurately delivered.		
2. Ventilation modes: VCV (Volume Controlled Ventilation), PCV (Pressure Controlled Ventilation), Manual mode		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Theatre**	**Anaesthesia workstation with monitor**

3. Under controlled ventilation mode:
   - Tidal volume setting range in VCV mode: 15~1500ml
   - Tidal volume control range in PCV mode: 5~1500ml
   - Respiratory rate setting range: 4~100 breaths/min
   - I:E (Inspiratory/Expiratory) ratio setting range: 4:1~1:10
   - Inspiratory pressure setting range: 5~70 cmH_2O, step size 1 cmH_2O
   - PEEP (Positive End-Expiratory Pressure) setting range: OFF, 3~30 cmH_2O, step size 1 cmH_2O
   - Pressure limit setting range: 10~100 cmH_2O

5. Under synchronized and supported ventilation mode:
   - Trigger window setting range: 5%~90%
   - Inspiratory trigger setting range: Flow trigger 0.2~15L/min, step size 0.1L/min; Pressure trigger -20~-1 cmH_2O, step size -0.5 cmH_2O
   - Pressure ramp: 0s~2.0s
   - Inspiratory time: 0.2~5s, step size 0.1s
   - Support pressure setting range: OFF, 3~60 cmH_2O
   - Inspiratory flow rate: 0~120L/min

6. Key parameter monitoring ranges:
   - Minute ventilation: 0~100L/min
     - Inspiratory and expiratory tidal volume: 0~3000ml
     - Compliance: 0~300 mL/cmH_2O
   - Airway resistance: 0~600 cmH_2O/(L/s)
   - Airway pressure: -20~120 cmH_2O
   - Oxygen sensor concentration: 18%~100%
   - Oxygen concentration: 18%~100%

7. Other monitoring parameters: Respiratory rate, peak pressure, mean pressure, plateau pressure, PEEP, inspired and expired oxygen concentration, I:E ratio; optional: inspired and end-tidal CO_2 concentration, inspired and end-tidal anesthetic gas concentration, depth of anesthesia monitoring, etc.

8. Respiratory mechanics monitoring: Standard pressure waveform, flow waveform, volume waveform; optional CO_2 waveform, EEG waveform, supporting up to 5 waveforms displayed simultaneously on the same screen

9. Optional pressure-volume loop, pressure-flow loop, flow-volume loop with loop analysis function, supporting reference loop marking and corresponding respiratory mechanics parameter calculation. Equipped with cardiopulmonary bypass (CPB) mode

Breathing Circuit

1. The entire circuit is heated to prevent condensate formation, eliminating the need for condensate collection treatment

2. Standard bidirectional flow sensor monitoring, with flow sensor sampling tube built into the circuit and equipped with waterproof protection device

3. Standard bidirectional flow sensor monitoring, with flow sensor sampling tube built into the circuit and equipped with waterproof protection device

4. Safety ascending bellows for easy leakage observation, suitable for adults, pediatrics and infants, no bellows replacement required for different patient populations

5. Integrated, monolithic circuit design, tool-free disassembly by hand, no external tubing connection between circuit and host, circuit volume ≤2.5L

6. The integrated circuit is made of PPSU material, and the entire circuit is autoclavable at 134℃ under high pressure

7. Optional ACGO (Auxiliary Common Gas Outlet) with integrated auxiliary gas circuit switch and cover design, the cover adopts rotating snap-fit design for easy opening and closing of the

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Theatre**	**Anaesthesia workstation with monitor**

auxiliary gas circuit, compatible with external Bain circuit, T-piece circuit, etc.

8. Optional intelligent Bypass function, allowing soda lime replacement during surgery without affecting anesthesia machine operation, no anesthetic agent leakage, safe and reliable
9. Standard 1 soda lime canister with one-hand snap-in installation, capacity ≥2L
10. Equipped with lift-type drain valve for expiratory end water removal to ensure measurement accuracy, the drain valve adopts water cup-free design, no disassembly required, supports intraoperative water drainage, and prevents anesthetic gas leakage
11. Circuit leakage rate shall not exceed 65ml/min

Vaporizer Specifications

1. Dual vaporizer slots, high-quality sevoflurane vaporizer with temperature, pressure and flow compensation functions, safety interlock function, and transport T-mode.
2. Vaporizer capacity ≥300ml.

Alarm Performance

1. Equipped with physiological alarm functions including: apnea alarm, apnea ≥2min alarm, sustained high airway pressure alarm, pressure limitation alarm, negative pressure alarm, upper and lower limit alarms for airway pressure, upper and lower limit alarms for inspired and expiratory tidal volume, upper and lower limit alarms for minute ventilation, upper and lower limit alarms for inspired and expiratory oxygen concentration, upper and lower limit alarms for inspired and end-tidal CO_2 concentration, upper and lower limit alarms for inspired and end-tidal N_2O (nitrous oxide) concentration, upper and lower limit alarms for inspired and end-tidal anesthetic gas concentration, and low BIS (Bispectral Index) signal quality alarm.

Auxiliary Functions

1. Mechanical brake
2. Two storage drawers
3. Auxiliary oxygen supply
4. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz
5. Standby/backup power supply: UPS of at least 15KVA

2. Installation and testing:
Complete installation and testing as per the manufacturer's instructions.

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**

Operational requirements
The machine is a plug-in patient monitor suitable for monitoring in operating rooms, ICU, CCU wards and bedside monitoring scenarios.

- **Technical Specifications**

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**
➢ Modular plug-in bedside patient monitor with integrated design of host, display screen and plugin slots, number of host slots ≥5		
➢ ≥15-inch LED high-definition LCD display, capacitive touchscreen (not resistive), resolution 1920×1080 pixels		
➢ Equipped with intelligent light sensor for automatic screen brightness adjustment, screen supports gesture swipe operation for quick interface switching, and supports operation with medical protective gloves		
➢ Multi-parameter monitoring module can be upgraded to transport monitoring module with screen, supports simultaneous unobstructed display and operation on dual screens at front and rear of the device, screen size ≥5 inches, built-in lithium battery provides power supply ≥8 hours		
➢ Fanless design, significantly reduces noise		
➢ Rechargeable lithium battery with continuous power supply ≥3 hours		
➢ Equipped with monitoring mode, demo mode, standby mode, night mode, cardiopulmonary bypass (CPB) mode, intubation mode		
➢ Capable of monitoring basic parameters including ECG, SpO2, pulse, non-invasive blood pressure, respiration, temperature, etc.; can be upgraded with parameter modules including Masimo/Nellcor SpO2, 2-channel IBP, EtCO2, C.O, AG (Anaesthetic Gas), depth of anesthesia, oxygen concentration, apnea arousal, etc.		
➢ Supports 3/5/6/12-lead ECG, with intelligent lead-off detection and multi-lead synchronous analysis functions		
➢ Equipped with heartbeat type recognition function, can distinguish normal heartbeat, abnormal heartbeat, paced heartbeat, and label each heartbeat according to arrhythmia analysis results		
➢ Supports ≥27 types of real-time arrhythmia analysis, can identify irregular rhythm cessation and atrial fibrillation cessation and trigger alarms		
➢ Can be equipped with Glasgow 12-lead resting ECG analysis algorithm, suitable for adults, pediatrics and neonates, can display analysis results, store reports and print reports		
➢ Equipped with QT/QTc measurement function, provides QT and QTc parameter values, QT/QTc monitoring is suitable for adult, pediatric and neonatal patients		
➢ Provides ST segment analysis function, suitable for adults, pediatrics and neonates, supports grouped display of real-time and reference ST segments of anterior, inferior and lateral cardiac walls in a dedicated window		
➢ Can be equipped with 24-hour ECG overview report, which allows viewing of heart rate statistics, arrhythmia statistics, QT/QTc statistics, ST segment statistics, pacing statistics and other information, helping doctors analyze the patient's 24-hour overall ECG status		
➢ Heart rate alarm limit ranges: HR high limit: 17bpm～295 bpm, HR low limit: 16bpm～290 bpm, extreme tachycardia: 60 bpm～300 bpm, extreme bradycardia: 15bpm～120 bpm		
➢ With strong anti-interference capability for ECG, polarization voltage tolerance: ±850mV		
➢ ECG modes include diagnostic, surgery, monitoring, ST modes, among which surgery, monitoring and ST modes have common mode rejection ratio (CMRR) >106dB		
➢ Equipped with heart rate variability (HRV) analysis function, provides display of HRV-related parameters, supports RR interval histogram, RR interval difference histogram, scatter plot, RR interval trend graph, for evaluating the activity of cardiac autonomic nerves		
➢ Supports RR respiratory rate measurement, measurement range: 0～200 rpm		
➢ Optional Masimo SpO2, measurement range: 1%～100%; within 70%～100% range, measurement accuracy for adults/pediatrics is ±2% (non-motion state), ±3% (motion state); for neonates it is ±3% (both non-motion and motion states)		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**
➢ Standard SpO2 function can display perfusion index (PI), PI range: 0.02-20%		
➢ Equipped with finger-cuff SpO2 probe, supports immersion cleaning and disinfection, waterproof rating IPx7		
➢ Non-invasive blood pressure (NIBP) is suitable for adults, pediatrics and neonates		
➢ NIBP provides five measurement modes: manual, automatic interval, continuous, sequence, hourly		
➢ NIBP measurement ranges:		
➢ Adult: Systolic 25 mmHg -290mmHg, Diastolic 10 mmHg-250mmHg, Mean 15mmHg -260mmHg		
➢ Pediatric: Systolic 25 mmHg -250mmHg, Diastolic 15 mmHg-210mmHg, Mean 15 mmHg-225mmHg		
➢ Neonate: Systolic 25 mmHg -140mmHg, Diastolic 10 mmHg-115mmHg, Mean 15mmHg -125mmHg		
➢ Equipped with ambulatory blood pressure monitoring interface, in the analysis interface, you can view the percentage of normal, below-normal and above-normal systolic and diastolic blood pressure data during the patient's measurement period, as well as the average, maximum and minimum values of systolic and diastolic blood pressure		
➢ Provides auxiliary venipuncture function		
➢ Supports dual-channel invasive blood pressure (IBP) monitoring, can be upgraded to support up to 8-channel IBP monitoring		
➢ IBP is suitable for adults, pediatrics and neonates, measurement range: -50～370mmHg		
➢ Provides real-time display of pulse pressure variation (PPV), measurement range: 0%～50%, resolution: 1%		
➢ Provides real-time display of systolic pressure variation (SPV), measurement range: 0 mmHg～ 50mmHg, resolution: 1mmHg		
➢ Provides pulmonary artery wedge pressure (PAWP) measurement		
➢ Can be upgraded with Comen/Philips Respironics/Masimo mainstream/side-stream EtCO2 monitoring module, suitable for patients of all age groups from adults to neonates, side-stream sampling rate ≤50ml/min, side-stream CO2 monitoring does not require water trap, adopts automatic drainage tube to reduce infection risk		
➢ Can be upgraded with anesthetic gas (AG) monitoring module, which monitors and displays waveforms and values of CO2/O2/N2O/AA (inhaled anesthetic agents) and airway respiratory rate (awRR); mainstream monitoring mode: no manual calibration required, automatic calibration every 24 hours		
➢ Can be upgraded with invasive cardiac output (C.O) monitoring module, uses gold standard thermodilution method for measurement		
➢ Can be upgraded with bispectral index (BIS) depth of anesthesia monitoring module, provides EEG waveform display, BIS index (0-100), EMG (electromyography), SQI (signal quality index), SR (suppression ratio), SEF (spectral edge frequency), TP (total power) and other parameters		
➢ Multiple interface display options: standard interface, large font interface, dynamic trend interface, respiratory oxygenation interface, other bed observation, full-screen ECG, half-screen ECG, PAWP, EWS (early warning score), single SpO2, CCHD (congenital heart disease) interface (optional), etc.		
➢ Can be upgraded with software functions including sepsis screening tool, Glasgow Coma Scale (GCS), early warning score function, pacing analysis, CCHD screening, etc.		
➢ Supports ≥160 hours of trend table and trend graph review		
➢ Supports storage and review of ≥2000 NIBP records		
➢ Supports storage and review of ≥2000 alarm events		
➢ Supports storage and review of ≥48 hours of full holographic waveforms		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**
➢ Supports ≥48 hours of arrhythmia statistics and review		
➢ Equipped with demo function for convenient training and learning		
➢ Equipped with graphical alarm indication function for easy viewing of alarm information		
➢ Equipped with drug calculation, renal function calculation, oxygenation calculation, ventilation calculation, hemodynamic calculation and titration table functions		
➢ Supports timer function, can display up to 4 timers simultaneously, each timer can be set independently, and the timer will alert when the set time is reached		
2. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
3. Quality standards: ISO 13485:2016: Medical devices — Quality management systems Conformity to standards: CE marked/ FDA approved or any other equal and equivalent internationally recognized documents		
4. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
5. Warranty: One year after commissioning		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Syringe Pump**
General description: A small-volume displacement infusion device that delivers precise amounts of fluid by mechanically driving the plunger of a syringe.		
1. Technical Specifications		
➢ LCD ≥3.0-inch display screen with convenient and fast human-machine operation interface.		
➢ Compatible syringe specifications: 5mL, 10mL, 20mL, 30mL, 50, 60ml.		
➢ Flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Bolus flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Infusion accuracy ≤±1.8%.		
➢ KVO (Keep Vein Open) rate setting range: 0.1mL/h～30mL/h adjustable.		
➢ ≥9 infusion modes: rate mode, time mode, weight mode, intermittent administration mode, gradient mode, dose-time mode, sequence mode, micro mode, loading dose mode.		
➢ Dynamic Pressure Detection (DPS), can display current pressure value in real time.		
➢ Automatic pressure release (Anti-Bolus) function: when line occlusion alarm is triggered, it automatically retracts line pressure to avoid accidental bolus injury to patients.		
➢ ≥15 adjustable occlusion alarm pressure thresholds.		
➢ Equipped with priming function to remove air bubbles in the infusion line.		
➢ Night mode: automatically reduces screen brightness and volume, automatically resumes original settings after the set time ends.		
2. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
3. Quality standards and certification: Complies with IEC 60601-1, IEC 60601-2-24, ISO 13485. CE marked or FDA approved.		
4. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Syringe Pump**
5. Warranty: One year after commissioning		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Syringe Pump**
General description: A small-volume displacement infusion device that delivers precise amounts of fluid by mechanically driving the plunger of a syringe.		
1. Technical Specifications		
➢ LCD ≥3.0-inch display screen with convenient and fast human-machine operation interface.		
➢ Compatible syringe specifications: 5mL, 10mL, 20mL, 30mL, 50, 60ml.		
➢ Flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Bolus flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Infusion accuracy ≤±1.8%.		
➢ KVO (Keep Vein Open) rate setting range: 0.1mL/h～30mL/h adjustable.		
➢ ≥9 infusion modes: rate mode, time mode, weight mode, intermittent administration mode, gradient mode, dose-time mode, sequence mode, micro mode, loading dose mode.		
➢ Dynamic Pressure Detection (DPS), can display current pressure value in real time.		
➢ Automatic pressure release (Anti-Bolus) function: when line occlusion alarm is triggered, it automatically retracts line pressure to avoid accidental bolus injury to patients.		
➢ ≥15 adjustable occlusion alarm pressure thresholds.		
➢ Equipped with priming function to remove air bubbles in the infusion line.		
➢ Night mode: automatically reduces screen brightness and volume, automatically resumes original settings after the set time ends.		
2. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
3. Quality standards and certification: Complies with IEC 60601-1, IEC 60601-2-24, ISO 13485. CE marked or FDA approved.		
4. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
5. Warranty: One year after commissioning		

1. The Specifications and Priced Activity Schedules

	Date: _____, ITT No: _____, Alternative No: _____ Page N° _____ of _____

1	2	3	4	5	6
Lot N°	Category(Sub Category)	Description of Service	Cost of Service(Ksh)	Any other incidental costs(Ksh)	Total Price of Service (Ksh) (Col. 4 +5)
[insert Lot number as described in tender]	*[insert name of category or sub category as provided in implementation oplan]*	*(Insert Procedure/Service Name)*	*[insert cost per Service]*		*[insert total price per unit service]*
Cost of all services in the Lot (Ksh)					

Name of Tenderer *[insert complete name of Tenderer]* Signature of Tenderer *[signature of person signing the Tender]* Date *[insert date]*

Name of Tenderer .....*[insert complete name of Tenderer] Signature of Tenderer [signature of person signing the Tender] Date [insert date]*

NOTE: Bidders are expected to transfer the total tender sums as computed above for all the lots to the Form of Tender indicating the respective lots for which they have participated.

At the point of implementation by the respective Implementing Agencies, the maximum value of the award to any bidder shall be limited to half the turnover of the lead bidder or its principal holding company for the year preceding year, for all the lots tendered and the implementing agency will assess the bidder's technical capability and financial strength to inform engagement.

2. Method Statement

Provision of Service using the Fixed Fee for Service
Terms of Reference

Introduction
This tender seeks qualified vendors to provide medical equipment to designated facilities under a reimbursement model based on utilization at a fixed fee for service. The objective is to equip facilities efficiently, ensuring optimal utilization of resources while adhering to social health insurance rates and applicable service guidelines. Competitive pricing is encouraged to capitalize on economies of scale.
The initial agreement period shall be determined based on negotiation and mutual agreement, with provisions for extension based on performance evaluation.

Vendor Obligations
a) The selected vendor will be responsible for supplying and equipping designated healthcare facilities with specified medical equipment. b) The vendor must ensure all equipment meets regulatory standards and specifications outlined in the tender. c) Equipment installation, setup, and configuration to be completed according to agreed timelines and facility requirements. d) Comprehensive training for facility staff on equipment operation, maintenance, and safety protocols. e) Regular monitoring and maintenance services to ensure optimal equipment performance throughout the agreement period.

Procurement Entity/Client Obligations
a) The procurement entity shall reimburse the vendor based on agreed utilization rates and fixed fee for service, aligned with social health insurance rates where applicable. b) Cooperation with the vendor to provide necessary site access, utilities, and support during equipment installation and ongoing operations. c) Timely reporting of equipment usage and performance metrics to facilitate reimbursement and service evaluation. d) Adherence to regulatory guidelines and quality standards in all procurement and operational activities. e) Facilitation of inspections, audits, and reviews as required to ensure compliance and quality assurance.

Scope of Services
The vendor must deliver the following services for equipping healthcare facilities under the reimbursement model:
Equipment Supply and Installation:

- Procurement and supply of specified medical equipment tailored to facility requirements.
- Installation, setup, and configuration of equipment in accordance with facility specifications and regulatory standards.
- Verification of equipment functionality and performance post-installation.

Training and Capacity Building:

- Provision of comprehensive training programs for facility staff on equipment usage, maintenance, and safety protocols.
- Ongoing support and refresher training to ensure effective utilization and operational efficiency.

Maintenance and Support:

- Scheduled preventive maintenance services to prevent equipment failures and ensure optimal performance.
- Prompt response and corrective maintenance services to address equipment breakdowns or malfunctions.
- Availability of spare parts and technical support to minimize downtime and maintain service continuity.

Reimbursement and Financial Management:

- Establishment of a transparent reimbursement mechanism based on agreed utilization rates and fixed fee for service.
- Submission of accurate usage reports and financial documentation to facilitate timely reimbursement.
- Pricing structures designed to be competitive and leverage economies of scale for cost efficiency.

IMPLEMENTATION PLAN

The implementation plan will include:

- Detailed timeline for equipment procurement, installation, and commissioning.
- Training schedules and content outline for facility staff.
- Maintenance schedule and procedures to ensure ongoing equipment reliability and compliance.

This plan will be adjusted based on specific facility needs and operational requirements to achieve optimal outcomes in healthcare service delivery.

List of Lots

CATEGORY	FFS	LOT
Cancer Diagnostic and Therapeutics	FFS	Lot 24
Specialized Surgical Services	FFS	Lot 25
Specialized Laboratory Services for Cancer Diagnosis and Treatment	FFS	Lot 26

3. Work Plan

[Procuring Entity shall provide main features of the work plan that the Tenderer should provide in the tender for carrying out the contract, from beginning to the end].

4. Other Time Schedule

(to be used by Tenderer when alternative Time for Completion is invited in ITT14.2)

1. NOTIFICATION OF INTENTION TO AWARD

[*This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender.*] [*Send this Notification to the Tenderer's Authorized Representative named in the Tenderer Information Form*] For the attention of Tenderer's Authorized Representative

Name: .....*[insert Authorized Representative's name]*

Address: .....*[insert Authorized Representative's Address]*

Telephone numbers: .....*[insert Authorized Representative's telephone/fax numbers]*

Email Address:..... *[insert Authorized Representative's email address]*

[IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

DATE OF TRANSMISSION:..... This Notification is sent by: [*email/fax*] on [*date*] (local time)

Procuring Entity: .....*[insert the name of the Procuring Entity]*

Contract title:..... *[insert the name of the contract]*

ITT No: .....*[insert ITT reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period you may:

a) Request a debriefing in relation to the evaluation of your Tender, and/or

b) Submit a Procurement-related Complaint in relation to the decision to award the contract.

I). The successful Tenderer

Name:	[*insert name of successful Tenderer*]
Address:	[*insert address of the successful Tenderer*]
Contract price:	[*insert contract price of the successful Tender*]

ii). **Other Tenderers *[INSTRUCTIONS: insert names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out.]***

Name of Tenderer	Tender price	Evaluated Tender price (if applicable)
[*insert name*]	[*insert Tender price*]	[*insert evaluated price*]
[*insert name*]	[*insert Tender price*]	[*insert evaluated price*]
[*insert name*]	[*insert Tender price*]	[*insert evaluated price*]
[*insert name*]	[*insert Tender price*]	[*insert evaluated price*]
[*insert name*]	[*insert Tender price*]	[*insert evaluated price*]

iii). How to request a debriefing

DEADLINE: The deadline to request a debriefing expires at midnight on [*insert date*] (local time).

You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (3)Business Days of receipt of this Notification of Intention to Award.

Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:

Attention: .....[*insert full name of person, if applicable*]

Title/position: .....[*insert title/position*]

Agency: .....[*insert name of Procuring Entity*]

Email address:..... [*insert email address*]

If your request for a debriefing is received within the3Business Days deadline, we will provide the debriefing within five (5) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (5) Business Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of the Contract Award Notice.

iv. How to make a complaint

Period: Procurement-related Complaint challenging the decision to award shall be submitted by [*insert date and time*].

Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:

Attention:.....[*insert full name of person, if applicable*]

Title/position:..... [*insert title/position*]

Agency: .....[*insert name of Procuring Entity*]

Email address:..... [*insert email address*]

At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Stand still Period and received by us before the Stand still Period ends.
In summary, there are four essential requirements:

1. You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process, and is the recipient of a Notification of Intention to Award.
2. The complaint can only challenge the decision to award the contract.
3. You must submit the complaint within the period stated above.
4. You must include, in your complaint, all of the information required to support the complaint.
5. The application must be accompanied by the fees set out in the Procurement Regulations, which shall not be refundable (information available from the Public Procurement Authority at info@ppra.go.ke or complaints@ppra.go.ke

v). Standstill Period

DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).
The Standstill Period lasts ten (10) Business Days after the date of transmission of this Notification of Intention to Award.

The Standstill Period may be extended as stated in Section 4 above.
If you have any questions regarding this Notification please do not hesitate to contact us.

On behalf of the Procuring Entity:

Signature: _____

Name: _____

Title/position: _____

Telephone: _____

Email: _____

4. REQUEST FOR REVIEW

FORM FOR REVIEW(r.203(1))

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO…….OF……..…20……...

BETWEEN

……...…….APPLICANT

AND

……RESPONDENT (Procuring Entity)

Request for review of the decision of the…… (Name of the Procuring Entity of ……dated the…day of ……..20…….in the matter of Tender No……..…of ……...20….. for .....(Tender description).

REQUEST FOR REVIEW

I/We……,the above named Applicant(s), of address: Physical address…….P. O. Box No……. Tel. No……..Email ……, hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds , namely:

1.

2.

By this memorandum, the Applicant requests the Board for an order/orders that:

1.

2.

SIGNED ……..(Applicant) Dated on…….day of ……/…20……

FOR OFFICIAL USE ONLY Lodged with the Secretary Public Procurement Administrative Review Board on……day of ……....20…..……

SIGNED

Board Secretary

5. LETTER OF AWARD

[Form head paper of the Procuring Entity]

.....*[date]*

To:.....*[name and address of the Service Provider]*

This is to notify you that your Tender dated*[date]*forexecutionofthe*[nameoftheContractandidentificationnumber, as given in the Special Conditions of Contract]* for the Contract Price of the equivalent of *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers is hereby accepted by us (Procuring Entity).

You are requested to furnish the Performance Security within 28days in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the tender document.

Please return the attached Contract dully signed

AuthorizedSignature:.....

Name and Title of Signatory:.....

Name of Agency:.....

Attachment: Contract

6. FORM OF CONTRACT

[Form head paper of the Procuring

Entity] **LUMP SUM**

REMUNERATION

This CONTRACT(herein after called the "Contract") is made the *[day]* day of the month of*[month]*,*[year]*, between, on the one hand,*[name of Procuring Entity]*(herein after called the "Procuring Entity") and, on the other hand, *[name of Service Provider]*(hereinafter called the" Service Provider").

[***Note****: In the text below text in brackets is optional; all notes should be deleted in final text. If the Service Provider consist of more than one entity, the above should be partially amended to read as follows:*"…(herein after called the "Procuring Entity") and, on the other hand, a joint venture consisting of the following entities, each of which will be jointly and severally liable to the Procuring Entity for all the Service Provider's obligations under this Contract, namely, *[name of Service Provider]*and*[name of Service Provider]*(herein after called the "Service Provider").]

WHEREAS

a) The Procuring Entity has requested the Service Provider to provide certain Services as defined in the General Conditions of Contract attached to this Contract (herein after called the "Services");
b) the Service Provider, having represented to the Procuring Entity that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract at a contract price of……;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents shall be deemed to form and be read and construed as part of this Agreement, and the priority of the documents shall be as follows:
   a) The Form of Acceptance;
   b) The Service Provider's Tender
   c) The Special Conditions of Contract;
   d) The General Conditions of Contract;
   e) The Specifications;
   f) The Priced Activity Schedule; and
   g) The following Appendices: [***Note****: If any of these Appendices are not used, the words "Not Used" should be inserted below next to the title of the Appendix and on the sheet attached hereto carrying the title of that Appendix.*]

   Appendix A: Description of the Services
   Appendix B: Schedule of Payments
   Appendix C: Subcontractors

   Appendix D: Breakdown of Contract Price
   Appendix E: Services and Facilities Provided by the Procuring Entity

2. The mutual rights and obligations of the Procuring Entity and the Service Provider shall be as set forth in the Contract, in particular:
   a) The Service Provider shall carry out the Services in accordance with the provisions of the Contract; and
   b) The Procuring Entity shall make payments to the Service Provider in accordance with the provisions of the Contract.

   IN WITNESS WHERE OF, the Parties here to have caused this Contract to be signed in their respective names as of the day and year first above written.

   For and on behalf of_____*[name of Procuring Entity]*

   _____*[Authorized Representative]*

For and on behalf of *[name of Service Provider]*

_____*[Authorized Representative]*

[***Note*** *:If the Service Provider consists of more than one entity, all these entities should appear as signatories, e.g., in the following manner*:]

For and on behalf of each of the Members of the Service Provider

.....*[name of member]*

.....*[Authorized Representative]*

..... *[name of member]*

.....*[Authorized Representative]*

4 SECURITY (Bank Guarantee) *[The bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.] [Guarantor Form head or SWIFT identifier code]*

Beneficiary:.....*[Procuring Entity to insert its name and address]*

ITT No.:.....*[Procuring Entity to insert reference number for the Request for Tenders]*

Alternative No.*:* .....*[Insert identification No if this is a Tender for an alternative]* **Date:** .....*[Insert date of issue]*

TENDER GUARANTEE No.:.....*[Insert guarantee reference number]*

Guarantor: .....*[Insert name and address of place of issue, unless indicated in the Form head]*

We have been informed that_____*[insert name of the Tenderer, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members there of]*(hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Tender (hereinafter called "the Tender") for the execution of_under Request for Tenders No._____("The ITT").

Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) Has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Form of Tender ("the Tender Validity Period"), or any extension there to provide by the Applicant; or

(b) Having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension thereto provided by the Applicant, (i) has failed to sign the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Tenderers ("ITT") of the Beneficiary's tendering document.

This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the Contract agreementsignedbytheApplicantandtheperformancesecurityissuedtothe Beneficiary in relation to such Contract agreement; or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) twenty-eight days after the

end of the Tender Validity Period.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

_____

[Signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

5. FORM OF TENDER SECURITY (TENDER BOND) *[The Surety shall fill*

in this Tender Bond Form in accordance with the instructions indicated.] BOND NO.___

BY THIS BOND *[name of Tenderer]* as Principal (herein after called "the Principal"), and *[name, legal title, and address of surety],***authorized to transact business in Kenya** ,as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[name of Procuring Entity]* as Obligee (hereinafter called "the Procuring Entity") in the sum of *[amount of Bond][amount in words]*, for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHERE AS the Principal has submitted or will submit a written Tender to the Procuring Entity dated the_____ day of_____, 20_____, for the supply of *[name of Contract]*(herein after called the "Tender").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

c) haswithdrawnitsTenderduringtheperiodofTendervaliditysetforthinthePrincipal'sFormofTender("the TenderValidityPeriod"),oranyextensionthereto providedbythePrincipal;or

d) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension there to provide by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to Tenderers ("ITT") of the Procuring Entity's tendering document.

then the Surety undertakes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Tender Validity Period set forth in the Principal's Form of Tender or any extension thereto provided by the Principal.

IN TESTIMONY WHERE OF, the Principal and the Surety have caused these presents to be executed in the irrespective names this_____day of_____20_____.

