

EOI FOR MEDICAL ELECTRON LINAC

EoI Date: 15.03.2021
Due Date: 27.04.2021

**INVITATION OF EXPRESSION of INTEREST
For
TECHNOLOGY TRANSFER AND MANUFACTURING OF
DUAL MODE DUAL ENERGY
MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC)**

Jointly From



**Society for Applied Microwave Electronics
Engineering & Research (SAMEER), Mumbai**

AND



Andhra Pradesh MedTech Zone (AMTZ), Visakhapatnam

PRE-BID MEETING-I

Date: 01.04.2021

Time: 11.00 A.M

Venue: SAMEER, Navi Mumbai

PRE-BID MEETING-II

Date: 09.04.2021

Time: 11.00 A.M

Venue: AMTZ, Visakhapatnam

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Expression of Interest

Society for Applied Microwave Electronics Engineering & Research, Mumbai (SAMEER herein after referred as “Authority-1”) and Andhra Pradesh MedTech Zone Ltd, Visakhapatnam (AMTZ herein after referred as “Authority-2”) invite Proposal for the purpose of TECHNOLOGY TRANSFER AND MANUFACTURING OF DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC) from reputed Private / Public sector units (An Indian registered legal entity) with relevant experience preferably in the field of Radiology/High end medical equipment. The Bidders are required to submit their ‘Expression of Interest’ as laid down in this document. The EoI documents will be available on official website of SAMEER and AMTZ, namely www.sameer.gov.in and <https://amtz.in> and also on <https://eprocure.gov.in>.

Acronyms:

Abbreviation	Description
EoI	Expression of Interest
GoI	Government of India
MeitY	Ministry of Electronics & Information Technology
SAMEER	Society for Applied Microwave Electronics Engineering and Research
AMTZ	Andhra Pradesh MedTech Zone
DME, AP	Directorate of Medical Education , Government of Andhra Pradesh
Linac	Linear Accelerator
TTC	Technology Transfer Committee
EMD	Earnest Money Deposit
PDF	Portable Document Format
XLS	Excel Spreadsheet
RAR	Roshal ARchive
DWF	Drawing Web Format
JPEG	Joint Photographic Experts Group
ISO	International Organization for Standardization
TSD	Target to Surface Distance
SSD	source to surface distance
NTD	Normal Treatment Distance
MU	Monitor Unit
PRF	Pulse Repetition Frequency
ODI	Optical Distance Indicator
DI	De-ionized
GUI	Graphical User Interface
IMRT	Intensity Modulated Radiation Therapy
dmax	Depth of maximum dose
AERB	Atomic Energy Regulatory Board (AERB)

1. About this EoI

1.1. Introduction

1.1.1 Society for Applied Microwave Electronics Engineering & Research (SAMEER)

SAMEER is an autonomous R&D institution under Ministry of Electronics & Information Technology (MeitY), Government of India. In its five centers located at Mumbai, Chennai, Visakhapatnam, Guwahati and Kolkata, SAMEER pursues application-oriented research and development activities in the areas of Medical Linear Accelerator, RF and Microwave systems, Photonics, EMI/EMC Engineering, Antenna and Electromagnetics, Communications, Thermal Engineering, Radar Based Atmospheric Instrumentation and related software. SAMEER with focus on application-oriented R&D undertakes projects, customized product development and design consultancy in these specialized areas.

SAMEER in collaboration with other Indian Scientific Organizations has developed the first indigenous medical electron linear accelerator (4MV LINAC) for treating cancer patients. On the recommendation of Radiation Oncologists and medical experts it was decided that 6 MV medical LINAC would be the workhorse for majority of cancer cases. Thus 6 MV medical LINACS were developed under the Prime Minister's Jai-Vigyan (JV) programme of Govt. of India. In the first phase two machines have already been developed & deployed. The 6 MV medical LINAC machine is type approved by Atomic Energy Regulatory Board (AERB). In addition to this, four more machines are being made under the Jai-Vigyan programme (Phase II). The encouragement and support by the Jai Vigyan project steering committee members and the positive feedback from eminent oncologists has enthused SAMEER to take up the challenging task of making more medical LINACS through industry partnership and cater to country's need. Also the growing number of cancer patients globally and in the country makes the indigenous medical LINAC production an urgent necessity. With this in view another project of development of most advanced DUAL MODE DUAL ENERGY MEDICAL LINAC was sponsored by Ministry of Electronics and IT (MeitY), Govt. of India. SAMEER took up this challenge and developed various subsystems of the machines including the LINAC TUBE. The machine is in the advance stage of final integration and testing etc. After completion of the necessary testing, it is essential to seek AERB type approval for -- deployment for patient treatment.

SAMEER is ready to pass on the technical know-how to prospective industry/s that is/are willing to take the challenge of commercial manufacturing of Medical LINAC machines in India. SAMEER has established facility for batch fabrication of Linac tubes at its Kharghar center.

1.1.2 Andhra Pradesh MedTech Zone (AMTZ)

Andhra Pradesh MedTech Zone (popularly known as AMTZ) is an enterprise under the Government of Andhra Pradesh, a 270 Acre zone, dedicated for Medical Device Manufacturing. The objective behind this 'One-Stop- Solution' is not only to reduce the cost of manufacturing up to 40% or to just simplify the end-to- end operations but also to reduce the import dependency, which is presently around 75%. AMTZ envisions to put India on the global map of high end medical equipment production and make health care products affordable and accessible not only for India but for world at large.

The creation of such a zone is based on the fact that medical devices manufacturing requires certain high investment facilities which are too capital intensive for individual manufactures to invest upon. The zone with in-house high investment scientific facilities would help manufacturers reduce the cost of manufacturing by more than 40%-50%. Currently, due to lack of such centrally located sharable facilities, either manufacturers do not undertake production of technologies requiring them or send their products abroad for process up-gradation and value addition. While the zone has all such facilities in-house to reduce manufacturing process costs, it is situated in an area which is well connected with Railways, Roadways, Waterways and Airways with near presence of Industrial Corridors, and Port to reduce logistical costs.

The required infrastructure for industry facilitation are being developed by AMTZ. While the manufacturing units shall be leased out, Common manufacturing facilities have been created on Build and Operate Model. AMTZ is establishing state of the art civil and electrical infrastructure for industry to walk in and establish the interiors of their units/assemblies in least amount of time possible.

(i) Common Scientific Facilities (CSF):

AMTZ is developing the Zone, consisting of capital intensive Common Scientific Facilities (CSF) required for facilitating the manufacture of electronic, electrical, electro medical, radiological and biomaterial medical devices including:

(a) X-ray/CT Scan Tube Manufacturing Facility

- X-ray tube processing facility
- X-ray tube glass shop
- High Degassing / vacuum facility
- X-ray tube insert processing
- Tube Radiation Performance testing

(b) Radiation Testing & Quality Control Testing Facility for Radiological Devices

- Radiation Testing facility using phantom
- Quality Control Testing

(c) Electrical Safety & EMC Testing Facility

- EMC Testing according to IEC 60601-1-2 Standards.
- A 10m Semi-Anechoic Chamber (up to 40 GHz)
- Electrical Safety Testing according to IEC 60601-1
- Acoustics Testing Facility complying with ISO 3744/3745.

(d) 3D Design and Rapid Prototyping Facility

- 3D Designing: Modelling and Design for Organic and Medical
- 3D Printing: FDM, SLA, SLS, CJP, PJP, Bio printing, Metal Printing, Hexagon Laser 3D scanners
- Rapid Prototyping: CNC 5/3 axis, CNC turning, EDM machines, Innovation Labs

(e) Biomaterial Testing Facility

- Biomaterial Testing
- Sterility Evaluation
- Histopathology Evaluation
- Physicochemical Evaluation
- Accelerated Aging
- Package Validation

(ii) Directorate of Radiation Safety (DRS):

- (a) AERB has authorized AMTZ as a Directorate of Radiation Safety (DRS) for conducting regulatory inspections of X-ray installations in the State of Andhra Pradesh as per the Guidelines of AERB.
- (b) AMTZ is entrusted with the responsibility of implementing Radiation Protection Rule 30 (2004) of the Atomic Energy and the Guidelines promulgated by the AERB from time to time regarding radiation safety in medical diagnostic X-ray facilities in Andhra Pradesh.
- (c) Verify the compliance with requirements stipulated in the Atomic Energy (Radiation Protection) Rules, 2004 and in the relevant Notifications, Safety Standards, Codes, and Guides of AERB during the regulatory inspection of X-ray installations and suggest correct measures to the X-ray installations if any, as appropriate.

1.2. General Instructions and Important Dates

- i. Bidding agencies are advised to study this EoI document carefully before submitting their proposals in response to the EoI Notice. Submission of a proposal in response to this notice shall be deemed to have been done after careful study and examination of this document with full understanding of its terms, conditions and implications.
- ii. EoI shall be published on website www.eprocure.gov.in and on our websites (www.sameer.gov.in) and (<https://amtz.in/>).
- iii. Corrigenda: Corrigenda, if any to this EoI will be published on our websites (www.sameer.gov.in) and (<https://amtz.in/>). The bidders are advised to check

- our website, before submitting the bid.
- iv. Bids should be dropped in Tender Box.
 - v. Bids received via e-mail, fax and Late Bids will not be considered.
 - vi. Unsuccessful bidders will not be formally informed of the result of their bid.
 - vii. This EoI document is not transferable.
 - viii. The response to this EoI should be full and complete in all respects. Failure to furnish all information required by the EoI documents or submission of a proposal not substantially responsive to the EoI documents in every respect will be at the bidder's risk and may result in rejection of its Proposal.
 - ix. Bidders interested in participating in pre-bid meetings must communicate about their participation at least two working days before by the e-mail. The information regarding persons participating in pre-bid meeting and their details should be communicated. The participants should carry letter of authorization from the company stating that they are authorized to attend the pre-bid meeting non behalf of the company. Looking into COVID-19 pandemic, maximum two persons per bidder will be allowed to take part in pre-bid meeting. The participants must strictly follow COVID-19 guidelines issued by the authority during pre-bid meeting. In case number of participant exceed the limit, pre-bid meeting may be arranged in staggered time/hours.
 - x. Jurisdiction : Mumbai

1.	EoI Release Date	15.03.2021
2.	Last date for submission of written queries for clarifications for first pre-bid meeting	31.03.2021
3.	Date of 1 st pre-bid meeting	On 01. 04.2021 at 11.00 A.M. at SAMEER, Navi Mumbai
	Date of 2 nd pre-bid meeting	On 09.04.2021 at 11. 00 A.M. at AMTZ, Visakhapatnam
4.	Last Date (Deadline) for submission of Bids	27.04.2021
5.	Opening of responses: Pre-Qualification Bids	28.04.2021 at 11.00 A.M
6.	Opening of Technical bids	To be informed later
7.	Opening of Financial bids	To be informed later
8.	Contact person for queries	S.N. Pethe Head, Medical Electronics Division-II SAMEER, Mumbai 400076 E-mail : sanjay@sameer.gov.in
9.	Email Address for all Bid Correspondence	sanjay@sameer.gov.in
10.	Addressee and Address at which proposal in response to EoI notice is to be submitted	The Purchase Officer, SAMEER IIT CAMPUS POWAI MUMBAI 400076 e-mail: purchase@sameer.gov.in
11.	EMI/Bid Security	As per OM dated 12th November 2020 by Ministry of Finance, instead of taking actual EMD, only Bid

		Security Declaration will be taken as per the format at Annexure C2.
12.	Tender/ EoI document fee (Non-refundable and Not exempted)	INR 5000/- by DD There will not be any 'Tender/EoI document Fee' if tender document is downloaded from the on-line portal.
13.	EoI document may be downloaded from websites www.sameer.gov.in , www.amtz.in and also from www.eprocure.gov.in	

2. Terms of Reference

2.1. Objective of the EoI

Ministry of Electronics and IT (MeitY), Govt. of India had sponsored the project of indigenous development of **DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINAC** used for treatment of Cancer patients. SAMEER has developed various subsystems of the machines including the LINAC TUBE. The machine is in the advance stage of final integration and testing etc. After completion of the necessary testing, it is essential to seek necessary approvals from appropriate authorities for deployment for patient treatment. SAMEER is ready to pass on the technical knowhow to prospective industry/s that is/are willing to take the challenge of commercial manufacturing of Medical LINAC machines in India. AMTZ is developing the medical device manufacturing zone having various scientific/technical facilities which will be provided to the industries. Hence, SAMEER and AMTZ jointly seek proposals from bidders for Transfer of Technology, manufacturing and supply of **DUAL MODE DUAL ENERGY MEDICAL LINAC Machines** in India. This EoI would be awarded to the bidder according to the Bid evaluation procedure.

2.2. Scope of work

2.2.1. The Bidder

(Bidder used interchangeably for Transferee/ Developer/ Manufacturer)

Extent of Work

- i. To manufacture DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINAC Machines and its Sub-systems based on the technical knowhow provided by SAMEER.
- ii. To establish and run both manufacturing and testing facilities in AMTZ which are required to achieve the Extent of Work.
- iii. To obtain required approvals from the appropriate authorities to establish & operate the facility and manufacturing of machine. (Example: Atomic Energy Regulatory Board - AERB, Government of India and others).
- iv. To install & commission medical LINAC machine at the user Hospitals / Radiotherapy Centers / Medical Research Centers, located in India and abroad.
- v. To service and maintain medical LINAC machines at the end users site.
- vi. To market medical LINAC machines both in India and abroad.
- vii. To establish Quality Assurance and Quality Control (QC) facilities to ensure compliance of the manufactured medical LINAC machines to Radiation Safety Standards & QA/QC provisions of *AERB*, IEC and any other related National and International standards.
- viii. To upgrade the proposed manufacturing facility from time to time as per internationally acceptable guidelines/ benchmarks.
- ix. To offer comprehensive after sales service including comprehensive maintenance and assured supply of spare parts for 15 Years.

