REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

Bid for the Supply and Installation of a Linear Accelerator to Rafik Hariri University Hospital

Addendum No 1

Nov 2026

Bid for the Supply and Installation of a Linear Accelerator to Rafik Hariri University Hospital - Addendum No 1

- Please replace "VOLUME II of III TECHNICAL SPECIFICATIONS" issued on September 2026 in the bidding document by the attached "VOLUME II of III TECHNICAL SPECIFICATIONS" issued on November 2026, in which the CT simulator and related accessories are deleted.
- Also replace in Volume I "Bidding Procedures, Supply Requirements and contract conditions" the following:
Page 48 "Price Schedule", page 49 "Price and completion Schedule" and page 65 "List of Goods & Delivery Schedule", by the related 3 attached pages.

REPUBLIC OF LEBANON
THE COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

Bidding Documents for

Supply and Installation of a Linear Accelerator to Rafic Hariri University Hospital (RHUH)

FINANCED BY THE ISLAMIC DEVELOPMENT BANK (IsDB)
Loan # LBN1012

VOLUME II OF III
TECHNICAL SPECIFICATIONS

ICB No: #/2026/ICB/Goods/CDR/IsDB
Project: 28 Governmental Hospitals in Lebanon
Purchaser: Council for Development and Reconstruction
Country: Lebanon

Issued on: November 2026

IsDB
البنك الإسلامي للتنمية
Islamic Development Bank

Based on IsDB standard Bidding Document for Procurement of Goods / January 2019

A CHEHAB ARCHITECTS & ENGINEERS
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ABDULWAHED CHEHAB
CONSULTING ENGINEERING OFFICE
2nd Floor, Baitarian Bldg, Dora, Beirut, Lebanon
+961 1 255 442 | +961 1 255 332 |info@achehab.com

1. Explanatory Notes

- The Technical Specifications (Volume II) shall be interpreted as guidelines for the type and quality of the equipment required. The specifications texts are therefore covering a wide range of equipment types and ancillaries. They do not relate to any specific manufacturer. In some cases, specific figures have been given. Such information should be considered as guidelines. The equipment offered however, shall be compliant with international standards and quality.
- If brand names, products, or catalog numbers are mentioned in Technical Specifications (Volume II) or in any other tender documents, it is considered as an example and the bidder could submit any brands with equivalent specifications.
- The Bidder shall provide one proposal only for each item that is listed in the specifications, as a complete, fully functional unit, with all ancillaries and accessories necessary for its normal and safe use "No variant is allowed". All ancillaries that are needed beyond normal operation, and all additional accessories to be listed and priced, with the item offered, as optional.
- When in the specifications, "a complete set of – "is mentioned, then the bidder shall list, specify and price all the items included in the set offered.
- The Bidder shall submit a filled compliance sheet in both Excel and Signed PDF formats.
- Supporting Documentation Requirements:
  - The Bidder shall provide complete technical datasheets with proof supporting each response.
  - In the technical specifications document, the Bidder shall clearly specify the reference document name together with the exact page number where the requirements is fulfilled.
  - The Bidder shall highlight the relevant parts in the technical datasheets provided to facilitate verification.
- It is important that the Bidder specifies and prices the application software and hardware that will be provided with the total system for its normal operation, and any other software and hardware that will be offered as options.
- All dimensions and ratings in the specifications for medical equipment are indicative for required sizes, weights, and functions.
- The bidder shall provide actual dimensions and ratings with this offer.
- In view of the rapid technological development and in case a new model for a required medical equipment is commercialized after the date of the bid opening, the Bidder shall provide the latest model of equipment made available in the market to replace what has been represented in his offer at no extra cost.

2. Mandatory Site Visit

- All Bidders shall conduct a formal site inspection of the equipment installation areas, access routes, available utilities and surrounding installation environment before submitting their Bids.
- The dates, times and related arrangements shall be determined and communicated to all prospective Bidders at a later stage.
- Bidders will be issued a signed Site Inspection Certificate upon completion of the visit. A copy of the signed certificate shall be included in the technical proposal. Proposals submitted without this certificate shall be deemed non-compliant.

3. Site Preparation and Installation Responsibilities

- The Supplier shall be responsible for defining and submitting all technical pre-installation requirements for the LINAC radiotherapy system, including equipment layouts, radiation-shielding calculations, structural and baseplate requirements, electrical and UPS specifications, HVAC requirements, utility connections, equipment-access requirements, and safety-system requirements.