Principal:_____
Corporate Seal (where appropriate)

_____
(Signature)

(Printed name and title)

Surety:_____

_____
(Signature)

(Printed name and title)

6. FORM OF TENDER-SECURING DECLARATION

[The Tenderer shall fill in this Form in accordance with the instructions indicated.]

Date:.....*[date (as day, month and year)]*

ITT No.: .....*[number of Tendering process]*

Alternative No:..... *[insert identification No if this is a Tender for an alternative]*

To:..... *[complete name of Procuring Entity]* We, the undersigned, declare

that: We understand that, according to your conditions, Tenders must be supported by a Tender-Securing

Declaration.
We accept that we will automatically be suspended from being eligible for Tendering or submitting proposals in any contract with the Procuring Entity for the period of time of *[number of months or years]*starting on *[date],*if we are in breach four obligation(s) under the Tender conditions, because we:

a) Have withdrawn our Tender during the period of Tender validity specified in the Form of Tender; or

b) having been notified of the acceptance of our Tender by the Procuring Entity during the period of Tender validity, (i) fail to sign the Contract agreement; or (ii) fail or refuse to furnish the Performance Security, if required, in accordance with the ITT.

We understand this Tender Securing Declaration shall expire if we are not the successful Tenderer, upon the earlier of (i) our receipt of your notification to us of the name of the successful Tenderer; or (ii) twenty-eight days after the expiration of our Tender.

Name of the Tenderer***** _____

Name of the person duly authorized to sign the Tender on behalf of the Tenderer****** _____

Title of the person signing the Tender _____

Signature of the person named above _____

Date signed _____ day of _____, _____

*****: In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer

**: Person signing the Tender shall have the power of attorney given by the Tenderer attached to the Tender

*[**Note:** In case of a Joint Venture, the Tender-Securing Declaration must be in the name of all members to the Joint Venture that submits the Tender.*

PART II – PROCURING ENTITY'S REQUIREMENTS

SECTION V - ACTIVITY SCHEDULE

Objectives

Provision of Service using the Fixed Fee for Service
Terms of reference

INTRODUCTION

This tender seeks proposals from qualified vendors to provide medical equipment to designated facilities under a reimbursement model based on utilization at a fixed fee for service. The objective is to equip facilities efficiently, ensuring optimal utilization of resources while adhering to social health insurance rates and applicable service guidelines. Competitive pricing is encouraged to capitalize on economies of scale.

The initial agreement period shall be determined based on negotiation and mutual agreement, with provisions for extension based on performance evaluation.

VENDOR OBLIGATIONS

a) The selected vendor will be responsible for supplying and equipping designated healthcare facilities with specified medical equipment. b) The vendor must ensure all equipment meets regulatory standards and specifications outlined in the tender. c) Equipment installation, setup, and configuration to be completed according to agreed timelines and facility requirements. d) Comprehensive training for facility staff on equipment operation, maintenance, and safety protocols. e) Regular monitoring and maintenance services to ensure optimal equipment performance throughout the agreement period.

PROCUREMENT ENTITY/CLIENT OBLIGATIONS

a) The procurement entity shall reimburse the vendor based on agreed utilization rates and fixed fee for service, aligned with social health insurance rates where applicable. b) Cooperation with the vendor to provide necessary site access, utilities, and support during equipment installation and ongoing operations. c) Timely reporting of equipment usage and performance metrics to facilitate reimbursement and service evaluation. d) Adherence to regulatory guidelines and quality standards in all procurement and operational activities. e) Facilitation of inspections, audits, and reviews as required to ensure compliance and quality assurance.

SCOPE OF SERVICES

The vendor must deliver the following services for equipping healthcare facilities under the reimbursement model:

Equipment Supply and Installation:

- Procurement and supply of specified medical equipment tailored to facility requirements.
- Installation, setup, and configuration of equipment in accordance with facility specifications and regulatory standards.
- Verification of equipment functionality and performance post-installation.
- The tenderer has the option to include multiple vendors for the equipment due to the vastness of the project and timelines for implementation, to ensure there is no dependency on any one manufacturer.

Training and Capacity Building:

- Provision of comprehensive training programs for facility staff on equipment usage, maintenance, and safety protocols.
- Ongoing support and refresher training to ensure effective utilization and operational efficiency.

Maintenance and Support:

- Scheduled preventive maintenance services to prevent equipment failures and ensure optimal performance.
- Prompt response and corrective maintenance services to address equipment breakdowns or malfunctions.
- Availability of spare parts and technical support to minimize downtime and maintain service continuity.

Reimbursement and Financial Management:

- Establishment of a transparent reimbursement mechanism based on agreed utilization rates and fixed fee for service.
- Submission of accurate usage reports and financial documentation to facilitate timely reimbursement.
- Pricing structures designed to be competitive and leverage economies of scale for cost efficiency.
- The Fee for Service pricing model shall also include costs for all necessary items to perform the service, including disposables, consumables, implants, stents, films for radiology, sterilization, sutures, and reagents among others.

IMPLEMENTATION PLAN
The implementation plan will include:

- Detailed timeline for equipment procurement, installation, and commissioning.
- Training schedules and content outline for facility staff.
- Maintenance schedule and procedures to ensure ongoing equipment reliability and compliance.

This plan will be adjusted based on specific facility needs and operational requirements to achieve optimal outcomes in healthcare service delivery.

List of Lots

CATEGORY	FFS	LOT
Cancer Diagnostic and Therapeutics	FFS	Lot 24
Specialized Surgical Services	FFS	Lot 25
Specialized Laboratory Services for Cancer Diagnosis and Treatment	FFS	Lot 26

Schedule of Services Required Under Each Lot

LOT		SERVICE
LOT 24 - CANCER DIAGNOSTIC AND THERAPEUTICS	MRI	MRI Scan
	Radiation oncology	Radionuclide scan
		Brachytherapy
		SBRT/SBRS
		Radiotherapy
	Nuclear medicine	Position emmission tomograpy (PET) Scan
		Single photon emission computed tomography (SPECT)
		Thyroid scans
		HIDA Scan-Hepatobiliary
		Bone scan
		Radioactive iodine (1-131) therapy
		Radioembolozation
		Radioligand therapy
LOT 25 -SPECIALIZED SURGICAL SERVICES	Cardiology	Aortic Valvuloplasty
	Cardiology	ASD percutaneous device closure
	Cardiology	Atrial Septostomy
	Cardiology	Cardiac Resynchronization Therapy Defibrillator (CRT- D) device
	Cardiology	Cardiac Resynchronization Therapy Pacemaker (CRT-P)
	Cardiology	Coronary angiography (diagnostic)
	Cardiology	Coronary Angioplasty (with single or Multiple Stents)
	Cardiology	Diagnostic catheterization
	Cardiology	Dual Chamber pacemaker insertion (permanent)
	Cardiology	Implantable Converter Defibrillator (ICD) Dual chamber insertion
	Cardiology	Implantable Converter Defibrillator (ICD) Single chamber insertion

	Cardiology	Intra- Aortic Balloon Pump
	Cardiology	IVC Filter insertion
	Cardiology	Loop recorder - reveal link
	Cardiology	Loop recorder-reveal xt
	Cardiology	Mitral Valvoplasty
	Cardiology	PDA percutaneous device closure
	Cardiology	Peripheral Angiography
	Cardiology	Peripheral Angioplasty
	Cardiology	Pulmonary artery catheterization
	Cardiology	Pulmonary Valvoplasty
	Cardiology	Renal artery stenting
	Cardiology	Retrival of Foreign bodies
	Cardiology	Right and Left Catheterization
	Cardiology	Single Chamber pacemaker insertion (permanent)
	Cardiology	Single pacemaker insertion (temporary)
	Cardiology	Thoracic endovascular aortic repair (TEVAR)
	Cardiology	VSD percutanoeus device closure
	Cardiothoracic and Vascular	Abdominal Aortic Aneurym Repair (Open)
	Cardiothoracic and Vascular	Achalasia cardia/Diverticulum
	Cardiothoracic and Vascular	Anterior Chest Wall Mass Excision and Reconstruction
	Cardiothoracic and Vascular	Anterior Mediastinal Mass Resection
	Cardiothoracic and Vascular	Aortic Valve Replacement (AVR)
	Cardiothoracic and Vascular	Arteriovenous Malformation Resection
	Cardiothoracic and Vascular	Atrial Septal Defect Closure
	Cardiothoracic and Vascular	AV Fistula Take down
	Cardiothoracic and Vascular	Bentall's Procedure
	Cardiothoracic and Vascular	Bidirectional Glenn Shunt
	Cardiothoracic and Vascular	Blalock Taussig (BT) Shunt
	Cardiothoracic and Vascular	Bronchopleural fistula repair
	Cardiothoracic and Vascular	Bronchoscopy and removal of FB
	Cardiothoracic and Vascular	CABG + Double Valve Replacement
	Cardiothoracic and Vascular	CABG + MWR/AVR
	Cardiothoracic and Vascular	Carotid Artery Endarterectomy
	Cardiothoracic and Vascular	Carotid Body Tumour Excision
	Cardiothoracic and Vascular	Carotid Body Tumour Redo Surgery
	Cardiothoracic and Vascular	Closed valvotomy

	Cardiothoracic and Vascular	Coarctation of Aorta repair with graft
	Cardiothoracic and Vascular	Coarctation of Aorta repair without graft
	Cardiothoracic and Vascular	Complete Atrioventricular Canal Defect Repair
	Cardiothoracic and Vascular	Complex repair for congenital heart disease
	Cardiothoracic and Vascular	Congenital AV fistula malformation Resection
	Cardiothoracic and Vascular	Conventional Elephant Trunk (CET) Procedure
	Cardiothoracic and Vascular	Coronary artery Bypass Grafting (CABG)
	Cardiothoracic and Vascular	Cox Maze IV Procedure
	Cardiothoracic and Vascular	Diaphragmatic Hernia Repair
	Cardiothoracic and Vascular	Dissected Aortic Aneurysm Repair (Open)
	Cardiothoracic and Vascular	Double Valve Replacement
	Cardiothoracic and Vascular	Endovascular Aneurysm Repair (EVAR)
	Cardiothoracic and Vascular	Esophagostomy
	Cardiothoracic and Vascular	ESRD AV Fistula Creation
	Cardiothoracic and Vascular	ESRD AV Graft Surgery
	Cardiothoracic and Vascular	Excision of Mediastinal Tumour
	Cardiothoracic and Vascular	Fontan procedure
	Cardiothoracic and Vascular	Frozen Elephant Trunk (FET) Procedure
	Cardiothoracic and Vascular	Gastrostomy/Jejunostomy
	Cardiothoracic and Vascular	Heller's myotomy
	Cardiothoracic and Vascular	Insertion of MB tube
	Cardiothoracic and Vascular	Lung decortication
	Cardiothoracic and Vascular	Mitral Valve Replacement (MVR)
	Cardiothoracic and Vascular	Mitral Valvotomy / Balloon
	Cardiothoracic and Vascular	Myocardial Biopsy
	Cardiothoracic and Vascular	Oesophageal perforation Repair
	Cardiothoracic and Vascular	Oesophagectomy
	Cardiothoracic and Vascular	Open Lobectomy
	Cardiothoracic and Vascular	Open Lung Biopsy

	Cardiothoracic and Vascular	Open Patent Ductus Arteriosus (PDA) surgery
	Cardiothoracic and Vascular	Open Pneumonectomy
	Cardiothoracic and Vascular	Open Removal of Esophageal Foreign Body
	Cardiothoracic and Vascular	Open Removal of Tracheal/Bronchial Foreign Body
	Cardiothoracic and Vascular	Other aneurysms repair
	Cardiothoracic and Vascular	Pacemaker Change of battery
	Cardiothoracic and Vascular	Partial Atrioventricular Canal Defect Repair
	Cardiothoracic and Vascular	Pericardial Catheterization
	Cardiothoracic and Vascular	Pericardial Window
	Cardiothoracic and Vascular	Pericardiectomy
	Cardiothoracic and Vascular	Pericardiocentesis
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Bypass Grafting
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Embolectomy
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Endovascular Balloon Angioplasty
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Endovascular Stenting
	Cardiothoracic and Vascular	Peripheral Vascular Disease (PAD) Vascular Amputation
	Cardiothoracic and Vascular	Pleurodesis
	Cardiothoracic and Vascular	Primary Open Pacemaker implantation
	Cardiothoracic and Vascular	Pulmonary Artery Banding
	Cardiothoracic and Vascular	Repair of Ruptured Diaphragm
	Cardiothoracic and Vascular	Simple Thoracotomy-Retained Haemothrax /Duct ligation/pleurodesis/FB removal
	Cardiothoracic and Vascular	Simple tracheal/Bronchial fistula repairs
	Cardiothoracic and Vascular	Splenorenal shunt
	Cardiothoracic and Vascular	Subfascial DVT ligation + skin graft
	Cardiothoracic and Vascular	Tetralogy of Fallot Repair
	Cardiothoracic and Vascular	Thoracic Aortic Aneurysm Repair (Open)
	Cardiothoracic and Vascular	Thoracic Endovascular Aneurysm Repair (TEVAR)
	Cardiothoracic and Vascular	Thoracotomy
	Cardiothoracic and Vascular	Tracheal Stenosis Resection and Anastomosis

	Cardiothoracic and Vascular	Tracheal/Bronchial Reconstruction
	Cardiothoracic and Vascular	Transcatheter percutaneous device PDA closure
	Cardiothoracic and Vascular	Traumatic Tracheal/Bronchial Disruption repair and anastomosis
	Cardiothoracic and Vascular	Traumatic Vascular Injury Repair
	Cardiothoracic and Vascular	Tube Thoracostomy
	Cardiothoracic and Vascular	Vascular Exposure and Safeguarding for Anterior Lumbar Interbody Fusion
	Cardiothoracic and Vascular	Venous Insufficiency Laser Ablation
	Cardiothoracic and Vascular	Venous Insufficiency Perforator Ligation
	Cardiothoracic and Vascular	Venous Insufficiency Radiofrequency Ablation
	Cardiothoracic and Vascular	Venous Insufficiency Stripping
	Cardiothoracic and Vascular	Ventricular Septal Defect Closure
	Cardiothoracic and Vascular	Vessel bypass Surgery
	Cardiothoracic and Vascular	Video Assisted Thoracoscopic Surgery (VATS) Decortication
	Cardiothoracic and Vascular	Video Assisted Thoracoscopic Surgery (VATS) Lobectomy
	Cardiothoracic and Vascular	Video Assisted Thoracoscopic Surgery (VATS) Pneumonectomy
	Ear Nose & Throat	Block dissection of the neck
	Ear Nose & Throat	Cochlea operations
	Ear Nose & Throat	Excision and reconstruction of head and neck tumours
	Ear Nose & Throat	Excision of pharyngeal diverticulum
	Ear Nose & Throat	Facial nerve decompression
	Ear Nose & Throat	Laryngectomy (Partial)
	Ear Nose & Throat	Laryngectomy (Total)
	Ear Nose & Throat	Laryngectomy with radical neck dissection
	Ear Nose & Throat	Middle ear tumour excision
	Ear Nose & Throat	Total/ Radical parotidectomy
	Ear Nose & Throat	EUA and biopsy of nasopharynx, ears, nose
	Ear Nose & Throat	Frontal sinus trephination
	Ear Nose & Throat	Maxillary Artery Ligation
	Ear Nose & Throat	MUA # nose
	Ear Nose & Throat	Removal of FB in ear or nose (paediatrics under GA)
	Ear Nose & Throat	Adenoidectomy
	Ear Nose & Throat	Adenotonsillectomy (Ts 7 As)
	Ear Nose & Throat	Cricotracheal reconstruction
	Ear Nose & Throat	Direct laryngoscopy and biopsy
	Ear Nose & Throat	Excision of submandibular gland
	Ear Nose & Throat	Frontal mucocele
	Ear Nose & Throat	Functional endoscopic sinus surgery (FESS)
	Ear Nose & Throat	Hemiglossectomy
	Ear Nose & Throat	Intranasal ethmoidectomy

	Ear Nose & Throat	Laryngocele excision
	Ear Nose & Throat	Lateral Rhinotomy (due to tumour, scars or congenital)
	Ear Nose & Throat	Maxillectomy
	Ear Nose & Throat	Myringoplasty
	Ear Nose & Throat	Myringotomy
	Ear Nose & Throat	Nasal polypectomy
	Ear Nose & Throat	Radical mastoidectomy
	Ear Nose & Throat	Rhinoplasty: Soft and bony tissue (Tumours, congenital, trauma)
	Ear Nose & Throat	Rhinoplasty: Soft tissue (Tumors, congenital, trauma)
	Ear Nose & Throat	Septoplasty (Tumors, congenital, trauma)
	Ear Nose & Throat	Simple mastoidectomy
	Ear Nose & Throat	Submucous resection of nasal septum
	Ear Nose & Throat	Superficial Parotidectomy
	Ear Nose & Throat	T.I.T. and Intranasal Antrostomy
	Ear Nose & Throat	T.I.T. and Turbinoplasty
	Ear Nose & Throat	Tonsillectomy
	Ear Nose & Throat	Transplatatal excision of Choanal atresia
	Ear Nose & Throat	Tympanoplasty
	Ear Nose & Throat	Uvulopalatopharyngoplasty
	Ear Nose & Throat	Vocal Cord lateralisation
	Interventional Radiology	Embolization/Carotid/Renal/Hepatic (no micro catheter)
	Interventional Radiology	Fallopian tube Catheterization
	Interventional Radiology	Flush Aortogram/Renal Artery/Hepatic (with embolization material and microcatheter
	Interventional Radiology	Image guided chemo port insertion (adult)
	Interventional Radiology	Image guided chemo port insertion (paediatric)
	Interventional Radiology	Image guided CVC insertion
	Interventional Radiology	Image guided dialysis catheter insertion
	Interventional Radiology	Image guided gastrotomy tube/nasojejunal tube insertion (without tube)
	Interventional Radiology	Image guided PICC line insertion
	Interventional Radiology	Internalization of biliary tube
	Interventional Radiology	Lower limb/ upper limb arteriogram bilateral
	Interventional Radiology	Lower limb/ upper limb arteriogram unilateral
	Interventional Radiology	Neuro-embolization
	Interventional Radiology	PTC/Biliary drainage
	Interventional Radiology	PTC/Biliary drainage (tubes not available)
	Interventional Radiology	PTC/Biliary drainage and stenting (stent available)
	Interventional Radiology	Ultrasound guided abdominal and peripheral biopsies

	Interventional Radiology	Ultrasound guided ascites drainage/abscess drainage
	Interventional Radiology	Ultrasound guided bilateral pleural effusion drainage
	Interventional Radiology	Ultrasound guided breast/prostate biopsies
	Interventional Radiology	Ultrasound guided unilateral pleural effusion drainage
	Interventional Radiology	Unilateral nephrostomy tube insertion
	Maxillofacial	Bilateral Open Joint Arthroplasty with condylar add-on
	Maxillofacial	Bilateral Open Joint Arthroplasty with costochondral graft+/-Temporalis fascia
	Maxillofacial	Cheiloplasty without Flap closure
	Maxillofacial	Closed reduction # Mandible/ Maxilla/MMF
	Maxillofacial	Closed Rhinoplasty
	Maxillofacial	Closure Cleft Oronasal Fistula + Bone graft
	Maxillofacial	Closure Cleft Oronasal Fistula with no Bone graft
	Maxillofacial	Closure Oro- Antral fistula without flap
	Maxillofacial	Complex nerve exploration+microsurgical repair
	Maxillofacial	Complex Salivary gland Sialedenectomy/Tumours excision+/-RMND
	Maxillofacial	ComplexFacial STR+Viin/Parotid Duct Repair
	Maxillofacial	Coronoidectomy
	Maxillofacial	Costocondral graft to Mandible post Tumour resection and implant
	Maxillofacial	Debridement of Necrotising Orofacial infections per theatre encounter
	Maxillofacial	Elevation # Zygoma: ORIF
	Maxillofacial	Elevation #Zygoma: Closed
	Maxillofacial	Enucleation Mandibular/ Maxillary cyst
	Maxillofacial	EUA Diagnostic for Oro-facial / Biopsy
	Maxillofacial	Excision of Complex facial Hemangioma/Lymphangioma
	Maxillofacial	Excision of Head / Neck lipoma >8cm
	Maxillofacial	Excision Of Oral / Facial Odontogenic tumors
	Maxillofacial	Excision of Scalp lesion +/- Wolfe graft
	Maxillofacial	Excision of Simple facial Hemangioma/Lymphangioma
	Maxillofacial	Excision/ Revision Facial scar
	Maxillofacial	Excisionof Oral/ Facial BCC + Local Flap Reconstruction
	Maxillofacial	Exploration of Submandibular/ Parotid Gland duct w/ stent
	Maxillofacial	Exploration/ removal Cranio- Facial Foreign bodies
	Maxillofacial	Exploration/ removal Cranio- Facial Foreign bodies (minor)
	Maxillofacial	Exploration/Graft orbital fracture
	Maxillofacial	Facial Soft tissue Repair
	Maxillofacial	Fractures of Upper face and cranioplasty
	Maxillofacial	Full thickness skin graft to oral defect-
	Maxillofacial	Functional Orthognathic surgeries of the Maxilla/Mandible
	Maxillofacial	Lip shave and mucosal advancement flap
	Maxillofacial	Mandibular fractures (ORIF)
	Maxillofacial	Mandibular/Maxillary Autogenous bone graft
	Maxillofacial	Mandibulectomy plus Reconstruction/Plating
	Maxillofacial	Mandibulectomy/Maxillectomy plus Microvascular Bone graft

	Maxillofacial	Maxillectomy + Obturator
	Maxillofacial	Mid face fractures
	Maxillofacial	Oral/ facial/ Catilage Onlay graft
	Maxillofacial	Panfacial fractures
	Maxillofacial	Post condylar cartilage Bilateral graft
	Maxillofacial	Reduction of Alveolar fracture closed
	Maxillofacial	Reduction of Alveolar fracture Open
	Maxillofacial	Removal of Bone plates
	Maxillofacial	Removal of branchial cyst/sinus/Ranula
	Maxillofacial	Revision Cleft Lip/ Nose
	Maxillofacial	Revision Palatoplasty- MicroVascular and Donor site graft
	Maxillofacial	Revision Palatoplasty-Rotational Flap
	Maxillofacial	Revision Vestibulopalsty + Skin graft
	Maxillofacial	RMND+ Mandibulectomy/Maxillectomy with Microvascular Free Flap
	Maxillofacial	RMND+Pedicled Flap Mandibulectomy/Maxillectomy +/- Implant
	Maxillofacial	Salivary Duct Redirection (Wilkie procedure)
	Maxillofacial	Secondary Craniofacial Reconstruction
	Maxillofacial	Segmental Osteotomy Mandible/Maxilla
	Maxillofacial	Sequestrectomy/ Decortication Mandible Maxilla
	Maxillofacial	Simple Nerve exploration + repair
	Maxillofacial	Simple Salivary Gland Sialedonectomy /Sialolithectomy
	Maxillofacial	Simple Vestibulopalsty + Skin graft
	Maxillofacial	Superficial Parotidectomy
	Maxillofacial	Temporalis/ Masseter Myotomy
	Maxillofacial	TMJ Arthroscopy
	Maxillofacial	Torticollis / Fibromatosis Colli Correction
	Neurosurgery	Acrylic Cranioplasty
	Neurosurgery	Anterior cervical fusion - AO plating/POSTERIOR DECOMPRESSION
	Neurosurgery	Application of skull calipers
	Neurosurgery	Brain abscess
	Neurosurgery	Brain Biopsy procedure
	Neurosurgery	Clipping of cerebral artery
	Neurosurgery	Craniotomy for Aneurysm
	Neurosurgery	Craniotomy for AV malformation
	Neurosurgery	Craniotomy for Intracelebral haematoma
	Neurosurgery	Craniotomy for Brain Tumour
	Neurosurgery	Elevation of depressed skull fracture
	Neurosurgery	Endoscopic Third Ventriculostomy w Choroid Plexux Cauterization (ETV/CPC)
	Neurosurgery	EVD Insertion/ICP Monitoring
	Neurosurgery	Excision of intracranial nerve lesions
	Neurosurgery	Excision of spinal tumours
	Neurosurgery	Extradural haematoma
	Neurosurgery	Laminectomy for cervical / thoracic / or lumbar spine
	Neurosurgery	Microdiscectomy
	Neurosurgery	Microsurgical nerve graft / Nerve repair / exploration/microsurgical anastomosis
	Neurosurgery	Posterior fossa surgery

	Neurosurgery	Repair of Dura for non-trauma/non cancer related
	Neurosurgery	Spina Bifida Surgery/encephalocoele
	Neurosurgery	Spinal fusions with implants II level
	Neurosurgery	Spinal fusions with implants III level
	Neurosurgery	Spinal fusions with implants IV level
	Neurosurgery	Surgical Toilet and repair of major scalp wounds under GA
	Neurosurgery	Surgical Toilet for scalp tumour under GA
	Neurosurgery	Ventriculoperitoneal (VP) shunting
	Neurosurgery	VP shunting
	Obs & Gyn	AP colpoperineorrhaphy
	Obs & Gyn	bilateral tubal ligation
	Obs & Gyn	Cerclage
	Obs & Gyn	Colposuspension + D&C
	Obs & Gyn	Cornual Wedge resection for Interstitial Ectopic Pregnancy
	Obs & Gyn	D & C + Cone biopsy
	Obs & Gyn	Diagnostic / Dye Laparoscopy
	Obs & Gyn	Dilation and Curettage for incomplete abortion/miscarriage
	Obs & Gyn	Laparotomy: Endometriosis Surgery
	Obs & Gyn	Laparotomy: Exploratory / Adhesiolysis
	Obs & Gyn	Laparotomy: Hysterectomy (Abdominal)
	Obs & Gyn	Laparotomy: Metroplasty / Uteroplasty
	Obs & Gyn	Laparotomy: Myomectomy
	Obs & Gyn	Laparotomy: Ovarian cystectomy
	Obs & Gyn	Laparotomy: Pelvic Abscess
	Obs & Gyn	Laparotomy: Ruptured ectopic pregnancy
	Obs & Gyn	Laparotomy: Salpingo – oopherectomy
	Obs & Gyn	Laparotomy: Tuboplasty
	Obs & Gyn	Laparotomy: Vaginal Hysterectomy
	Obs & Gyn	LLETZ (Loop excision)
	Obs & Gyn	Manchester Repair
	Obs & Gyn	Manual Vaccum Aspiriation
	Obs & Gyn	Marsupialisation of Batholins Cyst / Abscess
	Obs & Gyn	Obstetric Examination under GA
	Obs & Gyn	Operative Hysteroscopy: Avulsion of Endometrial Polyps
	Obs & Gyn	Operative Hysteroscopy: Biopsy
	Obs & Gyn	Operative Hysteroscopy: Endometrial Ablation
	Obs & Gyn	Operative Hysteroscopy: Resection of Submucous Fibroid
	Obs & Gyn	Operative Hysteroscopy: Retrieval of lost/ fragmented IUCD
	Obs & Gyn	Operative Hysteroscopy: Synechiolysis / Septolysis
	Obs & Gyn	Operative Laparoscopy: Adhesiolysis
	Obs & Gyn	Operative Laparoscopy: Ectopic Pregnancy
	Obs & Gyn	Operative Laparoscopy: Endometriosis Surgery
	Obs & Gyn	Operative Laparoscopy: Hysterectomy
	Obs & Gyn	Operative Laparoscopy: Myomectomy
	Obs & Gyn	Operative Laparoscopy: Ovarian Cystectomy / Drilling
	Obs & Gyn	Operative Laparoscopy: Tuboplasty
	Obs & Gyn	Ovarian cancer resection (Pelvic clearance)
	Obs & Gyn	Radical Vulvectomy
	Obs & Gyn	removal of retained placenta under GA

	Obs & Gyn	Repair of rectovaginal fistula
	Obs & Gyn	Repair of ruptured uterus/Caesarian Hysterectomy
	Obs & Gyn	Repair of vesicovaginal fistula
	Obs & Gyn	Resuturing of burst abdomen
	Obs & Gyn	Simple Vulvectomy
	Obs & Gyn	Wertheim's Hysterectomy (Oncology only)
	Ophthalmic	A/B Scan
	Ophthalmic	Ahmed Valve
	Ophthalmic	Amniotic Membrane grafting (Large)
	Ophthalmic	Anterior Chamber reformation and bandage contact lens
	Ophthalmic	Anterior Chamber Tap
	Ophthalmic	Anterior Chamber Washout
	Ophthalmic	Anterior Stromal Puncture with Bandage Contact Lens
	Ophthalmic	Anterior Vitrectomy + Lensectomy
	Ophthalmic	Biometry
	Ophthalmic	Bleb revision
	Ophthalmic	Blepharoplasty/Blepharotomy
	Ophthalmic	Bullae Rupture with Bandage Contact Lens
	Ophthalmic	Canthus Procedures (Cantholysis, Canthoplasty, Canthotomy)
	Ophthalmic	Cataract extraction SICS
	Ophthalmic	Cataract extraction with implant -Phaco ALCON
	Ophthalmic	Cataract extraction with implant-Phaco IOL
	Ophthalmic	Conjunctival DCR plus tube
	Ophthalmic	Conjunctival Excision + Major Reconstruction
	Ophthalmic	Conjunctival Incision biopsy (including histopathology)
	Ophthalmic	Corneal Tomo/Topography
	Ophthalmic	Corneal transplant + Cataract Extraction + Intraocular lens implant
	Ophthalmic	Corneal/Scleral Perforation repair
	Ophthalmic	Crosslinking
	Ophthalmic	Cyclocryotherapy
	Ophthalmic	Cyclophotocoagulation
	Ophthalmic	DCR revision
	Ophthalmic	DCR/Fistulectomy
	Ophthalmic	Ectropion repair minor and major
	Ophthalmic	Entropion repair minor and major
	Ophthalmic	Epiblepharon repair
	Ophthalmic	Evisceration + implant
	Ophthalmic	Flourescein Angiography
	Ophthalmic	Intraocular lens exchange
	Ophthalmic	Intraocular lens redialing
	Ophthalmic	Intravitreal Antibiotics/Steroid
	Ophthalmic	Intravitreal AntiFungal Injection
	Ophthalmic	Intravitreal Bevazicumab
	Ophthalmic	Intravitreal Dexamethasone implant
	Ophthalmic	Intravitreal Triamcinolone
	Ophthalmic	Iridolysis
	Ophthalmic	Lacrimal glands prolapse repair
	Ophthalmic	Lacrimal Probing and Syringing (adults)
	Ophthalmic	Lacrimal Probing and Syringing (pediatrics)