2.2.2. Technical Knowhow Transfer from SAMEER

- i. SAMEER will transfer the technical knowhow of the DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINAC system **excluding the Linac tube** on **non-exclusive** basis for period of **66 months** from the date of signing of ToT agreement. The knowhow shall be provided on “as is where is basis.” The bidder is expected to develop one model/piece of the ‘regulatory approved’ commercially deployable Medical Linear accelerator within 30 months from the date of signing the ToT agreement. The progress of the work shall be reviewed periodically.
- ii. SAMEER will transfer the technology of the DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINAC Machines excluding the Linac tube. The tube which is the most critical component has to be mandatorily taken from SAMEER as per mutually agreed terms for integration with rest of the system till the tube technology is also transferred. Only in the situation where SAMEER is not able to meet the requirements of the tubes, Grantee may source them from the open market with the permission of SAMEER.
- iii. SAMEER may transfer the tube technology to Grantee at a cost on non-exclusive basis after evaluating its readiness and capability to absorb the same. There shall, however be a separate TOT agreement for the same. The readiness of Grantee may be assessed after successful commissioning of two to three machines.
- iv. SAMEER will provide its laboratory design documentation for the medical LINAC Machines and its Sub-systems as mentioned in the scope of the work to the selected Bidder;
- v. SAMEER will offer guidance to the Bidder in understanding its documents.
- vi. The selected Bidder is expected to prepare detailed documents of fabrication, development & testing of various sub-systems.
- vii. The selected Bidder should prepare the final documentation as per industry standards.
- viii. SAMEER has established Linac tube fabrication facility at its Kharghar campus. This facility can be made available to the bidder on chargeable basis subject to its availability.
- ix. Implementation of this Technology transfer project would necessitate multidisciplinary proficiency. SAMEER’s experts in these various areas can be made available as consultant on applicable charges.

2.2.3. Support from AMTZ

A. Establishment of Manufacturing Facility

The selected bidder can take fully developed land within AMTZ Campus @ Rs. 400/- per sqft and set up their own factory premises. AMTZ shall also provide support for procurement of production plant and machinery to the extent of Rs. 10.0Cr based on a Leave & License agreement as per AMTZ norms.

B. Manufacturing facility

This facility is proposed to manufacture Dual mode Dual Energy Medical LINAC machines and its sub-systems indigenously as per specifications given in this document. Radiation Performance Testing Room as well as Quality Control Testing rooms of the facility would consist of concrete walls with radiation protective accessories. This would help to segregate it from the rest of the rooms of the facility and other facility/unit of AMTZ so that the radiation dose limits for radiation workers and other employees/visitors of AMTZ and public would be within the acceptable limit according to AERB. The plan of the radiation testing room need to be approved by AERB before the commencement of the construction.

As a part of the scope, the selected Bidder, would require setting up a high-end infrastructure with the specialized plant & machinery (P&M) and qualified & experienced manpower to manufacture various components/parts with suitable materials of the Dual mode Dual Energy Medical LINAC machines and its sub-systems. The scope also includes the following

An integration & Assembly of components/ parts

Construction of LINAC machine and its sub-systems

Testing

Radiation Performance Testing according to AERB protocols

Quality Control Testing according to AERB protocols

C. Regulatory Requirements Issued by AERB to get Approval

The Bidder would be responsible for applying and procuring the necessary license/ approvals/ clearances from AERB, CDSCO and other appropriate authorities. The following approvals are indicative, and not exhaustive. The Radiation Safety guidelines/requirement for the Bidder to establish the facility for manufacturing medical LINAC machines is outlined by AERB, Government of India.

- i. This manufacturing facility would be provided only to the Bidder, who have been authorized in writing by the Competent Authority to operate such facilities;
- ii. The Radiation Performance Testing Room as well as Quality Control Testing rooms of the facility would be constructed as per the layout design approved by AERB.
- iii. All the applications are to be submitted to AERB only through e-Licensing of Radiation Applications (eLORA) for approval.
(https://www.aerb.gov.in/images/PDF/Radiotherapy/eloraRTGuidelines_R4.pdf)

D. Radiation Performance Testing and Quality Control (QC) Testing

The following tests are indicative and not exhaustive

Dosimetry tests

- i. Photon and electron beam profile constancy
- ii. Electron beam energy
- iii. Photon beam energy

- iv. Dynamic delivery control
- v. Photon MU linearity (output constancy)
- vi. Electron MU linearity (output constancy)
- vii. Photon output vs dose rate
- viii. Photon and electron output vs gantry angle

International Electro-technical Commission (IEC) standards

Infrastructure support for the following tests of the International Electro-technical Commission (IEC) standards, which confirm the Radiological and Non-radiological Safety of the proposed manufacturing medical accelerator, will be provided by AMTZ. The list of tests given below is indicative and is not exhaustive:

- a. IEC TR 61859:1997: Guidelines for radiotherapy treatment rooms design
- b. IEC 62274 First Edition 2005-05: Medical electrical equipment- Safety of radiotherapy record and verify systems
- c. IEC 60976-2:2007-10: Medical electrical equipment-Medical electron accelerators - Functional performance characteristics
- d. IEC TR 60977:2008: Medical electrical equipment-Medical electron accelerators - Guidelines for functional performance characteristics
- e. IEC 60601-2-1:2009: Medical electrical equipment - Part 2-1: Particular requirements for the basic safety and essential performance of electron accelerators in the range 1 to 50 MeV
- f. IEC 62083 Edition 2.0 2009-09: Medical electrical equipment - Requirements for the safety of radiotherapy treatment planning systems
- g. IEC 61217:2011: Radiotherapy equipment - Coordinates, movements and scales
- h. IEC 61217 Edition 2.0 2011-12: Radiotherapy equipment- Coordinates, movements, and scales
- i. IEC 60601-2-68:2014: Electrical medical equipment- Part 2-68: Particular requirements for the basic safety and essential performance of X-ray-based image-guided radiotherapy equipment for use with electron accelerators, light ion beam therapy equipment and radionuclide beam therapy equipment
- j. IEC 60601-2-1 Edition 3.1 2014-07: Medical electrical equipment- Part 2-1: Particular requirements for the basic safety and essential performance of electron accelerators in the range 1 MeV to 50 MeV
- k. IEC 60731 Edition 3.1 2016-04: Consolidated Version Medical electrical equipment - Dosimeters with ionization chambers as used in radiotherapy
- l. AAMI RT2:2017: Radiation therapy readiness check

E. ISO certification

The Bidder should get its facility certified for ISO 13485/ICMED 13485 and any other

relevant quality standards.

F. Operations & Management

The Transferee and the Developer & Manufacturer would recruit adequate staff for the operation and management of the facility. Also, they would ensure an adequate marketing and promotional activities to operate the manufacturing facility with profit. An approximate manpower requirement is given as follows:

- i. Senior Production Manager, overall responsible for manufacturing the dual photon/ multiple electron beams LINAC machine
 - M.E./ M.Tech: Electronics/ Electrical/ Mechanical/ Production
- ii. Production In-Charge, Radiation Safety Officer (RSO) and Quality Control Officer (QCO) having the following qualifications:
 - A Degree in Engineering or in Science from a recognized University/ Institution with Physics as one of the subjects or A Post Graduate Diploma/Degree in Radiological Physics from a recognized University/ Institution or Successful completion of Radiation Safety Course recognized by the Competent Authority and received approval from the Competent Authority to function as a RSO.
 - The RSO shall have responsibilities as specified by AERB.
- iii. Assistant Engineer in the Fabrication/ Assembling/ Production/ Software development having any one of the following qualifications:
 - B.E/B.Tech in Electronics/ Electrical/ Mechanical/ Computer Science or Software/ Biomedical Engineering or any other relevant specialization and M.Sc. Medical Physics any other relevant specialization from a recognized University/ Institution
- iv. Office Administrative & Clerical Staff having the following qualification:
 - B.Com/ BBA from a recognized a recognized University/ Institution
- v. Electrical plus Mechanical Technicians having the following qualification:
 - Diploma in Electrical/Electronics/Mechanical Engineering from a recognized Institution
- vi. Casual Laborer for loading & unloading

The manpower listed above is an indicative and the Bidder can induct the manpower as per their need taking into consideration of the production requirements.

G. Future Expansion

Facility should be constructed in such a way so that there would be provision for future expansion.

2.3. Technologies involved

A brief description of the technologies involved in making of medical Linear Accelerator (LINAC) is given below. SAMEER has developed and established the technological expertise listed below that are required for the design and manufacturing of a medical LINAC tubes, machines and its sub-systems.

- i. Vacuum Tube Technology: The LINAC tube is the source of the X -Rays or electrons that are used for the treatment. The critical component, the LINAC tube requires proper materials, ultra-precision fabrication, controlled atmosphere furnace brazing, microwave measurements, ultra-high vacuum technology, chemical plating/cleaning etc.
- ii. Ultra-High Precision and Heavy Mechanical Engineering: Ultra High-precision fabrication is needed for the LINAC tube parts like cavities, electron gun parts etc. and secondary collimator. The gantry and stand are heavy structures that house most of the assemblies of medical LINAC machine. The complete gantry with the components weighs around five tones.
- iii. High Voltage Engineering: The high voltage modulator drives the microwave source i.e. klystron. It converts alternating current mains power to high voltage pulses which are applied through a pulse transformer to the klystron.
- iv. Microwave Engineering: The microwave source, i.e. the klystron generates megawatt of RF power and transports them to the accelerator through pressurized waveguides, high power circulator, directional couplers, bends etc. Loads are also used to absorb reflected power.
- v. Control/ Software Engineering: The FPGA based control console provides a central location for presetting, monitoring, and controlling operation of the accelerator for the therapy treatment. It also provides display of dose, beam on time, mechanical position readouts etc. and an indication of the status of the various interlocks and subsystems.
- vi. Thermal Engineering: The closed loop DI water circulation system cools critical components like LINAC tube, klystron, circulator etc. keeping them at a controlled constant temperature for optimum performance. This system comprises a chiller unit as well as a heater to maintain the output temperature with PLC controls at any ambient temperature.
- vii. Radiation Physics:
 - a. The LINAC machine is tested and the specifications have to be demonstrated to the regulatory authorities before it is cleared for installation at the hospitals. Efficient and safe radiation therapy requires the performance characteristics of radiation treatment beams to remain

constant during each individual treatment as well as over long periods of time.

- b. Radiation shielding to keep the radiation leakages from the machine within stipulated limits;
- c. Beam collimators to guide X Rays to fall on treatment area;

viii. Optics:

- a. The field optics is used for the simulation of the X-Ray field and to assist in positioning the patient prior to treatment on the patient couch. The projected light beam is adjusted to coincide with the X ray beam.
- b. The single body optical distance indicator (ODI) in the treatment head provides convenient visual methods for patient positioning using optical distance indicators. The main function of single body ODI is to determine the source to skin distance (SSD) or Target to Surface Distance (TSD).

ix. Engineering for Electromagnets:

- a. Double Achromatic Beam Bending magnet to bend the electron beam through 270°.
- b. Solenoids for beam alignment.
- c. Double Achromatic Beam Bending magnet to bend the electron beam through 270°.
- d. Solenoids for beam alignment.

2.4. Technical Specifications

2.4.1. Table of Specifications

Sr. No.	Feature	Specification
1	Particle type	Photons and Electrons
2	Photons : Photon energies Dose rate Field flatness Field Symmetry Field size Spot size	6 and 15 MV Variable from 100 to 500 MU/min. $\pm 3 \%$ $\pm 2 \%$ Variable from 1 cm x 1cm to 35cm x 35 cm 3.0 mm (nominal)
3	Electrons : Electron energies Dose rate Beam flatness Field size <u>X-ray Contamination:</u> for all available energies for 10x10 cm ² applicator size	6 , 9, 12 ,15 and 18MeV Variable from 100 to 500 MU/min. $\pm 5 \%$ Variable from 6 cm x 6 cm to 25 cm x 25 cm (Discrete 5 sizes) <4% up to 6 MeV <5% for 6-15 MeV <10% for > 15 MeV
4	Asymmetric Jaw movement secondary collimator	Yes (One pair)
5	Multi-leaf collimator	Yes (Eighty Leaves)
6	Floor to ISO-CENTRE distance	130 \pm 0.5 cm
7	3- D TPS	Yes (bought out)
8	Patient Treatment Couch Movements Angular Vertical Ranges Lateral Longitudinal	$\pm 90^\circ$ around vertical axis passing through the iso-centre 70-140 cm. from the floor ± 20 cm 130 cm.

2.4.2. Descriptive Specifications

The technical specifications for the DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINAC Machine and its Sub-Systems in detail are given below:

A. Photon beam characteristics

i. Beam Energies

The accelerator will be capable of producing two clinically useful photon beams with energies of 6 MV for the low energy and 15 MV for the high energy.

ii. Dose Rate

The maximum dose rate for routine clinical applications will be equal to 500 MU/min. The dose rate will be variable from 100 MU/min to 500 MU/min in steps.

iii. Field Size Specifications

The field size is defined as the distance along the radial and transverse axes between the points of 50% optical density on an X-ray film taken at 100 cm TSD. The digital display and light field size will be accurate to within ± 2 mm.