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- The Supplier shall be responsible for supplying, delivering, installing, connecting, testing and commissioning the LINAC radiotherapy system; providing and installing the equipment-related safety systems; and de-installing the existing equipment, where applicable.
- The Hospital shall be responsible for implementing the Supplier's approved pre-installation requirements, including bunker preparation, structural modifications, baseplate and foundation work, radiation-shielding works, floor finishing, civil works, and the required electrical, UPS, HVAC and utility infrastructure up to the designated equipment connection points.
- The Supplier shall coordinate with the Hospital and its appointed civil, architectural, structural and electromechanical contractors to ensure that the site-preparation works comply with the Supplier's approved technical requirements.
- All costs associated with the Supplier's responsibilities, including delivery, installation, testing, commissioning, coordination with the Hospital and its appointed contractors, and repair of any damage caused by the Supplier during installation, shall be included in the Bid Price.

4. Manual and Documentation Requirements.

- Provide hardcopies and softcopies of the user manual in English and French.
- Provide hardcopies and softcopies of the service/maintenance manual and calibration instructions in English and French.
- Provide laminated cleaning and disinfection instructions with each device.
- Provide laminated summarized instructions for use and calibration (if any) in English and French.
- Provide a preventive maintenance checklist to the biomedical department.
- Provide ALL level passwords (user, maintenance, calibration).
- Share and make accessible ALL hidden menus (user, maintenance, calibration).

5. Training

The Bidder shall specify, in detail, the training component in his offer, which shall cover the detailed schedule of the necessary training sessions and educational workshops for the relevant staff on the clinical operation safe and competent handling of major equipment and systems, and the associated costs. A detailed description of the in-service training to be provided for the clinical personal and technical training for biomedical engineering personnel. This should be included a description of program length and format and content.

6. Standards

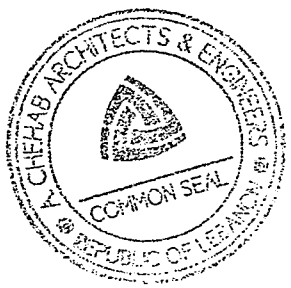
All medical electric and electronic equipment and other shall comply with all relevant standards i.e. IEC601-1 (General Requirement for Safety) and IEC-601-1-2 (EMC/ Electromagnetic Capability).

Any medical equipment with country of origin from European Committee, USA, Japan, Canada or Australia should have either CE or FDA Certificate, and any medical equipment with country of origin from outside European Committee, USA, Japan, Canada or Australia must have both CE and FDA Certificates.

All relevant documentation and valid certificates of conformity to the standards shall be presented in the Bid.

If these systems, as quoted, do not comply with the standards upon their issuances, it is the tenderer's responsibility to assure compliance, at no cost to the client.

The CDR reverses the right to consider any item without such certified of conformity as non-responsive.

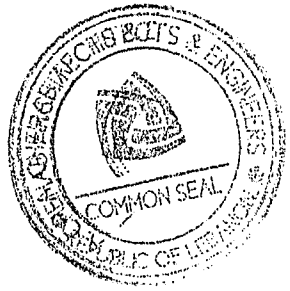


7. **Electricity**
   - All Electrical supplies are at 220 single phase/ 380 three phase, 50Hz.
   - All computerized and electronic equipment shall be provided with surge protection.
     - Electrical Safety:
       a. The unit should be provided with a line (power) cord of acceptable durability, quality, length, and capacity and should be secured with adequate strain reliefs.
       b. The unit should include, power plugs that are sufficient for the maximum voltage and current of the unit.
       c. The chassis should be grounded and grounding resistance should be as per applicable code.
       d. If the unit is double, it should be so labeled.
       e. Electrical leakage current from the chassis of the unit should not exceed the maximum permissible current as per IEC 601-1
     - Line Voltage Variation
       a. All computerized and electronic equipment shall be provided with surge unit; the unit should operate satisfactorily at line voltages from ±10% of the nominal line voltage of 220 Volts single phase or 380 Volts three phases.
       b. The unit should not be damaged by voltages from ±20% of the nominal line voltage specified above.

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0	Overview & Instructions
1	Technical Requirements
2	Beam Characteristics & Accuracy
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5	Accuracy Requirements
6	Clinical Capabilities
7	Immobilization & Accessories
8	Dosimetry & QA
9	Services & Support
10	Regulatory Compliance



INSTRUCTIONS TO VENDORS

1. Complete all sections with Yes/No responses
2. Provide detailed comments and specifications for all requirements
3. Submit technical documentation supporting your responses
4. Include actual measured values where requested
5. Reference specific IEC standards compliance
6. All responses must be supported by evidence

1- Documentation required as part of Tender Submittals:

· Installation Recommendations: Vendor shall supply all technical recommendations for new LINAC installation as part of the tender submitted documents.