	Ophthalmic	Laser suturelysis
	Ophthalmic	Lash electrolysis
	Ophthalmic	Lid splitting +cryotherapy
	Ophthalmic	Lid tumour Excision + major reconstruction
	Ophthalmic	Lid tumour Excision biopsy
	Ophthalmic	Lid tumour Incision biopsy
	Ophthalmic	Macula Hole Surgery
	Ophthalmic	OCT Angiography
	Ophthalmic	OCT Anterior
	Ophthalmic	OCT Posterior
	Ophthalmic	Ocular prosthesis
	Ophthalmic	Orbital implant removal
	Ophthalmic	Orbitotomy (lateral/anterior)
	Ophthalmic	Penetrating Keratoplasty (PKP)
	Ophthalmic	Photodocumentation
	Ophthalmic	Posterior Victrectomy - Foreign Body
	Ophthalmic	Posterior Victrectomy - Sunk Nucleus
	Ophthalmic	Posterior Vitrectomy
	Ophthalmic	Posterior Vitrectomy + band/buckle
	Ophthalmic	Posterior Vitrectomy + band/buckle + Cataract surgery
	Ophthalmic	Posterior Vitrectomy + Cataract surgery
	Ophthalmic	Posterior Vitrectomy + Delamination + Oil
	Ophthalmic	Pre-Descemets EndothelialKeratoplasty (DALK, DSAEK, DMEK)
	Ophthalmic	Pterygium excision with conjunctival autograft
	Ophthalmic	Ptosis repair/revision
	Ophthalmic	Ptosis Surgery: Anterior levator repair/resection, frontalis sling susp
	Ophthalmic	Punctoplasty/canaliculoplasty
	Ophthalmic	Pupiloplasty
	Ophthalmic	Retinopexy (Silicon Oil/Gas Insertion)
	Ophthalmic	Scleral buckle + Cyrotherapy or Laser
	Ophthalmic	Scleral buckle removal
	Ophthalmic	Socket reconstruction minor
	Ophthalmic	Specular Microscopy
	Ophthalmic	Squint Surgeries (all)
	Ophthalmic	Surgical Peripheral Iridectomy
	Ophthalmic	Tarsorrhaphy temporary
	Ophthalmic	Trabeculectomy + Phacoemulsification cataract surgery
	Ophthalmic	Trabeculectomy + Small Incision Cataract surgery
	Ophthalmic	Trabeculectomy with Mitomycin C
	Ophthalmic	Trabeculotomy/Goniotomy
	Ophthalmic	Ultrasound Biomicrcopy (UBM)
	Ophthalmic	YAG Iridotomy
	Orthopaedic	Above elbow Amputation
	Orthopaedic	Above knees Amputation
	Orthopaedic	ACL/PCL repair
	Orthopaedic	Angle plating fracture neck of femur
	Orthopaedic	Arthrodesis Hip, Knee, Ankle or Elbow with implants
	Orthopaedic	Arthrodesis vertebral joints
	Orthopaedic	Arthroscopic Bankart repair

	Orthopaedic	Arthroscopic Synovectomy
	Orthopaedic	Arthrotomy
	Orthopaedic	Below elbow Amputation
	Orthopaedic	Below knees Amputation
	Orthopaedic	Bone grafting
	Orthopaedic	Carpal tunnel decompression
	Orthopaedic	Cervical rib resection
	Orthopaedic	Chondroplasty
	Orthopaedic	Closed manipulation of dislocations/fractures under GA
	Orthopaedic	Contracture release without flaps
	Orthopaedic	Excision head of fibula
	Orthopaedic	Excision head of radius
	Orthopaedic	Excision of Bunion (simple and bilateral under GA)
	Orthopaedic	Excision of calcaneal spurs
	Orthopaedic	Excision of intervertebral disc
	Orthopaedic	Exploration of Osteomyelitis / sequestrectomy
	Orthopaedic	External clamp application and Debridement
	Orthopaedic	Extra articular repair of joint ligament and implants
	Orthopaedic	Fasciectomy
	Orthopaedic	Femoral epiphysis reduction / fixation (SUFE)with implants
	Orthopaedic	Hallux valgus operation
	Orthopaedic	Ilizarov procedure
	Orthopaedic	Insertion of Steinmann pin
	Orthopaedic	Intra articular Surgery (large joints)
	Orthopaedic	Intra articular Surgery (medium joints)
	Orthopaedic	Intra articular Surgery (small joints)
	Orthopaedic	Joint aspirations under GA
	Orthopaedic	Meniscus repair
	Orthopaedic	Menisectomy
	Orthopaedic	Mild club foot correction
	Orthopaedic	Moderate / severe club foot correction
	Orthopaedic	Open bone biopsy
	Orthopaedic	Open reduction and internal fixation: Clavicle
	Orthopaedic	Open reduction and internal fixation: Femur
	Orthopaedic	Open reduction and internal fixation: Humerus
	Orthopaedic	Open reduction and internal fixation: Pelvis
	Orthopaedic	Open reduction and internal fixation: Radius / Ulna
	Orthopaedic	Open Synovectomy
	Orthopaedic	Operative Arthroscopy with implants
	Orthopaedic	Osteotomy and implants
	Orthopaedic	Puttiplatt procedure for shoulder dislocation / Weber Osteotomy
	Orthopaedic	Removal of hardware (plates & nails)
	Orthopaedic	Removal of hardware (wires)
	Orthopaedic	Removal of Steinmann pin
	Orthopaedic	Revision of Total Hip or Knee (Including implants)
	Orthopaedic	Rotator cuff repair
	Orthopaedic	Scoliosis correction
	Orthopaedic	Stabilisation of Patella
	Orthopaedic	Subacromial decompression

	Orthopaedic	Syndactyly / polydactyly correction
	Orthopaedic	Synovectomy: Small joints
	Orthopaedic	Tendon repair (others)
	Orthopaedic	Tendon repair: Achiles tendon/Patella tendons/Quadriceps
	Orthopaedic	Tendon transfer
	Orthopaedic	Toes and fingers Disarticulation
	Orthopaedic	Total hipreplacement (THR) (Including implants)
	Orthopaedic	Total knee replacement (TKR) (Including implants)
	Orthopaedic	Wedge tarsectomy
	Paediatric	Hirschsprung's disease procedure a) Laparotomy, biopsy, colostomy
	Paediatric	Hirschsprung's disease procedure b) Abdominoperineal pull through (Soave, Swenson)
	Paediatric	Hirschsprung's disease procedure c) Closure of Colostomy
	Paediatric	Insertion of CAPD catheter
	Paediatric	Insertion of underwater seal drainage (Paediatric under GA)
	Paediatric	Laparotomy: Intestinal resection + anastomasis
	Paediatric	Laparotomy: Intussusception
	Paediatric	Laparotomy: Tumours
	Paediatric	Laparotomy: Volvulus
	Paediatric	Rectosigmoidectomy
	Paediatric	Resection of posterior / anterior urethral valves
	Paediatric	Urethroplasty for hypospadies and epispadies
	Plastic	Advancement flaps (CANCERS/TRAUMA)
	Plastic	Cleft lip and palate repair (Unilateral/Bilateral)
	Plastic	Cleft lip repair (Unilateral/Bilateral)
	Plastic	Cleft palate repair
	Plastic	Insertion of tissue expander
	Plastic	Lip reconstruction (ONLY for RTA and Tumors)
	Plastic	Posterior Sagittal Anorectalplasty (PSARP) for anorectal malformation (High ARM)
	Plastic	Posterior Sagittal Anorectalplasty (PSARP) for anorectal malformation (Low ARM)
	Plastic	Reduction Mammoplasty (bilateral)
	Plastic	Removal of tissue expander
	Plastic	Rotation flaps
	Plastic	Skin graft <10 % TBSA
	Plastic	Skin graft > 10% TBSA
	Urological	Anastomotic urethroplasty
	Urological	Anatrophic nephrolithotomy
	Urological	Anterior exenteration and ileal conduit
	Urological	Ascending urethrography
	Urological	Aspiration of hydrocele
	Urological	Bilateral modified inguinal node dissection
	Urological	Bilateral ochidectomy
	Urological	Bilateral radical inguinal node dissection
	Urological	Bipolar fulgration of genital and perineal warts
	Urological	Bipolar fulgration of urethral warts
	Urological	Bladder augmentation surgery
	Urological	Bladder biopsy
	Urological	Bladder diverticulectomy

	Urological	Bladder injury repair
	Urological	Bladder washout
	Urological	Bricker's ileal conduit
	Urological	Combined ascending and descending urethrography
	Urological	Creation of instestinal continent catherizable pouch
	Urological	Cutaneous ureterostomy
	Urological	Direct visual urethrotomy
	Urological	Epispadia urethroplasty
	Urological	Excision and graft peyronies repair
	Urological	Excision of epididymal cyst
	Urological	Excision of patent urachus
	Urological	Female urethral diverticulectomy
	Urological	Femoral hernia repair
	Urological	Flexible cystoscopy and removal of JJ stent
	Urological	Flexible cystoscopy and surveillance for bladder cancer
	Urological	Flexible ureterorenoscopy and laser ablation of ureteric or renal neoplasm
	Urological	Flexible ureterorenoscopy and laser lithotripsy
	Urological	Flexible ureteroscopy
	Urological	Flexible urethrocystoscopy
	Urological	Fournier's gangrene necrosectomy
	Urological	Graft urethroplasty
	Urological	Hydrocelectomy
	Urological	Hypospadia urethroplasty
	Urological	Ileal replacement of ureter
	Urological	Inguinal hernia repair
	Urological	Inguinal ochidopexy
	Urological	Insertion of artificial urethral sphincter
	Urological	Insertion of female urethral sling
	Urological	Intravesical instillation of chemotherapy for bladder cancer
	Urological	JJ stent placement
	Urological	Laparoscopic ablation of renal cyst
	Urological	Laparoscopic adrenalectomy
	Urological	Laparoscopic donor nephrectomy
	Urological	Laparoscopic ochidopexy
	Urological	Laparoscopic partial nephrectomy
	Urological	Laparoscopic pyelolithotomy
	Urological	Laparoscopic pyeloplasty
	Urological	Laparoscopic radical nephrectomy
	Urological	Laparoscopic radical nephroureterectomy
	Urological	Laparoscopic radical ochidectomy
	Urological	Laparoscopic radical prostatectomy
	Urological	Laparoscopic simple nephrectomy
	Urological	Laparoscopic ureterolithotomy
	Urological	Laparoscopic varicocelectomy
	Urological	Laser cystolithotripsy
	Urological	Laser urethrolithotripsy
	Urological	Laser urethrotomy
	Urological	Mainz II urinary diversion
	Urological	Meatoplasty

	Urological	Micturating cystourethrography
	Urological	Mitrofanoff's appendicovesicostomy
	Urological	Open adrenalectomy
	Urological	Open cystolithotomy
	Urological	Open decortication of renal cyst
	Urological	Open donor nephrectomy
	Urological	Open drainage of renal abscess
	Urological	Open nephrolithotomy
	Urological	Open partial nephrectomy
	Urological	Open pyelolithotomy
	Urological	Open pyeloplasty
	Urological	Open radical nephrectomy
	Urological	Open radical nephrectomy with IVC thrombectomy
	Urological	Open radical nephroureterectomy with bladder cuff
	Urological	Open radical prostatectomy
	Urological	Open Renorrhaphy
	Urological	Open simple nephroureterectomy
	Urological	Open simple prostatectomy
	Urological	Open suprapubic catheterization
	Urological	Open ureterolithotomy
	Urological	Open varicocelectomy
	Urological	Orthotopic neobladder reconstruction
	Urological	Partial cystectomy
	Urological	Partial glansectomy
	Urological	Partial penectomy
	Urological	Pelvic fracture urethral defect (PFUD) urethroplasty
	Urological	Percutaneous ablation of renal cyst
	Urological	Percutaneous cystolithotripsy
	Urological	Percutaneous drainage of renal abscess
	Urological	Percutaneous nephrolithotomy (PCNL)
	Urological	Percutaneous nephrostomy
	Urological	Percutaneous prograde JJ stenting
	Urological	Percutaneous prograde nephrostogram
	Urological	Percutaneous removal of retained JJ stent
	Urological	Percutaneous resection and ablation of urothelial tumors
	Urological	Percutaneous suprapubic catheterization
	Urological	Pericatheter urethrography
	Urological	Perineal urethrostomy
	Urological	Plication Peyronie's repair
	Urological	Post circumcision repair
	Urological	Posterior urethral valve ablation
	Urological	Prostate biopsy
	Urological	Proximal shunt of priapism
	Urological	Radical cystoprostatectomy and ileal conduit INC ICU stay
	Urological	Radical inguinal ochidectomy
	Urological	Radical penectomy with perineal urethrostomy
	Urological	Radical urethrectomy
	Urological	Recipient kidney transplantation
	Urological	Repair of bladder extrophy
	Urological	Repair of colovesical fistula

	Urological	Repair of cystocele with mesh
	Urological	Repair of fracture penis
	Urological	Repair of ligated ureter
	Urological	Repair of penile injury
	Urological	Repair of ureter injury
	Urological	Repair of urethral injury
	Urological	Retrograde pyelography
	Urological	Retroperitoneal lymph node dissection
	Urological	Rigid Cystoscopy and Removal of JJ stent
	Urological	Robotic radical prostatectomy
	Urological	Scrotal exploration and ochidopexy of testicular torsion
	Urological	Semi rigid ureteroscopy and laser ureterolithotripsy
	Urological	Semi rigid ureteroscopy and removal of retained JJ stent
	Urological	Semirigid ureteroscopy
	Urological	Sentinel inguinal node biopsy
	Urological	Simple cystectomy and ileal conduit
	Urological	Simple nephrectomy
	Urological	Simple ochidectomy
	Urological	Testicular/penile biopsy
	Urological	Total penectomy with perineal urethrostomy
	Urological	Trasurethral resection of prostate (TURP)
	Urological	Trauma nephrectomy
	Urological	Ultrasound guided biopsy of renal masses
	Urological	Unilateral modified inguinal node dissection
	Urological	Unilateral radical inguinal node dissection
	Urological	Ureter reimplantation
	Urological	Ureteral dilation
	Urological	Ureterolysis
	Urological	Ureteroscopy and laser ablation of ureteric tumor
	Urological	Ureteroscopy and laser incision of ureter stricture
	Urological	Ureteroureterostomy
	Urological	Urethral dilation
	Urological	Urethroscopy and ablation of bleeding prostatic hemangioma
	Urological	Vesicostomy
LOT 26 -SPECIALIZED LABORATORY SERVICES FOR CANCER DIAGNOSIS AND TREATMENT		Bone Marrow Aspiration and Biopsy
		Coombs Test (Direct and Indirect)
		Hemoglobin Electrophoresis
		Flow Cytometry for Immunophenotyping
		Insulin Assay
		Cortisol Assay
		Parathyroid Hormone Assay
		Vitamin D Levels
		Homocysteine Levels
		Serum Osmolality
		Protein Electrophoresis (Serum and Urine)
		Adrenal Function Tests (e.g., ACTH Stimulation Test)

		Dynamic Function Tests (e.g., Glucose Tolerance Test for Acromegaly)
		Gonadotropin Levels (LH, FSH)
		Sex Hormone Binding Globulin (SHBG)
		ANA (Antinuclear Antibody)
		Anti-ds DNA (Anti-double- stranded DNA Antibody)
		ANCA (Antineutrophil Cytoplasmic Antibodies)
		IgA (Immunoglobulin A)
		IgG (Immunoglobulin G)
		IgM (lmmunoglobulin M)
		IgE (Immunoglobulin E)
		Allergy Testing (e.g., RAST, Specific IgE)
		Complement Levels (C3, C4)
		HLA Typing
		Polymerase Chain Reaction (PCR) for Pathogen Detection
		Mycobacterial Culture and Sensitivity
		Fungal Culture and Sensitivity
		Stool for Clostridium difficile Toxin
		Urine Protein Electrophoresis
		24-Hour Urine Collection for Specific Analytes (e.g., cortisol,catecholamines)
		Factor VIII
		Factor IX
		D-Dimer
		Thrombophilia Screen (e.g., Protein C, Protein S, Antithrombin)
		Alpha-Fetoprotein (AFP)
		CA 19-9 (Pancreatic Cancer)
		Beta-HCG (Human Chorionic Gonadotropin)
		BRCA1 and BRCA2 Gene Testing
		LDH (Lactate Dehydrogenase) for Hematologic Malignancies
		Serology for Parasitic Infections (e.g., Toxoplasma, Echinococcus)
		Thick and Thin Blood Smear for Malaria
		Stool Antigen Tests (e.g., Giardia, Entamoeba)

NOTE: The successful service provider(s) will be required to provide the services listed, against each of the lots using the provided minimum equipement specifications including the provision of the consumables and reagents required for the provision of the service.

List of Itemized Equipment, Consumables, and Reagents for the Services

LOT 24	SERVICE	EQUIPMENT	CONSUMABLES/REAGENTS/IMPLANTS
Cancer diagnostic and therapeutics	**1. MRI**	MRI (1.5T)	**Contrast & Injection Consumables** • Gadolinium-based contrast agents (GBCAs) • Pre-filled contrast syringes / injector syringes

			• High-pressure tubing for power injectors • Normal saline (flush solution) • IV cannulas (various gauges) • Extension lines and 3-way stopcocks • Alcohol swabs and antiseptic wipes **Patient Preparation Consumables** • Disposable patient gowns • Earplugs / headphones covers (noise protection) • Skin markers (MRI-safe) • Disposable ECG electrodes (MRI-compatible for cardiac MRI) • Patient identification wristbands **Infection Prevention & Hygiene** • Disposable gloves (latex/nitrile) • Face masks • Hand sanitizers • Disinfectant wipes/solutions (MRI-safe, non-corrosive) • Disposable couch/bed sheets • Cleaning cloths **Positioning & Comfort Items** • Disposable pillow covers • Sheets and blankets • Positioning pads/cushions • Immobilization straps (where applicable)
	2. Radiation Oncology	External Beam Radiotherapy • Linear Accelerators (LINACs) – for 3D-CRT, IMRT, VMAT, IGRT • Cobalt-60 Teletherapy Units (older / low-resource	Patient-Related Consumables • Skin markers • Radio-opaque markers • Fiducial markers (gold seeds) • Contrast media (CT/MRI) • Disposable immobilization sheets • Medical tapes • Skin care products (radiation dermatitis

		settings)
		• CyberKnife® / Robotic Radiosurgery Systems
		• Tomotherapy Units
		• Proton Therapy Systems (cyclotron/synchrotron)
		• Stereotactic Radiosurgery (SRS) Systems – Gamma Knife®
		
		Brachytherapy Equipment
		
		• High-Dose Rate (HDR) Brachytherapy Afterloaders
		• Low-Dose Rate (LDR) Brachytherapy Systems
		• Pulsed Dose Rate (PDR) Systems
		• Applicators & Catheters
		  ○ Tandem & ovoids (gynecologic)
		  ○ Interstitial needles
		  ○ Prostate seed applicators
		  ○ Vaginal cylinders
		• Shielded Storage Containers
		• Radioactive Sources
		  ○ Iridium-192
			creams)
			
			Brachytherapy Consumables
			
			• Single-use applicators
			• Guide wires
			• Catheters
			• Sterile drapes
			• Source transfer tubes
			
			Dosimetry Consumables
			
			• Radiographic films
			• Dosimetry gels
			• TLD chips
			• OSL badges
			• Detector cables (limited-life)
			
			Infection Control
			
			• Sterile gloves
			• Gowns
			• Face masks
			• Disinfectants
			• Alcohol swabs

		○ Cesium-137 ○ Iodine-125 ○ Palladium-103 Treatment Planning & Imaging Equipment • CT Simulator • MRI (for soft-tissue delineation) • PET-CT Scanner • Treatment Planning System (TPS) Workstations • Image-Guided Radiotherapy (IGRT) Systems ○ Cone Beam CT (CBCT) ○ Portal Imaging Devices (EPID) • Laser Positioning Systems Patient Positioning & Immobilization Equipment • Carbon fiber treatment couches • Thermoplastic masks (head & neck) • Vacuum immobilization bags • Breast boards • Wing boards • Knee & foot	

		supports
		• Bite blocks
		• Stereotactic frames
		
		Dosimetry & Quality Assurance Equipment
		
		• Ionization Chambers
		• Electrometers
		• Solid-state Detectors
		• Phantoms
		  o Water phantoms
		  o Anthropo morphic phantoms
		• Film Dosimetry Systems
		• TLD / OSL Dosimeters
		• Beam Scanning Systems
		• Radiation Survey Meters
		
		Radiation Safety & Protection Equipment
		
		• Lead aprons
		• Lead thyroid shields
		• Lead glasses
		• Lead barriers & shielding doors
		• Personal dosimeters (TLD badges)
		• Area radiation monitors
		• Warning lights & interlock systems
		• Emergency source retrieval	

		tools 8. IT & Support Systems • Oncology Information System (OIS) • Record & Verify Systems • PACS integration • Treatment delivery software • Backup power systems (UPS & generators)	

	3. Nuclear Medicine	Imaging Systems
		
		• Gamma Camera (Scintillation Camera)
		  ○ Single-head, dual-head, or triple-head
		• SPECT Camera (Single Photon Emission Computed Tomography)
		• SPECT/CT System
		• PET Scanner (Positron Emission Tomography)
		• PET/CT System
		• PET/MRI System (advanced centers)
		
		Radiopharmacy & Hot Lab Equipment
		
		• Dose Calibrator
		• Radioisotope Elution System
			Radiopharmaceuticals
			
			Diagnostic Radiopharmaceuticals
			
			• Technetium-99m (Tc-99m) labeled compounds:
			  ○ MDP (Bone scans)
			  ○ MIBI (Cardiac imaging)
			  ○ DTPA / MAG3 (Renal scans)
			  ○ HIDA agents
			• Fluorine-18 (FDG) – PET scans
			• Iodine-123
			• Gallium-67
			• Thallium-201
			
			Therapeutic Radiopharmaceuticals
			
			• Iodine-131
			• Lutetium-177
			• Yttrium-90
			• Samarium-153
			• Radium-223
			
			Radiopharmaceutical

		(e.g. Tc-99m generator) • Shielded Fume Hood / Laminar Flow Hood • Lead-lined Hot Cells • Shielded Syringe and Vial Containers • Automatic Radiopharmaceutical Dispensing System • Refrigerator (radioisotope-dedicated) Radiation Safety & Monitoring • Geiger-Müller Survey Meter • Contamination Monitors • Personal Dosimeters (TLD, OSL, electronic) • Area Radiation Monitors • Lead Shields, Lead Glass, Lead Bricks • Waste Storage Containers (shielded) IT & Image Processing • Nuclear Medicine Workstations • Image Processing & Quantification Software • PACS & RIS Integration • Dose Management	Preparation Consumables • Cold kits (lyophilized reagent kits) • Sterile syringes (various sizes) • Shielded syringes • Vials and shielded vials • Needles and cannulas • Alcohol swabs • Saline for injection • Labels (radioactive warning labels) Patient-Related Consumables • IV cannulas • Normal saline • Contrast agents (for SPECT/CT or PET/CT) • Disposable gloves • Face masks • Drapes and gauze • Absorbent pads • Patient positioning aids Quality Control Consumables • Chromatography strips (ITLC-SG) • Solvents for radiochemical purity testing • pH indicator strips • Calibration sources • Test phantoms (flood phantoms, PET phantoms) Radiation Protection Consumables • Disposable protective gowns • Shoe covers • Lead syringe shields (consumable wear items) • Contamination wipes

		Software	• Radioactive waste bags • Sharps containers (shielded)
LOT 25	**SERVICE**	**EQUIPMENT**	**CONSUMABLES/REAGENTS/IMPLANTS**
Specialized Surgical Services	**1. Cardiology**	Perfusion & Circulation • Heart-lung machine (cardiopulmonary bypass machine) — supports circulation & oxygenation during surgery. • Oxygenator and tubing sets — oxygenate blood outside the body. • Hemoconcentrator — concentrates the patient's blood during bypass. • Cardioplegia delivery system — delivers solution to arrest the heart safely. Support Devices • Intra-aortic balloon pump (IABP) — temporarily supports cardiac output. • Mechanical circulatory support (e.g., Impella devices) — short-term ventricular support during high-risk procedures or	Consumables • ACT cartridges (for anticoagulation testing). • Surgical sutures and specialty cardiac suture packs. • Disposable tubing sets (e.g., for suction, perfusion circuits). Surgical Consumables & Implantables Bypass & Cannulation • Aortic and venous cannulae (various sizes). • Double-stage cannulae and angled cannulae. Implants & Prosthetics • Composite aortic valves and tissue valves (for valve replacement). • Sternum closure wires. Interventional Consumables & Support Items Fluid & Pressure Control • Manifolds (2-way/3-way) for controlled contrast and drug delivery. • High-pressure tubing sets compatible with contrast injectors. • Pressure monitoring lines and connection kits. Additional Essentials

		shock. Imaging & OR Support • Fluoroscopy/C-arm units (often in hybrid ORs) for real-time imaging. • Surgical tables with imaging-compatible accessories (radiolucent extensions, arm boards). Cardiac Surgery Instruments • Vascular clamps (arterial/venous clamps) and forceps for vessel control/manipulation. • Hemostatic forceps and needle holders for suturing and bleeding control. • Scissors (e.g., coronary artery scissors). • Sternotomy instruments and sternal closure sets (including sternum wires). • Retractors and tissue handling tools optimized for deep thoracic access. Interventional Cardiology — Cath Lab Equipment & Consumables	• Transseptal needles (for left atrial access). • Extension lines, stopcocks, and connectors. • Disposable diagnostic kits (contrast syringes, flush syringes). Other Essential Consumables • Sterile drapes, gowns, gloves, masks, and PPE. • Syringes and IV cannulae (various sizes). • Personal protective equipment and sterile field supplies. • Contrast media (radiopaque agents for imaging). (Standard cath lab item) • Suction systems and canisters. (General OR equipment)

		Catheterization Lab Systems • Cath lab imaging system with high-resolution fluoroscopy. • Pressure and flow monitoring systems. Guidance & Navigation • Guidewires — for navigating vasculature. • Introducer sheaths — access ports into the artery/vein. • Diagnostic and guiding catheters — various shapes/sizes. • Balloon catheter systems — expand narrowed vessels during angioplasty. Stents • Bare-metal stents — structural scaffolds for arteries. • Drug-eluting stents (DES) — reduce restenosis risk. Atherectomy & Thrombectomy • Atherectomy	

		devices — remove plaque from vessel walls. • Thrombectomy systems — aspirate clots. Supporting Clinical & Monitoring Equipment Diagnostic & Monitoring Systems • ECG/EKG machines with electrodes & cables. • Echocardiography (echo) systems — transthoracic, transesophageal (TEE). • Holter and event monitors for long-term rhythm tracking. • Defibrillators (manual and AED). • Blood pressure and hemodynamic monitors.	
	2. Specialized cardiothoracic & vascular	Core Surgical Equipment (Capital & Large Devices) Cardiopulmonary & Life-Support Systems • Heart-lung (cardiopulmonary bypass) machine — for open heart	Sterile Operating Consumables • Sterile drapes, gowns, gloves, caps, masks – protect patient & staff. • Sutures & staplers – absorbable/non-absorbable sutures (including microvascular sizes), and surgical staples for closure. • Cannulas & lines: IV

		procedures. • Oxygenator (often disposable membrane component of bypass circuit) for gas exchange during cardiopulmonary bypass. • ECMO (Extracorporeal Membrane Oxygenation) – for extended cardiopulmonary support. • Cell saver / blood recovery system — recovers and returns patient's blood during heavy bleeding cases. • Ventilators (ICU and OT monitored). • Intra-aortic balloon pump (IABP) — for circulatory support. Operating Theatre Support • Central monitoring systems for ECG, pressures, SpO_2, invasive lines, etc. • High-intensity surgical lights and OT tables with tilt/adjust functions. • Anesthesia	cannulas, arterial lines, central venous catheters. • Endotracheal tubes & breathing circuits – anesthesia airway management. • Suction tubing and Yankauer tips – surgical field fluid management. • Hemostatic agents & sponges – assist bleeding control. Interventional & Vascular Supplies • Guidewires, balloons, stents (including drug-eluting stents) – for angioplasty/endovascular interventions. • Catheters/introducers – various sizes for access, placement, drainage. • Contrast injection sets – used during imaging-guided intervention. Ancillary Equipment & Consumables Essential monitoring & emergency gear • Multi-parameter monitors (ECG, NIBP, SpO_2, $EtCO_2$). • Defibrillators & pacing pads. • Infusion pumps / syringe drivers – precise drug/fluid delivery. • Crash cart with emergency drugs & airway tools. Sterilisation & Instrument care • Autoclave trays & containers, instrument sterilisation wraps. • Instrument trays and

		workstation with ventilator, vaporizers, and monitoring. Surgical Instrument Sets Cardiothoracic Surgical Instruments • Sternal saw / oscillating bone saw – to open chest. • Sternal retractors (e.g., Rultract, Finochietto) – spread chest. • Needle holders (standard and fine Castro types) – suturing vessels & grafts. • Forceps & picks: o DeBakey atraumatic vascular forceps – gentle tissue handling. o Gerald, Russian forceps – fine tissue grasping. • Scissors: coronary scissors, Potts scissors (angled), Metzenbaum – precise cutting. • Retractors & cardiac hooks – surgical exposure of heart & vessels. Vascular Surgery Instruments	organizers – easy access during procedures.