- a. The accelerator will provide a continuously variable square unclipped field size from 1cm x1 cm to 35cm x35 cm at 100 cm TSD. The maximum field size will be equal to 40 cm x 40 cm at 100 cm TSD with clipped corners.
- b. A detachable block holder will be provided to accommodate 2 trays simultaneously for wedges and block trays. The size of the blocking trays will be at least 5cm larger than the maximum field size at the lower position.
- c. Asymmetrical Collimation: The asymmetric jaw facility will be provided for one set of jaws only. In this case, one set of jaws will be capable of crossing the center line (over travel) by at least 10 cm as projected at 100 cm TSD. The collimators will re-center automatically when the symmetrical mode of operation is reselected.
- d. MLC–Multi Leaf Collimator: The MLC system will have 80 leaves (40 pairs). The resolution of the MLC leaves at iso-centre will be 1 cm. The over travel distance of the MLC leaves will be 15 cm.

iv. Beam Profile

- a. Field Flatness Specification: Flatness for symmetrical fields at 10 cm depth in iso-centric set-up will not exceed $\pm 3\%$ along the longitudinal and transverse axes of all field sizes from 5 cmx5 cm to 30 cmx30 cm for collimator operation in the symmetric mode.
- b. Field Symmetry Specifications: The symmetry for symmetrical fields at 10 cm depth in iso-centric set-up will not exceed $\pm 2.0\%$ for the longitudinal and transverse halves of the fields. Field sizes will be specified as 5 cmx5 cm and 30 cmx30 cm.
- c. Field flatness and symmetry values should satisfy nationally recognized standards for both photon and electron beams.

- v. Mechanical Wedges: A minimum of 4 physical wedges will be supplied with the accelerator including 15, 30, 45 and 60 degrees.
- vi. Radiation Leakage:
Radiation leakage limits will be within national regulatory guidelines as follows:
 - a. Photon leakage in the patient plane: Leakage radiation is measured on a plane circular surface of radius 2.0 meters centered on and perpendicular to the central axis of the beam and containing the iso-centre. Outside the area of the maximum useful beam, the leakage radiation due to X-rays, averaged over 100cm², shall not exceed 0.1% (average) and the 0.2 % (maximum) of the maximum absorbed dose rate at iso-centre.
 - b. Leakage radiation other than patient plane: Maximum percentage leakage radiation at 1 m from the target; path of electrons between electron gun and the target or electron window in other than patient plane will be 0.5% of the central axis dose at Dmax measured in air for both photon energies.
 - The leakage radiation and electron contamination should comply with AERB regulations and IEC standard.
 - c. Neutron leakage: The neutron leakage rate expressed in neutron dose equivalent (REM) will not exceed 0.05% of the absorbed dose at any point one meter from the target when the jaws are closed
 - d. Collimator transmission: Photon leakage radiation through beam limiting devices (Secondary collimator) at NTD will be Maximum 2 % and Average 0.75 % of the central axis dose at Dmax measured in air for both photon energies

B. Electron beam characteristics

- i. Electron Beam Energies:
The following 5 clinically useful electron beam energies will be provided: 6, 9, 12, 15 & 18 MeV. Energy will be specified as the most probable energy (Ep) of the electron energy spectrum at 100 cm from the accelerator exit window.
- ii. Dose Rate:
The maximum dose rate at the iso-center will be 500 MU/minute for each electron energy measured with a field size of 10 cmx10 cm at an SSD of 100 cm. and at the depth of the dmax.
- iii. Field Size:
The electron beam size is defined by the inside dimensions of the electron beam applicators projected geometrically to a plane surface at 100 cm nominal SSD. A range of field sizes will be from 6 cm x 6 cm to 25 cm x 25 cm.
 - a. It will be possible to visualize both the field defining light and the optical

distance indicator with an electron applicator in place.

iv. Beam Profile

- a. Field Flatness: Flatness along major axes at the depth of dose maximum as separation between 90% and 50% dose points on either side of the beam profile for all applicators with a tolerance limit of ≤ 10 mm.
- b. Beam Symmetry: Symmetry along major axes at depth of dose maxima in SSD setup (maximum ratio of absorbed doses at symmetrical points from central beam axis and more than 1cm inside the 90% iso-dose contour) will not exceed 105 %.

- v. X-ray Contamination: The same for all available energies for 10x10 cm² applicator size will be
- <4% up to 6 MeV
 - <5% for 6-15 MeV
 - <10% for > 15 MeV

- vi. Total Skin Electron Irradiation Mode: A high dose rate electron mode for total skin electron irradiation will be provided with a dose rate of 900 MU/min for the 6 MeV electron beam.

C. Dosimetry system:

- i. A dual channel (channels-1 and 2) dose monitoring system will be designed with primary and secondary combination. The primary dose will terminate the treatment on reaching coincidence with the pre-set value. Backup termination will be provided by secondary dose monitor and time interlock systems.
- ii. The reproducibility of the dosimetry system for each energy is better than $\pm 1\%$ or ± 1 MU whichever is greater at fixed dose rate. (coefficient of Variation is $\leq 0.5\%$ as per AERB Document)
- iii. Reproducibility of dose with Gantry angle: For any gantry and radiation head angle the precision of the dosimetry system is $\pm 2\%$ or 1 MU, whichever is greater. (As per AERB document: Dependence of monitor response on gantry rotation is $\leq 3\%$)

D. Mechanical parameters:

- i. The target to gantry axis distance will be 100 ± 0.2 cm.
- ii. Accuracy of mechanical iso-centre: the intersection of the axes of rotation of the gantry, collimator and couch shall lie within a sphere of 2.0 mm diameter.
- iii. The accelerator gantry will be capable of rotation equal to or greater than 360 (± 180) degrees.
- iv. Digital scales indicating gantry angle position will be provided both in the treatment room and at the control console. Accuracy of the scales will be ± 0.5 degree and resolution of 0.1 degree.

- v. The distance from the end of the lower collimator to the isocentre will be greater than 45 cm.
- vi. The bottom of the blocking tray will be greater than 30 cm from the isocentre.
- vii. The height of the isocentre above the finished floor will be 130 cm.
- viii. Digital scales indicating collimator angle position will be provided both in the treatment room and at the control console. Accuracy of the scales will be ± 0.5 degree.
- ix. Field defining light: It will be provided with cross wires indicating position of beam central axis.
- x. Optical Distance Indicator (ODI): It shall have range of 75cm to 170cm. Accuracy: ± 1 mm at 100 cm; Resolution: 5mm;

E. Treatment couch (with indexed carbon fiber table top)

- i. The maximum height of the couch shall be 10 cm above the iso-centre.
- ii. The lowest couch position will be 70 cm above the finished floor. The lateral movement of the patient couch will be ± 20 cm.
- iii. The angular movement will be 180 degree around vertical axis passing through iso-centre.
- iv. Motions (except couch top rotation) will be both manual and variable-speed motor driven. An indexed carbon fiber couch top will be provided.
- v. Convenient digital scales in metric units will be incorporated on the couch and on an in room monitor which will allow the operator to check the orientation of the couch height and couch angle with respect to the gantry.
- vi. Couch positions (except couch top rotation) will also be displayed at the control console. Accuracy of the scales for vertical, lateral and longitudinal motions will be within ± 1 mm.
- vii. Two hand pendants will be provided.
- viii. Patient Treatment Couch Movements

Angular	: $\pm 90^\circ$ around vertical axis passing through the iso-centre
Vertical Ranges	: 70-140 cm. from the floor
Lateral	: ± 20 cm
Longitudinal	: 130 cm.

F. Treatment room and console position displays

- i. For accuracy of patient set-up, digital displays of gantry rotation angle, collimator rotation angle, collimator jaw settings (symmetric and asymmetric), and treatment couch vertical position, lateral position, Longitudinal position and turntable rotation angle about iso-centre will be provided both in the treatment room and at the operator console.
- ii. Accuracy of collimator and gantry angle displays will be $\pm 0.5^\circ$, with a resolution of 0.1° .
- iii. Accuracy of collimator jaw position displays will be ± 1 mm with a resolution of 1 mm.

- iv. Accuracy of the couch vertical, lateral and longitudinal displays will be ± 2 mm with a resolution of 1 mm.

G. Bought out/ Optional development items:

- i. Treatment planning system, TPS: An advanced, top-end 3-dimensional Treatment Planning System (TPS) compliant with latest ICRU Recommendations and approved by recognized regulatory authority that supports multiple dose calculation algorithms with accuracy within acceptable norms. The TPS software will run on a state-of-the-art graphics intensive computer system with adequate, latest backup technology.
- ii. MLC capable of delivering IMRT.
- iii. Record & Verify (R&V) system with latest features.
- iv. RFA, radiation dosimetry and monitoring systems.
- v. Immobilization devices.

2.5. Status of Development

1. The LINAC TUBE ASSEMBLY

A. The LINAC TUBE sub-assembly :

The main parts of the Linac tube are: (a) Triode type Electron gun, (b) R.F. accelerating structure, (c) R.F. window and (d) X-Ray target.

- a. Triode type electron gun: The triode type electron gun has been designed, fabricated and tested in stand-alone mode as well as after integration with Accelerating structure. The beam spot size has been measured. The development of triode gun has been successfully completed.

During development of Triode Gun, few failures were faced due to manufacturing defects and component failure. SAMEER has modified the assembly procedure after analyzing the failures. The manufacturer has improved the triode component based on feedback from SAMEER. It is proposed to redesign and develop new triode gun with this modified component to improve the reliability and output.

- b. R.F. accelerating structure: The RF accelerating structure has been designed, fabricated and tested. The RF outgassing of Linac tube at full peak and average power is completed. The electron beam of energy ranging from 6 MeV to 18 MeV is obtained from straight port exit window as well as after bending the electron beam through 270°. The plunger sub-assembly to shorten the length of Linac tube was designed and integrated with Linac tube. The testing of Plunger sub-assembly with high power RF is completed.
- c. R.F. window (bought out): Integrated and tested.
- d. X-ray Target: X-ray target has been designed and integrated with the beam bending system. The movements of integrated target system has been tested in stand-alone mode.

However the testing of x-ray Target in integrated mode with electron beam (Bremsstrahlung pattern) is pending due to low output from electron gun.

B. The Electron Beam Bending magnet Sub-Assembly

- a. 270° doubly achromatic beam bending magnet:
270° doubly achromatic beam bending magnet has been designed and fabricated. We have tested the bending magnet system for electrons from 6 MeV to 18 MeV. So the experimental verification for bending magnet is done.
- b. Electron beam exit window: Both electron beam exit windows are integrated with beam bending magnet systems.

The straight port exit window and the exit window attached to beam bending chamber have been tested with electron output at lower output power (average). It

was not possible to test these windows as full output power due to issues with triode gun.

2. BEAM HANDLING SYSTEM : SHIELDS, COLLIMATORS AND APPLICATORS

- a. Shields: The appropriate shields are designed, fabricated and integrated with the system.

The radiation leakage measurement is in progress. After radiation leakage measurement any correction to shield design if required will be carried out.

- b. Collimators: This consist of three sub-systems, namely (i) a fixed collimator known as Primary collimator, (ii) an asymmetric jaw secondary collimator with adjustable set of jaws and (iii) a multi-leaf collimator.

i) Primary collimator: The primary collimator has been designed, fabricated and integrated with the system.

ii) Asymmetric jaw collimator: The asymmetric jaw collimator has been designed, fabricated and integrated with the system. The standalone testing without radiation has been completed.

The final testing with 6 MV and 15 MV photon beams is in progress.

iii) Multi-leaf collimator :

The multi-leaf collimator has been designed and fabricated. MLC System has been integrated and Tested for its electrical specifications in stand-alone mode.

The integration of Multi-leaf collimator with Linac system is in progress. The testing of Multi-leaf collimator after integration is pending. Additional efforts may require to make it operational and conforming to the standards.

- c. Ionization Chamber: Fabrication of eight sector ionization chamber and its leak testing completed. Filling of Argon gas in the eight sector ionization chamber and its testing with radiation completed successfully.

- d. Electron Scatterer and Applicators: Design of Electron Scatterers and applicators for all five electron energies is completed. Fabrication of electron scatterers is done. Fabrication of Electron Applicators is completed.

Testing of Electron Scatterers and Applicators is in progress. Any correction to scatterer and applicator design if required will be carried out after final testing.

3. MICROWAVE SYSTEM :

Microwave system has been designed, fabricated, integrated and tested for full peak and average power. The variation of output RF power by operating klystron in linear mode (by varying input power to klystron) has been achieved successfully.

4. MODULATOR :

Modulator system has been designed, fabricated, integrated and tested for full peak and average power. The stability of operation and flat top of the pulse has been achieved.

The modulator used in the system needs to be conformed to IEC standard 60601-2-1 for EMI/EMC. However, additional efforts are required to make it conforming to these standards.

5. COMPUTERIZED CONTROL CONSOLE :

The firmware for all the boards is developed and tested. All the boards are integrated and the functionality operation, with field signal has been demonstrated. Safety Interlocks are checked. The RF hardening of the tube which is one of the important processes is completed using the control console. The electron energies measurement for all the required energies with the detuning arrangement is achieved. The calibration of the systems is to be carried out once the operational parameters are fixed.