2- Support Utilities to be quoted by the Vendor as Part of the Tender:

· UPS: UPS for LINAC controls & IT.

. Dedicated cooling system

· Electrical: Dedicated RT machine final feeder panel with transient protection included.

· Safety: All redundant interlocks connection for system safety and bunker door, last-man key, emergency stops, CCTV, intercom, warning lights.

3- Additional Scope Required from the Approved Vendor:

· Deinstallation: Vendor shall be responsible for safe removal of old LINAC (including disposal under local regulations).

· Pre-installation Requirements and Shop drawings: Vendor shall develop and share the site preparation and requirements report, in addition to site-specific layouts and shop drawings with the hospital contractor including but not limited to shielding, power, HVAC, UPS, and low current requirements.

. Site Verification prior to Installation: Vendor shall coordinate with the hospital civil contractor and be responsible for verifying that all civil, mechanical, electrical, and plumbing (MEP) works executed at the site comply with the manufacturer's requirements prior to equipment installation; the Vendor shall issue a formal site acceptance accordingly.

· The LINAC shall be capable of receiving, transmitting, and exchanging all treatment plans and associated data with the Treatment Planning System (TPS), Oncology Information System (OIS), and CT Radiotherapy Simulator (CTRT).

· Shielding Study: Vendor shall provide a full bunker shielding calculations study including doors, labyrinth; approval by licensed Medical Physicist.

· Documentation: User manuals, service manuals, QA protocols.

4- Service, Training & Support:

· Remote monitoring, predictive maintenance, secure updates.

· Training:

· - RTTs & physicists: ≥10 days

· - Radiation oncologists: ≥5 days

· - QA/commissioning: ≥10 days

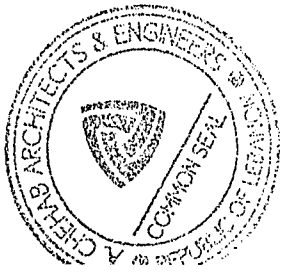
· - Super-user training + vendor applications specialist on-site during go-live.

5- Commitment of the Approved Vendor:

· Warranty: ≥2 years full coverage; option +3–5 years extended.

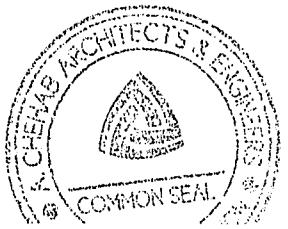
· Spare parts availability : 15 years.

· SLA: Uptime ≥98% (quarterly); response ≤8 h (critical), ≤24 h (major); remedies: warranty extension or penalties.



1. Technical Requirements

Requirement	Specification	Compliance (Yes/No)	Vendor Response/Value
MANDATORY REQUIREMENTS			
Photon Beam Energies	The system shall include 6 MV and 10 MV photon beam energies as standard.		
Optional High Energy	15 MV photon beam (optional). If included, it shall be specified.		
Additional Photon Energies	List any additional photon beam energies that may be available (if any).		
FFF Beams	Flattening Filter Free beams for 6MV and 10MV		
High Dose Rate FFF	6MV FFF ≥1400 MU/min, 10MV FFF ≥2200 MU/min		
Electron Energies	Multiple electron energies 6-20 MeV		
CBCT Imaging	Integrated cone-beam CT imaging system		
Patient Couch	6 degrees of freedom patient positioning system		
Safety Systems	Comprehensive patient safety and monitoring systems		
Treatment Techniques	3D-CRT, IMRT, VMAT, SRS, SBRT capabilities		
System Uptime	Minimum 95% system uptime guarantee		
BEAM DELIVERY SYSTEM			
Dose Rate Range	Variable dose rate from ≤100 MU/min up to ≥600 MU/min for flattened photon beams, selectable in discrete steps		
Gantry Rotation	360-degree gantry rotation capability		
Collimator Rotation	±180-degree collimator rotation minimum		
Beam Monitoring	Dual ionization chamber monitoring system		
Beam Interruption	Beam interruption capability <100ms		
Gated Delivery	Respiratory gating capability with IEC compliance		
QUALITY ASSURANCE			
Integrated QA Tools	Built-in quality assurance measurement tools		
Daily QA Automation	Automated daily quality assurance procedures		
Automated Machine QA	Automated machine performance verification		
Log File Analysis	Treatment log file analysis capabilities		
Real-time QA	Real-time treatment verification capability		