		• Vascular clamps: Satinsky, Cooley, Bulldog clamps – control blood flow. • Vessel dilators & probes – facilitate lumen access. • Tibbs arterial cannula set – for arterial access in vascular cases. • Fine dissecting instruments – Microscissors, Iris scissors, fine forceps. • Sutures & suture catchers – for precise vessel closure.	
	3. Specialized urology	Core Equipment • Cystoscopes (rigid and flexible) – for bladder and urethral inspection. • Ureteroscopes & nephroscopes – for ureter and kidney access in stone and other interventions. • Endovision systems (light source, camera heads, monitors) – for high-definition visualization. • Bladder scanners – point-of-care ultrasound for residual urine volume	Catheters & Drainage • Foley/indwelling urinary catheters (various sizes) – for bladder drainage. • Straight/intermittent catheters • Suprapubic catheters • Urine drainage bags & leg bags • Sterile catheter insertion kits Endoscopic Consumables • Access sheaths • Guidewires (hydrophilic, nitinol) • Dilatation balloons • Retrieval baskets for stone capture • Laser fibers (for lithotripsy) • Connecting tubes, clamps, irrigation syringes Sterilization & Field

		assessment. Endoscopic & Scope-based Tools • Biopsy forceps and graspers • Stone baskets, stone graspers and extraction forceps • Guide sheaths and bridges • Dilators and urethral bougies Open & General Surgical Tools • Urethral dilators • Needle holders and scissors (e.g., Metzenbaum, Potts) • Retractors (bladder and prostate) • TURP (transurethral resection) instrument sets • Prostatectomy and urethrotome instruments • Catheter introducers • Standard surgical instruments (scalpels, clamps, forceps) Specialized Urology Procedure Equipment • Lithotripters (pneumatic or laser, e.g., holmium:YAG fibers) – for stone	Maintenance • Sterile drapes and gloves • Sterile lubricating jelly • Antiseptic solutions and saline irrigation sets • Specimen containers/traps Monitoring & OR Support • Pulse oximeter, ECG monitors • Suction & fluid management systems • Sterile surgical gowns/masks

		fragmentation • Resectoscopes – for transurethral resections (e.g., TURP) • Endoscopy fluid management/in sufflators – for irrigation control • Artificial urinary sphincter devices – implantable devices for incontinence management	
	4. Specialized maxillofacial	Surgical & Operating Room Equipment • Operating table with head & neck support • Surgical overhead lights / head-mounted light • Anesthesia machine with ventilator • Patient monitors (ECG, SpO_2, NIBP, $EtCO_2$) • Suction machines (primary & backup) • Electrosurgical unit (diathermy) • Tourniquet (for graft sites if needed) Maxillofacial Surgical Instruments • Basic surgical instrument set	Sterile Supplies • Sterile surgical gloves • Surgical drapes & gowns • Face masks, caps • Sterile towels • Sterile gauze & swabs • Surgical blades (#10, #11, #15) Sutures & Fixation Consumables • Absorbable sutures (Vicryl, Chromic catgut) • Non-absorbable sutures (Nylon, Prolene) • Bone wax • Stainless steel wires • Intermaxillary fixation (IMF) wires / elastics • Arch bars Fixation & Implant Consumables • Titanium plates (miniplates, reconstruction plates) • Titanium screws (various lengths) • Resorbable plates & screws (pediatric cases) • Dental implants (where

		(scalpels, forceps, needle holders, scissors) • Mouth gags (Dingman, Boyle-Davis) • Cheek retractors (Langenbeck, Minnesota) • Periosteal elevators (Freer, Molt) • Bone rongeurs • Osteotomes and chisels • Bone files • Mallete • Wire twisters & cutters • Needle drivers (long) • Maxillofacial retractors Power & Bone Handling Equipment • High-speed surgical drill system • Drill handpieces & foot pedal • Drill bits (various sizes) • Bone saw (reciprocating or oscillating) • Irrigation system (saline cooling) Fixation & Reconstruction Equipment • Titanium plate and screw system • Miniplate bending instruments • Screwdrivers	applicable) Anesthesia & Airway Consumables • Endotracheal tubes (nasal & oral) • Laryngeal masks • Suction catheters • IV cannulas • Syringes & needles • Oxygen tubing • Local anesthetic agents Wound Care & Post-Op Items • Saline irrigation fluids • Antiseptic solutions (povidone-iodine, chlorhexidine) • Pressure dressings • Elastoplast & bandages • Antibiotic ointments • Ice packs Dental & Oral Procedure Consumables • Dental burs • Impression materials • Temporary splints • Bite blocks • Mouth props

		(manual or powered) • Plate cutters • Depth gauge • Bone graft harvesting set • Microvascular instrument set (for free flaps) Imaging & Navigation (Advanced Centers) • C-arm fluoroscopy • 3D navigation systems • Intraoperative imaging system	
	5. Specialized orthopaedic	General Theatre Equipment • Operating table with traction attachments • C-arm fluoroscopy machine • Anaesthesia machine & patient monitors • Surgical lights • Suction machines • Tourniquet machie (pneumatic) Orthopaedic Instrument Sets • Basic orthopaedic instrument set (periosteal elevators, bone levers, bone hooks)	Implants • Bone plates (DCP, LC-DCP, LCP) • Screws (cortical, cancellous, locking) • Intramedullary nails • K-wires • Steinmann pins • External fixator pins • Joint prostheses (hip, knee, shoulder) • Spinal implants (pedicle screws, rods) Bone & Soft Tissue Materials • Bone cement (PMMA) • Antibiotic-loaded cement • Bone grafts (autograft/allograft/synthetic) • Bone substitutes (calcium sulfate/phosphate) Wound Closure & Dressing • Sutures (Vicryl, Nylon, Prolene)

		• Bone holding forceps (Lane, Lowman) • Reduction forceps • Osteotomes & chisels • Mallets (nylon/metal) • Rongeurs (Kerrison, Lempert) • Bone nibblers • Bone curettes • Hand rasps & files Power & Cutting Equipment • Orthopaedic drill machine • Drill bits (various sizes) • Reamers (acetabular, intramedullary) • Oscillating saw • Gigli saw • Burrs (high-speed) Fracture Fixation Equipment • Plate benders • Screwdrivers (manual & powered) • Depth gauges • Tap sets • Wire tighteners • K-wire drivers • External fixator systems Joint Replacement Equipment • Joint replacement	• Skin staples • Staple removers • Sterile dressings • Pressure bandages • Plaster of Paris (POP) • Fiberglass casting material • Padding (cotton wool, synthetic) Disposable Surgical Supplies • Sterile drapes • Gowns • Gloves • Surgical blades • Syringes & needles • Suction tubing • Diathermy tips • Irrigation fluids (normal saline) Infection Control & Support Items • Antiseptic solutions (chlorhexidine, povidone-iodine) • Antibiotics (peri-operative prophylaxis) • Tourniquet cuffs • Drain tubes (Redivac, Hemovac) Orthopaedic Ward & Procedure Room Items • Traction weights & pulleys • Crutches, walkers, frames • Splints & braces • Continuous Passive Motion (CPM) machines • Backslabs

		instrument trays: o Hip o Knee o Shoulder • Alignment jigs • Trial components • Cement guns & mixers Arthroscopy Equipment • Arthroscopy tower o Camera o Light source o Monitor • Arthroscope (2.7mm, 4.0mm) • Shaver system • Fluid pump • Radiofrequency probe	
	6. Specialized neurosurgery	Operating Room & Visualization • Operating microscope (e.g., Zeiss, Leica) • Neuro-endoscope & endoscopy tower • High-definition monitors • Surgical headlights • Neuronavigation system (image-guided surgery) • Intraoperative MRI / CT (where available) • C-arm fluoroscopy Patient Positioning &	Consumables & Single-Use Items Sutures & Closure • Absorbable & non-absorbable sutures • Dural sutures • Skin staples • Staple removers Hemostasis & Dural Repair • Hemostatic agents (Surgicel, Gelfoam, Floseal) • Bone wax • Dural substitutes (synthetic or collagen) • Fibrin sealants Drains & Catheters • External ventricular drains (EVD) • Lumbar drains

		Safety • Neurosurgical operating table • Mayfield skull clamp / head fixation system • Headrests (horseshoe, gel pads) • Pressure-relief pads • Patient warming system Cutting & Bone Work • High-speed cranial drill system • Drill bits & perforators • Craniotome • Ultrasonic bone scalpel • Kerrison rongeurs • Bone punches Tissue Handling & Dissection • Bipolar electrosurgical unit • Micro-dissectors • Micro-scissors • Micro-forceps • Ultrasonic aspirator (CUSA) • Laser system (selected cases) Hemostasis & Monitoring • Bipolar forceps • Electrosurgical generator • Neurophysiological monitoring system (EEG,	• Subgaleal drains • Suction drains Implants & Fixation • Cranial plates & screws (titanium) • Burr hole covers • Aneurysm clips • Spinal cages • Pedicle screws & rods Monitoring & Access • ICP transducers • EEG electrodes • EMG needles • Arterial and central venous lines --- Neuro-Anesthesia & ICU Support Items • Endotracheal tubes • Anesthesia circuits • Infusion pumps • Ventilators • Syringes & IV cannulas • Sedation & neuro-protective drugs --- Sterile & Theatre Consumables • Sterile drapes & gowns • Surgical gloves • Sterile covers for microscope & C-arm • Suction tubing & canisters • Irrigation fluids (normal saline, Ringer's)

		EMG, SSEPs) • Intracranial pressure (ICP) monitor Neurosurgical Instruments (Reusable Sets) Craniotomy Set • Scalpels & handles • Periosteal elevators • Retractors (Leyla, Greenberg) • Dural hooks • Bone elevators Microsurgical Instrument Set • Micro needle holders • Micro forceps • Aneurysm clips & appliers • Temporary clips Spine Surgery Instrument Set • Pedicle screw system • Rod benders & holders • Disc rongeurs • Nerve root retractors	
	7. Specialized ENT	Major Surgical Equipment • Operating microscope (high-magnification)	Consumables • Sterile gloves, gowns, drapes • Ear specula (disposable or autoclavable) • Sterile normal saline &

		• Ear microsurgical instrument sets • High-speed otologic drill with attachments • Suction units (variable vacuum) • Sterile headlight or surgical headlights • Tympanoplasty/ endaural sets • Ossicular chain prosthesis tools □ Instruments • Microsurgical forceps (various fine tips) • Micro scissors • Canal speculums (various sizes) • Curettes (middle ear & canal) • Picks & hooks • Rosen needle • Suction tips (Frazier, fine) Eye (Ophthalmic) Surgery & Procedures Major Surgical Equipment • Ophthalmic operating microscope • Phacoemulsification machine (for cataract surgery) • Vitrectomy machine • Laser systems (YAG, SLT, PRP) • Ophthalmic ultrasound (A-	irrigation fluids • Hemostatic agents (e.g., Gelfoam) • Bone wax • Sutures (vicryl, nylon; micro sizes) • Sterile cottonoids, sponges • Packing materials (e.g., Merocel) • Antibiotic ear drops • Tympanostomy tubes & grommets Consumables (Eye) • Sterile ophthalmic drapes • Eye irrigation fluid (BSS) • Ophthalmic viscoelastic devices • Sutures (10-0 nylon, etc.) • Intraocular lenses (IOLs) • Disposable blades • Sterile syringes/needles for anesthesia • Antibiotic/steroid eye drops • Silicone oil, gas (e.g., C3F8, SF6 for retina) Consumables (Nose) • Endoscope sheaths/covers • Sterile saline irrigation • Nasal packing (absorbable & non-absorbable) • Hemostatic agents (oxidized cellulose, Surgicel) • Throat packs • Sutures (vicryl, chromic) Dressing materials

		scan/B-scan) □ Instruments • Eyelid speculum • Corneal shields • Keratomes & crescent knives • Micro scissors, forceps (various) • Needle holders (ophthalmic) • Vitreoretinal forceps • Cryo probes (when applicable) Nose (Rhinology & Endoscopic Nasal) Surgery Major Surgical Equipment • Endoscopic tower (camera + monitor + light source) • Sinus endoscopes (0°, 30°, 45°) • Foot-pedal-controlled microdebrider • Suction cautery system • Powered instruments set □ Instruments • Nasal speculum • Blakesley forceps • Through-cutting forceps • Sickle knives • Ballenger swivel knife • Freer elevators • Suction tips	

		(Yankauer, Frazier) General OR Equipment Shared Across ENT & Ophthalmic Support Equipment • Electrosurgical unit (monopolar/bipolar) • Suction & smoke evacuator • Sterilization trays & indicators • Procedure carts • Patient positioning aids □ Consumables • Sterilization wraps & indicators • Surgical marking pens • Antiseptic prep solutions • IV fluids & tubing • Oxygen & anesthesia supplies • Syringes, infusion sets • Biohazard waste bags Office/Minor Procedure Consumables (for clinic ear tube placements, foreign body removals, office rhinolaryngoscopy) • Disposable ear	

		curettes • Alligator forceps • Suction tips (disposable) • Local anesthetic & needles • Topical anesthetic sprays/gels • Diagnostic otoscope/ophthalmoscope tips • Specula sizes • Sterile gauze, swabs	
	8. Specialized OBS/GYNAE	Theatre Equipment • Operating table with lithotomy attachments • Overhead theatre lights • Anesthesia machine with monitors • Multiparameter patient monitor • Suction machines (electric/manual) • Electrosurgical unit (diathermy) • Infusion pumps & syringe pumps • Ultrasound machine (portable / transabdominal / transvaginal) • Fetal monitor (CTG machine) • Baby resuscitaire / neonatal warmer • Instrument trolleys & Mayo stands	OB/GYN Consumables Sterile Consumables • Surgical gloves (sterile & non-sterile) • Drapes & gowns • Swabs & gauze • Sutures (Vicryl, Chromic, PDS, Nylon) • Needles & blades • Syringes & IV cannulas • Catheters (Foley) • Suction tubing • Urine bags Obstetric Consumables • Oxytocin • Misoprostol • Magnesium sulphate • Tranexamic acid • IV fluids • Neonatal suction catheters • Cord clamps Gynaecology Consumables • Pap smear brushes & slides • Endometrial sampling devices • IUCDs & implants

		Obstetric Equipment (Labour & Delivery) Delivery & Labour • Delivery beds • Dopplers / Fetoscopes • Episiotomy scissors • Umbilical cord clamps • Vacuum extractor (Ventouse) • Forceps (Wrigley, Simpson) • Perineal repair instruments • Manual vacuum aspiration (MVA) kits Caesarean Section Equipment • C-section instrument set • Abdominal retractors (Deaver, Doyen) • Bladder retractor • Sponge holding forceps • Needle holders • Suction tubing & Yankauer • Baby resuscitation equipment Gynaecological Surgical Equipment Open & Minor Procedures • Gynecology instrument set • Vaginal speculums	• Contraceptive supplies • Lubricating jelly • Antiseptic solutions

		(Cusco, Sims)
		• Uterine sound
		• Tenaculum forceps
		• Dilators (Hegar, Pratt)
		• Curettes (sharp & blunt)
		• Biopsy forceps
		• Polypectomy forceps
		
		Endoscopic & Advanced Procedures
		
		• Laparoscopy tower
		  ○ Camera, light source, monitor
		  ○ CO_2 insufflator
		• Laparoscopic instruments (graspers, scissors, trocars)
		• Hysteroscope
		• Endometrial ablation systems
		• Morcellator (where applicable)
		
		Diagnostic & Monitoring Equipment
		
		• Pregnancy test kits
		• Colposcope
		• Pap smear collection tools
		• Ultrasound probes (TVS & TAS)
		• Blood pressure machines
		• Fetal heart rate monitors
		• Weighing scales	

		(mother & baby) Emergency & Support Equipment • Oxygen cylinders / concentrators • Bag-valve masks (adult & neonatal) • Defibrillator • Emergency drug trolley • Blood transfusion sets	

	9. Specialized Paediatric	General Surgical Instruments (Paediatric Sizes)
		
		• Paediatric surgical instrument sets
		  ○ Forceps (atraumatic, micro)
		  ○ Needle holders (fine jaws)
		  ○ Scissors (Metzenbaum, iris)
		  ○ Retractors (small self-retaining, handheld)
		• Micro-instrument sets
		• Magnifying loupes / operating microscope
		• Paediatric electrosurgical units (low-energy settings)
		• Suction apparatus with low-pressure regulators
			Consumables
			
			• Breathing circuits (neonatal/paediatric)
			• CO_2 sampling lines
			• Suction catheters (5–12 Fr)
			• Syringes (1–10 ml)
			• IV cannulas (24G, 22G, 20G)
			
			Consumables
			
			• Absorbable sutures (Vicryl, PDS – fine gauges)

		• Paediatric warming devices (forced-air warmers) • Infant surgical tables & positioning aids Paediatric Anaesthesia & Airway Equipment Airway & Ventilation • Neonatal & paediatric anesthesia machines • Infant ventilators • Laryngoscopes (Miller, Macintosh – paediatric sizes) • Endotracheal tubes (uncuffed & cuffed, neonatal–paediatric) • Laryngeal mask airways (paediatric sizes) • Supraglottic airway devices • Oxygen masks (neonatal & paediatric) • CPAP & HFNC systems Monitoring • Paediatric patient monitors • Neonatal pulse oximeter probes • NIBP cuffs (neonate, infant, child) • Capnography modules	• Non-absorbable sutures (Prolene) • Surgical meshes (paediatric hernia) • Laparoscopic clips • Specimen retrieval bags • Surgical gloves (small sizes) • Sterile drapes (paediatric)

		• Temperature probes Paediatric General Surgery Equipment Equipment • Paediatric laparoscopic towers • Insufflators (low-pressure CO_2) • Paediatric trocars (3–5 mm) • Paediatric graspers, scissors, clip appliers • Stapling devices (paediatric compatible) • Hernia repair instrument sets • Bowel anastomosis instruments Paediatric Urology Surgery Equipment • Paediatric cystoscopes • Paediatric ureteroscopes • Mini nephroscopes • Hypospadias repair instrument sets • Endoscopic camera systems Paediatric Orthopaedic Surgery	Consumables • Foley catheters (6–12 Fr) • Feeding tubes • Double-J stents (paediatric) • Guidewires (fine) • Irrigation fluids • Fine sutures (6-0, 7-0) Consumables • K-wires (small diameter) • Paediatric plates & screws • Orthopaedic pins • Plaster of Paris & fiberglass casts • Sterile dressings • Bone cement (where applicable) Consumables • Ventriculoperitoneal (VP) shunts • External ventricular drain kits • Dural substitutes • Haemostatic agents (Surgicel, Gelfoam) • Fine sutures (6-0 to 8-0) Consumables • Vascular grafts (small diameter) • Paediatric cannulae

		Equipment • Paediatric orthopaedic instrument sets • Mini C-arm fluoroscopy • Paediatric power drills & saws • External fixation systems (paediatric) • Traction systems • Casting tables Paediatric Neurosurgery Equipment • Paediatric neurosurgical microscope • Cranial drills (low-torque) • Paediatric craniotomy sets • Ventricular endoscopy systems • ICP monitoring devices Paediatric Cardiothoracic Surgery Equipment • Paediatric heart–lung machine • Neonatal oxygenators • Paediatric sternotomy sets	• Cardiac sutures • Chest tubes (small bore) • Pacing wires Consumables • Ear tubes (grommets) • Nasal packs • Fine suction tips • Sutures (absorbable) • Local anesthetic agents Consumables • Skin graft meshes • Fine sutures (6-0 to 8-0) • Tissue adhesives • Dressing materials (silicone, foam) Infection Control & Safety Consumables • Sterile gloves (neonatal & paediatric) • Surgical gowns • Face masks • Sterile drapes • Antiseptic solutions • Sharps containers • Paediatric crash cart supplies

		• Cardiac retractors (small) • Transesophageal echocardiography probes (paediatric) Paediatric ENT Surgery Equipment • Paediatric ENT operating microscope • Tonsillectomy & adenoidectomy sets • Paediatric endoscopes • Microdebriders • Hearing assessment equipment Paediatric Plastic & Reconstructive Surgery Equipment • Microvascular surgery sets • Operating microscope • Skin grafting instruments • Dermatomes (paediatric settings)	Consumables • Endotracheal tubes (uncuffed & micro-cuffed, sizes 2.5–6.0) • Laryngeal mask airways (neonatal to paediatric sizes) • Face masks (neonate, infant, child) • Nasal cannulae & oxygen masks • Anaesthetic circuits (paediatric) • CO_2 sampling lines Consumables • Absorbable sutures (5/0–7/0 Vicryl, PDS, Monocryl) • Non-absorbable sutures (5/0–6/0 Prolene, Nylon) • Surgical gloves (small sizes)

			• Sterile drapes (paediatric) • Wound dressings (non-adherent)
		Operating Theatre & General Paediatric Surgical Equipment • Paediatric operating table (with warming mattress) • Infant and neonatal warming devices • Paediatric surgical instrument sets (miniaturized) • Head rings and paediatric positioning devices • Suction machines with low-pressure regulators • Paediatric electrosurgical unit (diathermy) with safety limits • Paediatric surgical lights • Infusion pumps (micro-infusion capable)	Consumables • CO_2 insufflation tubing • Disposable trocars • Laparoscopic sutures • Specimen retrieval bags (small) • Disposable electrosurgical tips
		Anaesthesia & Airway Equipment (Paediatric-Specific) Equipment • Paediatric anaesthesia workstation • Infant and neonatal ventilators	Consumables • Feeding tubes (used as urinary catheters) • Foley catheters (6–12 Fr) • Double-J stents (paediatric sizes) • Contrast media • Irrigation fluids Consumables • K-wires (small diameter) • Bone screws and plates (paediatric) • Plaster of Paris &

		• Laryngoscopes (Miller & Macintosh blades – neonatal to adolescent sizes) • Video laryngoscope (paediatric blades) • Paediatric bronchoscopes • Suction catheters (6–12 Fr) • Paediatric resuscitation trolley Paediatric General Surgery Equipment • Paediatric retractors (small Deaver, Langenbeck) • Fine tissue forceps (atraumatic) • Needle holders (micro and small) • Paediatric bowel clamps • Paediatric suction tips (Yankauer – paediatric) • Paediatric staplers (where applicable) Paediatric Laparoscopic & Minimal Access Surgery	fiberglass casts • Orthopaedic drapes • Bone wax Consumables • Paediatric cannulae • Vascular sutures (6/0–8/0) • Chest tubes (8–16 Fr) • Hemostatic agents • Pericardial patches Consumables • Ventricular shunt systems • Dural substitutes • Haemostatic agents • Micro sutures (6/0–8/0) Consumables • Split-thickness skin graft blades • Burn dressings (silver-impregnated) • Foam and silicone dressings • Topical antimicrobials

		Equipment • Paediatric laparoscopic tower • Insufflator with low-pressure settings • Paediatric trocars (3 mm, 5 mm) • Paediatric laparoscopes (3–5 mm) • Micro laparoscopic instruments • Camera and light source Paediatric Urology Surgery Equipment • Paediatric cystoscope & ureteroscope • Paediatric resectoscope • Paediatric nephroscope • Dilators (small caliber) Paediatric Orthopaedic Surgery Equipment • Paediatric orthopaedic drill system • Mini-plates and screws • Paediatric traction devices	Infection Control & Safety Consumables • Sterile gloves (paediatric sizes) • Surgical masks & gowns • Sterile suction tubing • Syringes (1–10 ml) • IV cannulas (24G–18G) • Antiseptic solutions Consumables • ECG electrodes (paediatric) • IV fluids (paediatric formulations) • Nasogastric tubes (6–10 Fr) • Urine bags (paediatric)

		• External fixators (paediatric) • Paediatric C-arm compatible instruments Paediatric Cardiothoracic Surgery Equipment • Paediatric heart–lung machine • Paediatric surgical retractors • Neonatal cardiac instruments • Paediatric chest spreaders Paediatric Neurosurgery Equipment • Paediatric operating microscope • Paediatric cranial drill • Micro-neurosurgical instruments • Paediatric head fixation devices Burns & Reconstructive Paediatric Surgery Equipment • Dermatome (paediatric	

		compatible) • Skin graft mesher • Warming devices Monitoring & Post-operative Care Equipment • Multi-parameter monitors (paediatric settings) • Pulse oximeters (neonate & child probes) • Blood pressure cuffs (neonatal to child) • Paediatric ICU beds	
	10. Specialized plastic surgery	General Operating Theatre Equipment • Operating table (radiolucent, adjustable) • Surgical lights (shadow-free LED) • Anesthesia machine with ventilator • Patient monitors (ECG, SpO_2, NIBP, $ETCO_2$) • Suction machines • Electrosurgical unit (diathermy – mono & bipolar) • Surgical microscope (for microsurgery) • Loupes (2.5×–6× magnification)	Consumables (Single-Use Items) Sutures • Absorbable: Vicryl, Monocryl, PDS • Non-absorbable: Nylon, Prolene, Silk • Microsutures (8-0 to 11-0) Dressings & Wound Care • Sterile gauze • Paraffin gauze • Foam dressings • Hydrocolloids • Silicone sheets (scar management) • Compression bandages • Elastic garments (post-liposuction, burns) Fluids & Drugs • Normal saline

		• Headlights
		• Warming devices (forced-air warmers)
		
		Basic Plastic Surgery Instrument Sets
		
		• Scalpel handles (No. 3, 4, 7)
		• Fine scissors (Metzenbaum, Iris, tenotomy)
		• Forceps (Adson, Adson with teeth, Debakey, jewelers)
		• Needle holders (Castroviejo, Mayo-Hegar)
		• Skin hooks (single & double prong)
		• Retractors (Senn, Army-Navy, Aufricht, Ragnell)
		• Hemostats (mosquito, Kelly)
		• Towel clips
		
		Microsurgery & Reconstructive Equipment
		
		• Operating microscope
		• Micro-instrument set:
		  ○ Micro forceps
		  ○ Micro scissors
		  ○ Micro needle holders
		  ○ Vessel dilators
		• Microvascular
			• Tumescent solution
			• Local anesthetics (Lidocaine, Bupivacaine)
			• Adrenaline
			• Antibiotics
			• Tranexamic acid
			• Steroids (for scar management)
			
			Infection Control & Disposables
			
			• Surgical gloves
			• Gowns and drapes
			• Masks and caps
			• Sterile suction tubing
			• Yankauer suction tips
			• Syringes and needles
			• Electrocautery tips
			• Sterile marking pens

		clamps • Anastomosis couplers • Doppler probe (handheld or implantable) • Nerve stimulators • Tourniquet system Aesthetic (Cosmetic) Surgery Equipment • Liposuction machine • Cannulas (tumescent, infiltration, aspiration) • Fat grafting systems • Power-assisted liposuction (PAL) • Ultrasound-assisted liposuction (VASER) • Laser systems (CO_2, Nd:YAG, diode) • Radiofrequency skin tightening devices • Dermabrasion unit • Chemical peel kits Implant-Based Surgery Equipment • Breast implant sizers • Keller funnel • Implant inserters • Calipers for symmetry	

		measurement • Sizers for facial implants • Implant sterilization trays Burns & Wound Care Equipment • Dermatome (manual or electric) • Mesh graft expanders • Skin graft carriers • Negative pressure wound therapy (VAC) • Burn dressing trolleys • Hydrotherapy equipment (where available) Scar & Post-Operative Management • Silicone gel sheets • Pressure garments • Scar massage tools • Laser scar treatment devices • Steroid injection kits Emergency & Support Equipment • Difficult airway	

		trolley • Crash cart • Blood warming devices • Infusion pumps	
LOT 26	**SERVICE**	**EQUIPMENT**	**CONSUMABLES/REAGENTS/IMPLANTS**
Specialized Laboratory Services for Cancer Diagnosis and Treatment	**TESTS**	**EQUIPMENT**	**REAGENT**
	44. Bone Marrow Aspiration and Biopsy	Microtome, microscope	Reagents in scope of histology: e.g strainers and fixative
	45. Coombs Test (Direct and Indirect)	Centrifuge , Incubator Microscope	Anti-human globulin
	46. Hemoglobin Electrophoresis	electrophoresis analyzing system	Cellulose strip
	47. Flow Cytometry for Immunophenotyping	Flow cytometer	Specified antibody
	48. Insulin Assay	Incubator, Microscope	anti-insulin antibodies
	49. Cortisol Assay	ELISA Washer, ELISA Reader	Human, Bovine and Ovine quantified in plasma, serum, urine, saliva, fecal extract.
	50. Parathyroid Hormone Assay	TSH/ T3/T4 Immuno assay Analyser	Monoclonal antibodies, calibrators and controls
	51. Vitamin D Levels	Immunoassay analyser e.g Cobas, centrifuge	VDBP-Vitamin D Binding Protein
	52. Homocysteine Levels	LC-MS Analyser(Liquid Chromatography- Mass Spectrophotometry)	**Enzymes:CBS, CBL,LDH,ADA, Monoclonal antibodies**
	53. Serum Osmolality	Osmometer	Instrument calibration standards
	54. Protein Electrophoresis (Serum and Urine)	Electrophoresis Chamber- Gel tank and accessories	**Acrylamide and Bis-acrylamide.** **Ammonium Persulfate (APS):** **TEMED Catalyst**
	55. Adrenal Function Tests (e.g., ACTH Stimulation Test)	ELISA Washer, ELISA Reader Hormone analyser	**Cosyntropin / Tetracosactide**
	56. Dynamic Function Tests	ELISA Washer, ELISA Reader Hormone	Humulin, Novolin