The GUI (graphic User Interface) is developed for testing of the machine. The machine commands are passed through the GUI parameters like accelerator vacuum, interlocks and subsystem status are monitored on the GUI. The values acquired from the individual controller are converted to the desired engineering values at the controller end. The controller data acquisition was tuned for timing and the data could be acquired at a rate of 400 /ms. The console based server module was written to test the data acquisition. Treatment parameter screen is ready and will be integrated for the treatment mode.

The final testing of control console will be completed when the system will be tested for specification demonstration as per AERB guidelines.

6. GANTRY, STAND and OPTICS :

- a. Gantry and Stand: The stand and Gantry system have been designed and fabricated and installed on the base frame in the radiation bay. The levelling of gantry has been completed. Fixing of wall lasers in the radiation bay has been completed. Identification of iso-centre with help of five-point laser and correction of wall laser position have been completed. Integration of Microwave system, Linac tube, Carousel, beam handling system and water bus bar in the gantry has been completed.

The design of enclosures for stand and Gantry has been completed. The fabrication is balance.

- b. Optics: The design, fabrication and testing of field optics have been completed. Design and Fabrication of ODI has been completed.

However, it is felt that to get the expected results ODI needs to be re-developed.

7. PATIENT SUPPORT ASSEMBLY, PSA (Treatment Couch):

The patient support assembly has been designed and fabricated. All the three motions of patient support assembly have been tested from control console. The carbon fibre couch top has been procured. The design and fabrication of carbon fibre support frame for PSA, was outsourced.

However, it is felt that to get the expected results PSA support frame needs to be re-developed

8. WATER CIRCULATION SYSTEM:

The water circulation system has been designed, fabricated, integrated and tested.

9. TREATMENT PLANNING SYSTEM :

The treatment planning system has been procured and tested in stand-alone mode.

SUMMARY: READYNESS OF TECHNOLOGY BY SAMEER

S.NO	DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINAC SYSTEMS	READYNESS OF THE TECHNOLOGY BY SAMEER
1.	LINAC TUBE ASSEMBLY	
A	Tube Sub-assembly	
a.	Triode type Electron gun	* √ Ready (stand-alone tested. improvement required based on testing data)
b.	R.F. accelerating structure	* √ Ready
c.	R.F. window	* √ Ready
d.	X-Ray target	* √ Ready Integrated in system final testing with electron beam (Bremsstrahlung pattern) is in progress
B	Electron Beam Bending Magnet Sub-Assembly	
a.	270° doubly achromatic beam bending magnet	* √ Ready
b.	Electron beam exit window	* bought out / Tested at lower power
2.	BEAM HANDLING SYSTEM: SHIELDS, COLLIMATORS AND APPLICATORS:	
a.	Shields	* Developed/ Testing in progress
b.	Primary collimator	* √ Ready
c.	Asymmetric jaw collimator	* Developed/ Testing in progress
d.	Multi-leaf collimator	* Developed/ Not Tested
e.	Ionization Chamber	* √ Ready
f.	Electron Scatterer and Applicators	* Developed/ Testing in progress
3.	MICROWAVE SYSTEM	* √ Ready
4.	MODULATOR	* Developed/Tested. <i>The modulator used in the system</i>

		<i>needs to be conformed to IEC standard 60601-2-1 for EMI/EMC. However, additional efforts are required to make it conforming to these standards.</i>
5.	COMPUTERIZED CONTROL CONSOLE	* Developed/ Testing in progress
6.	GANTRY, STAND and OPTICS	
a.	Gantry & Stand	* Ready
b.	Field Optics	* Ready
c.	ODI	* Developed. <i>However, it is felt that to get the expected results ODI needs to be re-developed.</i>
7.	PATIENT SUPPORT ASSEMBLY	✕ Developed <i>However, it is felt that to get the expected results PSA support frame needs to be re-developed</i>
8.	WATER CIRCULATION SYSTEM	* √ Ready

Balance work / activities to be carried out:

1. Re-design of triode gun to improve output dose.
2. Re-design of Optical Distance Indicator (ODI) to improve image quality.
3. Automation of control console for both modes and different energies.
4. Design, fabrication and validation of beam flatteners, Electron applicators and hard wedges.
5. Radiation leakage measurement and any correction to shield design if required.
6. Integration of Multi-leaf collimator and its testing
7. Generating Performance Test data for AERB approval.
8. Test certification of Modulator as per IEC standard 60601-2-1 for EMI/EMC
9. Tests for Certification for Electrical safety as per IEC 60601-1-4 for Programmable electrical systems.

2.6. Role of Stakeholders

2.6.1. Role of SAMEER

SAMEER will provide the technology on “**as is where is basis**” to the selected industry. The ToT agreement shall be signed between SAMEER and the selected industry as per terms and conditioned approved by the competent authority.

2.6.2. Role of AMTZ

AMTZ shall support the selected agencies undertake manufacturing at AMTZ at standard terms and conditions applicable as given in section 2.2.3. A separate lease agreement shall be signed between AMTZ and the selected industry as per terms and conditioned approved by the competent authority.

3. Pre-bid Queries

- i. SAMEER and AMTZ / (ToT Committee) shall hold a pre-bid briefing meeting with the prospective bidders at SAMEER, Mumbai and AMTZ, Vishakhapatnam. The bidders will have to send their queries to SAMEER by email to sanjay@sameer.gov.in
- ii. All enquiries / clarifications from the bidders, related to this EoI, must be directed in writing exclusively to the contact person notified in this EoI document. Please refer to Annexure: C1 “Request for Clarifications” for pre-bid queries format.
- iii. The preferred mode of delivering written questions to the aforementioned contact person would be through email. Telephone calls will not be accepted. In no event SAMEER and AMTZ will be responsible for ensuring that bidders' inquiries have been received by SAMEER.
The queries by the bidders will be provided in the format mentioned in Annexure C1
- iv. After distribution of the EoI, the contact person notified by SAMEER will begin accepting written questions from the bidders. SAMEER will make efforts to provide a full, complete, accurate, and timely response to all questions. However, SAMEER/AMTZ makes no representation or warranty as to the completeness or accuracy of any response, nor does SAMEER/AMTZ undertake to answer all the queries that have been posed by the bidders.

4. Bid submission

4.1. Bid Submission Instructions

- i. The bidders should submit their offers in three parts Pre-Qualification Bid, Technical Bid and Financial Bid as per format given in this document.
- ii. The bidder shall submit following envelopes:

Envelope Number	Marked As	Content of Envelope
One	Response to Pre-Qualification criterion from <<Bidder Name>>	One Original Hard Copy, One Duplicate Hard Copy & One Soft Copy of the documents as per Annexure C.15
Two	Technical bid/proposal from << Bidder Name>>	One Original Hard Copy, One Duplicate Hard Copy & One Soft Copy of the documents as per Annexure C.16
Three	Commercial bid/proposal from <<Bidder Name>> Also, marked as “To be opened only post Technical evaluation of bids”	One Original Hard Copy of the Commercial bid/proposal as per Annexure C.17

- iii. The bidders should submit soft copy of technical bid in a sealed envelope. Technical bid should be in a single file in PDF format.
- iv. The soft copy media (CD/DVD/USB) must be duly signed using a permanent Pen/Marker and should bear the name of the bidder.
- v. The bidder shall seal the response to the invitation of EoI, including response to pre-qualification bid and Technical bids in an outer envelope marked “Response to the invitation of EoI for ToT OF DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINAC”. The envelope shall indicate the name and address of the bidder.
- vi. The outer envelope shall indicate the name and address of the bidder to enable the proposal to be returned unopened in case it is declared “late”. Both inner and outer envelopes shall be addressed to SAMEER at the address specified in section 1.2.
- vii. The original proposal shall be prepared in indelible ink. It shall contain no inter-lineation or overwriting, except as necessary to correct errors made by the bidder itself.
- viii. Any such corrections must be initialed by the person (or persons) who sign(s) the proposals.
- ix. All pages of the proposal must be sequentially numbered and shall be initialed by the Authorized Representative of the bidder.

- x. A bidder is eligible to submit only one Bid against this EoI.
- xi. To assist in the examination, evaluation and comparison of bids, AMTZ & SAMEER at their discretion can ask the bidder for the clarification of its bid. The request for clarification and the response shall be in writing. However, post submission of bid, no clarification at the initiative of the bidder shall be entertained.
- xii. Bidders if they choose, May prior to submitting their bid, visit SAMEER & AMTZ, with prior appointment.
- xiii. Bidders may be called for making a presentation before the committee.
- xiv. Authority may visit bidder's facilities for the assessment.
- xv. At any time before the submission of EoI, the Authority may carry out amendment(s) to this EoI document and/or the schedule. The amendment will be made available on our websites (www.sameer.gov.in) and (<https://amtz.in/>) and will be binding on the bidder. The Authority may at its discretion extend the bid schedule for the submission of proposals.
- xvi. The Authority reserves the right to accept or reject any application without assigning any reason thereof.
- xvii. Bids that are incomplete in any respect or those that are not consistent with the requirements as specified in this document or those that do not adhere to formats, wherever specified may be considered non-responsive and may be liable for rejection and no further correspondences will be entertained with such bidders.
- xviii. Canvassing in any form would disqualify the applicant.
- xix. For any clarifications on the Expression of Interest, the following may be contacted through email/Letter

Shri S.N. Pethe
SAMEER
IIT CAMPUS POWAI
MUMBAI 400076
e-mail: sanjay@sameer.gov.in

4.2. Bid Security Declaration

- i. Bidders shall submit, along with their Bids, Bid Security declaration as given in Annexure C.2.
- ii. Proposals submitted without Bid Security declaration or containing Bid Security declaration with infirmity (ies), shall be summarily rejected.
- iii. The firm, which is submitting the current bid, will be suspended for the period of three years from being eligible to submit bids for contracts with Society for Applied Microwave Electronics Engineering and Research (SAMEER), if :
 - a. If a bidder withdraws the bid during the validity period or any extension agreed or varies his quoted prices during the period of bid validity or its extended period, if any; or
 - b. In the case of a successful bidder, if the bidder fails to sign the Contract or to furnish Bank Guarantees within specified time in accordance with the format given in the EoI.
 - c. If the proposal is varied or modified in a manner not acceptable to the **SAMEER/AMTZ** after opening of proposal during the validity period or

- any extension thereof.
 - d. If the bidder tries to influence the evaluation process.
 - e. If the shortlisted bidder withdraws its proposal during negotiations.
 - f. If the bidder being found to have indulged in any suppression of facts, furnishing of fraudulent statement, misconduct, or other dishonest or other ethically improper activity, in relation to this EoI.
 - g. If any default by the bidder in respect of EoI terms & conditions.
- iv. The Bid Security declaration shall be submitted along with Prequalification Bid.

4.3. Integrity Pact

The bidder is required to enter into an Integrity Pact with SAMEER/AMTZ. For this, the bidder shall submit the original signed, stamped and notarized Integrity Pact as part of Pre-qualification bid failing which, the Proposal submitted by the concerned bidder will be liable to be forthwith and summarily rejected. The format for the Integrity Pact is provided in Annexure c.14.

4.4. Technical Proposal guidelines

- i. The bidder is expected to understand the complete scope of this technology transfer for manufacturing dual mode dual energy medical Linac as per know how transfer by SAMEER on “**as is where is basis**” described in this EoI under para 2.3, 2.4 & 2.5. Bidder is required to give the acceptance to receive the technology on “**as is where is basis**” as per technical specifications and status of development described under 2.4 & 2.5.
- ii. SAMEER and AMTZ retains the right of the final say in the interpretation of the scope of the Project in terms of Technology Transfer for Manufacturing and deployment of dual mode dual energy medical Linac , as listed in this EoI.
- iii. The bidder is expected to submit their bid in the format specified. Failure to use the specified formats may result in disqualification of the proposal.
- iv. The Technical Proposals must be direct, concise, and complete. Any information which is not directly relevant to this EoI should not be included in the proposal by the bidder.
- v. The bidder is requested to provide documentary evidence of experience, methodology or any other information provided in the Technical Bid. The bidders are not expected to attach any promotional material or brochures with the proposal.
- vi. The bidder shall number all the pages of the Technical Bid including the annexure and other attachments. All pages should be signed by the authorized signatory.
- vii. The Technical proposal shall include the following major sections:
 - i) Section I – Understanding of Scope of Technology Transfer for Manufacturing of dual mode dual energy medical Linac
The bidder is expected to understand the complete scope of this technology transfer for manufacturing dual mode dual energy medical Linac as per know how transfer by SAMEER on “**as is where is basis**” described in this EoI under para 2.3, 2.4 & 2.5. Bidder is required to give the acceptance to receive the technology on “as is where is basis” as per technical specifications and

status of development described under 2.4 & 2.5.

ii) Section II – Proposed Approach and Methodology

Overall tentative approach and methodology for manufacturing dual mode dual energy medical Linac with all sub-systems

- Methodology for manufacturing electrical / electronic subsystems
- Methodology for manufacturing mechanical sub-systems
- Methodology for integration and testing
- Setting up of proposed facilities at AMTZ, Visakhapatnam with timeline.

iii) Section III – Broad Work Plan

- Proposed stages of product development with timeline
- Proposed plan for manufacturing first unit including QA/QC and obtaining type approval from appropriate authority
- Proposed plan for manufacturing subsequent units

viii. Additional information directly relevant to the scope of technology transfer process provided in the EoI may be submitted to accompany the proposal. In submitting additional information, please mark it as supplemental to the required response. However, this information will not be considered for evaluation purposes.