2. Beam Characteristics & Accuracy

Beam Parameter	IEC Standard/Requirement	Compliance (Yes/No)	Vendor Response/Value
PHOTON BEAM CHARACTERISTICS			
Beam Flatness	IEC 60601-2-1: Beam flatness ≤3% for all flattened photon energies (measured at 10 cm depth over the flattened area, field sizes 10×10 cm to 30×30 cm).		
Beam Symmetry	IEC 60601-2-1: Beam symmetry ≤2% for all photon energies (measured at 10 cm depth).		
Penumbra Width	IEC 60601-2-1: 80%–20% penumbra width preferably ≤8 mm at 10 cm depth (10×10 cm		
Output Constancy	IEC 60601-2-1: Daily output variation preferably ≤2%		
Energy Constancy	IEC 60601-2-1: Beam energy stability preferably within ±1% (PDD/TPR constancy vs. baseline)		
Beam Quality Index	IEC 60601-2-1: TPR20,10 or %dd(10)x values to be provided for each photon energy, preferably within ±1% of published reference data		
Leakage Radiation	IEC 60601-2-1: Maximum leakage outside patient plane preferably ≤0.1% (averaged over 100 cm^2)		
Dose Rate Accuracy	IEC 60601-2-1: Dose rate accuracy preferably within ±2%		
FFF BEAM CHARACTERISTICS			
FFF Beam Profile	FFF beam profile symmetry ≤2% and profile constancy within ±2% of commissioning baseline for each FFF energy; full beam profile data shall be provided.		
FFF Dose Rate	High dose rate capability for FFF beams, preferably ≥1400 MU/min (6MV FFF) and ≥2200 MU/min (10MV FFF)		
FFF Symmetry	IEC 60601-2-1: FFF beam symmetry preferably ≤2%		
FFF Output Stability	FFF beam output stability preferably within ±2% of commissioning baseline		

2. Beam Characteristics & Accuracy

Beam Parameter	IEC Standard/Requirement	Compliance (Yes/No)	Vendor Response/Value
ELECTRON BEAM CHARACTERISTICS			
Electron Flatness	IEC 60601-2-1: Electron beam flatness preferably ≤3% for all energies		
Electron Symmetry	IEC 60601-2-1: Electron beam symmetry preferably ≤2% for all energies		
Mean Energy	IEC 60601-2-1: Mean energy at phantom surface to be stated for each electron energy, preferably within ±2% of nominal		
Energy Spread	IEC 60601-2-1: Energy spread to be stated for each electron energy, preferably such that depth-dose parameters (R50, Rp) are within ±2 mm of commissioning reference data		
X-ray Contamination	IEC 60601-2-1: X-ray contamination in electron mode		
RADIATION SAFETY			
Patient Plane Leakage	IEC 60601-2-1: <2% outside maximum useful beam		
Leakage Outside Patient Plane	IEC 60601-2-1: <0.1% averaged over 100cm²		
Maximum Leakage	IEC 60601-2-1: <0.05% in any area 100cm²		
Neutron Leakage	IEC 60601-2-1: Neutron leakage for energies >10 MV preferably ≤0.05% of the X-ray dose in the patient plane		

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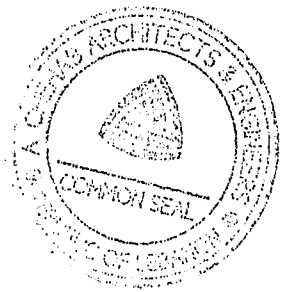
3. MLC Specifications

MLC Parameter	Specification Requirement	Compliance (Yes/No)	Vendor Specification
CRITICAL MLC FIELD COVERAGE			
Maximum Field Size	40x40cm field size capability		
MLC Field Coverage	FULL 40x40cm field covered by MLC system		
Leaf Width Configuration	2.5mm preferred or 5mm with virtual leaf capability		
Virtual Leaf Width	Effective/virtual leaf width resolution preferably ≤2.5 mm at isocenter (via high-definition MLC or dynamic leaf-shift technique)		
Number of Leaves	Minimum 120 leaves; 160-leaf configuration shall be considered an advantage		
Leaf Travel Range	Minimum ±15cm leaf travel from central axis		
MLC PERFORMANCE SPECIFICATIONS			
Maximum Leaf Speed	Maximum leaf speed preferably ≥2.5 cm/s at isocenter; ≥3.5 cm/s shall be considered an advantage.		
Dynamic Leaf Capability	Dynamic leaf movement during beam delivery		
Control Points	Minimum 180 control points per arc		
Leaf Positioning Accuracy	Leaf positioning accuracy ≤1.0 mm; ≤0.5 mm shall be considered an advantage		
Leaf Position Repeatability	Leaf position repeatability ≤0.5 mm		
Interdigitation	Full interdigitation across entire field		
LEAKAGE AND TRANSMISSION			
Intraleaf Transmission	Intraleaf transmission <0.5%		
Interleaf Leakage	Interleaf leakage preferably ≤2.5%; lower values shall be considered an advantage		
Leaf End Transmission	Dosimetric leaf gap data shall be provided		
Average Transmission	Average transmission through leaves preferably ≤2%		
Peak Transmission	Peak transmission through leaves preferably ≤2.5%		