	(e.g., Glucose Tolerance Test for Acromegaly)	analyser	
	57. Gonadotropin Levels (LH, FSH)	**Automated Immunoassay Analyser/CLIA Chemiluminescence Analyzer**	**Monoclonal antibodies**
	58. Sex Hormone Binding Globulin (SHBG)	**Mass Spectrometry / Immunoassay Analyzers**	Antibodies: (**Paired, goat poly clonal, monoclonal)** Calibrators and Standards
	59. ANA (Antinuclear Antibody)	Fluorescence microscope, incubator	**Antigen Substrate**: **HEp-2 cells** **Detection Antibody (Conjugate)**: **Fluorescein Isothiocyanate (FITC)**
	60. Anti-ds DNA (Anti-double-stranded DNA Antibody)	Microplate reader, Fluorescence microscope, automated analyser	**Antigen-Coated Plate, Enzyme Conjugate: Horseradish Peroxidase (HRP). Chromogenic Substrate: TMB (3,3',5,5'-Tetramethylbenzidine)**
	61. ANCA (Antineutrophil Cytoplasmic Antibodies)	**Fluorescence Microscope**, **Incubation Chamber, Substrate Slides**: Glass slides pre-coated with human neutrophils	**Fluorescent Conjugate**: **Fluorescein Isothiocyanate (FITC)** Wash buffer, mounting media and controls
	62. IgA (Immunoglobulin A)	ELISA immunoassay analyser: Washer and Reader	Capture antibodies anti-human IgA, IgG, IgM, or IgE). Detection Conjugates: Horseradish Peroxidase (HRP) or Alkaline Phosphatase (AP), Sbstrates and buffers
	63. IgG (Immunoglobulin G)		
	64. IgM (Immunoglobulin M)		
	65. IgE (Immunoglobulin E)		
	66. Allergy Testing (e.g., RAST, Specific IgE)	Standardized Allergen Panels, reading plates	Dependent on allergen: Eg Metals, Fragrances, Adhesives, Chemicals
	67. Complement Levels (C3, C4)	Chemistry analyzer	Specific polyclonal antibodies, buffers, calibrators and controls

	68. HLA Typing	Microscope, Incubator, Autoclave, Refrigerator	Culture media, Sensitivity discs
	69. Polymerase Chain Reaction (PCR) for Pathogen Detection		
	70. Mycobacterial Culture and Sensitivity	GeneXpert	Strips/Cartridges, Diluents, wash buffers, conjugates, and substrates Controls
	71. Fungal Culture and Sensitivity	Electrophoresis Chamber-Gel tank and accessories	Acrylamide and Bis-acrylamide. Ammonium Persulfate (APS):. TEMED Catalyst
	72. Stool for Clostridium difficile Toxin	ELISA Washer, ELISA Reader	Human, Bovine and Ovine quantified in urine
	73. Urine Protein Electrophoresis		Factor deficient plasma, contact activator, calcium chloride, buffer and control
	74. 24-Hour Urine Collection for Specific Analytes (e.g., cortisol,catecholamines)	Coagulation Analyzer	
	75. Factor VIII	Rapid point-of-care (POC) Equipment	Rapid point-of-care (POC) test kit
	76. Factor IX	Automated Coagulation Analyzer	Antithrombin ATIII
	77. D-Dimer	Automated Immunoassay Analyser/CLIA Chemiluminescence Analyzer	Capture antibodies AFP Detection Conjugates Substrates and buffers
	78. Thrombophilia Screen	Multi-Detector Computed Tomography	CEA (Carcinoembryonic Antigen) Liver Function Panel:

	(e.g., Protein C, Protein S, Antithrombin)	(MDCT), MRCP (Magnetic Resonance Cholangiopancreatography), Endoscopic Ultrasound (EUS)	CA 19-9 (Carbohydrate Antigen 19-9)
	79. Alpha-Fetoprotein (AFP)	Automated Immunoassay Analyser/CLIA Chemiluminescence Analyzer	Monoclonal antibodies And Enzyme conjugate B-specific
	80. CA 19-9 (Pancreatic Cancer)	Next-Generation Sequencing (NGS) Platform, Illumina MiSeq: Ion Torrent PGM (Personal Genome Machine Sanger Sequencer (Genetic analyser)	BRCA Panels and associated mixes and purification beads
	81. Beta-HCG (Human Chorionic Gonadotropin)	Chemistry Analyser, centrifuge, microplate reader, incubator	Substrate (L-Lactate or Pyruvate) Coenzyme (NAD+ or NADH) Buffer Solution
	82. BRCA1 and BRCA2 Gene Testing	ELISA Washer and Reader	Antigen specific for Toxoplasma, Echinococcus
	83. LDH (Lactate Dehydrogenase) for Hematologic Malignancies	Microscope	Choice stains e.g Field A&B
	84. Serology for Parasitic Infections (e.g., Toxoplasma, Echinococcus)		Antigen specific for Giardia, Entamoeba
	85. Thick and Thin Blood Smear for Malaria		
	86. Stool Antigen Tests (e.g., Giardia, Entamoeba)	ELISA Washer and Reader	

SPECIFICATIONS FOR LOTS

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**

1.5T Superconducting Magnetic Resonance Imaging System (MRI)

Operational requirements

Whole Body 1.5T Magnetic Resonance Imaging system optimized for higher performance in Cardiac and Neuro-radiological examinations with shorter superconducting magnet, high performance gradients and digital Radio Frequency. All capabilities as detailed below should be integral part of the quotation.

Technical Specifications

Magnet System

19. 1.5 Tesla active shielded super conductive magnet.
20. Should state the magnet length preferred Ultrashort of at least 1.56 m
21. It should have at least 60cm patient bore with flared opening; larger patient bore is preferable. The magnet should have facilities of better illumination, ventilation and designed to avoid patient claustrophobia
22. The magnet should be shielded from the external interferences.
23. The homogeneity of the magnet should be ≤ 0.5 ppm and minimum of 40 cm DSV or equivalent. Give details of the number of the planes plots and number of measurements per plane to measure the homogeneity.
24. Specify maximum FOV in all 3 axis (FOV to scan the largest possible human) 40 cm minimum or more preferred)
25. Specify Homogeneity at 50 (z) X 50 (x,y) cm DSV
26. Specify the weight of the magnet including the gradient and covers etc.
27. The front panel display at the magnet should display coil table position and also remote selection of coil elements,

Gradient System

18. Actively shielded Gradient system with strength of at least 40 mT/m or more with the slew rate of 160 T/m/s or more. This slew rate of 160 T/m/s at 40 mT/m should be available in each axis independent, for overall better duty cycle performance of the gradient.
19. The duty cycle should be 100 percent. Please give details.
20. The Gradient system should have provision for eddy current compensation. (Bidder should demonstrate how they've compensated for the loss)
21. Largest Field of View should be at least 50 cm in all three axis. Higher viable FOV will be preferred.
22. Minimum TE in Gradient Echo 2D / 3D should be specified for all sequences. Minimum of 0.9 msec
23. Minimum Slice Thickness in 2D should be specified. Minimum of 0.05 mm
24. Minimum Slice Thickness in 3D should be specified. Minimum of 0.03 mm
25. Maximum Echo Tr' Length in both Spin Echo and Gradient Echo should be at least 256 or more.
26. The measurement matrix should be from128x128 to 1024x1024 in both 2D and 3D imaging as well.

RF System

7. RF system should be fully digital with transmit power of at least 18 Kw

8. RF system should have at least minimum of 24 true independent RF receiving channels with each having independent ADC with bandwidth of 250KHz or more.

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**
9. Should have necessary hardware to support Phased array coils.		
10. Specify frequency stability and amplifier resolution.		
11. RF system should be compatible with parallel imaging techniques. It should be able to support time reductions with compatible coils in 2D/3D imaging in Body/ Neuro imaging up to factor of 2 or more		
12. RF amplifier should be solid state for overall better performance		
RF Coils - All coils are needed/ essential for advanced detail of the MRI studies		
16. The main body coil integrated to the magnet must be Quadrature/ CP. In addition to this coil following coils should be quoted.		
17. Phased Array Head coil with mirror. It should be at least 24 Elements or more. Higher element coil will be preferred.		
18. Phased Array Neck Coil.		
19. In case above two coils do not suffice in combination for complete Neuro-vascular study from Aortic arch to Circle of Willis, please quote separate coil in addition to above two coils for this study. Please specify the max parallel imaging time reduction		
20. Phased Array Spine Coil for thoracic and Lumber spine imaging. Mention the number of coil elements available.		
21. It should be possible to do Head and Spine imaging together without changing the coil and the patient. It should be possible to do the same either with combination-of coils or a dedicated coil to achieve the same should be quoted		
22. Phased Array Body coil, capable of doing abdomen, pelvic, MRCP and peripheral imaging. It should have at least 12 elements and 45 cm FOV should be achievable.		
23. Flexible Coil -Large for imaging of large regions such as shoulder, hip and knee etc. 24. Flexible Coil -small for imaging of small regions such as shoulders, wrist, elbow and ankle. 25. Quadrature Extremity Coil for Knee Imaging		
26. Dedicated Shoulder Phased Array coil.		
27. Coil for Knee Imaging with 8 channels or more. Please specify the time reduction factor with parallel acquisition techniques.		
28. Dedicated 8 channel Brain Coil for High resolution Brain Images. Please specify the time reduction factor with parallel acquisition techniques.		
29. Bilateral Breast Coil, specify type and channel		
30. A coil for Neurovascular Application.		
Patient Handling System: Dockable trolley/ stretcher system to limit lifting of patients into the examination couch and for safety of patients		
7. Please specify the table type whether it's conventional trolley type or incorporates new (dockable trolley system) design principles. If fixed table, quote MRI compatible stretcher trolley.		
8. The table should be fully motorized, computer-controlled table movements in up and down) (vertical) and horizontal directions. The position accuracy should be at least +/ - 1mm or better for higher reproducibility' in advanced applications.		
9. The patient table should be able to withstand patient load of at least 200 kg		
10. The table should have facility for emergency manual traction in case of emergency. The table should have patient auto alarm system. .		
11. The CCTV/ Intercom system with LCD display to observe the patient.		
12. The table should deliver the protocols for automatic bolus chasing in peripheral angio with the automatic table movement.		

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**
Host Computer /Main Console and Image Processor (Consideration for RIS and PACS to enable image transfer and archiving with enough storage capacity to archive images) consider cloud storage for unlimited space)		
8. Computer system should be latest in the industry, fast and efficient. It should have at least 16GB RAM.		
9. The main computer should have all the main processing software available in the Advanced workstation for quick review		
10. The system should have image storage capacity of at least 1 TB for at least 500,000 images in 256 x 256 matrix.		
11. The reconstruction speed should be at least 800 images per sec or more for full FOV 256 matrix and the image processor should have high RAM capacity of at least 16 GB for faster processing for advanced applications.		
12. The main Host computer should have at least 18-inch TFT type Color monitor. The main console should have integrated music system for the patient		
13. The system should have DVD and CD archiving facility (can add USB/ External drive) on the main console for storage of 50,000 images or more in 256 x 256 matrix. Additionally, 500 high storage DVD's to be provided with external hard drives.		
14. One additional workstation with Color monitor to be provided for the applications as listed and 4 Additional workstations for concurrent interpretation (radiologists and academic		
Application Software / Hardware (The range of purchased software will determine the capability of the machine e.g Diffusion, Perfusion, Spectroscopy, Tractography, BOLD, Cardiac, CSF flow studies, DWIBS		
21. The system should have basic sequences package with Spin Echo, Inversion Recovery, Turbo Spin Echo with high turbo factor of 256 or more, Gradient Echo with echo train length of 256 or more		
22. The application software for image smoothing and edge sharpness etc. for improvement in image resolution should be quoted and it should apply for major imaging applications.		
23. Single and Multi-shot EPI imaging techniques with ETI factor of 256 or more		
24. Fat and water excitation, please specify the application package		
25. Diffusion Weighted Imaging, with at least b value of 7000 (b-value used in diagnostics are 2000 or less. Higher b-values lead to loss in image resolution or more. The system (? Software) should have facility for ON Line automated calculation of ADC maps.		
26. Please specify the motion correction algorithm/package for high-resolution motion free diffusion weighed imaging with multishot/ segmented EPI techniques.		
27. It should be also possible to do 3D motion correction, please specify the application		
28. BOLD imaging: BOLD. technique with automated 3D motion correction, z- score, and correlation analysis with color overlay on anatomical images. It should be possible to have Real Time Processing of BOLD imaging data on the main console for the complete reconstruction. ? software purchase		
29. The perfusion and the BOLD imaging should be possible for the whole brain with motion correction techniques. Please specify the application package and the motion correction technique.		
30. Parallel Acquisition Techniques: Please specify the name of the package. It should have applications in abdomen, neuroimaging including diffusion and perfusion etc., free breathing abdomen imaging and Cardiac imaging. The scan reduction time should be mentioned.		
31. Bolus chasing with automatic moving table should be offered and should be available with fluoro triggered MR angiography for manual and fast switchover in less than 1 sec for ceMRA results.		
32. The system should have prospective ECG triggering and retrospective gating with navigator pulses, interactive or automatic definition of the ventricular and myocardial contours, cine imaging, grid tagging etc. Besides this comprehensive set of all post processing		
33. The system should be supplied with ECG Trigger; respiratory trigger, peripheral pulse trigger and external trigger Electrodes		

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**
34. The system should have facility to do Head to Toe imaging without shifting the patient at one go for metastases study (DWIBS) and without any loss of SNR.		
35. The system should be available to perform Multi Direction Diffusion weighted imaging /Diffusion Tensor Imaging and the same should be possible on the main console.		
36. The system quoted should have image pasting software on the main console for ease of use.		
37. The system should be quoted with motion correction software for uncooperative Head patients, It should be possible to have the same routine in T1, T2 and FLAIR imaging.		
38. The system quoted should have the software for Whole Body Diffusion weighted imaging (DWIBS)		
39. The system should have acoustic reduction techniques to reduce acoustic noise to the lowest level. Please specify noise reduction technology and reduction amount.		
40. The system quoted should be able to do multi contrasts in a single image to save time.		
Workstation and documentation		
11. The additional 5 workstations in number with parallel licences for concurrent use by more than one radiologist and also for academic use by students. The workstations should be vendor neutral to integrate with any modality with preferably the same user interface as of the main console with the availability of MPR, MIP etc. It should have 18-inch LCD monitor, with hard disk of at least 50 GB for at least 95000 image storage in 256 x 256 matrix, and 2 GB RAM.		
12. Image documentation should be possible from the main as well as the workstation(s).		
13. The workstation should have display of Cardiac cine images in movie mode with rapid avi creation.		
14. The workstation should have availability of Cardiac post processing capabilities: calculation of ventricular area/volume, stroke volume, ejection fraction, relative ejection fraction, calculation of myocardial thickness, Time volume diagram generation.		
15. The perfusion analysis should have capability to calculate color display		
16. Processing of 2D/3D CSI data with color metabolite mapping, if not offered/available on the main console as mentioned in point 3.7.14 should be quoted here.		
17. Processing of Real Time BOLD imaging data sets for color overlay of functional and anatomic data, if not available on the main console should be quoted here. It should be possible to have Real Time BOLD image processing for the complete brain.		
18. The system should facility for quantification of the CSF flow data on the main console, if not offered/available on the main console as mentioned in point 3.7.13 should be quoted here.		
19. The post processing workstation should have software package for analysis of the vessel disease with the possibility of detection of vessel segments and to quantify the changes in vessel size.		
20. Volume Rendering Techniques software for visualization of complex anatomy.		
Multiformat Dry Laser Imager		
9. Dry imager - DICOM 3.0 (or newer version) compatible, Dry chemistry. 600 DPI or more, with at least two film drawers. 14 x 17 "(35 x 45 cm) and 14 x14" (35 x 35 cm) size.		
10. System must provide complete batch filming with means to adjust image contrast and density.		
11. Imager must be controlled for exposure from the operator's console and any workstation. An interlock/indicator system must be provided to prevent image production from one console, being intermixed with images from other consoles.		
12. Automatic transport system.		
13. Remote keypad, contrast inversion, 35mm adaptability.		
14. Should be connectable to multiple modalities like CT, MRI, Angiographic systems, Ultrasonography, with online PACS necessary interface provided. Filming must be possible with all modalities mixed		

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**
on a film.		
15. Must be able to do serial processing imaging system wise when multiple systems are connected to the processor.		
16. All needed software and hardware must be provided		
Accessories		
5. MRI Compatible O2 patient monitor		
6. Patient Comfort Kit for different body parts (head, knee, shoulder etc) two for each to provide adequate support)		
7. Portable metal detector with battery loader? entry metal detector vs handheld metal detector		
8. MR compatible Injector (Dual head): Must have Independent dual Syringe power head and console must have full color touch screen with user-defined protocols with programmable interscan delay.		
Environmental factors		
12. The unit shall be capable of operating continuously in ambient temperature of 30° C and relative humidity of 80%		
13. Chiller System		
14. All the shielding requirements of the room will have to be done by the supplier.		
UPS and Power supply		
4. Power input to be 220-240VAC, 50Hz, /440 V 3 Phase		
5. UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup		
6. Voltage stabilizer with suitable rating will be supplied		
Standards and safety		
7. Should be FDA and/or CE approved product		
8. Electrical safety conforms to standards for electrical safety IEC-60601 / ISO-13450		
Warranty		
8. 24 months from the date of satisfactory installation & handing over to the department.		
Maintenance		
Comprehensive maintenance contract (CMC) for the complete system will start after expiry of the warranty period. This will include replacement of spares including all consumables and sealed units, liquid Helium and labour. The contract will also include the recommissioning of the system in the event of magnet quench for whatsoever reasons. The maintenance contract will also cover comprehensive maintenance (Labour + spares) for UPS including batteries. Note that any Liquid Helium lost due to quenching or due to any other causes during the guarantee period shall be borne by the firm. System spare parts availability should be guaranteed for at least 10 years from the delivery of the system.		
Documentation		
9. Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
10. Detailed documentation on various sequences, spectroscopy, application software and evaluation software etc. are to be provided and the same must be updated regularly for next 10		

Department	Section	Item Description
Imaging Equipment	**MRI**	**1.5T MRI Complete with Injector Pump**
years as and when these are released. (Timely software updates are key)		
11. Supplier is required to ensure mailing of product/research newsletters (on MRI and MRS) released from their R&D sites to the Hospital on a regular basis. This is to keep this centre abreast of the latest developments taking place in system technology and research techniques.		
12. The vendor is to provide a tender compliance sheet by giving all the necessary specifications, which should be supported by printed documentation sheets and certification of each item. In the absence of such documentation, a letter from the principals of the company should be provided.		
Software up gradation		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
Linear Accelerator (LINAC)		
Description: - A Linear Accelerator (Linac) is a complex device used for external beam radiation therapy, designed to accelerate electrons to high speeds using microwave technology to produce therapeutic X-rays or electron beams. **Operational requirements** For a radiation therapy equipment with an accurate image guidance system, and it includes 1 set of radiation therapy planning systems. The planning system consists of: 1 physiotherapist workstations (for treatment plan design and calculation), 1 doctor workstations, as well as the software and hardware necessary for the operation of this system, and 1 set of tumor radiation therapy network management systems, as well as the software and hardware required to support this system. The bidding products must have the following functions: conventional radiotherapy, 3D CRT conformal radiotherapy, static/dynamic intensity-modulated radiotherapy, image-guided intensity-modulated radiotherapy, and volumetric rotation intensity-modulated radiotherapy.		
Technical Specifications		
High-speed large-aperture O-ring gantry system		
10. Gantry structure: O-ring gantry		
11. Gantry features: The gantry and kV CBCT imaging system are enclosed in the cover, without potential collision		
12. The on-board kV CBCT or FBCT system should be equipped, and the kV CBCT or FBCT should be isocenter with the accelerator to reduce the setup error		
13. The kV CBCT imaging system adopts a fixed design, which can save time without stretching motion, and has good repeatability and high accuracy		
14. MV imaging system adopts fixed design, no need for telescopic movement, saving time, good position repeatability, high precision		
15. Treatment system and kV imaging system gantry aperture: ≥95cm		
16. Maximum gantry rotation speed: ≥6RPM		

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
17. Isocenter accuracy: ≤±0.5mm		
18. Gantry structure: O-ring gantry		
Integrated design		
27. Laser light indication system: the gantry should be built with laser light to improve the positioning accuracy		
28. Touch control system: indoor dual touch screen operating system		
29. Patient voice communication system: active noise reduction microphone and audio transmission		
30. Silent cooling system: efficient silent water-cooling system, high cooling efficiency, low noise		
31. Quality control system: built-in equipment performance check module		
32. Intelligent positioning system: light-guided operation and automatic positioning		
33. Patient verification system: identification of patient identity and positioning information in the treatment room		
34. Self-shielding system: built-in self-shielding system shields the main beam of the treatment room and reduces the thickness of the main protective wall of the bunker		
Beam system		
7. X-ray energy: > 4 MV		
8. Beam mode: flattening filter free (FFF) and dynamic flattening filter mode		
9. Equipped with Three-stage grid-controlled electron gun, easy to start and stop the beam quickly		
10. The maximum dose rate of X-ray: ≥ 1200MU/min		
11. Output dose error: 1% or 1MU		
12. Ionization chamber requirements: Fully closed ionization chamber		
Multi-leaf collimation system		
8. System structure: double-layer staggered collimator structure, can effectively reduce radiation leakage.		
9. Effective resolution of all leaves at isocentric: ≤0.5cm		
10. Total number of leaves: ≥120		
11. Leaf travel length: ≥30cm		
12. The leaf should support Interdigitating movement		
13. Radiation field size: 0.5×0.5cm~30cm×30cm		
14. The fastest independent movement speed of leaves: ≥5cm/s		
Treatment positioning system		
10. Intelligent positioning function		
11. Guided operation: standardized treatment process and guided operation		

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
12. In-room touch screen displays setup photos and notes		
13. Light prompt system to assist in guiding positioning		
14. Treatment table for kV IGRT		
15. Treatment table surface material: full carbon fiber		
16. Should with manual control		
17. Treatment table capacity: ≥230kg		
18. Positioning accuracy of treatment table: ≤0.05cm		
kV(kilovoltage) image guidance system		
10. High speed kV cone-beam CT scan		
11. kV imaging system scanning aperture: ≥95cm		
12. kV detector structure: amorphous silicon flat panel detector		
13. The kV imaging, MV imaging and MV beam systems should designed in the same isocenter		
14. The fastest scan & reconstruction time: ≤14s		
15. Consistency between kV imaging center and MV beam center: ≤±0.5mm		
16. Imaging and treatment comprehensive isocenter accuracy: ≤±0.5mm (Please provide Brochure or Instruction Manual or Datasheet)		
17. 4D image guidance system		
18. 4D CBCT images can be acquired when the patient is breathing freely		
Electronic Portal Imaging System (EPID)		
6. Imaging hardware: using amorphous silicon flat panel detector		
7. The MV imaging center, kV imaging center and treatment center should in the same isocenter to ensure the accuracy and repeatability of setup		
8. The MV imaging system does not require unfold operation and supports fast imaging		
9. Effective image sensing area: ≥43×43cm.		
10. Built-in machine performance check program		
Self-shielding system		
7. Self-shielding system: the system comes with a shielding system to shield the main ray		
8. Self-shielding system transmittance (1 meter behind the shielding layer) : ≤0.1%		
Automatic quality control system		
4. With integrated equipment automatic quality control function: ≥24 items		
5. Automatic quality control should be completed in a few minutes, including: image, mechanical, beam performance		

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
6. Automatic quality control duration: ≤5 minutes		
Radiotherapy planning system		
15. Brief Description of functions: It should have the functions of patient and treatment equipment data management, patient modeling, photon volume modulated radiation therapy plan design optimization, automatic organ delineation, multimodal image elastic registration, dose calculation, plan evaluation and quality assurance, report and output, etc. It is used for the design and analysis of photon radiotherapy plans.		
16. Algorithm: CPU + GPU acceleration, Monte Carlo dose calculation (providing the manufacturer's patent certificate for the Monte Carlo algorithm)		
17. System language: English interface		
18. System network: Network connection cards with a connection speed of 1GB/s or above, capable of handling GB network transmission data.		
19. Device Data management		
20. Patient Data management		
21. Automatic delineation (Auto contouring)		
22. Treatment plan design and optimization		
23. Plan Evaluation		
24. QA Preparation		
25. Backup plan		
26. Automatic planning		
27. system		
28. Database system		
Dedicated network system for radiotherapy		
9. General Requirements		
10. Task management		
11. Appointment management		
12. Plan Management		
13. Quality control management		
14. Comprehensive statistics		
15. Form management		
16. System administration		
Power & Utility Requirements:		
Voltage: 415 V AC, 3-phase 50/60Hz		
Standby power supply: At least 15KVA		

Department	Section	Item Description
Radiation Oncology	**LINAC**	**LINAC**
Cooling systems: Dedicated chiller units or water-cooling channels		
Installation and testing: Complete installation and testing as per the manufacturer's instructions.		

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**
Radiotherapy Simulator A machine that mimics a linear accelerator but is used for planning radiation treatment, not for treating.		
Operational requirements Radiotherapy simulation systems that perform radiographic and/or fluoroscopic imaging to determine, document, and externally mark the area to be treated. These systems combine technologies from both therapeutic and diagnostic radiology; they consist of a radiographic CT fluoroscopic simulator that includes an x-ray system and a mechanical system (collimator, gantry, table, controls) that mimics the movement of a linear accelerator and/or a cobalt unit CT scanner.		
Technical Specifications		
28. Whole body		
29. Multi-slice scanner with very fast scanning time (minimum 128 slices at a time)		
30. Ability to perform large studies with narrow slice thickness for production of good quality DRR		
31. High heat capacity anode liquid metal bearing X-Ray tube for larger data sets		
32. Directly cooled anode preferable (to eliminate delay in anode heating & enable fast acquisition scans)		
33. Wide aperture preferably 85 cm or more		
34. Scanned Field of View (SFOV) > 51 cm		
35. Number of detectors in the x-y plane to scan the full 51 cm field of view		
36. Extended reconstructed FOV (RFOV) of >80cm		
11. True SFOV to be provided		
Gantry		
7. Should have tilt of ± 30 degrees		
8. Gantry must support rotations of ≤ 0.35 second to 5 seconds per 360°.		
9. Provide Internal-positioning lights		
10. Provide facility for voice and visual breathing instructions		
11. The gantry must have laser positioning lights with a positioning accuracy of ± 1mm or better.		
12. Effective and accurate connectivity between CT simulator and RTPS (Radiotherapy treatment planning system) - essential		
X-ray System		
High frequency X-ray generator with power rating of at least 60kW or more.		

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**
10. The tube voltage should in the range of 70 kV to 140 kV or better.		
11. The mA range must be from 5 mA to 667mA or better depending on kV		
12. Heat capacity: > 10 MHU		
13. Peak Anode heat dissipation rate of at least 1100 kHU / min or better.		
14. X-ray tube should have dual focal spot. Please mention the size of the focal spots		
15. X-Ray tube with anode heat storage capacity of at least 22 MHU		
16. Automatic selection of the focal spot should be possible		
17. Optimizing x-ray tube voltage (kV) to patient size and shape should be possible.		
18. The adjustment of tube current to patient attenuation, but the adjustment of kV protocol optimization.		
Detectors		
5. The detector system should be a high performance, low noise, high data density, active response data acquisition system.		
6. The detectors should be solid state.		
7. It should be free from repeated calibrations.		
8. Number of Detector elements: to be specified (number per row to be mentioned)		
Scan parameters		
15. Slice thickness should be user selectable from 0.375 mm to 10 mm.		
16. KV: 70 - 140kV or better		
17. mA: 5 - 667mA in increments of 5mA or better.		
18. Scan time of 0.35 second or less for full 360 degree rotation.		
19. Retrospective reconstruction should be possible on raw data files with change in parameters such as FOV.		
20. The following scanning modes should be possible: Scano-gram, Axial,Spiral.		
21. The scanogram length should be more than 2080mm long		
22. It must be possible to obtain the scanogram from AP or PA		
23. The accuracy of slice prescription from the scanogram should be ± 0.375mm or better.		
24. Accuracy of slice location < 1mm.		
25. Reference scan should be possible on an arbitrary slice with the proposed treatment volume.		
26. High contrast spatial resolution: It should be at least 23.5 lp/cm maximum at 0%MTF.		
27. Low contrast detestability: 2mm or less @ 0.3%		
28. The CT number accuracy must be better than ± 4 HU for water.		