4.5. Venue and Deadline for submission

- i. Proposals must be received at the address specified in section 1 of this EoI.
- ii. Any proposal received by the SAMEER after the above deadline shall be rejected and returned unopened to the bidder
- iii. SAMEER shall not be responsible for any postal delay or non-receipt/ non-delivery of the documents. No further correspondence on the subject will be entertained.
- iv. SAMEER AND AMTZ reserves the right to
 - a. relax or waive any of the conditions stipulated in this EoI document as deemed necessary in the best interest of the Nation and the objective of the scheme without assigning any reasons thereof and
 - b. Include any other item in the scope of work at any time after consultation in the pre-bid meeting or otherwise.
- v. SAMEER AND AMTZ reserves the right to modify and amend any of the above-stipulated condition/criterion depending upon project priorities.
- vi. In case, the day of bid submission is declared holiday by Govt. of India, the next working day will be treated as day for submission of bids. There will be no change in the timings.

4.6. Bid Opening

The Bids will be opened by Technology Transfer Committee (TTC).

There will be three bid-opening events:

- a) Pre-Qualification bid
- b) Technical bid
- c) Commercial bid

The venue, date and time for opening the Pre-qualification bid are as mentioned in section 1.2. The date and time for opening of Technical bid and Commercial bid would be communicated to the qualified bidders.

The Technical Bids of only those bidders will be opened who clears the Pre-qualification stage.

The Commercial Bids of only those bidders will be opened who qualify in Technical Bid.

IMPORTANT NOTE:

- a. Participation in Bid Opening will be STRICTLY via ONLINE VIRTUAL PLATFORM.
- b. Vendors interested must fill the ONLINE FORM available at <http://publictender.sameer.gov.in/> , two working days before the tender opening date.
- c. On the day of Bid opening, a virtual meeting link will be provided through mail to the vendors who have registered for participating in the EoI bidding. Only the vendors who have submitted the offer can participate in the online tender opening.
- d. It will be assumed that those Vendors who did not fill in the form are not interested in joining the EoI bid Opening Process.

4.7. Right to Accept Any Proposal and To Reject Any or All Proposal(s)

SAMEER AND AMTZ reserves the right to accept or reject any proposal, and to annul the tendering process and reject all proposals at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for SAMEER AND AMTZ's action.

4.8. Notification of Award

- i. Prior to the expiration of the validity period, SAMEER/ AMTZ will notify the successful bidder in writing or by fax or email, that its proposal has been accepted. In case the evaluation process has not been completed within the stipulated period, SAMEER AND AMTZ reserves the right to extend the validity period of the bid.
- ii. The notification of award will constitute the initial formation of the contract which shall be valid till the execution of the agreement between the parties.

5. Bid Evaluation

5.1. Technology Transfer Committee (TTC)

- i. The Technology Transfer Committee (TTC) constituted by the SAMEER shall evaluate the Bids.
- ii. The decision of the TTC in the evaluation of the Technical (including Pre-Qualification) and Financial bids shall be final. Technical Bid evaluation is to ensure that the proposed solution by the bidder meets the functional/technical requirements as outlined in the EoI Document. No correspondence will be entertained outside the process of discussion with the Committee.
- iii. TTC will evaluate and compare the bids determined to be substantially responsive. It is TTC's intent to select the proposals that are responsive to the project needs and each proposal will be evaluated using the information furnished in technical bid as per section 4.4.
- iv. To qualify the Technical Bid Evaluation, the bidder must conform to all the requirements stated in the EoI document.
- v. Financial bids of only those bidders will be opened who qualifies the pre-qualification criteria and the technical bid evaluation.

5.2. Pre-qualification Evaluation

- i. The bidders must have furnished the necessary documents to establish their eligibility (indicating the page number in the bid) for each of the items given as per Annexure A: ELIGIBILITY CRITERIA. Relevant portions in the documents should be highlighted. If a bid is not accompanied by all the necessary documents, it will be summarily rejected.
- ii. A Bid that does not fulfill all the stipulated eligibility conditions/criteria will not be considered.

5.3. Technical Bid Evaluation

- i. Technology Transfer Committee (TTC) constituted by the SAMEER will carry out a detailed evaluation of responses to the EoI and all supporting documents/ documentary evidence. Technical Bids received will be evaluated to determine whether they are substantially responsive to the requirements set forth in the Expression of Interest. In order to reach such a determination, TTC will examine the information supplied by the bidders, and shall evaluate the same. In the event of inability to submit requisite supporting documents / documentary evidence, bid shall be rejected.
- ii. **Proposal Presentations:** The Committee shall invite bidders who meet pre-qualification criteria to make a Presentation. The purpose of such presentations would be to allow the bidders to present their proposed approach to the TTC and the key point in their respective proposals.
- iii. The technical evaluation of Bids will be carried out to ensure technical and functional compliance with requirements mentioned in the EoI. For all technically qualified bidders the financial bids will be opened for further evaluation.

- iv. The decision of the TTC in the evaluation of responses to the Expression of Interest shall be final. No correspondence will be entertained in this regard.
- v. TTC will evaluate bidder's proposal based upon its clarity and the directness of its response to the requirements of the project as outlined in this EoI.
- vi. SAMEER/AMTZ reserves the right to ask for more information in terms of customer name, experience or deliverables and the bidder is required to provide details about the information enquired.
- vii. TTC reserves the right to reject any or all proposals on the basis of any deviations.
- viii. Financial bids of only those bidders will be opened whose technical proposal complies with the requirements mentioned in the EoI document.

5.4. Financial Bid Evaluation

- i. Based on the technical evaluation, the Financial Bids of only the technically qualified bidders shall be opened by the TTC. The Financial evaluation will take into account the information supplied by the bidders in the Financial Proposal, and shall evaluate the same as per the evaluation criteria specified in ANNEXURE: B of this EoI.
- ii. Financial evaluation of the proposal will be carried out after determining whether the Financial Proposals are complete, qualified and unconditional. The quoted amount by the bidder towards transfer of technology fee shall be considered for this purpose as per Annexure B. The quoted price indicated in the Financial Proposal shall be deemed as final.
- iii. The Financial bid should indicate ToT fees excluding govt. taxes. The govt. taxes as applicable shall be charged at actuals.
- iv. Mention of any condition in the financial bid will lead to summary disqualification of the entire bid and forfeiture of the EMD.

6. Appointment of Successful bidder

6.1. Award Criteria

SAMEER/AMTZ will award the Contract to the successful bidder based on the evaluation criteria described herein.

6.2. Bank Guarantee against ToT fees

- i. On award of contract, the successful bidder must give Bank Guarantee equivalent of 50% of the total ToT fees for the period of fifteen months while signing the agreement as security measure.

6.3. Signing of Contract/Agreement

After SAMEER/AMTZ notifies the successful bidder that its proposal has been accepted, the bidder must submit bank guarantees within 30 days of notification of award and must sign the separate contract/agreement within 30 days of notification with the respective institute namely, SAMEER and AMTZ.

6.4. Failure to Agree with the Terms and Conditions of the EoI

- i. Failure of the successful bidder to agree with the Legal Agreement and Terms & Conditions of the EoI shall constitute sufficient grounds for the annulment of the award, in which event SAMEER may award the contract to the next qualifying bidder or call for new proposals from the interested bidders.
- ii. In such a case, the SAMEER shall invoke the Bid Security Declaration and/or Bank Guarantee of the defaulting bidder.

7. Deliverables, Payments and Timelines

- i. The successful bidder shall render progress-cum-achievement reports to SAMEER/AMTZ on quarterly basis on the progress made on all aspects of the project.
- ii. The payment schedule and timelines are divided into following phases:
SAMEER:

S	Description	Timeline (T)	Amount
1	Signing of ToT agreement	Within 30 days from award of contract	Industry to pay 50% of ToT fees to SAMEER
2	Handing over of ToT documents and Training	6 months	Industry to pay 25% of ToT fees to SAMEER within 6 months of signing of the ToT agreement Industry to pay balance 25% of ToT fees to SAMEER within 12 months of signing of the ToT agreement
3	Manufacturing of ready to deliver first machine including approvals from appropriate authorities.	30 months	-
4	Payment of Royalty	Immediately after sale of every machine	@ 4 % of Ex-works price to be paid to SAMEER

AMTZ:

S	Description	Timeline (T)	Amount
	Signing of lease agreement	On or before 90 days from award of contract	The selected bidder can take fully developed land within AMTZ campus @Rs 400/- per sft and set up their own factory premises.

8. Progress Review and Monitoring

8.1. Technology Transfer Committee

Technology Transfer Committee Constituted by SAMEER will meet on a regular basis to review and monitor the implementation of the ToT.

In case of delay, the successful bidder will be called for meeting with TTC to explain the reasons for the delay to enable TTC to make recommendations regarding termination of exclusivity clause of the contract. TTC's decision will be final and binding on the bidder.

8.2. Technical Review Committee

A Technical Review Committee (TC) will be set up during the start of the project. The TC will, at the minimum, include a designated point of contact from bidder. It will also include key persons from various stakeholders like SAMEER, AMTZ, field experts and other officials/representatives by invitation. The operational aspects of the TC need to be handled by SAMEER including maintaining monthly statuses, minutes of the meetings, project plans, etc.

Technical committee will meet formally covering, at a minimum, the following agenda items:

- i. Project Progress
- ii. Technical challenges and support required from stakeholders
- iii. Issues and concerns
- iv. Discussion on submitted deliverables
- v. Discussion/Clarifications on progress-cum-achievement reports
- vi. Any other issues that either party wishes to add to the agenda

9. General Terms and Conditions

9.1. Terms and Conditions

- i. While every effort has been made to provide comprehensive and accurate background information on requirements and specifications, bidders must form their own conclusions about the solution needed to meet the requirements. Bidders and recipients of this EoI may wish to consult their own legal advisers in relation to this EoI. All information supplied by bidders may be treated as contractually binding on the bidders, on successful award of the assignment by Authority on the basis of this EoI.
- ii. Bidder shall sign multi-party agreement with SAMEER, AMTZ. In case of consortium, all the consortium members shall have to enter in a multi-party agreement with SAMEER, AMTZ.
- iii. If bidder quotes NIL charges/consideration, the bid shall be treated as unresponsive and will not be considered.
- iv. Any notification of preferred bidder status by SAMEER/AMTZ shall not give rise to any enforceable rights by the bidder. SAMEER/AMTZ may cancel the

- whole EoI process at any time prior to a formal written contract being executed by or on behalf of the SAMEER/AMTZ.
- v. This EoI supersedes and replaces any previous public documentation & communications related to the components mentioned in the EoI and bidders should place no reliance on such communications.
 - vi. Bidders are advised to study all instructions, forms, terms, requirements and other information in the EoI documents carefully. Submission of the bid shall be deemed to have been done after careful study and examination of the EoI document with full understanding of its implications.
 - vii. The response to this EoI should be full and complete in all respects. Failure to furnish all information required by the EoI documents or submission of a proposal not substantially responsive to the EoI documents in every respect will be at the bidder's risk and may result in rejection of its Proposal.
 - viii. The bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of proposal, providing any additional information required by SAMEER/AMTZ to facilitate the evaluation process, and in negotiating a definitive Contract or all such activities related to the bid process. SAMEER/AMTZ will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
 - ix. All materials submitted by the bidder become the property of SAMEER/AMTZ and may be returned completely at its sole discretion.
 - xi. At any time prior to the last date for receipt of bids, SAMEER/AMTZ may for any reason whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the EoI document by an amendment.
 - xii. The amendment will be published on the SAMEER/AMTZ website.
 - xiii. In order to afford prospective bidders reasonable time in which to take the amendment into account in preparing their bids, SAMEER/AMTZ may, at its discretion, extend the last date for the receipt of Bids.
 - xiv. The bidders are allowed to resubmit their bid, if required, after such amendments.
 - xv. If SAMEER/AMTZ deems it appropriate to revise any part of this EoI or to issue additional data to clarify an interpretation of provisions of this EoI, it may issue supplements to this EoI. Any such corrigendum shall be deemed to be incorporated by this reference into this EoI.
 - xvi. SAMEER/AMTZ may, in exceptional circumstances and at its discretion, extend the deadline for submission of proposals by issuing a corrigendum published in the SAMEER/AMTZ website in which case all rights and obligations of the project and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.
 - xvii. SAMEER/AMTZ may terminate the EoI process at any time and without assigning any reason. SAMEER/AMTZ makes no commitments, express or implied, that this process will result in a business transaction with anyone. The bidder must specifically indicate if there is any conflict of interest arising as a result of bidder or any consortium partner.
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- xviii. IPR must also reside in India so that India has access and complete control to these rights in times of emergency to protect our national interest.
- xix. The Grantee (bidder) shall not on its own name or in the name of any third party, file any patent Application for the grant of patent of the said KNOW-HOW provided by SAMEER hereby licensed and shall also not oppose at any patent application made by SAMEER. The IPR pertaining to the new innovation/technology developed by the Grantee (bidder) shall be in the name of the Grantee (bidder).
- xx. The details of the add-on knowhow brought in by the Grantee (bidder) by Modifications / Improvements will not be passed on to other agencies by SAMEER without the Grantee (bidder)'s consent.
- xxi. Any minor modifications / improvements to the existing designs which the Grantee (bidder) may consider essential while in the process of commercial production of the article covered under this agreement may be introduced only with prior permission of SAMEER in writing. Any such modification and improvement shall constitute an add-on knowhow to the original knowhow provided by this agreement and shall as such belong to SAMEER.
- xxii. Any new accessories / attachments / features which the Grantee (bidder) may consider essential during the process of commercialization of the article covered under this agreement may be developed and retrofitted by the Grantee (bidder) if these items result in an upgrading of the specification without degrading the performance. All such items will be introduced with prior intimation of the same to SAMEER in writing. If introducing such items make it necessary to get approval from the regulatory authority, Grantee (bidder) will be solely responsible to obtain all such approvals. SAMEER reserves the right to conduct such test and evaluation on the Product that are manufactured after introducing such items, as SAMEER may consider necessary to satisfy itself as to the performance of the Product till this agreement is in force. Grantee (bidder) shall indemnify SAMEER from any deterioration of the system performance arising out of the modification carried by Grantee (bidder).
- xviii. The successful bidder shall comply with all applicable laws (including without limitation labor laws, insurance laws, etc.) while providing the services.
- xix. All clauses of the EoI shall mutatis mutandis apply to consortium members of the successful bidder to the extent of their scope of work.
- xx. Subcontracting of this contract as a whole is not allowed.
- xxi. In case of any dispute on any matter related to the project during the course of its implementation, the decision of the Secretary, MeitY shall be final and binding.