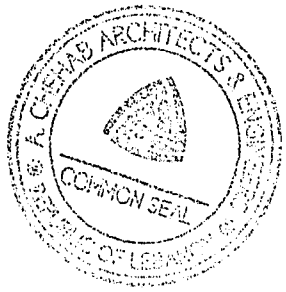
3. MLC Specifications

MLC Parameter	Specification Requirement	Compliance (Yes/No)	Vendor Specification
ADVANCED MLC FEATURES (LIMITED)			
Jaw Tracking	Automatic jaw tracking with MLC movement		
Dynamic Jaw Movement	Dynamic jaw/diaphragm movement synchronized with MLC (jaw tracking) a preferably ≥1.5 cm/s at isocenter.		
Diaphragm Speed	Maximum diaphragm/jaw speed ≥2.0 cm/s at isocenter; higher speeds shall be considered an advantage.		
Leaf Sequencing	Optimized leaf sequencing algorithms		
CLINICAL VALIDATION			
IMRT Delivery Accuracy	IMRT delivery accuracy preferably ≥95% gamma passing rate at 3%/2 mm criteria (AAPM TG-218)		
VMAT Delivery Accuracy	VMAT delivery accuracy preferably ≥95% gamma passing rate at 3%/2 mm criteria (AAPM TG-218)		
SRS Delivery Accuracy	SRS delivery accuracy for small fields preferably ≥95% gamma passing rate at 2%/2 mm criteria		
Complex Plan Delivery	Complex plan delivery capability		
Multi-target SRS	Multiple small target SRS capability		



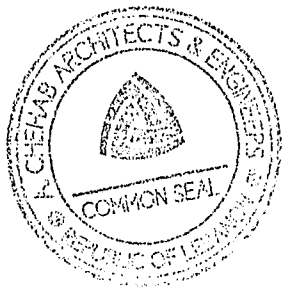
4. Imaging & IGRT

Imaging Feature	Specification	Compliance (Yes/No)	Vendor Specification
HIGH-DEFINITION AI-ENHANCED IMAGING			
Iterative Reconstruction	Advanced CBCT reconstruction: iterative and/or AI-based reconstruction, preferably GPU-accelerated.		
HU Accuracy	HU accuracy preferably within ±40 HU of reference values for standard density inserts (quantitative imaging).		
Contrast Resolution	Soft tissue (low-contrast) resolution preferably able to visualize ≤1% contrast objects of ≥15 mm diameter.		
Artifact Suppression	Advanced artifact suppression algorithms		
Noise Reduction	Reduced image noise compared to standard CBCT		
CBCT IMAGING CHARACTERISTICS			
Field of View	CBCT field of view preferably ≥45 cm diameter (transverse) × ≥15 cm longitudinal coverage per single acquisition; larger longitudinal coverage shall be considered an advantage.		
Acquisition Time	CBCT acquisition time preferably ≤60 seconds for a full 360° scan; fast acquisition protocols ≤30 seconds shall be considered an advantage.		
Spatial Resolution	Spatial resolution preferably ≥7 lp/cm; ≥10 lp/cm (high-resolution mode) shall be considered an advantage.		
Image Uniformity	Image uniformity preferably within ±40 HU across the field of view.		
Geometric Accuracy	Geometric accuracy preferably ≤1.0 mm; ≤0.5 mm shall be considered an advantage.		
4D CBCT CAPABILITIES			
4D CBCT	4D (respiration-correlated) cone-beam CT with respiratory phase sorting, using the vendor's motion-management solution (e.g., RGSC, Symmetry 4D, or equivalent).		
Respiratory Gating	Advanced respiratory motion management		
4D Registration	4D CBCT registration with planning CT		
Motion Tracking	Real-time motion tracking capability		
Phase Sorting	Respiratory phase sorting capability		
Anatomy-Based Sorting	Respiratory sorting: phase-based and/or anatomy-based sorting algorithm (vendor to describe).		