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**
Image Quality		
5. The reconstruction matrix must be 1024 x 1024 or higher. The reconstruction time should be as less as possible. Simultaneous scanning and reconstruction should be possible.		
6. Simultaneous scanning & routine analysis.		
7. Simultaneous scanning and transfer to workstation.		
8. The system must have automatic mA control software that automatically adjusts mA for patient size		
Spiral Parameters		
4. Different selection of pitch should be possible, in 0.1 increments. Please mention the pitch available. Mention the single run coverage and the table scannable range.		
5. The following scanning modes should be possible: Scanogram, Axial, Spiral, Cine and biopsy mode Pilot scan: The pilot scan field size should be more than 2000 mm long.		
6. Reference scan should be possible on an arbitrary slice within the proposed treatment volume Specify the table speed to the scan in terms of Z-axis coverage.		
Couch		
12. The couch top must be a carbon fibre, flatbed type. It must be a State of the Art; indexed couch top matching the Medical College's linear accelerators' couch tops to facilitate accurate treatment delivery with ease and convenience.		
13. The couch top material must be carbon fibre, having horizontal moving range of 200 cm or more		
14. The speed of horizontal movement must be variable with a maximum speed of at least 400mm per second.		
15. The accuracy (reproducibility) of the table tope must be better than ±0.25mm.		
16. The scannable horizontal range should be at least 200cm or more.		
17. The couch must meet the following vertical movement ranges: 48 to 1030 cm		
18. It must be able to take a maximum weight of 200kg or more without any change in stated performance specifications (like the positioning accuracy).		
19. Couch should be suitable for all kinds of radiotherapy immobilization system		
20. Laser system facility for radiation therapy placement of treatment fields and marking of radiation field portals on patient's skin is required without moving the couch.		
21. The CT-simulator should have at least three laser sets for marking the field reference points, consists of a single overhead moving laser to project the sagittal plane, two moving lasers to project coronal plane and two moving lasers to project the axial plane. This should eliminate the need for manual couch movements.		
22. The CT scanner should also have conventional in-built lasers for positioning the patient along with all positional devices.		
Support for respiratory management system:		

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**

9. Seam less integration to the interface of the linear accelerator respiratory management system.
10. The CT scanner firm is required to provide all licenses and necessary interface hardware for seamless integration for the purpose of gated.
Computer Hardware
15. Computer System for the CT scanner State-of-the-Art, high end main computer system, must be provided.
16. The system must have parallel processors; RAM size must be at least 16 GB or better.
17. There must be two monitors in the console and they must be 19" TFT flat screen LCD monitors. One of these will be used for acquisition and the other will be used for review and processing.
18. The hard disk capacity of the main computer system must be at least 1TB or more.
19. In the hard disk meant for image storage, the number of uncompressed 512 x 512 images that can be stored should be at least 1,920,000 or more. The maximum possible hard disk capacity must be provided.
20. All necessary accessory hard ware like UPS for computers, printers to be specified and provided.
21. Dicom 3.0 Print service class as a user.
22. Dicom 3.0 Storage class as a user.
23. Dicom 3.0 Storage class as a provider.
24. Dicom 3.0 Send / Receive
25. Dicom 3.0 Query / Retrieve service class as a user.
26. Dicom 3.0 Query / Retrieve service class as a provider.
27. Dicom compliance statement should be provided.
28. A bi-directional speaker communication must be provided between the operator and the patient.
Computer System for Moving Laser System
5. The laser system provided must be 3 moving lasers for marking the isocenter without moving the table top.
6. Following the isocenter localization in the CT simulator workstation, the isocenter coordinate will be sent directly to the computer system that is controlling the movements of the lasers. This computer in turn should drive all the lasers, so that without moving the table top, the lasers point to the isocenter.
7. Complete quality assurance tool (as stated above) must be provided.
8. The control computer system must be latest Windows based system with Pentium 4 processor or higher.
Connectivity
13. The entire CT Simulation system must be interconnected (all the workstations, laser systems, printers etc.) and must be integrated into the department's treatment planning system for smooth

Department	Section	Item Description
Radiation Oncology	**Radiotherapy**	**Radiotherapy Simulator with 128 slices**
transferring of images		
Quality Assurance and Acceptance tests:		
6. All QA and Acceptance to be done before commissioning as per radiation board guidelines		
7. All QA & Dosimeter, Maintenance tools (Hardware and software) to be provided		
8. DRR accuracy: Ray line angular displacement < 0.1 degree tolerance		
9. Last man out switch to be provided to ensure safety.		
Power & Utility Requirements:		
Voltage: 415 V AC, 3-phase 50/60Hz		
Standby/backup power supply: UPS of at least 15KVA		
Air conditioning systems: Dedicated units to maintain the temperature at about 22°C		
Installation and testing: Complete installation and testing as per the manufacturer's instructions.		

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**PCR Thermal Cycler**
PCR Thermal Cycler General description: A laboratory equipment that runs the polymerase chain reaction.		
Operational requirements All capabilities as detailed below should be integral part of the quotation and none of these essential requirements should be quoted as optional. If a supplier has any additional advanced applications or technique available with them, the same may be quoted as options.		
1. Technical specifications		
1.Sample Capacity: 96×0.2ml		
2.Applicable Consumables: 0.2ml single tube, 8×0.2ml strip tube, 96-well plate		
3. Reaction System: 10ul-120ul		
4.Operating Ambient Temperature: 15-30℃		
5.Storage Temperature: -20-55℃		
6.Relative Ambient Humidity: ≤85%		
7.Dimensions and Weight: 600*390*320mm (W*D*H), 23kg		
8. Heating Mode: Peltier heating mode, with 6 independent temperature control zones and intelligent temperature control technology		
9. Temperature Control Range: 4℃-100℃		
10. Temperature Control Accuracy: ±0.1℃		

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**PCR Thermal Cycler**
11. Temperature Uniformity: ±0.2℃		
12. Number of Temperature Control Zones: 6 independent temperature control zones, equipped with thermal compensation technology to reduce temperature edge effect		
14. Gradient Temperature Function: Available		
14. Number of Gradient Temperature Columns: 12		
15. Gradient Temperature Variation Range: 1℃-32℃		
16. Gradient Temperature Zones: 6		
17. Gradient Temperature Selection Range: 30℃-100℃ (ambient temperature below 28℃)		
18. Excitation Light Source: Tungsten halogen lamp		
19. Detection Component: Cold-state -20℃ low-temperature CCD		
20. Transmission Medium for Excitation/Detection Channels: 96 high-temperature resistant professional optical fibers in bidirectional arrangement		
21. Number of Excitation/Detection Channels: 5 (expandable to 6 channels)		
22. Excitation Wavelength: Channel 1: 470nm±10nm; Channel 2: 525nm±10nm; Channel 3: 570nm±10nm; Channel 4: 620nm±10nm; Channel 5: 670nm±10nm; Channel 6: User-customizable. Detection Wavelength: Channel 1: 512nm-528nm; Channel 2: 562nm-578nm; Channel 3: 612nm-628nm; Channel 4: 662nm-678nm; Channel 5: 702nm-718nm; Channel 6: User-customizable		
23. Applicable Dyes and Probes: FAM/SYBR Green/Eva Green/LC Green/Fluorescein; VIC/HEX/TET/CY3/JOE/Alexa555; ROX/Cy3.5/Texas Red; Cy5/LC Red640; Cy5.5/LC Red705; Tamara		
23. Detection Sensitivity: ≥1 copy		
24. Resolution: As low as 1.5-fold change in single reaction		
25. Sample Repeatability: CV≤1%		
26. Linear Range: 1-10^{10}		
27. Sample Linearity: R≥0.99		
28. Software Language: English		
29. Control Mode: External computer connection via USB interface, multi-unit connection supported, compatible with LIMS/LIS system		
30. Software Functions: Real-time monitoring, automatic identification and calculation of positive/negative results, automatic standard curve establishment, absolute/relative quantification, multiplex quantification, melting curve analysis, gene mutation detection, end-point genotyping (Taqman probe method), Tm value measurement, quality control graphic analysis, PCR amplification efficiency analysis, etc.		
31. Data Output Format: EXCEL/WORD/PDF		
Power supply		
14. Power input to be AC 110-220V, 50/60Hz		

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**PCR Thermal Cycler**
9. **Standards and safety**		
Should be FDA and/or CE approved product		
Conforms to standards for ISO13485 Medical Device Registration Certificate No.: NMPA Registration No. 20173221410		
10. Warranty		
24 months from the date of satisfactory installation & commissioning.		
11. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
12. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Hemoglobin Electrophoresis**
Automatic Capillary Electrophoresis General description: A Lab equipment that separates charged molecules like proteins, DNA, or Hb variants by running them through a capillary tube using high voltage.		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
28. Detection Method: Capillary high-performance liquid electrophoresis		
29. Detection Items: Serum protein, immunotyping, glycated hemoglobin, hemoglobin		
30. Sample Types: Serum, whole blood, cord blood, etc.		
31. Throughput: Serum protein electrophoresis ≥ 90 tests/h; hemoglobin electrophoresis ≥ 50 tests/h		
32. Sensitivity: The minimum detectable concentration of monoclonal protein ＜ 27mg/dL		
33. Repeatability: CV of serum albumin ＜ 2%, CV of other serum proteins ＜ 10%		
34. Light Source: Built-in dual light sources. The deuterium lamp with 200nm wavelength improves detection sensitivity; the LED with 415nm wavelength is applicable to the detection of glycated hemoglobin and hemoglobin		
35. Capillary Material 35.1 Adopts standardized finished quartz material, no manual cutting required for replacement; 35.2 Capillary length ≦ 175mm; 35.3 Inner diameter of capillary analysis section ≥ 25μm; 35.4 Inner diameter of capillary detection section ≥ 120μm		
36. Detection Channels: ≥ 8 channels		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Hemoglobin Electrophoresis**
37. Electric Field Strength: ＞ 45V/mm		
38. Voltage: Adjustable from 0 to 20kV		
39. Reagent Compartments: ≥ 7 compartments		
40. Reagent Bottle Capacity: ≥ 900mL per bottle		
41. Sample Loading Volume: Minimum sample volume ≦ 1μL		
42. Sample Loading Capacity: 6 sample racks can be placed at one time, with a maximum single injection of 48 blood collection tubes. Continuous rack loading is supported, and an external autosampler can be connected to expand sample quantity		
43. Sampling Mode: Continuous sampling from original tubes; in-machine aspiration, dilution and electrophoresis are fully automatic		
44. Injection Mode: Lever type injection (superior to belt transmission injection to avoid sampling jamming)		
45. Identification Function: Equipped with sample barcode recognition and RFID for buffer and reagent bottles; real-time reagent remaining volume display on the instrument		
46. Full Automation: Needle piercing & cap-free testing to minimize biohazard; built-in automatic upside-down mixing ensures thorough sample mixing and accurate results		
47. Control Unit: Automatic liquid level monitoring, temperature, gas circuit and optical circuit detection, as well as automatic flushing. The software is equipped with an automatic capillary maintenance program to clean sampling needles and capillaries automatically		
48. Electrophoresis Temperature Control: Peltier bonded precise temperature control system; adjustable temperature range: ≤5℃ (min) to ≥50℃ (max)		
49. Internal Refrigeration: Built-in reagent refrigeration function		
50. Operation Mode: Built-in touch screen for independent operation without external computer; independent data and electrophoretogram analysis, real-time result viewing offline		
51. Onboard Touch Screen: ≥ 13.3 inches, resolution: 1600×900		
52. Software System: Chinese UI; automatic band identification, percentage and quantitative calculation; results can be transmitted to hospital LIS/HIS via network		
53. Automatic Maintenance: Independent automatic maintenance function; maintenance solution installed on the instrument for unattended automatic operation		
54. Quality Control System: Compatible with conventional QC materials; L-J quality control chart statistical function to ensure detection accuracy		
15. Power supply		
Power voltage: 220V±10%~ 50Hz		
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup		
Voltage stabilizer with suitable rating will be supplied		
16. Warranty		
24 months from the date of satisfactory installation & handing over to the department.		
13. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
14. **Software up gradation**		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Hemoglobin Electrophoresis**
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests Tumor Markers Endocrinology Tests**	**Chemiluminescence Immunoassay Analyzer**
Chemiluminescence Immunoassay Analyzer		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
Principle: Direct chemiluminescence, acridinium ester platform		
Solid phase: superparamagnetism nano magnetic microbead		
The reagent carousel has 25 positions with on-board cooling temperature 2~8°C.		
The analyzer is using vortexer non-touch mixing		
Onboard sample capacity: 90		
The analyzer throughput is up to 180 tests/h.		
Sample volume: 10μL~150μL. Reagent volume: 20μL~200μL		
Use single long life metal probe to aspirate sample and reagent		
The analyzer has 55 incubation position in reaction disk		
The analyzer has 25 reagent positions, with on-board cooling temperature 2~8°C.		
Supply 50T/kit and 100T/kit reagent package		
The analyzer can load 2 cuvette box on board and onboard cuvette capacity: 180		
The operation system can be installed on Window 10.		
Concentrated wash buffer should be applied to reduce the cost of storage.		
The reagent shall use paramagenetic particles which diameter is micrometer level.		
No more than 2 calibrator to calibrate.		
The calibrator and control is ready to use.		
11. **Environmental factors**		
Environmental temperature: 10℃~30℃;		
Relative humidity: not more than 70%		
Atmospheric pressure: 75kPa~106kPa		
Be away from strong electromagnetic interference sources;		
12. UPS and Power supply		

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests Tumor Markers Endocrinology Tests**	**Chemiluminescence Immunoassay Analyzer**
Power input to be Supply voltage: 220/230V~, 50/60Hz		
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup		
Voltage stabilizer with suitable rating will be supplied		
13. **Standards and safety**		
Should be FDA and/or CE approved		
14. Warranty		
24 months from the date of satisfactory installation & commissioning.		
15. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
16. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	Immunology and Serology Tests	Chemiluminescence Immunoassay Analyzer
Chemiluminescence Immunoassay Analyzer for Allergy Testo and Autoimmune Test General description: A fully automated laboratory equipment that measures hormones, tumor markers, cardiac markers, infectious disease, and vitamins by detecting light produced from a chemical reaction.		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
Throughput: Single-step method ≥150 tests/h		
Reagent Positions: ≥12 positions		
Sample Positions: 40 samples loaded at one time; supports automatic dilution and STAT emergency testing		
Reaction Cups: Automatic cup loading; maximum 200 disposable cups loaded at one time, online replenishment available at any time		
Carryover Contamination Rate: ≤1 ppm		
Intelligent System: Automatic sample barcode scanning Probe with liquid level detection, collision prevention, clot detection and aspiration error alarm functions Unattended running time ＞2 hours Supports reflex testing		

Department	Section	Item Description
Specialised Laboratory	Immunology and Serology Tests	Chemiluminescence Immunoassay Analyzer
Software System: 10.1-inch touch screen, integrated design with the instrument		
Assay Types: Supports total allergen IgE detection, allergen-specific IgE antibody detection, and component-resolved allergen detection.		
Can independently detect 3 ANCA items: MPO, PR3 and GBM		
Specific IgE items ≥ 70, including ≥ 10 mixed allergen screening items and ≥ 10 component-resolved allergen detection items, covering Blomia tropicalis and Latex testing.		
2. UPS and Power supply		
Power input to be AC 220V/240V±22V, 50/60Hz±1Hz		
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup		
Voltage stabilizer with suitable rating will be supplied		
3. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
4. Standards and safety		
Should be FDA and/or CE approved		
17. Warranty		
24 months from the date of satisfactory installation & handing over to the department.		
18. Documentation		
sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
19. **Software upgradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**
Fully Automated Feces Analyzer General description: A fully automated laboratory equipment that processes stool samples to detect blood, parasites, inflammation markers, and other pathology.		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
Instrument Function		
Automatic detection of physical indicators and formed elements microscopic examination indicators in human stool samples, used in conjunction with detection kits for chemical and immunological indicators.		
Physical Indicators		
Automatic recognition of color, characteristics, etc.		

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**
Formed Elements		
All pathological formed elements visible under the microscope in stool specimens.		
Fecal Occult Blood		
Supports hemoglobin immunoassay, transferrin immunoassay, hemoglobin-transferrin immune duplex method, and hemoglobin-chemical-immune duplex method.		
Other Items		
Rotavirus, adenovirus, Helicobacter pylori, calprotectin, lactoferrin, etc.		
Intelligent Mixing Control Technology		
During specimen pre-processing, real-time monitoring of mixing effect, automatic adjustment of mixing intensity and time, personalized processing of specimens to fully release pathological components, avoid destruction of pathological components, and obtain the best processed sample suspension.		
Intelligent Image Acquisition Technology		
Using high-speed microscope combined with high-speed imaging, applying multi-layer automatic focusing technology, photographing specimens at different layers and collecting target feature parameters to prevent omission of formed elements.		
Intelligent Recognition Technology		
Applying artificial intelligence, simulating the human brain, with autonomous learning and deep learning functions, through massive image acquisition training, automatic recognition and classification of formed elements to ensure recognition accuracy.		
Parasite Egg locating & Tracking technology		
Utilizing advanced algorithms, the system rapidly scans the entire sample field at LP, and automatically flagging suspected parasite eggs. Upon detection, it intelligently prioritizes these targets for HP reconnaissance, capturing detailed, high-resolution images centered on each finding. This two-stage process ensures precise analysis of all potential targets with uncompromised image clarity.		
Multi-point Sampling		
Multi-contact design of sampling spoon, convenient for patients to take multi-point samples.		
Sample Mixing		
Double-sided propeller design, forming turbine water flow during mixing process, more thorough mixing, fully releasing pathological components.		
Dynamic Filter		
Dynamic filter design, active capture of pathological components, through filters distributed on both sides, can effectively filter food residues and enrich pathological components (especially eggs).		
Biosafety		
Stool sampling cup covered with "cross" silicone membrane sealing design, preventing stool suspension from leaking, ensuring the specimen is fully sealed before, during, and after detection, reducing biological infection risk, can meet pneumatic transmission requirements.		
Sample Delivery Device		
Track-type sample delivery, can batch process 50 specimens.		

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**

Barcode Scanning
Can automatically scan and recognize barcodes on specimen tubes.
Specimen Pre-processing
Rotary mixing, during mixing process, real-time monitoring of mixing effect based on specimen characteristics, automatic adjustment of mixing time and intensity, low intensity for loose stools, short time for soft stools, long time and high intensity for hard stools, personalized pre-processing of specimens, ensuring full release of pathological components without destroying cell morphology.
Closed-cap Sampling
Closed-cap puncture sampling, shortening specimen turnaround time, avoiding aerosol generation from opening cap causing personnel infection, ensuring biosafety.
Rapid Test Kit cassette Loading
Adopts "magazine-style" design, moisture-proof and easy to load, plug and play, can load without stopping, detection items can be freely selected and combined, supports single and double cards, can detect 1~10 different items at once.
Cell Counting Slide
Uses high-precision disposable counting board, can prevent cross-contamination between specimens, avoid equipment failure caused by pipeline or counting pool blockage, ensure instrument stability and biosafety.
Counting Slide Queuing Sedimentation Device
Disposable can accommodate 6 samples for simultaneous queuing sedimentation, ensuring sufficient sedimentation time for stool specimens, improving image clarity and overall detection speed.
Intelligent Recognition
Using Hough transform detection and recognition method, algorithm continuously optimized, based on massive database training from thousands of users, through autonomous learning, deep learning, precise recognition of red blood cells, white blood cells, fungi, starch granules, eggs and other pathological components.
Centralized Review
Instrument automatically captures images of individual formed elements from CCD photos, classifies and arranges them centrally, convenient for review.
Emergency Function
Has dedicated position for emergency insertion, can insert emergency analysis at any time during testing.
Quality Control Function
Equipped with original factory matching CFDA-certified stool formed elements quality control materials (including negative, sensitivity and precision three types) and fecal occult blood, transferrin quality control products (containing normal, low, medium and high four concentrations respectively).
Report Method
Provides comprehensive physical, chemical, immunological and formed elements detection report with illustrations, providing comprehensive reference information for clinical diagnosis.
Detection Card Incubation

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**

Equipped with 37°C constant temperature incubation system, ≥100 incubation positions, ensuring full reaction of detection cards, accurate and reliable results.

Alarm Function

Has fault alarm function.

Scan Code Repair

Direct scan code repair, simple and convenient, after-sales personnel respond quickly and eliminate faults in time, ensure normal operation of the instrument.

Printer

Laser printer

Data Interface

Bidirectional communication interface, convenient for data transmission.

Speed: ≥60 specimens/hour

Detection Rate

Detection rate for detection limit samples (quality control sensitivity or simulated samples) ≥95%

Formed Elements Gathering Rate: ≥80%

Accuracy Deviation

Comprehensive recognition and counting accuracy deviation of formed elements ≤5%; 2) Chemical-immune detection items: Automatic recognition of color development through dedicated stool detection cards, recognition accuracy deviation ≤1%.

Repeatability

Concentration 20～100/μL: CV≤20%; Concentration 500～1000/μL: CV≤12%; Concentration 5000/μL: CV≤8%.

Detection Compliance Rate

Red blood cells compliance rate 97.5%; White blood cells compliance rate 95.3%; Eggs (liver fluke eggs) compliance rate 92.3%; Fungi compliance rate 100%.

Carry-over Contamination Rate

Concentration (4600~5400)/uL: ≤1/uL; Concentration (9200~10800)/uL: ≤2/uL.

8. UPS and Power supply

Power input to be AC 100-240V, 50/60Hz

- UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup
- Voltage stabilizer with suitable rating will be supplied

9. **Installation and testing**:

Complete installation and testing as per the manufacturer's instructions.

10. **Standards and safety**

- Should be FDA and/or CE approved product

Department	Section	Item Description
Specialised Laboratory	**Parasitology Tests**	**Feces Analyzer**

- Conforms to standards for ISO13485

11. Warranty

24 months from the date of satisfactory installation & handing over to the department.

12. Documentation

Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.

13. **Software up gradation**

Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests** **Tumor Markers** **Immunology and Serology Tests**	**Fully Automated Chemistry Analyzer**

Fully Automated Chemistry Analyzer

General description: A fully automated laboratory equipment that runs blood and urine biochemistry tests like glucose, urea, creatinine, liver enzymes, electrolytes, lipids, proteins from start-to-finish with almost no manual steps.

Operational requirements

All capabilities as detailed below should be integral part of the quotation.

1. Technical Specifications

Wavelength coverage: Flat field grating type beam-splitting system, simultaneous photometric data collection and processing of 12 wavelengths; The specific wavelengths are 340nm,380nm, 405nm, 450nm, 480nm, 505nm, 546nm, 570nm, 600nm, 660nm, 700nm,800nm.

Reaction temperature 37℃

Fluctuation of temperature ±0.1℃

Test items 80 colorimetric items, 3 ISE items (optional), K+, Na+ and Cl- can be tested

Test speed Colorimetric items: Constant-speed 240 tests/ hour,ISE items (optional): Maximum 480 tests/ hour.

reagent position: Maximum 80 reagent positions, with refrigeration

Reagent volume :10μL~300μL, step 0.1μL

Volume of reagent bottle :20mL, 35mL,70mL

Sample and reagent storage temperature: 2℃～12℃

Sample and reagent bar code recognition system: 1 built-in bar code reader (optional)

Probe liquid level sensor: Integrated with probe

Sample loading capacity at one time: Alt least 80 sample positions, with refrigeration

Sample type: Serum, plasma, urine, ascites, cerebrospinal fluid

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests** **Tumor Markers** **Immunology and Serology Tests**	**Fully Automated Chemistry Analyzer**
Sample volume: 2μL~35μL, step 0.1μL		
Interface: RJ45 network interface		
Connected system: Can be connected to LIS/HIS		
Equipped with an advanced intelligent software system to ensure accurate and reliable test results, and improve laboratory operation convenience and quality control level: Serum Index Function, Hook Effect Monitor Function, Substrate Depletion Monitor & Enzymatic Linear Expansion Function, Water Quality Monitoring Function		
Cuvette type: Discrete type		
Optical path of cuvette: 5mm		
Absorbance range 0~5.7Abs		
Absorbance linear Range 0~3.5Abs		
QC: Real-time QC, daily QC, inter-day QC and analysis on losing control with double-concentration method		
Automatic rinsing: Automatic rinsing of cuvette, Sample and reagent probe, mixing bar		
Mixing system: Independent mixing after reagent dispensing		
2. Environmental factors		
Environmental temperature: 10℃~30℃;		
Relative humidity: not more than 70%		
Atmospheric pressure: 75kPa~106kPa		
Be away from strong electromagnetic interference sources;		
3. UPS and Power supply		
Power voltage: 100V-240V~ 50/60Hz		
UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup		
Voltage stabilizer with suitable rating will be supplied		
4. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
5. Standards and safety		
Should be FDA and/or CE approved product		
Conforms to standards for ISO13485		
10. Warranty		
24 months from the date of satisfactory installation & handing over to the department.		
15. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		

Department	Section	Item Description
Specialised Laboratory	**Biochemistry Tests** **Tumor Markers** **Immunology and Serology Tests**	**Fully Automated Chemistry Analyzer**
16. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**Nucleic Acid Extractor**
Nucleic Acid Extractor General description: An automated laboratory equipment that purifies DNA and/or RNA from blood, swabs, sputum, etc.		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
Processing Volume		
30 µL ~ 1000 µL (32 throughputs, standard 96 deep well plate)		
Capacity		
95% (Conditions: 96 deep well plate & magnetic rod covers from XATL Co., Ltd.; 1 µm magnetic beads; 1× recycle in 6 mol/L guanidine hydrochloride; 2× recycle in neutral washing liquid)		
Inter-well Purification Accuracy		
CV < 3% (for identical concentration samples extracted in identical process)		
Magnetic Rods		
Magnetic rod frame for 32 magnetic rods		
Mixing Mode		
Multi-modes and multi-gears for mixing		
Heating Temperature		
Heating modes: Lysis heating: room temperature ~ 120°C Elution heating: room temperature ~ 120°C		
Diversified operation modes:		
Remote control via mobile phone/tablet (Android system) On-board screen key operation		
Network communication		
Supports WiFi remote control via mobile phones and tablets, with expandable Ethernet remote control function.		
Program Storage		
Firmware system can store up to 15 experimental programs		
Power Failure Protection		

Department	Section	Item Description
Specialised Laboratory	**Molecular Tests**	**Nucleic Acid Extractor**
Can continue unfinished experiment after restart following unexpected power failure		
Disinfection		
Equipped with UV lamp in experiment cabin; disinfection time can be manually or automatically controlled		
Plates Forms		
Dedicated plates, 6-strip tubes, and 96 deep well plates available (depending on throughput)		
3. Standards and safety		
Should be FDA and/or CE approved		
Conforms to standards for ISO13485		
Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
9. **Installation and testing**: Complete installation and testing as per the manufacturer's instructions.		
Warranty: One year after commissioning.		
10. Warranty		
24 months from the date of satisfactory installation & commissioning.		
11. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
12. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Medical Centrifuge**
Medical Centrifuge for Coombs Tests General description: A motor-driven laboratory device that uses centrifugal force to separate components of biological mixtures—such as blood, urine, or saliva—based on their density.		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
1. Technical Specifications		
Centrifugation Speed		
Maximum speed: 3500rpm, speed relative deviation: ±2.5%		
Centrifuge for 5 minutes (automatically, 900 rpm for 2 minutes, 1500 rpm for 3 minutes)		
2. Accessories		
Centrifuge rotor * 1 set		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Medical Centrifuge**
Fuse T2A, 250VAC（2pcs）		
3. Environmental factors		
15. Indoors, temperature range 5℃~40℃;		
16. relative humidity ≤80%;		
17. Atmospheric pressure 860hPa~1060hPa;		
18. No conductive dust, explosive gases, or corrosive gases in the surrounding environment.		
4. UPS and Power supply		
Power input to be AC 220/240V±22V， 50/60Hz±1Hz		
20. **Quality standards**: IEC 60601-1, or any other internationally recognized standards Conformity to standards: CE marked or any other internationally recognized documents		
21. **Installation and testing**: Complete installation and testing as per the manufacturer's instructions.		
22. Warranty		
24 months from the date of satisfactory installation & handing over to the department.		
23. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
24. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Incubator**
Reagent Card Incubator for Coombs Tests General description: A bench top laboratory equipment that heats and holds gel cards or column agglutination cards at precise temperature for blood bank testing.		
Operational requirements All capabilities as detailed below should be integral part of the quotation.		
9. Technical Specifications		
Incubator Temperature: 37℃ ±1℃ (incubation for antigen-antibody reactions inside gel cards before centrifugation)		
10. Accessories		
Card holder 5 sets to fit the Coombs Reagent Card		
Fuse T2A, 250VAC（2pcs）		
11. **Environmental factors**		
19. Indoors, temperature range 5℃~40℃;		

Department	Section	Item Description
Specialised Laboratory	**Hematology Tests**	**Incubator**
20. relative humidity ≤80%;		
21. Atmospheric pressure 860hPa~1060hPa;		
22. No conductive dust, explosive gases, or corrosive gases in the surrounding environment.		
12. UPS and Power supply		
Power input to be AC 220/240V±22V, 50/60Hz±1Hz		
13. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
14. Warranty		
24 months from the date of satisfactory installation & commissioning.		
15. Documentation		
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.		
16. **Software up gradation**		
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.		

Department	Section	Item Description
Specialist Laboratory	**Microbiology Tests**	**Fungal Culture and Sensitivity**
Auto Fungus identification and antimicrobial susceptibility testing system		
1. Technical Specifications		
1.Intended use: Used for automated identification detection and quantitative or qualitative susceptibility testing of isolated colonies for clinical bacteria and fungi.		
2.Test Principle: Identification: Colorimetry Susceptibility testing: Turbidimetry		
3.Identification & susceptibility test range: Covering 11 common clinical categories, more than 300 kinds of pathogenic bacteria, including Enterobacteriaceae, non-fermentative bacteria, Streptococcus (Enterococcus), Staphylococcus (micrococcus), fungi, Corynebacterium, Neisseria/Haemophilus, etc.		
4. Throughput: ≥50 pcs/hr		
5. Size: Instrument size: 215mm* 258mm *215mm		

6.Weight:4.4 kg (N.W); 6.2 (G.W)
7.Condition: Temperature:5-40℃, Humidity: ≤80%, Power supply:AC100-240V, 50/60Hz
8.Construction: Built in pinhole lens, built in barcode scanner, Integrated fuselage including computer system and identification/antimicrobial susceptibility testing system
9.Working Station, Windows 10, 8-inch touch screen, 128GB
1. Function: Auto self-checking at startup, uses image recognition to analyze the test card, and uploads the data to a database for automated analysis. Advanced expert system presents testing results with high accuracy and instructive interpretation for over 200 kinds of antibiotics. LIS and WHONET support According to CLSI or EUCAST regulation Multiple drug-resistant monitoring: MRSA, BETA-lac, VRE, VRSA, HLAR, ESBLs and so on Customized report format Equipped with statistic function for analyzing the data in different aspects
2. Test card(consumable): The test cards can be rechecked by naked eyes. *Fungus AST card should contain Amphotericin B, Flucytosine, Micafungin, Caspofungin, Fluconazole, Isavuconazole, Voriconazole, Posaconazole, Itraconazole *The test cards should be 96 wells or above. Advanced expert system presents testing results with high accuracy and instructive interpretation for over 200 kinds of antibiotics.