9.2. Instructions for Consortium

Bidder can form consortium with the partners to leverage the expertise of the partners – Design/Fabrication/Sales or any other relevant expertise required to manufacture and supply dual mode dual energy medical Linac System.

1. All members in the consortium should be registered legal entity in India and should have signed the Integrity Pact.

2. At least one member of consortium should meet the turnover, project experience mentioned in Annexure A.
3. The lead bidder should be liable for the entire scope of work and risks involved thereof (the liability should be for the entire value of the contract).
4. The non-lead bidders should be liable for the scope of work for which they are responsible along with the lead bidder (Liability should be limited to the value of the scope of work; while the lead bidder still carries the liability for the entire scope of work.)
5. The maximum number of partners in the consortium shall not exceed 3.
6. Any change in the consortium member at a later date would not be allowed without prior permission of SAMEER/AMTZ for cases where the consortium has benefited from the non-lead bidders credentials/ experience.
7. Member of the one consortium cannot be part of any other consortium for the bidding.

9.3. Conflict of Interest

1. The bidder must specifically indicate if there is any conflict of interest arising as a result of any share or investment of the **SAMEER/AMTZ** or any consortium partner.

1.1 If there is a conflict of interest, the bidder must mention such conflict of interest in their bid for evaluation by SAMEER/AMTZ and if requested by SAMEER/AMTZ, give such undertaking as may be required by SAMEER/AMTZ to mitigate any adverse impact of such conflict on the project.

2. The bidder must specifically indicate if there is any conflict of interest arising if any staff/official who may be involved in the preparation, negotiation, management or enforcement of the contract has any private interest relevant to the proposal. If there is a conflict of interest, the bidder must give undertaking, indemnifying SAMEER/AMTZ and confirming that the existence of any such staff/official will not affect the project.

9.4. Inspection, Quality Control and Audit

The selected bidder shall, whenever required, furnish all relevant information, records, and data to auditors and/or inspecting officials of SAMEER/AMTZ and or any authority designated by SAMEER/AMTZ. SAMEER/AMTZ reserves the right to call for any relevant material information/report which would help it in arriving at a decision.

9.5. Manage Risks

1. The successful bidder shall identify and bear all the risks associated with Development, Implementation, and Support & Maintenance for supply of dual mode dual energy medical Linac System.
2. SAMEER/AMTZ shall not compensate for any losses if any incurred by the successful bidder during entire contract period.

9.6. Disqualification

The proposal is liable to be disqualified in the following cases or in case bidder fails to meet the bidding requirements as indicated in this EoI:

- i. Proposal not submitted in accordance with the procedure and formats prescribed in this document or treated as non-conforming proposal.
- ii. During validity of the proposal, or its extended period, if any, the bidder varies its quoted prices.
- iii. Bidder's proposal is conditional and has deviations from the terms and conditions of EoI.
- iv. Proposal is received in incomplete form.
- v. Proposal is received after due date and time.
- vi. Proposal is not accompanied by all the requisite documents
- vii. Information submitted in bid proposal is found to be misrepresented, incorrect or false, accidentally, unwittingly or otherwise, at any time during the processing of the contract or during the tenure of the contract including the extension period if any.
- viii. Bidder tries to influence the proposal evaluation process by unlawful/corrupt/fraudulent means at any point of time during the bid process.
- ix. In case any one party submits multiple proposals or if common interests are found in two or more bidders, the bidders are likely to be disqualified, unless additional proposals/bidders are withdrawn upon notice immediately.

9.7. Limitation of Liability

- i. Neither Party shall be liable to the other Party for any indirect or consequential loss or damage (including loss of revenue and profits) arising out of or relating to the Contract.
- ii. Except in the case of Gross Negligence or Willful Misconduct on the part of the successful bidder or on the part of any person acting on behalf of the successful bidder executing the work or in carrying out the Services, the successful bidder, with respect to damage caused by the successful bidder including to property and/or assets of SAMEER/AMTZ or its stakeholders shall regardless of anything contained herein, not be liable for any direct loss or damage that exceeds (A) the Support Amount or (B) the proceeds the Selected Agency may be entitled to receive from any insurance maintained by the Selected Agency to cover such a liability, whichever of (A) or (B) is higher.
- iii. This limitation of liability slated in this Clause, shall not affect the successful bidder's liability, if any, for damage by successful bidder to a Third Party's real property, tangible personal property or bodily injury or death caused by the successful bidder or any person acting on behalf of the successful bidder in executing the work or in carrying out the Services and shall also not affect indemnity provisions under clause 9.8 below.

9.8. Indemnify

The selected bidder must indemnify SAMEER/AMTZ and its stakeholders against all third party claims of intellectual property rights infringement including infringement of patent, trademark/copyright or industrial design rights arising from the use of the services, designs, codes, chips etc. and related services or any part thereof. SAMEER/AMTZ and its stakeholders stand indemnified from any claims that the hired manpower / bidder vendor's manpower may opt to have towards the discharge of their duties in the fulfillment of the contract. SAMEER/AMTZ and its stakeholders also stand indemnified from any compensation arising out of accidental loss of life or injury sustained by the hired manpower / bidder's manpower while discharging their duty towards fulfillment of the contract.

9.9. Termination for Default

SAMEER/AMTZ may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the bidder, terminate the contract in whole or part: if the bidder fails to deliver any or all of the systems within the period(s) specified in the Contract, or within any extension thereof granted by the SAMEER/AMTZ pursuant to conditions of contract or if the bidder fails to perform any other obligation(s) under the Contract. In the event SAMEER/AMTZ terminates the Contract in whole or in part.

SAMEER/AMTZ may terminate the contract granted to the bidder if the bidder fails to develop and deliver Dual Energy Linac machine within given timeline.

9.10. Termination for Insolvency

SAMEER/AMTZ may at any time terminate the contract by giving four weeks written notice to the selected bidder, without any compensation to the selected bidder, if the selected bidder becomes bankrupt or otherwise insolvent or a bankruptcy or insolvency etc. proceeding is initiated against the successful bidder.

9.11. Force Majeure

If at any time, during the continuance of the contract, the performance in whole or in part by either party of any obligation under the contract is prevented or delayed by reasons of any war, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, acts of God (hereinafter referred to as "events") neither party shall, by reason of such event, be entitled to terminate the contract, nor shall either party have any claim for damages against the other in respect of such non-performance or delay, provided the performance and/or delivery is resumed as soon as practicable after such event has come to an end or ceased to exist. The decision of SAMEER/AMTZ as to whether the performance or delivery has so resumed or not, shall be final and conclusive, provided further, that if the performance in whole or in part or any obligation under the contract is prevented or delayed by reason of any such event for a period exceeding 30 days, the SAMEER/AMTZ may at its option, terminate the contract

without any obligation to compensate.

9.12. *Governing Law and Disputes*

The contract shall be interpreted in accordance with the laws of the Government of India

All disputes or differences whatsoever arising between the parties out of or in connection with this contract or in discharge of any obligation arising out of the Contract (whether during the progress of work or after completion of such work and whether before or after the termination of this contract, abandonment or breach of this contract), shall be settled amicably. If however, the parties are not able to solve them amicably, either party (SAMEER/AMTZ or bidder), give written notice to other party clearly setting out there in specific dispute(s) and/or difference(s) and shall be referred to a sole arbitrator mutually agreed upon, and the award made in pursuance thereof shall be binding on the parties. In the absence of consensus about the single arbitrator, the dispute may be referred to joint arbitrator; one to be nominated by each party and the said arbitrators shall nominate a presiding arbitrator, before commencing the arbitration proceedings. The arbitration shall be settled in accordance with the applicable Indian Laws. Any appeal will be subject to the exclusive jurisdiction of courts at Mumbai. The bidder shall continue work under the Contract during the arbitration proceedings unless otherwise directed by the SAMEER/AMTZ or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrator is obtained. Arbitration proceeding shall be held at Mumbai, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be in English.

In the event of a dispute or a difference of any nature whatsoever between the parties during the course of performance of respective obligations arising out of this Agreement, the parties agree to refer the matter to the Heads of the Institutions to resolve the disputes keeping in view the best interest of the Parties and in keeping with the spirit of performance of this Agreement. If the matter still remains unresolved, then the same may be referred to for arbitration under the Arbitration and Conciliation Act, 1996.

JURISDICTION

The Parties to this Agreement hereby declare that the Courts in **Mumbai** alone are competent to deal with disputes, if any, arising out of this Agreement.

9.13. *Fraud and Corrupt Practices*

- a) The bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this EoI, SAMEER/AMTZ shall reject a Proposal without being liable in any manner whatsoever to the bidder, if it determines that the bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “Prohibited Practices”) in the Selection Process. In such an event, SAMEER/AMTZ shall, without

prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre- estimated compensation and damages payable to the Authority for, inter alia, time, cost and effort of the Authority, in regard to the EoI, including consideration and evaluation of such bidder's Proposal.

- b) Without prejudice to the rights of the SAMEER/AMTZ under Clause above and the rights and remedies which SAMEER/AMTZ may have under the Agreement, if a bidder, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the execution of the Agreement, such bidder shall not be eligible to participate in any tender or EoI issued by SAMEER/AMTZ during a period of 2 years from the date such bidder, as the case may be, is found by SAMEER/AMTZ to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.
- c) For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:
- d) "corrupt practice" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of SAMEER/AMTZ who is or has been associated in any manner, directly or indirectly with the Selection Process or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of SAMEER/AMTZ, shall be deemed to constitute influencing the actions of a person connected with the Selection Process); or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Selection Process or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the Agreement, who at any time has been or is a legal, financial or technical consultant/ adviser of SAMEER/AMTZ in relation to any matter concerning the Project;
- e) "fraudulent practice" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;
- f) "coercive practice" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Selection Process;
- g) "undesirable practice" means (i) establishing contact with any person connected with or employed or engaged by SAMEER/AMTZ with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or (ii) having a Conflict of Interest; and
- h) "Restrictive practice" means forming a cartel or arriving at any understanding or arrangement among bidders with the objective of restricting or manipulating a full and fair competition in the Selection Process.

Annexure A - Eligibility Criteria

S. No.	Criteria	Documentary proof to be submitted
1	An applicant (referred to as “bidder”) shall be a Limited Liability Partnership registered under the LLP Act or a Company incorporated and registered in India under the Companies Act, 1956. Certification by chartered Accountant for minimum of Fifty one percent shareholding by Indian entities is to be furnished. The LLP/Company should be operational in India for at least last five financial years as of 31st March, 2020 as evidenced by the Certificate of Incorporation issued by the Registrar of Companies, India.	Documents in the format as mentioned in Annexure C7
2	The bidder should have an annual turnover of INR 12.0 crores or more in each of the last three financial years ending 31st March 2020 as evidenced by the audited accounts of the company. In case of consortium, at least one member of consortium should meet the turnover requirement.	Documents in the format as mentioned in Annexure C9
3	The bidder should have a positive net worth for the last three financial years ending 31st March 2020 as evidenced by the audited accounts of the company. Net worth is defined as sum of shareholders capital and Reserves & Surplus	Documents in the format as mentioned in Annexure C9
4	The bidder should have executed work related to design, manufacture, supply and maintenance during the last 5 financial years. In case of consortium, at least one member of consortium should meet the experience requirement	Documents in the format as mentioned in Annexure C10
5	The bidder should possess ISO 9000/9001 /13485 or equivalent certified.	Copy of valid certificates
6	Firms/ Companies may enhance their qualifications/ competence by forming a Consortium with other firms/companies. It is clarified that in case of Consortium, the Lead Bidder, who shall submit the bid, shall be a firm established in India or a Company incorporated in India	Copy of Power of Attorney with clear roles & responsibilities and defining joint and several liabilities and Consortium Agreement

7	The bidder (Single firm or Consortium) shall not have been blacklisted by or entangled in legal disputes with Central Government or any State Government Organization / Department PSU in India at the time of submission of the Bid.	Documents in the format as mentioned in Annexure C8
8	The Bidder should have adequate manpower to undertake this work	Manpower strength i. Technical; ii. Non-technical at various levels to be furnished.
9	The Bidder should have adequate inspection and Quality control facilities for this work.	The list of equipments available to be furnished.
10	The Bidder should indicate the necessary space (in acres) required to undertake the manufacturing work at AMTZ, Visakhapatnam.	The available and required space to be furnished.
11	The Bidder should have service engineers to attend service calls for this unit.	The details of this are to be furnished
12	The Bidder should have well-established sales and marketing network.	The details of this are to be furnished

The bidder is required to download the EoI document from the website. The complete document is required to be signed on each page along with the company seal and submitted along with the prequalification bid.