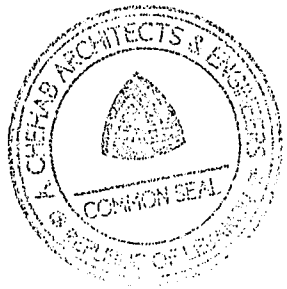
4. Imaging & IGRT

Imaging Feature	Specification	Compliance (Yes/No)	Vendor Specification
INTRAFRACTION IMAGING			
kV Imaging	kV planar imaging capability		
MV Imaging	MV portal imaging capability		
Intrafraction CBCT	Intrafraction imaging during beam delivery: intrafraction CBCT and/or triggered/continuous kV imaging (vendor to describe method).		
Intrafraction 4D	Intrafraction motion monitoring: 4D imaging, triggered kV, or surface-based monitoring (vendor to describe method).		
Real-Time Monitoring	Real-time patient monitoring during treatment		
IMAGE GUIDANCE FEATURES			
Auto-Registration	Automated image registration algorithms		
Manual Registration	Manual registration tools and capabilities		
Multi-Modal Registration	Registration with CT, MR, PET images		
ROI-Based Registration	Region-of-interest registration		
Critical Structure Avoidance	Workflow supporting critical-structure protection during image registration and positioning (vendor to describe).		
Fusion Display	Multi-image fusion display capabilities		
SGRT	Surface Guided Radiotherapy (SGRT) with DIBH, real-time surface monitoring, and automatic beam-hold.		
Fiducial marker	Fiducial marker detection & auto-registration (prostate/liver).		



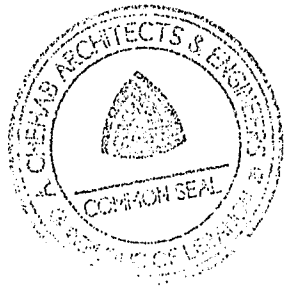
5. Accuracy Requirements

Accuracy Parameter	Specification	Compliance (Yes/No)	Measured Value
MECHANICAL ACCURACY			
Gantry Angle Accuracy	Gantry angle positioning accuracy ≤0.5° (readout vs. actual); ≤0.3° shall be considered an advantage.		
Collimator Angle Accuracy	Collimator angle positioning accuracy preferably ≤0.5°; ≤0.3° shall be considered an advantage.		
Couch Angle Accuracy	Couch isocentric rotation accuracy ≤0.5°.		
Gantry Sag	Gantry mechanical sag preferably ≤1.0 mm at isocenter over full 360° rotation.		
ROBOTIC TABLE POSITIONING			
6D Robotic Positioning	6 degrees of freedom robotic positioning system, with positioning accuracy preferably ≤0.5 mm (translations) and ≤0.3° (rotations).		
Submillimeter Accuracy	Robotic positioning accuracy preferably ≤0.5 mm (submillimeter).		
Longitudinal Accuracy	Longitudinal positioning accuracy preferably ≤0.5 mm.		
Lateral Accuracy	Lateral positioning accuracy preferably ≤0.5 mm.		
Vertical Accuracy	Vertical positioning accuracy preferably ≤0.5 mm.		
Pitch Accuracy	Table pitch rotation accuracy preferably ≤0.3° over a ±3° range.		
Roll Accuracy	Table roll rotation accuracy preferably ≤0.3° over a ±3° range.		
Yaw Accuracy	Table yaw rotation accuracy preferably ≤0.3°.		



5. Accuracy Requirements

Accuracy Parameter	Specification	Compliance (Yes/No)	Measured Value
OVERALL SYSTEM ACCURACY			
End-to-End MV Accuracy	Overall MV beam delivery accuracy preferably ≤1.0 mm (end-to-end / hidden-target test).		
Overall System Accuracy	Overall system accuracy preferably ≤1.0 mm; ≤0.75 mm shall be considered an advantage.		
Isocenter Accuracy	Radiation isocenter accuracy preferably ≤1.0 mm diameter sphere; ≤0.75 mm shall be considered an advantage.		
Coincidence Accuracy	Radiation/mechanical isocenter coincidence preferably ≤1.0 mm.		
Image Guidance Accuracy	IGRT positioning accuracy preferably ≤1.0 mm; ≤0.5 mm shall be considered an advantage.		
kV/MV Coincidence	kV imaging and MV treatment isocenter coincidence preferably ≤1.0 mm; ≤0.5 mm (for SRS applications) shall be considered an advantage.		