13.SCAN-10: Throughput 1-2 minutes per cards
14.Auto sampling instrument (Optional): Size Instrument size: 496mm* 365mm *443mm, Capability:96-well cards & 120-well cards
15.Turbidimeter (Standard): Size Instrument size: 215mm* 258mm *215mm
16.Detection range:0-6 McF
9. **Environmental factors**
1. Environmental temperature: 10℃~30℃;
2. Relative humidity: not more than 70%
10. **UPS and Power supply**
1. Power voltage: 1`0V-220V~ 50/60Hz

2. UPS of suitable rating shall be supplied for complete system with minimum 8 minutes backup
3. Voltage stabilizer with suitable rating will be supplied
11. **Standards and safety**
1. Should be FDA and/or CE approved product
2. Conforms to standards for ISO13485
12. **Warranty**
24 months from the date of satisfactory installation & handing over to the department.
13. **Documentation**
Two sets of operational/service/application manuals (Hard and soft copy) are to be provided along with the equipment.
14. **Software up gradation**
Software upgrades for the core system and all related applications for next 10 years to be provided free by the firm as a matter of routine as and when these are released, inclusive of minor hardware changes.

Department	**Section**	**Item Description**
Specialised Cardiothoracic & Vascular		**Infusion Pump**
General description: An infusion pump is designed for precise, safe delivery of fluids, medications, or nutrition in hospitals, clinics, and home-care settings.		
Operational requirements		
4. Technical Specifications		
An infusion pump with a screen size ≥3.0 inches, convenient and fast human-machine operation interface.		
Flow rate range: 0.10mL/h～2000mL/h (minimum step 0.01mL/h).		
Bolus flow rate range: 0.10mL/h～2000mL/h (minimum step 0.01mL/h).		
Infusion accuracy ≤±4.5%.		
KVO (Keep Vein Open) rate setting range: 0.1mL/h～30mL/h adjustable.		
≥10 infusion modes: rate mode, time mode, weight mode, micro mode, sequence mode, loading dose mode, gradient mode, dose-time mode, intermittent administration mode, drip		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Infusion Pump**
mode.		
Dynamic Pressure Detection (DPS), can display current pressure value in real time.		
Automatic pressure release (Anti-Bolus) function: when line occlusion alarm is triggered, it automatically retracts line pressure to avoid accidental bolus injury to patients.		
≥15 adjustable occlusion pressure thresholds, minimum 75mmHg.		
Equipped with priming function to remove air bubbles in the infusion line.		
Online titration function, no need to interrupt infusion when changing flow rate.		
Air bubble detection: can detect single air bubble ≥20μL, 7 adjustable levels for single bubble size.		
Night mode: automatically reduces screen brightness and volume, automatically resumes original settings after the set time ends.		
Drug library function, can store ≥3000 drugs.		
Log recording function, can store ≥2000 operation records.		
Automatically calculates four types of cumulative volumes: 24-hour cumulative volume, latest cumulative volume, cumulative volume in custom time period, cumulative volume at fixed time intervals, for easy management of total infused fluid volume.		
Battery operating time ≥5 hours @25mL/h; can be upgraded to ≥10 hours @25mL/h.		
Dustproof and waterproof rating: IP44.		
Complete unit weight ≤1.6kg (including battery), host is equipped with built-in handle for easy carrying.		
Certified to EN1789 ambulance standard, suitable for use in outdoor first aid and on-board scenarios.		
Can be equipped with wireless module to realize wireless network communication.		
5. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
6. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Neurosurgery Operating Suite / Ophthalmology Operating Suite**	**Operating Light**
General description: A surgical light (Operating lamp) ceiling mounting type. The surgical light should consist of two lamp head, main and auxiliary (dual type). It should be constructed from light weight material preferable aluminum, and easily to disinfect. It should have emergency backup power supply to last for at least 2 hours.		
Operational requirements		
10. Technical Specifications		
The operating light adopts medical-grade LED cold light source, number of LED beads in main lamp ≥36, number of LED beads in satellite lamp ≥15.		
The Lamp housing is made of aluminum alloy for good heat dissipation, surface is treated with environmental-friendly powder coating, and the powder has passed antibacterial test.		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Neurosurgery Operating Suite / Ophthalmology Operating Suite**	**Operating Light**
When the base frame is loaded with 10000N·m force for 10 minutes, the horizontal tilt angle of the flange is less than 0.6°; the rotation life of the rotating shaft under 300kg load ≥100,000 cycles. (Third-party test reports for the above two items shall be provided)		
The main lamp is equipped with LCD touch panel located at the lamp head rotating shaft, with adjustable angle of 60° for convenient operation and observation by doctors. It has normal lighting, bright lighting, endoscopic lighting modes, and optional automatic mode.		
The main lamp has customizable clinical modes, allowing the department to save 3 different lighting parameters according to clinical usage habits for one-click switching.		
Adopts circular rotating balance arm suspension system with six sets of joint linkage, light movement, stable positioning, and 340° omnidirectional design, which can meet the needs of different heights and angles during surgery.		
The main lamp is equipped with illuminance stabilization technology. When adjusting the spot size, the illuminance is automatically compensated to keep the central illuminance constant.		
The main lamp can be equipped with auto-focus function. After enabling the automatic function, it can adapt to different wound distances, and the illuminance remains unchanged when moving the lamp head position. (Third-party test report shall be provided)		
Sterile handle design, made of PPSU material, resistant to high temperature and high-pressure steam sterilization ≥134℃, easy to install, disassemble, clean and disinfect. The handle also has illuminance adjustment function, which can change the illuminance by rotating clockwise/counterclockwise.		
Adopts DC dimming technology, which directly controls the current of LED beads to realize illuminance adjustment, no PWM dimming for the light source, avoiding visual fatigue and discomfort to medical staff caused by low-frequency flicker, and eliminating water ripples during video recording. (Third-party test report shall be provided)		
The surgical lamp is light and convenient to move. The force required for vertical movement of the main and satellite lamps ≤40N, and the force required for horizontal displacement ≤20N. (Third-party test report shall be provided)		
The main lamp can be equipped with intelligent shadow management system. After activation, the measured shadowless rate of the main lamp under single obstruction ≥95%.		
The measured color rendering index Ra of the main lamp ≥97, ensuring that the light source can most realistically restore the actual appearance of the wound surface. (Third-party test report shall be provided)		
The main lamp has 10-level adjustable spot size: minimum spot ≤180mm, maximum spot ≥300mm. Satellite lamp spot size is 230mm±10mm.		
The measured illumination depth of the main lamp ≥1400mm, which can provide excellent illumination for deep cavity surgery. (Third-party test report shall be provided)		
The ratio of irradiance Ee to illuminance Ec shall not exceed 3.7±10% mW/ (m^2 lux).		
10-level adjustable illuminance: main lamp 40000-160000lux / satellite lamp 40000-130000lux.		
The main and satellite lamps can be switched to endoscopic mode with one click. The endoscopic illuminance of the main lamp ≤8500lux, and the endoscopic illuminance of the satellite lamp ≤500lux. The satellite lamp can be set to white light or green light. (Third-party test report shall be provided)		
The measured color rendering index R9 of both main and satellite lamps ≥95. (Third-party test report shall be provided)		
11. Power & Utility Requirements: Voltage: 415 V AC, 3-phase 50/60Hz		
12. Standby/backup power supply: UPS of at least 15KVA		
13. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Theatre**	**Anaesthesia workstation with monitor**

General description: Inhalation anaesthetic machine with electronic ventilator complete with all accessories for low and high flow anaesthesia, adult, paediatric and infant application. It should include a patient monitor unit.

Operational requirements

Anaesthesia Workstation inclusive of ventilator, Anaesthesia Monitoring systems, complete with all accessories for low and high flow anesthesia, adult, pediatric and infant application.

1. Technical Specifications

LCD ≥12.1-inch color resistive touchscreen with rotatable external design

Operating system with cascading menu structure, all setting operations completed within 2 steps

Integrated electromechanical power switch, equipped with power-on self-test (POST), quick start, standby mode, and delayed shutdown function

Backup lithium battery with continuous operation duration ≥120 minute

Equipped with ≥3 auxiliary mains power sockets to provide power support for perioperative equipment

3 module slots on the front panel of the host, supporting module sharing with the same brand of plug-in patient monitors. Capable of monitoring parameters including CO_2, AG (Anesthetic Gas), BIS (Bispectral Index), O_2, etc., with maximum 5 waveforms displayed simultaneously on the same screen

AGSS (Anesthesia Gas Scavenging System) with active suction for waste gas discharge, while effectively preventing unnecessary waste of anesthetic gas during the process

Gas Supply Section

Three gas sources (Oxygen, Nitrous Oxide, Air) with operating pressure range of 0.28~0.6MPa

Equipped with 6-tube mechanical flowmeters for quick and intuitive reading, with adjustment range of 0-10L/min, adjustment accuracy of 0.05L/min, adjustment resolution of 10%, suitable for low and micro-flow anesthesia procedures

Equipped with mechanical nitrous oxide-oxygen protection device, independent of power supply, ensuring oxygen concentration ≥25% at any flow rate

Oxygen flush function with flow rate range of 25-75L/min

Anesthesia Ventilator

1. Pneumatically driven, electronically controlled ventilator Application scope: Adults, pediatrics and infants.

Equipped with automatic compensation functions for circuit leakage, compliance and fresh gas, ensuring the set tidal volume is accurately delivered.

2. Ventilation modes: VCV (Volume Controlled Ventilation), PCV (Pressure Controlled Ventilation), Manual mode

3. Under controlled ventilation mode:

- Tidal volume setting range in VCV mode: 15~1500ml
- Tidal volume control range in PCV mode: 5~1500ml
- Respiratory rate setting range: 4~100 breaths/min
- I:E (Inspiratory/Expiratory) ratio setting range: 4:1~1:10
- Inspiratory pressure setting range: 5~70 cmH_2O, step size 1 cmH_2O
- PEEP (Positive End-Expiratory Pressure) setting range: OFF, 3~30 cmH_2O, step size 1 cmH_2O
- Pressure limit setting range: 10~100 cmH_2O

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Theatre**	**Anaesthesia workstation with monitor**

14. Under synchronized and supported ventilation mode:

- Trigger window setting range: 5%~90%
- Inspiratory trigger setting range: Flow trigger 0.2~15L/min, step size 0.1L/min; Pressure trigger -20~-1 cmH_2O, step size -0.5 cmH_2O
- Pressure ramp: 0s~2.0s
- Inspiratory time: 0.2~5s, step size 0.1s
- Support pressure setting range: OFF, 3~60 cmH_2O
- Inspiratory flow rate: 0~120L/min

15. Key parameter monitoring ranges:

- Minute ventilation: 0~100L/min
  - Inspiratory and expiratory tidal volume: 0~3000ml
  - Compliance: 0~300 mL/cmH_2O
- Airway resistance: 0~600 cmH_2O/(L/s)
- Airway pressure: -20~120 cmH_2O
- Oxygen sensor concentration: 18%~100%
- Oxygen concentration: 18%~100%

16. Other monitoring parameters: Respiratory rate, peak pressure, mean pressure, plateau pressure, PEEP, inspired and expired oxygen concentration, I:E ratio; optional: inspired and end-tidal CO_2 concentration, inspired and end-tidal anesthetic gas concentration, depth of anesthesia monitoring, etc.

17. Respiratory mechanics monitoring: Standard pressure waveform, flow waveform, volume waveform; optional CO_2 waveform, EEG waveform, supporting up to 5 waveforms displayed simultaneously on the same screen

18. Optional pressure-volume loop, pressure-flow loop, flow-volume loop with loop analysis function, supporting reference loop marking and corresponding respiratory mechanics parameter calculation. Equipped with cardiopulmonary bypass (CPB) mode

Breathing Circuit

1. The entire circuit is heated to prevent condensate formation, eliminating the need for condensate collection treatment

12. Standard bidirectional flow sensor monitoring, with flow sensor sampling tube built into the circuit and equipped with waterproof protection device

13. Standard bidirectional flow sensor monitoring, with flow sensor sampling tube built into the circuit and equipped with waterproof protection device

14. Safety ascending bellows for easy leakage observation, suitable for adults, pediatrics and infants, no bellows replacement required for different patient populations

15. Integrated, monolithic circuit design, tool-free disassembly by hand, no external tubing connection between circuit and host, circuit volume ≤2.5L

16. The integrated circuit is made of PPSU material, and the entire circuit is autoclavable at 134℃ under high pressure

17. Optional ACGO (Auxiliary Common Gas Outlet) with integrated auxiliary gas circuit switch and cover design, the cover adopts rotating snap-fit design for easy opening and closing of the auxiliary gas circuit, compatible with external Bain circuit, T-piece circuit, etc.

18. Optional intelligent Bypass function, allowing soda lime replacement during surgery without affecting anesthesia machine operation, no anesthetic agent leakage, safe and reliable

19. Standard 1 soda lime canister with one-hand snap-in installation, capacity ≥2L

Department	Section	Item Description
Specialised Cardiothoracic & Vascular	**Theatre**	**Anaesthesia workstation with monitor**

20. Equipped with lift-type drain valve for expiratory end water removal to ensure measurement accuracy, the drain valve adopts water cup-free design, no disassembly required, supports intraoperative water drainage, and prevents anesthetic gas leakage

21. Circuit leakage rate shall not exceed 65ml/min

Vaporizer Specifications

1. Dual vaporizer slots, high-quality sevoflurane vaporizer with temperature, pressure and flow compensation functions, safety interlock function, and transport T-mode.

6. Vaporizer capacity ≥300ml.

Alarm Performance

1. Equipped with physiological alarm functions including: apnea alarm, apnea ≥2min alarm, sustained high airway pressure alarm, pressure limitation alarm, negative pressure alarm, upper and lower limit alarms for airway pressure, upper and lower limit alarms for inspired and expiratory tidal volume, upper and lower limit alarms for minute ventilation, upper and lower limit alarms for inspired and expiratory oxygen concentration, upper and lower limit alarms for inspired and end-tidal CO_2 concentration, upper and lower limit alarms for inspired and end-tidal N_2O (nitrous oxide) concentration, upper and lower limit alarms for inspired and end-tidal anesthetic gas concentration, and low BIS (Bispectral Index) signal quality alarm.

Auxiliary Functions

1. Mechanical brake

2. Two storage drawers

7. Auxiliary oxygen supply

8. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz

9. Standby/backup power supply: UPS of at least 15KVA

2. Installation and testing:
Complete installation and testing as per the manufacturer's instructions.

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**

Operational requirements
The machine is a plug-in patient monitor suitable for monitoring in operating rooms, ICU, CCU wards and bedside monitoring scenarios.

- **Technical Specifications**
  - Modular plug-in bedside patient monitor with integrated design of host, display screen and plugin slots, number of host slots ≥5

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**
➢ ≥15-inch LED high-definition LCD display, capacitive touchscreen (not resistive), resolution 1920×1080 pixels		
➢ Equipped with intelligent light sensor for automatic screen brightness adjustment, screen supports gesture swipe operation for quick interface switching, and supports operation with medical protective gloves		
➢ Multi-parameter monitoring module can be upgraded to transport monitoring module with screen, supports simultaneous unobstructed display and operation on dual screens at front and rear of the device, screen size ≥5 inches, built-in lithium battery provides power supply ≥8 hours		
➢ Fanless design, significantly reduces noise		
➢ Rechargeable lithium battery with continuous power supply ≥3 hours		
➢ Equipped with monitoring mode, demo mode, standby mode, night mode, cardiopulmonary bypass (CPB) mode, intubation mode		
➢ Capable of monitoring basic parameters including ECG, SpO2, pulse, non-invasive blood pressure, respiration, temperature, etc.; can be upgraded with parameter modules including Masimo/Nellcor SpO2, 2-channel IBP, EtCO2, C.O, AG (Anaesthetic Gas), depth of anesthesia, oxygen concentration, apnea arousal, etc.		
➢ Supports 3/5/6/12-lead ECG, with intelligent lead-off detection and multi-lead synchronous analysis functions		
➢ Equipped with heartbeat type recognition function, can distinguish normal heartbeat, abnormal heartbeat, paced heartbeat, and label each heartbeat according to arrhythmia analysis results		
➢ Supports ≥27 types of real-time arrhythmia analysis, can identify irregular rhythm cessation and atrial fibrillation cessation and trigger alarms		
➢ Can be equipped with Glasgow 12-lead resting ECG analysis algorithm, suitable for adults, pediatrics and neonates, can display analysis results, store reports and print reports		
➢ Equipped with QT/QTc measurement function, provides QT and QTc parameter values, QT/QTc monitoring is suitable for adult, pediatric and neonatal patients		
➢ Provides ST segment analysis function, suitable for adults, pediatrics and neonates, supports grouped display of real-time and reference ST segments of anterior, inferior and lateral cardiac walls in a dedicated window		
➢ Can be equipped with 24-hour ECG overview report, which allows viewing of heart rate statistics, arrhythmia statistics, QT/QTc statistics, ST segment statistics, pacing statistics and other information, helping doctors analyze the patient's 24-hour overall ECG status		
➢ Heart rate alarm limit ranges: HR high limit: 17bpm～295 bpm, HR low limit: 16bpm～290 bpm, extreme tachycardia: 60 bpm～300 bpm, extreme bradycardia: 15bpm～120 bpm		
➢ With strong anti-interference capability for ECG, polarization voltage tolerance: ±850mV		
➢ ECG modes include diagnostic, surgery, monitoring, ST modes, among which surgery, monitoring and ST modes have common mode rejection ratio (CMRR) >106dB		
➢ Equipped with heart rate variability (HRV) analysis function, provides display of HRV-related parameters, supports RR interval histogram, RR interval difference histogram, scatter plot, RR interval trend graph, for evaluating the activity of cardiac autonomic nerves		
➢ Supports RR respiratory rate measurement, measurement range: 0～200 rpm		
➢ Optional Masimo SpO2, measurement range: 1%～100%; within 70%～100% range, measurement accuracy for adults/pediatrics is ±2% (non-motion state), ±3% (motion state); for neonates it is ±3% (both non-motion and motion states)		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**
➢ Standard SpO2 function can display perfusion index (PI), PI range: 0.02-20%		
➢ Equipped with finger-cuff SpO2 probe, supports immersion cleaning and disinfection, waterproof rating IPx7		
➢ Non-invasive blood pressure (NIBP) is suitable for adults, pediatrics and neonates		
➢ NIBP provides five measurement modes: manual, automatic interval, continuous, sequence, hourly		
➢ NIBP measurement ranges:		
➢ Adult: Systolic 25 mmHg -290mmHg, Diastolic 10 mmHg-250mmHg, Mean 15mmHg -260mmHg		
➢ Pediatric: Systolic 25 mmHg -250mmHg, Diastolic 15 mmHg-210mmHg, Mean 15 mmHg-225mmHg		
➢ Neonate: Systolic 25 mmHg -140mmHg, Diastolic 10 mmHg-115mmHg, Mean 15mmHg -125mmHg		
➢ Equipped with ambulatory blood pressure monitoring interface, in the analysis interface, you can view the percentage of normal, below-normal and above-normal systolic and diastolic blood pressure data during the patient's measurement period, as well as the average, maximum and minimum values of systolic and diastolic blood pressure		
➢ Provides auxiliary venipuncture function		
➢ Supports dual-channel invasive blood pressure (IBP) monitoring, can be upgraded to support up to 8-channel IBP monitoring		
➢ IBP is suitable for adults, pediatrics and neonates, measurement range: -50～370mmHg		
➢ Provides real-time display of pulse pressure variation (PPV), measurement range: 0%～50%, resolution: 1%		
➢ Provides real-time display of systolic pressure variation (SPV), measurement range: 0 mmHg～50mmHg, resolution: 1mmHg		
➢ Provides pulmonary artery wedge pressure (PAWP) measurement		
➢ Can be upgraded with Comen/Philips Respironics/Masimo mainstream/side-stream EtCO2 monitoring module, suitable for patients of all age groups from adults to neonates, side-stream sampling rate ≤50ml/min, side-stream CO2 monitoring does not require water trap, adopts automatic drainage tube to reduce infection risk		
➢ Can be upgraded with anesthetic gas (AG) monitoring module, which monitors and displays waveforms and values of CO2/O2/N2O/AA (inhaled anesthetic agents) and airway respiratory rate (awRR); mainstream monitoring mode: no manual calibration required, automatic calibration every 24 hours		
➢ Can be upgraded with invasive cardiac output (C.O) monitoring module, uses gold standard thermodilution method for measurement		
➢ Can be upgraded with bispectral index (BIS) depth of anesthesia monitoring module, provides EEG waveform display, BIS index (0-100), EMG (electromyography), SQI (signal quality index), SR (suppression ratio), SEF (spectral edge frequency), TP (total power) and other parameters		
➢ Multiple interface display options: standard interface, large font interface, dynamic trend interface, respiratory oxygenation interface, other bed observation, full-screen ECG, half-screen ECG, PAWP, EWS (early warning score), single SpO2, CCHD (congenital heart disease) interface (optional), etc.		
➢ Can be upgraded with software functions including sepsis screening tool, Glasgow Coma Scale (GCS), early warning score function, pacing analysis, CCHD screening, etc.		
➢ Supports ≥160 hours of trend table and trend graph review		
➢ Supports storage and review of ≥2000 NIBP records		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Patient monitor**
➢ Supports storage and review of ≥2000 alarm events		
➢ Supports storage and review of ≥48 hours of full holographic waveforms		
➢ Supports ≥48 hours of arrhythmia statistics and review		
➢ Equipped with demo function for convenient training and learning		
➢ Equipped with graphical alarm indication function for easy viewing of alarm information		
➢ Equipped with drug calculation, renal function calculation, oxygenation calculation, ventilation calculation, hemodynamic calculation and titration table functions		
➢ Supports timer function, can display up to 4 timers simultaneously, each timer can be set independently, and the timer will alert when the set time is reached		
6. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
7. Quality standards: ISO 13485:2016: Medical devices — Quality management systems Conformity to standards: CE marked/ FDA approved or any other equal and equivalent internationally recognized documents		
8. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
9. Warranty: One year after commissioning		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Syringe Pump**
General description: A small-volume displacement infusion device that delivers precise amounts of fluid by mechanically driving the plunger of a syringe.		
6. Technical Specifications		
➢ LCD ≥3.0-inch display screen with convenient and fast human-machine operation interface.		
➢ Compatible syringe specifications: 5mL, 10mL, 20mL, 30mL, 50, 60ml.		
➢ Flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Bolus flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Infusion accuracy ≤±1.8%.		
➢ KVO (Keep Vein Open) rate setting range: 0.1mL/h～30mL/h adjustable.		
➢ ≥9 infusion modes: rate mode, time mode, weight mode, intermittent administration mode, gradient mode, dose-time mode, sequence mode, micro mode, loading dose mode.		
➢ Dynamic Pressure Detection (DPS), can display current pressure value in real time.		
➢ Automatic pressure release (Anti-Bolus) function: when line occlusion alarm is triggered, it automatically retracts line pressure to avoid accidental bolus injury to patients.		
➢ ≥15 adjustable occlusion alarm pressure thresholds.		
➢ Equipped with priming function to remove air bubbles in the infusion line.		
➢ Night mode: automatically reduces screen brightness and volume, automatically resumes original settings after the set time ends.		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Syringe Pump**
7. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
8. Quality standards and certification: Complies with IEC 60601-1, IEC 60601-2-24, ISO 13485. CE marked or FDA approved.		
9. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
10. Warranty: One year after commissioning		

Department	Section	Item Description
Specialised Cardiothoracic & Vascular		**Syringe Pump**
General description: A small-volume displacement infusion device that delivers precise amounts of fluid by mechanically driving the plunger of a syringe.		
1. Technical Specifications		
➢ LCD ≥3.0-inch display screen with convenient and fast human-machine operation interface.		
➢ Compatible syringe specifications: 5mL, 10mL, 20mL, 30mL, 50, 60ml.		
➢ Flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Bolus flow rate range: 0.10mL/h～2000mL/h, minimum step 0.01mL/h.		
➢ Infusion accuracy ≤±1.8%.		
➢ KVO (Keep Vein Open) rate setting range: 0.1mL/h～30mL/h adjustable.		
➢ ≥9 infusion modes: rate mode, time mode, weight mode, intermittent administration mode, gradient mode, dose-time mode, sequence mode, micro mode, loading dose mode.		
➢ Dynamic Pressure Detection (DPS), can display current pressure value in real time.		
➢ Automatic pressure release (Anti-Bolus) function: when line occlusion alarm is triggered, it automatically retracts line pressure to avoid accidental bolus injury to patients.		
➢ ≥15 adjustable occlusion alarm pressure thresholds.		
➢ Equipped with priming function to remove air bubbles in the infusion line.		
➢ Night mode: automatically reduces screen brightness and volume, automatically resumes original settings after the set time ends.		
6. Power & Utility Requirements: Voltage: 240 V AC, 3-phase 50/60Hz		
7. Quality standards and certification: Complies with IEC 60601-1, IEC 60601-2-24, ISO 13485. CE marked or FDA approved.		
8. Installation and testing: Complete installation and testing as per the manufacturer's instructions.		
9. Warranty: One year after commissioning		

Minimum specifications

The specifications outlined here aim to establish a minimum standard of care across facilities, ensuring consistency and smooth referrals while minimizing the need for repeat diagnostic investigations. These specifications serve as a guideline to standardize services and equipment of equivalent or higher specifications are acceptable.

NOTE:

Whereas the procuring entity (ies) is engaging service providers for the provision of the requisite medical tests/ procedures, the equipment specifications provided are the minimum required and may be upgraded depending on the status of the facility to be installed.

PART III – CONDITIONS OF CONTRACT AND CONTRACT FORMS

SECTION VI - GENERAL CONDITIONS OF CONTRACT

A. General

Provisions Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

a) The Adjudicator is the person appointed jointly by the Procuring Entity and the Service Provider to resolve disputes in the first instance, as provided for in Sub-Clause8.2 hereunder.

b) "Activity Schedule" is the priced and completed list of items of Services to be performed by the Service Provider forming part of his Tender;

c) "Completion Date" means the date of completion of the Services by the Service Provider as certified by the Procuring Entity

d) "Contract" means the Contract signed by the Parties, to which these General Conditions of Contract (GCC) are attached, together with all the documents listed in Clause 1 of such signed Contract;

e) "Contract Price" means the price to be paid for the performance of the Services, in accordance with Clause 6;

f) "Day works" means varied work inputs subject to payment on a time basis for the Service Provider's employees and equipment, in addition to payments for associated materials and administration.

g) "Procuring Entity" means the Procuring Entity or party who employs the Service Provider

h) "Foreign Currency" means any currency other than the currency of Kenya;

i) "GCC" means these General Conditions of Contract;

j) "Government "means the Government of Kenya;

k) "Local Currency "means Kenya shilling;

l) "Member," in case the Service Provider consist of a joint venture of more than one entity, means any of these entities; "Members" means all these entities, and "Member in Charge" means the entity specified in the SC to act on their behalf in exercising all the Service Provider' rights and obligations towards the Procuring Entity under this Contract;

m) "Party" means the Procuring Entity or the Service Provider, as the case maybe, and "Parties" means both of them;

n) "Personnel" means persons hired by the Service Provider or by any Subcontractor as employees and assigned to the performance of the Services or any part there of;

o) "Service Provider" is a person or corporate body whose Tender to provide the Services has been accepted by the Procuring Entity;

p) "Service Provider's Tender" means the completed Tendering Document submitted by the Service Provider to the Procuring Entity

q) "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented;

r) "Specifications" means the specifications of the service included in the Tendering Document submitted by the Service Provider to the Procuring Entity

s) "Services" means the work to be performed by the Service Provider pursuant to this Contract, as described in Appendix A; and in the Specifications and Schedule of Activities included in the Service Provider's Tender.

t) "Subcontractor" means any entity to which the Service Provider subcontracts any part of the Services in accordance with the provisions of Sub-Clauses3.5and4;

u) "Public Procurement Regulatory Authority (PPRA)" shall mean the Government Agency responsible for oversight of public procurement.

v) "Project Manager" shall the person appointed by the Procuring Entity to act as the Project Manager for the purposes of the Contract and named in the Particular Conditions of Contract, or other person appointed from time to time by the Procuring Entity and notified to the Contractor.

w) "Notice of Dissatisfaction" means the notice given by either Party to the other indicating its dissatisfaction and intention to commence arbitration.

1.2 Applicable Law

The Contract shall be interpreted in accordance with the laws of Kenya**.**

1.3 Language

This Contract has been executed in the English language**,** which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

1.4 Notices

Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, hand delivery, or email to such Party at the address **specified in the SCC.**

1.5 Location

The Services shall be performed at such locations as a respecified in Appendix A, in the specifications and, where the location of a particular task is not so specified, at such locations, whether in Kenya or elsewhere, as the Procuring Entity may approve.

1.6 Authorized Representatives

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Procuring Entity or the Service Provider may be taken or executed by the officials **specified in the SCC.**

1.7 Inspection and Audit by the PPRA

Pursuant to paragraph 2.2 e. of Attachment 1 to the General Conditions, the Service Provider shall permit and shall cause its sub contract or sand sub-consultants to permit, PPRA and/or persons appointed by PPRA to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by PPRA. The Service Provider's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 3.10 which provides, inter alia, that acts intended to materially impede the exercise of PPRA's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to PPRA's prevailing sanctions procedures).

1.8 Taxes and Duties

The Service Provider, Subcontractors, and their Personnel shall pay such taxes, duties, fees, and other impositions as may be levied under the Applicable Law, the amount of which is deemed to have been included in the Contract Price.

2. Commencement, Completion, Modification, and Termination of Contract

2.1 Effectiveness of Contract

This Contract shall come into effect on the date the Contract is signed by both parties or such other later date as maybe **stated in the SCC.**

2.2 Commencement of Services

2.2.1 Program

Before commencement of the Services, the Service Provider shall submit to the Procuring Entity for approval a Program showing the general methods, arrangements order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.

2.2.2 Starting Date

The Service Provider shall start carrying out the Services thirty (30) days after the date the Contract becomes effective, or at such other date as may be **specified in the SCC.**

2.3 Intended Completion Date

Unless terminated earlier pursuant to Sub-Clause 2.6, the Service Provider shall complete the activities by the Intended Completion Date, as is **specified in the SCC.** If the Service Provider does not complete the activities by the Intended Completion Date, it shall be liable to pay liquidated damage as per Sub-Clause3.8.Inthiscase,the Completion Date will be the date of completion of all activities.