Annexure B - Financial Bid Evaluation Criteria

The minimum one-time Transfer of Technology (ToT) Fee to be paid by the Bidder to SAMEER is INR 2.0 Crores (Rupees Two Crores only). Any bids with ToT fee of less than INR 2 Crores shall be rejected.

The royalty amount is fixed @ 4% of Ex-works price of each machine. Bidders are required to give acceptance to pay the royalty as specified here.

The technology will be transferred on NON Exclusive basis to the bidder who quotes the highest ToT fee. However, the authority may consider transferring the technology also to the other bidders on NON Exclusive basis who match the ToT Fee of the highest bidder.

Annexure C - Bid formats

C1 Request for Clarifications

Bidders requiring specific points of clarification may communicate with SAMEER during the specified period using the following format:

bidder's Request for Clarification			
Name of the Organization			
Representative Name			
Position / Designation			
Email Address			
Contact Details		Mob:	Landline:
Clarifications Requested			
S. No.	EoI Page No – Section – Sub-section	Content of the EoI	Points of Clarification
1			
2			
3			

Yours faithfully,

Designated

Contact Person Company name Designation

Company Seal

C2 Bid Security Declaration

<Letterhead of the bidder>

Bid Securing Declaration Form

Dated:

To,

Registrar,
Society for Applied Microwave Electronics Engineering and Research
IIT Campus, Powai,
Mumbai 400076

Sir,

I, the undersigned, declare that:

1. I am duly authorised to submit bid and undertakings in response to your tender
No. _____.
2. I understand that the bidders are required to submit Bid Security of the prescribed amount, while submitting bids in response to tender enquiries of the Society for Applied Microwave Electronics Engineering and Research.
3. As an alternative to the Bid Security, I hereby declare that my firm, which is submitting the current bid, will be suspended for the period of time specified in the request for bid document or for a period of three years if no such period of time is specified in the request for bid document, from being eligible to submit bids for contracts with Society for Applied Microwave Electronics Engineering and Research (SAMEER),
 - i. if we withdraw or modify the bid during the period of validity (including the extended period of validity) **or**
 - ii. If we fail to sign the contract, or to submit the performance security before the deadline prescribed in the request for bid document or in the communication sent by SAMEER.

Signature with seal:

Name: _____

Designation _____

Name of the firm _____

Place _____

C3 Authorization Letter

Duly authorized to sign the Tender Response for and on behalf of:

(Name and Address of Company) (Seal/Stamp of bidder)

Witness Signature:

Witness Name:

Witness Address:

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I, <representative name>, the Company Secretary of <name of the organization>, certify that

<Representative name> who signed the above Bid is authorized to do so and bind the company by authority of its board/ governing body.

Date:

Name:

Designation:

Signature: (Company Seal)

Note: *Authorized signatory should be an employee of the bidder organization and should have been authorized vide a board resolution, authorizing him/her to sign/execute the proposal as a binding document and also to execute all relevant agreements forming part of EoI. Copy of board resolution should be provided.*

C4 Litigation Impact Statement

<Company letter head>

<Date>

<Address>

**Ref: EoI for TECHNOLOGY TRANSFER AND MANUFACTURING OF
DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR
ACCELERATOR (LINAC)**

Dear Sir,

We have read and understood the contents of the Expression of Interest and pursuant to this hereby confirm that we continue to satisfy the eligibility criteria laid out at the time of short-listing us to participate in the bidding process to EoI for TECHNOLOGY TRANSFER AND MANUFACTURING OF DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC).

There are no pending litigations in any court of law, which are likely to have a materially adverse impact on our ability to deliver under this project, or to pay our debts as they fall due or on our ability to enter into any of the transactions contained in or contemplated in respect of the technology transfer and manufacturing of DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC) Systems.

<Signature>

<Designation>

Duly authorized to sign the EoI Response for and on behalf of: Sincerely,

Company Seal

Name

Designation

Signature

Date

<Name and Address of Company>

Seal/Stamp of the Company

C5 Bid Cover Letter

<Company letter head>
<Address>

<Date>

Dear Sir,

Ref: EoI for TECHNOLOGY TRANSFER AND MANUFACTURING OF DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC)

Having examined the EoI, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide the professional services as required and outlined in the EoI for Technology Transfer and Manufacturing of DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC)

We attach hereto the response as required by the EoI, which constitutes our proposal.

We confirm that the information contained in this response or any part thereof, including its exhibits, and other documents and instruments delivered or to be delivered to SAMEER and AMTZ is true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead the corporation in its short-listing process.

We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading the short listing process, we are liable to be dismissed from the selection process or termination of the agreement during the project, if selected to do so.

We agree for unconditional acceptance of all the terms and conditions set out in the EoI document and also agree to abide by this tender response from the date fixed for bid opening.

We hereby declare that in case the agreement is awarded to us, we shall submit the bank guarantee in the form prescribed format in the EoI.

We agree that SAMEER and AMTZ are not bound to accept any tender response that they may receive. We also agree that SAMEER and AMTZ reserves the right in absolute sense to reject all or any of the products/ services specified in the tender response.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

The following persons will be the authorized representatives of the company for all the future correspondence till the completion of the bidding process, between SAMEER and AMTZ and our organization.

Details	Primary Contact	Secondary
Name		
Designation		
Address		
Landline No.		
Mobile No.		
Fax No.		
Email Address		

We understand that it will be the responsibility of our organization to keep SAMEER and AMTZ informed of any changes in this list of authorized persons and we fully understand that SAMEER and AMTZ shall not be responsible for non-receipt or non-delivery of any communication and/or any missing communication in the event reasonable prior notice of any change in the authorized person(s) of the company is not provided to SAMEER and AMTZ.

Dated this Day of 2021

Sincerely, Company Seal

Name Designation Signature Date

<Name and Address of Company>

Seal/Stamp of the Company

C6 Conflict of Interest

<Company letter head>

<Date>

<Address>

Sir,

Sub: Undertaking on Conflict of Interest regarding Technology Transfer and Manufacturing of DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC)

I/We do hereby undertake that there is absence of, actual or potential conflict of interest on the part of the bidder or any prospective subcontractor due to prior, current, or proposed contracts, engagements, or affiliations with SAMEER and AMTZ.

I/We also confirm that there are no potential elements (time-frame for service delivery, resource, financial or other) that would adversely impact our ability to complete the requirements as given in the EoI.

We undertake and agree to indemnify and hold SAMEER and AMTZ harmless against all claims, losses, damages, costs, expenses, proceeding fees of legal advisors (on a reimbursement basis) and fees of other professionals incurred (in the case of legal fees and fees of professionals, reasonably) by SAMEER and AMTZ and/or its representatives, if due to any such conflict any loss or damage is suffered by SAMEER and AMTZ.

<Signature>

<Designation>

Duly authorized to sign the EoI Response for and on behalf of: Sincerely,

Company Seal

Name

Designation

Signature

Date

<Name and Address of Company>

Seal/Stamp of the Company

C7 Details of bidder Organization

To be filled separately by consortium members

<Company Letter Head>

Details of the bidder Organization	
Name	
Nature of the legal status in India	
Nature of business in India	
Date of Incorporation	
Date of Commencement of Business	
ROC Reference No	
Address of the Headquarters	
Address of the Registered Office in India	
Address of offices in India	
Other Relevant Information	
Name of the contract person: Address: Telephone: Fax: E-mail:	
Permanent Account Number	
GSTN	
The Bidder profile, giving details of current activities and management/ personnel structure including evidence of incorporation.	
The in-house technological expertise available from the following to be furnished: Vacuum technology Precision & heavy mechanical engineering High voltage Engineering Microwave Engineering Control Electronics Thermal Engineering Optics	
The list of technical collaborators on similar technology is to be furnished.	
Please indicate the percentage of work proposed to be done at AMTZ as well as from outside.	
Mandatory Supporting Documents:	
a. Certificate of Incorporation from Registrar Of Companies (ROC) b. Relevant sections of Memorandum of Association of the company or filings to the stock exchanges to indicate the nature of business of the company c. Certification on commencement of business d. Copy of board resolution authorizing the bid signatory along with power of attorney	

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I, <representative name>, the Company Secretary of <name of the organization>, certify that <Representative name> who signed the above Bid is authorized to do so and bind the company by authority of its board/ governing body.

Date:

Name:

Designation: Signature:

(Company Seal)

C8 Undertaking of not being Black Listed

(To be submitted on the Letterhead of the bidder)

<Date>

<Address>

Dear Sir,

We confirm that our company is not blacklisted in any manner whatsoever by MeitY, any State Government, Central Government or any other Public sector undertaking or a Corporation or any other Autonomous organization of Central or State Government as on Bid submission date.

Further we confirm that, our company is not convicted of an offence (a) under the Prevention of Corruption Act, 1988; or (b) the Indian Penal Code or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a public procurement contract, during last 3 years from date of submission of this bid.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Sincerely,

<Signature>

<Company Seal>

Name:

Designation:

Name and Address of Company:

C9 Financial Information of the bidder

To be filled separately by consortium members

<Date>

Financial Information		
2017-18	2018-19	2019-20
Turnover (in INR crores)		
Profit Before Tax (in INR crores)		
Net Worth (in INR crores)		
Other Relevant Information		
Mandatory Supporting Documents: <ul style="list-style-type: none">a. Audited financial statements for each of the three financial years as mentioned above (Please include only the sections on P&L, revenue and the assets, not the entire balance sheet.)b. Certification by the company auditors supporting the revenue break-up		

<Signature>

<Company Seal>

Name:

Designation:

Name and Address of Auditor:

C10 Bidder's Experience

To be filled separately by consortium members

Bidder's experience in the last 5 financial years from the date of publishing of EoI
Product development
<p>The previous experience of manufacturing products under the ToT/own internal development by the Bidder is preferred. Please furnish the details.</p> <p>AMTZ and SAMEER would inspect the manufacturing facilities of the Bidder, and the decision of AMTZ & SAMEER visiting committee would be final and binding on all the parties.</p>
Products manufactured as regular activity
List of products manufactured as regular activity in last five years. Give the list of products with general specifications and the customers.
List of clients
List of PSUs/ Govt. customers- with the contact details (Address, Telephone Number, and the name of contact person)
List of other important customers – with the contact details (Address, Telephone Number, and the name of contact person)

Supporting Documents

bidders to submit (a) Work Order/Purchase Order/Contract + Completion Certificates from the client; OR (b) Work Order/Purchase Order/Contract + Certificate of Completion by the Statutory Auditor; (c) OR Work Order/Purchase Order/Contract + Phase Completion Certificate for Projects for which Development is complete

The above supporting document(s) should clearly specify the value of the purchase order

The above document(s) should be duly certified by authorized signatory. Please

use separate forms for multiple citations.

<On behalf of bidder Name>

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm: Address:

Seal/Stamp of bidder:

C11 Technical Proposal Cover Letter

<Letterhead of the bidder>

<Date>

<Address>

Ref: EoI for Technology Transfer and Manufacturing of DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC)

Dear Sir,

Having examined the bid document, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to bid for Technology Transfer and Manufacturing of DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC) as required and outlined in the EoI.

We attach hereto the bid Technical response as required by the bid document, which constitutes our proposal.

We undertake, if our proposal is accepted, to provide all the services put forward in this EoI or such features as may subsequently be mutually agreed between us and SAMEER and AMTZ or its appointed representatives.

We agree for unconditional acceptance of all the terms and conditions in the bid document and also agree to abide by this bid response till the expiry of the Bid Validity Period. Until a formal contract is prepared and executed, this bid response (along with any changes agreed by us), together with your written acceptance thereof in your notification of award, shall constitute a binding contract between us, SAMEER and AMTZ.

We confirm that the information contained in this proposal or any part thereof, including its exhibits, schedules, and other documents and instruments delivered or to be delivered to SAMEER and AMTZ is true, accurate, and complete. This proposal includes all information necessary to ensure that the statements therein do not in whole or in part mislead SAMEER and AMTZ as to any material fact.

We agree that you are not bound to accept any bid response you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products/ service specified in the bid response without assigning any reason whatsoever.

It is hereby confirmed that I/We are entitled to act on behalf of our corporation/company/firm/organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Dated this Day of **2021**.

(Signature)

(In the capacity of) Duly authorized to sign the Bid Response for

and on behalf of:

(Name and Address of Company)

Seal/Stamp of bidder

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I, certify that I am<designation>..... of the<Company Name>....., and that<Name of the Respondent>..... who signed the above response is authorized to bind the corporation by authority of its governing body.

Date

(Seal here)

Signature

C12 Financial Proposal Cover Letter and Bid Format

<Letterhead of the bidder>

<Date>

<Address>

Ref: EoI for Technology Transfer and Manufacturing of DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC)

Dear Sir,

Having examined the Bid Document, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to undertake Technology Transfer and Manufacturing of DUAL MODE DUAL ENERGY MEDICAL ELECTRON LINEAR ACCELERATOR (LINAC). Following is our quotation summarizing our Commercial proposal.