6. Clinical Capabilities

Clinical Feature	Requirement	Compliance (Yes/No)	Clinical Capability
TREATMENT TECHNIQUES			
3D Conformal RT	3D conformal radiotherapy capability		
IMRT Delivery	Intensity modulated radiotherapy		
VMAT Delivery	Volumetric modulated arc therapy		
SRS Capability	Stereotactic radiosurgery delivery		
SBRT Capability	Stereotactic body radiotherapy		
Hypofractionation	Hypofractionated treatment delivery		
Multi-target SRS	Multiple small target SRS treatments		
SPECIALIZED TECHNIQUES			
Total Body Irradiation	TBI treatment capability		
Total Skin Electron	Total skin electron therapy		
Respiratory Gating	Respiratory gated treatments		
Motion Management	Advanced motion management techniques		
Arc Therapy	Dynamic and VMAT arc therapy		
CLINICAL VALIDATION			
Published Studies	Peer-reviewed clinical publications		
Clinical Outcomes	Documented clinical outcomes		
Multi-Center Experience	Multi-center clinical experience		
Long-term Follow-up	Long-term patient follow-up data		
Comparative Studies	Comparative effectiveness studies		
First Patient Treatments	First patient treatment experience		



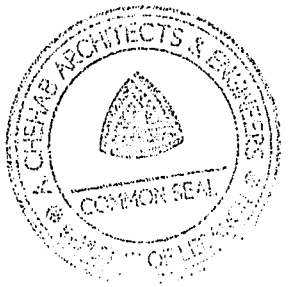
7.Immobilization & Accessories

Immobilization	Requirement	Compliance (Yes/No)	Vendor Capability
Immobilization & Accessories			
Head & Neck Baseplates	With ≥50 thermoplastic masks and headrests		
Breast Boards	DIBH (Deep Inspiration Breath Hold) compatible		
Pelvic/Abdominal Boards	Must be included		
Wing Boards & Arm Supports	Must be included		
Knee & Foot Supports	Must be included		
Vac-Lok Cushions	Sizes S/M/L, with vacuum pump		
SRS/SBRT Cradles	Including stereotactic masks		
Pediatric Immobilization Sets	Complete set for pediatric patients		



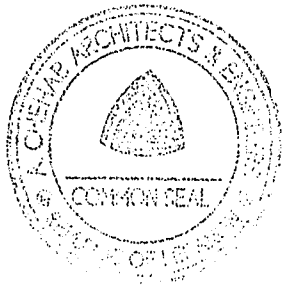
8.Dosimetry & QA

Dosimetry & QA	Requirement	Compliance (Yes/No)	Vendor Capability
Absolute Dosimetry			
Reference Electrometer	≥2 channels		
Ion Chambers	Farmer (0.6 cc), small-volume (0.125 cc), parallel-plate		
Calibration	Traceable to IAEA TRS-398 / AAPM TG-51		
Relative / Patient-Specific			
3D Scanning Water Phantom	With motorized axes		
2D/3D Detector Arrays	For IMRT/VMAT/SBRT QA (e.g., ArcCHECK, Delta4, Octavius, or equivalent)		
Daily QA Device	For photon/electron constancy		
Winston–Lutz Phantom	For SRS verification		
Film Dosimetry Kit	With scanner		
Imaging QA & Safety			
CBCT QA Phantom (Catphan or equivalent) & MV QA Phantom	For CBCT and MV QA		
Radiation Survey Meters	Ion chamber + GM probe		
Thermometer/Barometer	For P/T corrections		
Neutron Dosimetry	Capability for >10 MV		
In-vivo Dosimetry			
In-vivo Dosimetry	EPID-based or diode/MOSFET solution with analysis software		
Pediatric/TBI QA Tools			
TBI Phantom	For Total Body Irradiation		
Spoiler QA	QA tools for TBI spoilers		
Lung-equivalent Inserts	For TBI phantoms		
Pediatric Dosimetry Accessories	For pediatric treatments		



9. Services & Support

Service Feature	Requirement	Compliance (Yes/No)	Vendor Capability
REMOTE SUPPORT CAPABILITIES			
24/7 Remote Monitoring	Continuous remote system monitoring		
Predictive Maintenance	AI-powered predictive maintenance		
Remote Software Updates	Secure remote software updates		
Virtual Support	Virtual reality/AR support tools		
BEAM MATCHING SERVICES			
Multi-Unit Matching	Beam matching across multiple units		
Automated Matching	Automated beam matching algorithms		
Cross-Platform Matching	Matching with existing equipment		
Ongoing Verification	Continuous beam matching verification		