2.4 Modification

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services or of the Contract Price, may only be made by written agreement between the Parties.

2.4.1 Value Engineering

The Service Provider may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following;

a) The proposed change(s), and a description of the difference to the existing contract requirements;

b) A full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs, if applicable) the Procuring Entity may incur in implementing the value engineering proposal; and

c) A description of any effect(s)of the change on performance/functionality.

The Procuring Entity may accept the value engineering proposal if the proposal demonstrates benefits that:

a) accelerates the delivery period; or

b) reduces the Contract Price or the lifecycle costs to the Procuring Entity; or

c) improves the quality, efficiency, safety or sustainability of the services; or

d) yields any other benefits to the Procuring Entity, without compromising the necessary functions of the Facilities.

If the value engineering proposal is approved by the Procuring Entity and results in:

a) a reduction of the Contract Price; the amount to be paid to the Service Provider shall be the percentage specified in the **SCC** of the reduction in the Contract Price; or

b) an increase in the Contract Price; but results in a reduction in lifecycle costs due to any benefit described in (a) to(d)above, the amount to be paid to the Service Provider shall be the full increase in the Contract Price.

2.5 Force Majeure

2.5.1 Definition

For the purposes of this Contract,"ForceMajeure"meansaneventwhichisbeyondthereasonablecontrolofa Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

2.5.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and(b) has informed the other Party as soon as possible about the occurrence of such an event.

2.5.3 Extension of Time

Any period with in which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

2.5.4 Payments

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Service Provider shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

2.6 Termination

2.6.1 By the Procuring Entity

The Procuring Entity may terminate this Contract, by not less than thirty(30) days' written notice of termination to the Service Provider, to be given after the occurrence of any of the events specified in paragraphs(a)through
(d) of this Sub-Clause 2.6.1:

a) If the Service Provider does not remedy a failure in the performance of its obligations under the Contract, within thirty (30) days after being notified or within any further period as the Procuring Entity may have subsequently approved in writing;

b) if the Service Provider become insolvent or bankrupt;

c) if, as the result of Force Majeure, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

d) if the Service Provider, in the judgment of the Procuring Entity has engaged in Fraud and Corruption, as defined in paragraph2.2a. of Attachment1 to the GCC, in competing for or in executing the Contract

2.6.2 By the Service Provider

The Service Provider may terminate this Contract, by not less than thirty (30) days' written notice to the Procuring Entity, such notice to be given after the occurrence of any of the events specified in paragraphs (a) and
(b) of this Sub-Clause 2.6.2:

a) If the Procuring Entity fails to pay any monies due to the Service Provider pursuant to this Contract and not subject to dispute pursuant to Clause 7 within forty-five (45) days after receiving written notice from the Service Provider that such payment is overdue; or

b) if, as the result of Force Majeure, the Service Provider is unable to perform a material portion of the Services for a period of not less than sixty (60) days.

2.6.3 Payment up on Termination

Upon termination of this Contract pursuant to Sub-Clauses 2.6.1 or 2.6.2, the Procuring Entity shall make the following payments to the Service Provider:

a) remuneration pursuant to Clause 6 for Services satisfactorily performed prior to the effective date of termination;

b) except in the case of termination pursuant to paragraphs (a), (b), (d) of Sub-Clause 2.6.1, reimbursement of any reasonable cost incident to the prompt and orderly termination of the Contract, including the cost of the return travel of the Personnel.

3 Obligations of the Service Provider

3.1 General

The Service Provider shall perform the Services in accordance with the Specifications and the Activity Schedule, and carry out its obligations with all due diligence, efficiency, and economy, in accordance with

generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. The Service Provider shall always act, in respect of any matter relating to this Contractor to the Services, as faithful adviser to the Procuring Entity, and shall at all times support and safeguard the Procuring Entity's legitimate interests in any dealings with Subcontractors or third parties.

3.2 Conflict of Interests

3.2.1 Service Provider Not to Benefit from Commissions and Discounts.

The remuneration of the Service Provider pursuant to Clause 6 shall constitute the Service Provider's sole remunerationinconnectionwiththisContractortheServices,andtheServiceProvidershallnotacceptfortheir own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contractor to the Services or in the discharge of their obligations under the Contract, and the Service Provider shall use their best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them similarly shall not receive any such additional remuneration.

3.2.2 Service Provider and Affiliates Not to be Otherwise Interested in Project

The Service Provider agree that, during the term of this Contract and after its termination, the Service Provider and its affiliates, as well as any Subcontractor and any of its affiliates, shall bed is qualified from providing goods, works, or Services(other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

3.2.3 Prohibition of Conflicting Activities

Neither the Service Provider nor its Subcontractors nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

a) During the term of this Contract, any business or professional activities in Kenya which would conflict with the activities assigned to them under this Contract;

b) during the term of this Contract, neither the Service Provider nor their Subcontractors shall hire public employees' inactive duty or on any type of leave, to perform any activity under this Contract;

c) After the termination of this Contract, such other activities as may be **specified in the SCC.**

3.3 Confidentiality

The Service Provider, its Subcontractors, and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract, or the Procuring Entity's business or operations without the prior written consent of the Procuring Entity.

3.4 **The Service Provider** (a) shall take out and maintain, and shall cause any Subcontractors to take out and maintain, at its (or the Sub contractors', as the case may be)own cost but on terms and conditions approved by the Procuring Entity, insurance against the risks, and for the coverage, as shall be **specified in the SCC;** and (b) at the Procuring Entity's request, shall provide evidence to the Procuring Entity showing that such insurance has been taken out and maintained and that the current premiums have been paid.

3.5 Service Provider's Actions Requiring Procuring Entity's Prior Approval

The Service Provider shall obtain the Procuring Entity's prior approval in writing before taking any of the following actions:

a) Entering into a subcontract for the performance of any part of the Services,

b) appointing such members of the Personnel not listed by name in Appendix C ("Key Personnel and Subcontractors"),

c) changing the Program of activities; and

d) Any other action that may be **specified in the SCC.**

3.6 Reporting Obligations

The Service Provider shall submit to the Procuring Entity the reports and documents specified in Appendix B in the form, in the numbers, and within the periods set forth in the said Appendix.

3.7 Documents Prepared by the Service Provider to Be the Property of the Procuring Entity

All plans, drawings, specifications, designs, reports, and other documents and software submitted by the Service Provider in accordance with Sub-Clause 3.6 shall become and remain the property of the Procuring Entity, and the Service Provider shall, not later than upon termination or expiration of this Contract, deliver all such documents and software to the Procuring Entity, together with a detailed inventory thereof. The Service Provider may retain a copy of such documents and software. Restrictions about the future use of these documents, if any, shall be **specified in the SCC.**

3.8 Liquidated Damages

3.8.1 Payments of Liquidated Damages

The Service Provider shall pay liquidated damages to the Procuring Entity at the rate per day **stated in the SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount **defined in the SCC.** The Procuring Entity may deduct liquidated damages from payments due to the Service Provider. Payment of liquidated damages shall not affect the Service Provider's liabilities.

3.8.2 Correction for Over-payment

If the Intended Completion Date is extended after liquidated damages have been paid, the Procuring Entity shall correct any overpayment of liquidated damages by the Service Provider by adjusting the next payment certificate. The Service Provider shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in Sub-Clause 6.5.

3.8.3 Lack of performance penalty

If the Service Provider has not corrected a Defect within the time specified in the Procuring Entity's notice, a penalty for Lack of performance will be paid by the Service Provider. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as described in Sub-Clause7.2 and **specified in the SCC.**

3.9 Performance Security

The Service Provider shall provide the Performance Security to the Procuring Entity no later than the date specified in the Form of acceptance. The Performance Security shall be issued in an amount and form and by a bank or surety acceptable to the Procuring Entity, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The performance Security shall be valid until a date 28 day from the Completion Date of the Contract in case of a bank guarantee, and until one year from the Completion Date of the Contract in the case of a Performance Bond.

3.10 Fraud and Corruption

The Procuring Entity requires compliance with the Government's Anti-Corruption laws and its prevailing sanctions. The Procuring Entity requires the Service Provider to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the tendering process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

3.11 Sustainable Procurement

The Service Provider shall conform to the sustainable procurement contractual provisions, if and as specified in the **SCC**.

4 Service Provider's Personnel

4.1 Description of Personnel

The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Service Provider's Key Personnel are described in Appendix C. The Key Personnel and Subcontractors listed by title as well as by name in Appendix Care hereby approved by the Procuring Entity.

4.2 Removal and/or Replacement of Personnel

a) Except as the Procuring Entity may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Service Provider, it becomes necessary to replace any of the Key Personnel, the Service Provider shall provide as a replacement a person of equivalent or better qualifications.

b) If the Procuring Entity finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Service Provider shall, at the Procuring Entity's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Procuring Entity.

c) The Service Provider shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

5 Obligations of the Procuring Entity

5.1 Assistance and Exemptions

The Procuring Entity shall use its best efforts to ensure that the Government shall provide the Service Provider such assistance and exemptions as **specified in the SCC.**

5.2 Change in the Applicable Law

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the Services rendered by the Service Provider, then the remuneration and reimbursable expenses otherwise payable to the Service Provider under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred to in Sub-Clauses 6.2(a) or (b), as the case may be.

5.3 Services and Facilities

The Procuring Entity shall make available to the Service Provider the Services and Facilities listed under Appendix F.

6 Payments to the Service Provider

6.1 Lump-Sum Remuneration

The Service Provider's remuneration shall not exceed the Contract Price and shall be a fixed lump-sum including all Subcontractors' costs, and all other costs incurred by the Service Provider in carrying out the Services described in Appendix A. Except as provided in Sub-Clause 5.2, the Contract Price may only be increased above the amounts stated in Sub-Clause 6.2 if the Parties have agreed to additional payments in accordance with Sub- Clauses2.4and6.3.

6.2 Contract Price

a) The price payable is **set forth in the SCC.**

b) Price may be payable in foreign currency, if so allowed in this document.

6.3 PaymentforAdditionalServices,andPerformanceIncentiveCompensation

6.3.1 For the purpose of determining the remuneration due for additional Services as may be agreed under Sub-Clause 2.4, a breakdown of the lump-sum price is provided in Appendices D and E.

6.3.2 **If the SCC so specify,** the service provider shall be paid performance incentive compensation asset out in the Performance Incentive Compensation appendix.

6.3.3 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (*which would be the tender price*), payment valuation certificates and variation orders on omissions and additions valued based on rates in the schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows:*(corrected tender price–tender price)/tender price X100.*

6.4 Terms and Conditions of Payment

Payments will be made to the Service Provider according to the payment schedule **stated in the SCC. Unless otherwise stated in the SCC**, the advance payment (Advance for Mobilization, Materials and Supplies) shall be made against the provision by the Service Provider of a bank guarantee for the same amount, and shall be valid for the period **stated in the SCC.** Any other payment shall be made after the conditions **listed in the SCC** for such payment have been met, and the Service Provider have submitted an invoice to the Procuring Entity specifying the amount due.

6.5 Interest on Delayed Payments

If the Procuring Entity has delayed payments beyond thirty (30) days after the due date stated in the **SCC**, interest shall be paid to the Service Provider foreach day of delay at the rate stated in **the SCC**.

6.6 Price Adjustment

6.6.1 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC.** If so provided, the amounts certified in each payment certificate, after deducting for Advance Payment, shall be adjusted by applying the respective price adjustment fact or to the payment amounts due in each currency. A separate formula of the type indicated below applies to each Contract currency:

$$P_c = A_c + B_c \, Lmc / Loc + C_c \, Imc / Ioc$$

Where:

P_c is the adjustment factor for the portion of the Contract Price payable in a specific currency "c".

A_c, B_c and C_c are coefficients specified in the **SCC**, representing: A_c the non-adjustable portion; B_c the adjustable portion relative to labor costs and C_c the adjustable portion for other inputs, of the Contract Price payable in that specific currency "c"; and

Lmc is the index prevailing at the first day of the month of the corresponding invoiced ate and Loc is the index prevailing28 days before Tender opening for labor; both in the specific currency "c".

Imc is the index prevailing at the first day of the month of the corresponding invoice date and Ioc is the index prevailing 28 days before Tender opening for other inputs payable; both in the specific currency "c".

If a price adjustment factor is applied to payments made in a currency other than the currency of the source of the index for a particular indexed input, a correction factor Zo/Zn will be applied to the respective component factor of pn for the formula of the relevant currency. Zo is the number of units of Kenya Shillings of the index, equivalent to one unit of the currency payment on the date of the base index, and Zn is the corresponding number of such currency units on the date of the current index.

6.6.2 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account to fall changes in cost due to fluctuations in costs.

6.7 Day works

6.7.1 If applicable, the Day work rates in the Service Provider's Tender shall be used for small additional amounts of Services only when the Procuring Entity has given written instructions in advance for additional services to be paid in that way.

6.7.2 All work to be paid for as Day works shall be recorded by the Service Provider on forms approved by the Procuring Entity. Each completed form shall be verified and signed by the Procuring Entity representative as indicated in Sub-Clause1.6 within two days of the Services being performed.

6.7.3 The Service Provider shall be paid for Day works subject to obtaining signed Day works forms as indicated in Sub-Clause6.7.2

7 Quality Control

7.1 Identifying Defects

The principle and modalities of Inspection of the Services by the Procuring Entity shall be as **indicated in the SCC.** The Procuring Entity shall check the Service Provider's performance and notify him of any Defects that are found. Such checking shall not affect the Service Provider's responsibilities. The Procuring Entity may instruct the Service Provider to search for a Defect and to uncover and test any service that the Procuring Entity considers may have a Defect. Defect Liability Period is as **defined in the SCC**.

Correction of Defects, and Lack of Performance Penalty

a) The Procuring Entity shall give notice to the Service Provider of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

b) Every time notice a Defect is given, the Service Provider shall correct the notified Defect within the length of time specified by the Procuring Entity's notice.

c) If the Service Provider has not corrected a Defect within the time specified in the Procuring Entity's notice, the Procuring Entity will assess the cost of having the Defect corrected, the Service Provider will pay this amount and a Penalty for Lack of Performance calculated as described in Sub-Clause 3.8.

8 Settlement of Disputes

8.1 Contractor's Claims

8.1.1 If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

8.1.2 If the Contractor fails to give notice of a claim within such period of 28days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clauses hall apply.

8.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all s relevant to such event or circumstance.

8.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record-keeping and /or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.

8.1.5 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and /or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

8.1.5.1 This fully detailed claim shall be considered as interim;

a) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and /or amount claimed, and such further particulars as the Project Manager may reasonably require; and

b) The Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.

8.1.6 Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.

8.1.7 Within the above defined period of 42 days, the Project Manager shall proceed in accordance with Sub-Clause 3.5[Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

8.1.8 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only been titled to payment for such part of the claim as he has be enable to substantiate.

8.1.9 If the Project Manager does not respond within the time framed fined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer to Arbitration in accordance withSub-Clause8.2 [Matters that may be referred to arbitration].

8.1.10 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contract or fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub- Clause.

8.2 Matters that may be referred to arbitration

8.2.1 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Services or abandonment of the Services or termination of the Contract by either party:

a) The appointment of a replacement Project Manager upon the said person ceasing to act.

b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions

c) Whetherornotacertificatehasbeenimproperlywithheldorisnotinaccordance with these Conditions.

e) Any dispute arising in respect of war risks or war damage.

f) All other matters shall only be referred to arbitration after the completion or alleged completion of the Services or termination or alleged termination of the Contract, unless the Procuring Entity and the Contractor agree otherwise in writing.

8.3 Amicable Settlement

8.3.1 Where a Notice of Dis satisfaction has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a Notice of Dissatisfaction in accordance with Sub-Clause 8.1 above should move to commence arbitration after the fifty-sixth day from the day on which a Notice of Dissatisfaction was given, even if no attempt at an amicable settlement has been made.

8.4 Arbitration

8.4.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 8.3 shall be finally settled by arbitration. Arbitration shall be conducted in accordance with the Arbitration Laws of Kenya.

8.4.2 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Project Manager, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

8.4.3 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.

8.4.4 Arbitration may be commenced prior to or after completion of the services. The obligations of the Parties, and the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of the services.

8.4.5 The terms of the remuneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

8.5 Arbitration with proceedings

8.5.1 In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions;

a) Law Society of Kenya or

b) Chartered Institute of Arbitrators (Kenya Branch)

8.5.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

8.5.3 The arbitration maybe on the construction of this Contractor on any matter or thing of what so ever nature arising there under or in connection there with, including any matter or thing left by this Contract to the discretion of the Project Manager, or the withholding by the Project Manager of any certificate to which the Contractor may claim to been titled to or the measurement and valuation referred to in clause 23.0 of these conditions, or the rights and liabilities of the parties subsequent to the termination of Contract.

8.5.4 Provided that no arbitration proceedings shall be commenced on any claim or dispute where notice of a claim or dispute has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.

8.5.5 Notwithstanding the issue of a notice as stated above, the arbitration of such a claim or dispute shall not commence unless an attempt has in the first instance been made by the parties to settle such claim or dispute amicably with or without the assistance of third parties. Proof of such attempt shall be required.

8.5.6 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.

8.5.7 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.

8.5.8 The award of such Arbitrator shall be final and binding upon the parties.

8.6 Failure to Comply with Arbitrator's Decision

8.6.1 In the event that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

9.1 The Adjudicator

9.1.1 Should the Adjudicator resign or die, or should the Procuring Entity and the Service Provider agree that the Adjudicator is not functioning in accordance with the provisions of the Contract; a new Adjudicator will be jointly appointed by the Procuring Entity and the Service Provider. In case of disagreement between the Procuring Entity and the Service Provider, within 30days, the Adjudicator shall be designated by the

Appointing Authority **designated in the SCC** at the request of either party, within 14 days of receipt of such request.

9.2 The Adjudicator shall be paid by the hour at the rate **specified in the TDS and SCC,** together with reimbursable expenses of the type's **specified in the SCC**, and the cost shall be divided equally between the Procuring Entity and the Service Provider, whatever decision is reached by the Adjudicator. Either party may refer a decision of the Adjudicator to an Arbitrator within28 days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above 28 days, the Adjudicator's decision will be final and binding.

B. SPECIAL CONDITIONS OF CONTRACT

SECTION VII - SPECIAL CONDITIONS OF CONTRACT

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(a)	The Adjudicator is _____
1.1(v)	Project Manager is _____
1.1(d)	The contract name is _____.
1.1(g)	The Procuring Entity is _____
1.1(l)	The Member in Charge is _____
1.1(o)	The Service Provider is _____
1.4	The addresses are: Procuring Entity: _____ Attention: _____ Telex: _____ Service Provider: _____ Attention: _____ Email address _____
1.6	The Authorized Representatives are: For the Procuring Entity: _____ For the Service Provider: _____
2.1	The date on which this Contract shall come into effect is _____.
2.2.2	The Starting Date for the commencement of Services is _____.
2.3	The Intended Completion Date is _____.
2.4.1	If the value engineering proposal is approved by the Procuring Entity the amount to be paid to the Service Provider shall be ___% (insert appropriate percentage. The percentage is normally up to 50%) of the reduction in the Contract Price.
3.2.3	Activities prohibited after termination of this Contract are: _____ _____
3.4	The risks and coverage by insurance shall be: (i) Third Party motor vehicle _____ (ii) Third Party liability _____ (iii) Procuring Entity's liability and workers' compensation _____ (iv) Professional liability _____ (v) Loss or damage to equipment and property _____
3.5(d)	The other actions are _____.]
3.7	Restrictions on the use of documents prepared by the Service Provider are:

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	_____
3.8.1	The liquidated damages rate is _____ per day The maximum amount of liquidated damages for the whole contract is _____ percent of the final Contract Price.
3.8.3	The percentage _____ to be used for the calculation of Lack of performance Penalty(ies) is _____.
5.1	The assistance and exemptions provided to the Service Provider are: _____
6.2(a)	The amount in Kenya Shillings _____.
6.3.2	The performance incentive paid to the Service Provider shall be: _____ _____
6.4	Payments shall be made according to the following schedule: • Advance for Mobilization, Materials and Supplies: _____ percent of the Contract Price shall be paid on the commencement date against the submission of a bank guarantee for the same. • Progress payments in accordance with the milestones established as follows, subject to certification by the Procuring Entity, that the Services have been rendered satisfactorily, pursuant to the performance indicators: _____ (indicate milestone and/or percentage) _____ _____ (indicate milestone and/or percentage) _____ and _____ (indicate milestone and/or percentage) _____ Should the certification not be provided, or refused in writing by the Procuring Entity within one month of the date of the milestone, or of the date of receipt of the corresponding invoice, the certification will be deemed to have been provided, and the progress payment will be released at such date. • The amortization of the Advance mentioned above shall commence when the progress payments have reached 25% of the contract price and be completed when the progress payments have reached 75%. • The bank guarantee for the advance payment shall be released when the advance payment has been fully amortized.
6.5	Payment shall be made within _____ days of receipt of the invoice and the relevant documents specified in Sub-Clause 6.4, and within _____days in the case of the final payment. The interest rate is _____.
6.6.1	Price adjustment is _____ in accordance with Sub-Clause 6.6. The coefficients for adjustment of prices are _____: (a) For local currency: A_L is _____ B_L is _____ C_L is _____ L_{mc} and L_{oc} are the index for Labor from _____ I_{mc} and I_{oc} are the index for _____ from _____

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
	(b) For foreign currency A_F is _____ B_F is _____ C_F is _____ L_{mc} and L_{oc} are the index for Labor from _____ I_{mc} and I_{oc} are the index for _____ from _____
7.1	The principle and modalities of inspection of the Services by the Procuring Entity are as follows: _____ The Defects Liability Period is _____.
9.1	The designated Appointing Authority for a new Adjudicator is _____
9.2	The Adjudicator is _____. Who will be paid a rate of _____ per hour of work? The following reimbursable expenses are recognized: _____

C. APPENDICES

Appendix A - Description of the Services

Give detailed descriptions of the Services to be provided, dates for completion of various tasks, place of performance for different tasks, specific tasks to be approved by Procuring Entity, etc.

Appendix B - Schedule of Payments and Reporting Requirements

List all milestones for payments and list the format, frequency, and contents of reports or products to be delivered; persons to receive them; dates of submission; etc. If no reports are to be submitted, state here "Not applicable."

Appendix C - Breakdown of Contract Price

List here the elements of cost used to arrive at the breakdown of the lump-sum price:

1. *Rates for Equipment Usage or Rental or for Personnel (Key Personnel and other Personnel).*

2. *Reimbursable expenditures.*

This appendix will exclusively be used for determining remuneration for additional Services.

Appendix D - Services and Facilities Provided by the Procuring Entity

D. FORMS

SECTION VIII -CONTRACT FORMS

FORM NO. 1 - PERFORMANCE SECURITY – (Unconditional Demand Bank Guarantee)

[Guarantor letterhead or SWIFT identifier code]

Beneficiary:_____*[insert name and Address of* Procuring Entity*]*

Date:_____*[Insert date of issue]*

PERFORMANCE GUARANTEE No.:_____

Guarantor:..... *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that_____(hereinafter called "the Applicant") has entered into Contract No._____*dated*_____with the Beneficiary, for the execution of_____ (herein after called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

3. At the request of the Applicant, we as Guarantor, hereby irrevocably under take to pay the Beneficiary any sum or sums not exceeding in total an amount of_____(),[1] such sum being payable in the types and proportions ofcurrenciesinwhichtheContractPriceispayable,uponreceiptbyusoftheBeneficiary'scomplyingdemand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

4. This guarantee shall expire, no later than the….Day of……, 2…[2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."_____

_____

[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

---

[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Procuring Entity might consider adding the following text to the form, at the end of the pen ultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such*

extension, such request to be presented to the Guarantor before the expiry of the guarantee."

FORM No. 2 - PERFORMANCE SECURITY OPTION 2 – (Performance Bond)

[Note: Procuring Entities are advised to use Performance Security–Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]

[Guarantor letterhead or SWIFT identifier code]
Beneficiary: *[insert name and Address of* Procuring Entity*]* **Date:**_____*[Insert date of issue]*

PERFORMANCE BOND No.:_____

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond_____ as Principal (hereinafter called "the Contractor") and_____] as Surety (herein after called "the Surety"), are held and firmly bound unto_] as Obligee (herein after called "the Procuring Entity")in the amount of_____for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the_____ day of_____, 20_____, for_____in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are herein after referred to as the Contract.

3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:
   1) Complete the Contract in accordance with its terms and conditions; or
   2) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable here under, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
   3) pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named herein or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.

6. In testimony whereof, the Contractor has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this day_____of_____20_____.

SIGNED ON _____ on behalf

of by _____ in the capacity

of In the presence of

SIGNED ON _____ on behalf

of By _____ in the capacity

of In the presence of

FORM NO. 3 - ADVANCE PAYMENT SECURITY[Demand Bank Guarantee]

[Guarantor letter head or SWIFT identifier code] [Guarantor letter head or SWIFT identifier code]

Beneficiary: _____*[Insert name and Address of* Procuring Entity*]*

Date:_____*[Insert date of issue]*

ADVANCE PAYMENTGUARANTEE No.:_____*[Insert guarantee reference*

number] **Guarantor:***[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that_____(hereinafter called "the Applicant") has entered into Contract No._____*dated*_____with the Beneficiary, for the execution of_____ (herein after called "the Contract").

2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____() is to be made against an advance payment guarantee.

3. At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of_____()[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document ac companying or identifying the demand, stating either that the Applicant:
   a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
   b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number_____at

5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90)percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the day of , 2,[2] whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months] [one year]*, in response to the Beneficiary' s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

.....
[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

[1]*The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Procuring Entity.*

[2]*Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be*

made prior to the expiration date established in the guarantee. In preparing this guarantee, the Procuring Entity might consider adding the following ext. to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

FORM NO. 4 BENEFICIAL OWNERSHIP DISCLOSURE FORM

(Amended and issued pursuant to PPRA CIRCULAR No. 02/2022)

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer pursuant to Regulation 13 (2A) and 13 (6) of the Companies (Beneficial Ownership Information) Regulations, 2020. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the legal person (tenderer) or arrangements or a natural person on whose behalf a transaction is conducted, and includes those persons who exercise ultimate effective control over a legal person (Tenderer) or arrangement.

Tender Reference No.:_____[*insert identification no*] Name of the Tender Title/Description:_____*[insert name of the assignment]* to:_____*[insert complete name of Procuring Entity]*

In response to the requirement in your notification of award dated___*[insert date of notification of award]* to furnish additional information on beneficial ownership:_____*[select one option as applicable and delete the options that are not applicable]*

I) We here by provide the following beneficial ownership information.

Details of beneficial ownership

	Details of all Beneficial Owners		**% of shares a person holds in the company Directly or indirectly**	**% of voting rights a person holds in the company**	**Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer** (Yes / No)	**Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)**
1.	Full Name		Directly---------- % of shares Indirectly---------- % of shares	Directly…… …….% of voting rights Indirectly---------- % of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 2. Is this right held directly or indirectly?: Direct……	1. Exercises significant influence or control over the Company body of the Company (tenderer**)** Yes -----No---- 2. Is this influence or control
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					

	Details of all Beneficial Owners		**% of shares a person holds in the company Directly or indirectly**	**% of voting rights a person holds in the company**	**Whether a person directly or indirectly holds a right to appoint or remove a member of the board of directors of the company or an equivalent governing body of the Tenderer** (Yes / No)	**Whether a person directly or indirectly exercises significant influence or control over the Company (tenderer) (Yes / No)**
	Residential address				…… Indirect…… ……...	exercised directly or indirectly? Direct…… ….. Indirect…… …
	Telephone number					
	Email address					
	Occupation or profession					
2.	Full Name		Directly---------- % of shares Indirectly---------- % of shares	Directly…… …….% of voting rights Indirectly---------- % of voting rights	1. Having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer: Yes -----No---- 2. Is this right held directly or indirectly?: Direct…… …… Indirect…… ……...	1. Exercises significant influence or control over the Company body of the Company (tenderer**)** Yes -----No---- 2. Is this influence or control exercised directly or indirectly? Direct…… ….. Indirect…… …
	National identity card number or Passport number					
	Personal Identification Number (where applicable)					
	Nationality(ies)					
	Date of birth *[dd/mm/yyyy]*					
	Postal address					
	Residential address					
	Telephone number					
	Email address					
	Occupation or profession					
3.						
e.t .c						

II) Am fully aware that beneficial ownership information above shall be reported to the Public Procurement Regulatory Authority together with other details in relation to contract awards and shall be maintained in the Government Portal, published and made publicly available pursuant to Regulation 13(5) of the Companies

(Beneficial Ownership Information) Regulations, 2020.(Notwithstanding this paragraph Personally Identifiable Information in line with the Data Protection Act shall not be published or made public). *Note that Personally Identifiable Information (PII) is defined as any information that can be used to distinguish one person from another and can be used to deanonymize previously anonymous data. This information includes National identity card number or Passport number, Personal Identification Number, Date of birth, Residential address, email address and Telephone number.*

III) In determining who meets the threshold of who a beneficial owner is, the Tenderer must consider a natural person who in relation to the company:

(a) holds at least ten percent of the issued shares in the company either directly or indirectly;

(b) exercises at least ten percent of the voting rights in the company either directly or indirectly;

(c) holds a right, directly or indirectly, to appoint or remove a director of the company; or

(d) exercises significant influence or control, directly or indirectly, over the company.

IV) What is stated to herein above is true to the best of my knowledge, information and belief.

Name of the Tenderer: .....[insert complete name of the Tenderer]*_____

*Name of the person duly authorized to sign the Tender on behalf of the Tenderer: ** [insert complete name of person duly authorized to sign the Tender]*

Designation of the person signing the Tender: ..... [insert complete title of the person signing the Tender]

Signature of the person named above: ..... [insert signature of person whose name and capacity are shown above]

Date this ..... [insert date of signing] day of..... [Insert month], [insert year]

Bidder Official Stamp