We provide hereto the Commercial proposal as required by the Bid document, which constitutes our proposal.

Particulars	Indian Rupees in figures	Rupees in words
Technology transfer fees to be paid SAMEER		
Royalty : @ 4% of Ex-work Price of each machine to be paid to SAMEER		
Validity of the offer – Should be minimum 90 days from the due date of submission of bids		Days:

We undertake, if our proposal is accepted, to provide all the services to implement the solution as put forward in the EoI or such modified requirements as may subsequently be mutually agreed between us and SAMEER/AMTZ or its appointed representatives.

If our proposal is accepted, we will obtain a Bank Guarantee in the format given in the bid document issued by any Nationalized Banks or scheduled bank in India, acceptable to SAMEER for a sum as mentioned in Section 6.2 & 6.3

We agree for unconditional acceptance of all the terms and conditions in the bid document and also agree to abide by this bid response for a period of contract from the date fixed for opening the Commercial bid and it shall remain binding upon us, until within this period a formal agreement is prepared and executed, this bid response, together with your written acceptance thereof in your notification of award, shall constitute a binding agreement between us.

We confirm that the information contained in this proposal or any part thereof, including its exhibits, schedules, and other documents and instruments delivered or to be delivered to SSAMEER/AMTZ is true, accurate, and complete. This proposal includes all information necessary to ensure that the statements therein do not in whole or in part mislead MeitY as to any material fact.

We also agree that you reserve the right in absolute sense to reject all or any if the products/ service specified in the bid response without assigning any reason whatsoever.

It is hereby confirmed that I/We are entitled to act on behalf of our corporation/company/ firm/organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Dated this Day of**2021**

(Signature)

(In the capacity of) Duly authorized to sign the Bid Response for and on behalf of:

(Name and Address of Company)

Seal/Stamp of bidder

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I, certify that I am<designation>..... of the<Company Name>....., and that<Name of the Respondent>..... who signed the above response is authorized to bind the corporation by authority of its governing body.

Signature:

Date:

C13 Bank Guarantee

<Name>

<Designation>

<Address>

<Phone Nos.>

<Fax Nos.>

<Email id>

Whereas, <<name of the supplier and address>> (hereinafter called “the bidder”) has undertaken, in pursuance of contract no. <Insert Contract No.> dated. <Date> to undertake <<name of the assignment>> to SAMEER (hereinafter called “the beneficiary”)

And whereas it has been stipulated by in the said contract that the bidder shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with its obligations in accordance with the contract;

And whereas we, <Name of Bank> a banking company incorporated and having its head /registered office at <Address of Registered Office> and having one of its office at <Address of Local Office> have agreed to give the supplier such a bank guarantee.

Now, therefore, we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of Rs.<Insert Value> (Rupees <Insert Value in Words> only) and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of Rs. <Insert Value> (Rupees <Insert Value in Words> only) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the bidder before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the bidder shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This Guarantee shall be valid until <<Insert Date>>)

Notwithstanding anything contained herein:

I. Our liability under this bank guarantee shall not exceed Rs. <Insert Value> (Rupees <Insert Value in Words> only).

II. This bank guarantee shall be valid up to <Insert Expiry Date>)

III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this bank guarantee that we receive a valid written claim or demand for payment under this bank guarantee on or before <Insert Expiry Date>) failing which our liability under the guarantee will automatically cease.

C14 Integrity Pact

This Integrity Pact is entered into by and between SAMEER/AMTZ located at Mumbai and Vishakhapatnam respectively, which expression shall, unless excluded by or repugnant to the context, deemed to include its successor/s in office or assign) of the First Part;

AND

_____, a Company incorporated under the Companies Act, 1956, having its registered office at _____ (hereinafter referred to as “bidder” which expression shall, unless the context otherwise requires, include its permitted successors and assigns) of the Second Part.

Preamble

SAMEER/AMTZ intends to award, under laid down organizational procedures, contract for _____ through an open tender process and has issued EoI bearing number _____.

SAMEER/AMTZ values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/ transparency in its relations with its bidder(s) and /or Vendor(s) / Contractor(s).

In order to achieve these goals, SAMEER/AMTZ wishes to enter into this Integrity Pact with the bidder(s) for this tender process and execution of the Agreement and will appoint an <Independent External Monitor (IEM)>, who will monitor the tender process and the execution of the Agreement for compliance with the principles mentioned above.

Section 1 – Commitments of SAMEER/AMTZ

a) SAMEER/AMTZ commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

i) No employee of SAMEER/AMTZ, personally or through family members, will in connection with the EoI for, or the execution of the Agreement, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

ii) SAMEER/AMTZ will during this tender process treat all bidder(s) with equity and reason. SAMEER/AMTZ will in particular, before and during this tender process, provide to all bidders the same information and will not provide to any bidder(s) confidential/ additional information through which the bidder(s) could obtain an advantage in relation to this tender process or the Agreement execution.

iii) SAMEER/AMTZ will exclude from the process all known prejudiced persons.

b) If SAMEER/AMTZ obtains information on the conduct of any of its officers /employees which is a criminal offence under the Indian Penal Code 1860 and/or Prevention of Corruption Act 1988, or if there be a substantive suspicion in this regard, MeitY will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 – Commitments of the bidder

a) The bidder commits to take all measures necessary to prevent corruption. It commits itself to observe the following principles during its participation in this tender process and during the Agreement execution.

b) The bidder will not, directly or through any other persons or firm, offer promise or give to any of SAMEER/AMTZ employees involved in this tender process or the execution of the Agreement or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during this tender process or during the execution of the Agreement.

c) The bidder will not enter with other bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications,

subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in this tender process.

d) The bidder will not commit any offence under the Indian Penal Code 1860 and / or Prevention of Corruption Act 1988; further the bidder will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by SAMEER/ AMTZ as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

e) The bidder will, when presenting its bid, disclose any and all payments it has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with this tendering process or the award of Agreement under this tendering process.

f) The bidder will not, directly or through any other person or firm, approach any Government officials, ministers, political persons public servants, or any external agencies in an effort to influence the bidding decision making process or to attain any undue favour to the bidder.

g) The bidder shall exclude, from this tender process or execution of the Agreement, all known prejudiced persons including those employees / Directors /management representatives of the bidder who have family relationships with the employees or officers of SAMEER/ AMTZ.

h) The bidder shall disclose the circumstances, arrangements, undertakings or relationships that constitute, or may reasonably be considered to constitute, an actual or potential conflict of interest with its obligations specified in the tender process or under any Agreement which may be negotiated or executed with SAMEER/ AMTZ. Bidder and its employees, agents, advisors and any other person associated with the bidder must not place themselves in a position which may, or does, give rise to conflict of interest (or a potential conflict of interest) between the interests of SAMEER/ AMTZ or any other interests during this tender process or through operation of the Agreement.

i) The bidder will not indulge in any corrupt, fraudulent, coercive undesirable or restrictive practice in the tender process or the execution of the Agreement.

j) The bidder will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and exclusion from future Contracts

If the bidder, during the tender process or before award or during execution of the Agreement has committed a transgression through a violation of Section 2 above, or in any other form, such as to put his reliability or credibility in question, SAMEER/ AMTZ is entitled to disqualify the bidder from this tender process or decide not to award the work or terminate the awarded Agreement or blacklist the bidder.

Section 4 – Compensation for Damages

a) If SAMEER/ AMTZ has disqualified the bidder from this tender process prior to the award according to Section 3, SAMEER/ AMTZ is entitled to forfeit the Earnest Money Deposit/ Bid Security deposited by the bidder.

b) If SAMEER/AMTZ has terminated the Agreement according to Section 3, or if SAMEER/AMTZ is entitled to terminate the Agreement according to Section 3, SAMEER/AMTZ shall be entitled to demand and recover from the bidder / Vendor the amount equivalent to Security Deposit / Performance Bank Guarantee in addition to any other penalties/ recoveries as per terms and conditions of the Agreement.

Section 5 – Previous Transgression

a) The bidder declares that no previous transgressions occurred in the last three years with any other Central Government / State Government or Central PSU entity in India or any entity in any other country conforming to the anti-corruption approach that could justify bidder's exclusion from this tender process.

b) If the bidder makes incorrect statement on this subject or hides any material information.

c) SAMEER/ AMTZ is entitled to disqualify the bidder from this tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6 – Equal treatment of all bidders

- a) The bidder undertakes to demand from all subcontractors of the Vendor a commitment in conformity with this Integrity Pact, and to submit it to SAMEER/AMTZ before signing of the Agreement with SAMEER/AMTZ.
- b) SAMEER/AMTZ will enter into individual Integrity Pacts with identical conditions as this one with all sub-contractors of the Vendor.
- c) Only if the bidder has entered into this Integrity Pact with SAMEER/AMTZ, the bidder shall be eligible to participate in this tender process or execution of the Agreement.
- d) SAMEER/AMTZ will have the right to disqualify the bidder from this tender process if the bidder does not get this Integrity Pact from bidder's authorized signatory or violate any of its provisions.

Section 7 – Criminal charges against violation bidder/ Subcontractor(s)

If SAMEER/AMTZ obtains knowledge of conduct of the bidder or its Subcontractor, or of an employee or a representative or an associate of the bidder or Subcontractor which constitutes corruption, or if SAMEER/AMTZ has substantive suspicion in this regard, SAMEER/AMTZ will inform the same to the Chief Vigilance Officer.

Section 8 – <Independent External Monitor>

- a) SAMEER/AMTZ appoints _____ as <Independent External Monitor> for this Integrity Pact. The task of <Independent External Monitor> is to review independently and objectively, whether and to what extent the Parties comply with the obligations under this Integrity Pact.
- b) <Independent External Monitor> is not subject to instructions by the representatives of the Parties and performs his functions neutrally and independently. <Independent External Monitor> shall report to _____.
- c) The bidder accepts that <Independent External Monitor> has the right to access without restriction to all project documentation of SAMEER/AMTZ including that provided by the bidder. The bidder will also grant <Independent External Monitor>, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors of the Vendor. <Independent External Monitor> is under contractual obligation to treat the information and documents of the bidder/ Subcontractor(s) of Vendor with confidentiality.
- d) SAMEER/AMTZ will provide to <Independent External Monitor> sufficient information about all meetings among the parties related to the tender process or the execution of the Agreement provided such meetings could have an impact on the contractual relations between SAMEER/AMTZ and the successful bidder. The Parties offer to <Independent External Monitor> the option to participate in such meetings.
- e) As soon as <Independent External Monitor> notices, or believes to notice, a violation of this Integrity Pact, he will so inform SAMEER/AMTZ and request SAMEER/AMTZ to discontinue or take corrective action, or to take other relevant action. <Independent External Monitor> can in this regard submit non-binding recommendations. Beyond this, <Independent External Monitor> has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- f) <Independent External Monitor> will submit a written report to SAMEER/AMTZ within 8 to 10 weeks from the date of reference or intimation to him by SAMEER/AMTZ and, should the occasion arise, submit proposals for correcting problematic situations.
- g) If <Independent External Monitor> has reported to SAMEER/AMTZ, a substantiated suspicion of an offence under relevant Indian Penal Code 1860 and Prevention of Corruption Act 1988, and SAMEER/AMTZ has not, within the reasonable time taken visible action to proceed against such
- h) offence or reported it to the Chief Vigilance Officer, <Independent External Monitor> may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

- i) The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

a) This Integrity Pact begins when both Parties have legally signed it. It expires for the successful bidder 12 months after the last payment under the Agreement, and for all other bidders, 6 months after the execution of the Agreement with the Vendor.

b) If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by SAMEER / AMTZ.

Section 10 – Other provisions

a) This Integrity Pact is subject to Indian Law, place of performance and jurisdiction is the Office of SAMEER / AMTZ first above written, i.e. Mumbai/Visakhapatnam.

b) Changes and supplements of this Integrity Pact as well as termination notices need to be made in writing. Parties acknowledge that side agreements have not been made.

c) Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact remains valid. In this case, the Parties will strive to come to an agreement to their original intentions.

For & On Behalf of SAMEER / AMTZ
bidder

For & On Behalf of the

(Official Seal)

(Official Seal)

Signature:

Signature:

Name

Name

Place

Place

Date

Date

Witness

Witness

(Name, Signature & Address)

(Name, Signature & Address)

C15 Pre-Qualification Bid Format

S. No.	Section Heading	Details
1	Bid Cover Letter	Annexure C.5
2	Integrity Pact	Annexure C.15
3	Authorization Letter	Annexure C.3
4	Bid Security Declaration and tender Fees	Annexure C.2
5	Conflict of Interest	Annexure C.6
6	Litigation Impact Statement	Annexure C.4
7	Details Of Bidder Organisation	Annexure C.7
8	Bidders Experience	Annexure C.10
9	Undertaking Of Not Being Black Listed	Annexure C.8
10	Financial Information Of The Bidder	Annexure C.9
11	Pre-Qualification Criteria	Annexure A
12	Signed copy of EoI	

C16 Technical Bid Format

S. No.	Section Heading	Details
1	Technical Proposal Cover Letter	Annexure C.11
2	Technical Proposal (with all relevant documents)	Section 4.4

C17 Financial Bid Format

S. No.	Section Heading	Details
1	Financial Proposal Cover Letter and Bid	Annexure C.12