10. Regulatory Compliance

Regulatory Standard	Requirement	Compliance (Yes/No)	Certification Status
IEC STANDARDS COMPLIANCE			
IEC 60601-1	Medical electrical equipment general safety		
IEC 60601-2-1	Electron accelerator safety standard		
IEC 60601-1-2	EMC electromagnetic compatibility		
IEC 60601-1-3	Radiation protection requirements		
IEC 62304	Medical device software lifecycle		
IEC 80001-1	Network security for medical devices		
REGIONAL REGULATORY APPROVALS			
CE Marking	European Conformity marking		
FDA Clearance	US FDA approval (510k/PMA)		
Other Markets	Additional regulatory approvals		



REPUBLIC OF LEBANON
THE COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

Bidding Documents for

Supply and Installation of a Linear Accelerator to Rafic Hariri University Hospital (RHUH)

FINANCED BY THE ISLAMIC DEVELOPMENT BANK (IsDB)
Loan # LBN1012

VOLUME I OF III

ICB No: #/2026/ICB/Goods/CDR/IsDB
Project: 28 Governmental Hospitals in Lebanon
Purchaser: Council for Development and Reconstruction
Country: Lebanon

Issued on: November 2026

IsDB
البنك الإسلامي للتنمية
Islamic Development Bank

Based on IsDB standard Bidding Document for Procurement of Goods / January 2019

ABDULWAHED CHEHAB
CONSULTING ENGINEERING OFFICE
2nd Floor, Baitarian Bldg, Dora, Beirut, Lebanon
+961 1 255 442 | +961 1 255 332 |info@achehab.com

A. CHEHAB ARCHITECTS & ENGINEERS
COMMON SEAL
REPUBLIC OF LEBANON

Price Schedule

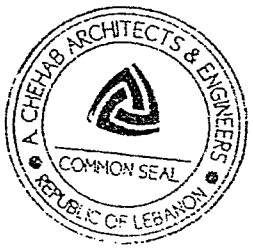
The original Bill of Quantities (BOQ) of the Bid shall be filled in indelible ink, only, otherwise the Bid will be rejected.

Currencies in accordance with ITB 15	Date:_____ ICB No: _____ Page N° _____ of _____

1	2	3	4	5	6
Line Item N°	Description of Goods	Unit	Quantity	Unit price	Total Price
1	**LINEAR ACCELERATOR (LINAC) SYSTEM, INCLUDING ALL ASSOCIATED EQUIPMENT, ACCESSORIES AND SERVICES, AS SPECIFIED IN THE REVISED TECHNICAL SPECIFICATIONS (VOLUME 2 – REV. V2), EXCLUDING THE CT SIMULATOR AND RELATED ACCESSORIES.**	Item	1		

	Grand Total (In Number and In Letter)	

Name of Bidder *[insert complete name of Bidder]*
Signature of Bidder *[signature of person signing the Bid]*
Date *[insert date]*



Price and Completion Schedule - Related Services

Currencies in accordance with ITB 15					Date:_____ ICB No: _____ Alternative No: Page N° _____ of _____	
1	2	3	4	5	6	7
Service N°	Description of Services (excludes inland transportation and other services required in the Purchaser's country to convey the goods to their final destination)	Country of Origin	Delivery Date at place of Final destination	Quantity and physical unit	Unit price	Total Price per Service (Col. 5*6 or estimate)
[insert number of the Service]	*[insert name of Services]*	*[insert country of origin of the Services]*	*[insert delivery date at place of final destination per Service]*	*[insert number of units to be supplied and name of the physical unit]*	*[insert unit price per item]*	*[insert total price per item]*
1	**Installation, Testing, Commissioning and Training for LINEAR ACCELERATOR (LINAC) SYSTEM, INCLUDING ALL ASSOCIATED EQUIPMENT, ACCESSORIES AND SERVICES, AS SPECIFIED IN THE REVISED TECHNICAL SPECIFICATIONS (VOLUME 2 – REV. V2), EXCLUDING THE CT SIMULATOR AND RELATED ACCESSORIES.**					
				Total Bid Price		

Name of Bidder *[insert complete name of Bidder]*

Signature of Bidder *[signature of person signing the Bid]*

Date *[insert date]*

A. CHEHAB ARCHITECTS & ENGINEERS
COMMON SEAL
REPUBLIC OF LEBANON

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date	Latest Delivery Date	Bidder's offered Delivery date [*to be provided by the bidder*]
1	LINEAR ACCELERATOR (LINAC) SYSTEM, INCLUDING ALL ASSOCIATED EQUIPMENT, ACCESSORIES AND SERVICES, AS SPECIFIED IN THE REVISED TECHNICAL SPECIFICATIONS (VOLUME 2 – REV. V2), EXCLUDING THE CT SIMULATOR AND RELATED ACCESSORIES.	1	Item	RHUH Hospital		*4 months from contract notification date*	

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