

(Non-committal Eoi)

Invitation of Expression of interest is invited from Indian manufacturers for design, development, supply, installation, commissioning and testing of performance acceptance of AMS/IBA system based on 6MV Ion accelerator

Inter University Accelerator Centre (IUAC), an autonomous centre of UGC, Ministry of Education, Government of India invites on behalf of Director IUAC Expression of Interest from interested manufacturers of tandem Ion accelerators for design, development, supply, installation, commissioning and testing of performance acceptance of AMS/IBA system based on 6MV Ion accelerator

For overview of the existing system, scope, pre-qualification criteria, bidding terms and conditions and suggested response formats, please visit our website <https://www.iuac.res.in/index.php/tenders>

Interested parties who meet the pre-qualification criteria may furnish their Expression of Interest with all the necessary documents in a sealed cover along with the covering letter duly signed by an authorized signatory on or before 18th August 2023 by 16:00 hours at the following address:

To

The A.O.(S&P)

IUAC, Aruna Asaf Ali Marg,

Post Box 10502

New Delhi – 110067.

Envelope should be properly labelled with “EOI for 6 MV based AMS / IBA system”

1. Introduction

Inter-University Accelerator Centre (IUAC) was set-up by the University Grants Commission as the first Inter-University Centre (IUC) called Nuclear Science Centre after due approval of the Planning Commission and the Prime Minister in October, 1984. The basic objective of Inter-University Accelerator Centre (IUAC) is to provide front ranking accelerator based research facilities to create possibilities for internationally competitive research within the university system.

Currently IUAC is in the process of installing National Geochronology Facility at **Sector – 62 Noida**. Under this project a 6.0 MV tandem accelerator based Accelerator Mass Spectrometry (AMS) facility to perform quantitative radioisotope measurements of ^{10}Be , ^{26}Al , ^{32}Si , ^{36}Cl , ^{41}Ca , ^{44}Ti , ^{53}Mn , ^{60}Fe , $^{59,63}\text{Ni}$, ^{129}I , ^{236}U etc. and actinides is proposed to be installed. The facility may also have suitable IBA facility to perform complimentary measurements. It is expected that the facility will consist of at least 3 ion source, 6.0 MV tandem accelerator and suitable number of beamlines with appropriate detection system to measure radioisotopes mentioned previously. Indicative technical specifications of proposed facility are provided in Annexure – I.

2. Objectives of EOI

The primary objective of EOI is to identify the suitable vendors who have technical competence, capability and experience in manufacturing, installation and commissioning of 6.0 MV tandem ion accelerator based Accelerator Mass Spectrometry (AMS) facility. The qualified bidder (after due process of tendering, post EOI) will be responsible for design, development, fabrication, supply, installation, commissioning and testing of performance (as per test criteria) of AMS/IBA system based on 6MV Ion accelerator as per technical specifications of proposed facility provided in Annexure – I. The EOI intends to share technical specifications and necessary terms and conditions that are deemed necessary to share with the interested bidders.

3. EOI Submission procedure

- a. Interested applicants are requested to submit the application in a sealed and signed envelop to A.O.(S&P), *Inter University Accelerator Centre, Aruna Asaf Ali Marg, new Delhi 110067*. **The last of submission of application is 21st July 2023. The format of Application should be as per annexure – II.**
- b. Prior to the submission of EOI, Applicant may visit IUAC (or send email) for technical clarification. The applicant is requested to contact *Administrative Officer (S&P) (iuacstores@gmail.com)* for any administrative queries or indenter, *Mr. Sunil Ojha (sunil.mumbaikar@gmail.com)* for any technical queries related to EOI.
- c. Along with the application of EOI, the applicants are requested to submit following documents:
 1. Brief company profile as per **annexure – III** along with all required documents listed
 2. Financial details of organization as per **annexure – IV**
 3. Proof of similar project executed in the past as per **annexure – V**
 4. Signed copy of self-declaration certificate **annexure – VI**
 5. Quality accreditations licensing requirements
 6. Facilities available with the applicant along with manpower expertise
 7. After – sales support infrastructure

Eoi can be downloaded from the IUAC website (<https://www.iuac.res.in/index.php/tenders>). The bidders are expected to examine all instructions, forms, terms, project requirements and other details in the Eoi documents. Failure to furnish complete information as mentioned in 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 the proposal.

In exceptional circumstances and at its discretion, extend the deadline for submission of proposals by issuing an addendum to be made available on the IUAC's website, in which case all rights and obligations of IUAC and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

Each applicant shall submit only one proposal.

4. Qualification Criteria (shortlisting)

The invitation for EOI bids is open to all entities registered in India who fulfil prequalification criteria as specified below:

a. The participation is restricted to companies registered in India.

b. The Bidder should satisfy all of the criteria below on its own:

i. The Bidder should be a company registered under Indian Companies Act 1956. The company should be primarily providing **Ion Accelerator based research equipments** in India for at least the last five financial years for the year ending 31st March 2022 as evidenced by the Certificate of Incorporation issued by the Registrar of Companies, India. The bidder (Service Provider) will be a single legal entity.

ii. The Bidder should be a profitable company for the last three years and must have an annual turnover of not less than INR 75 Crores for each of the last three financial years ending 31st March 2022.

iii. The Bidder must have executed at least one installation of similar facility with total contract value of **INR 35 Crores or above in last 10 years**. The information must be cited with valid documentation

iv. After sales support provided should be clearly emphasized.

v. The Bidder must have at least **20 accelerator technologists** on its payroll. A document of their job profiles need to be submitted.

vi. Solvency certificate minimum of Rs.75 crores in a prescribed format is required from any scheduled bank.

vii. Proof of Registration of the bidder under relevant law, such Company Act / Trade Licence from appropriate authority.

viii. A certificate (Affidavit) to be signed by MD/CEO of the Company that they haven't been debarred or blacklisted for any services, supplies or products dealing in, by any organisations or educational or research institutes/University or state/central government and no criminal case is pending or contemplated against them.

ix. All bidders should submit along with their EOI, copies of PAN card, GST Registration certificates.

x. The bidders must submit copies of acknowledgement of Income Tax Return for the last three financial years.

All points mentioned will carry equal weightage and shortlisting (if required) will be done on the basis of a total marks obtained by each parties as evaluated by the technical / purchase committee appointed by the Director IUAC.

5. EOI Requirements

- i) The Response to the Pre-Qualification Requirements shall be prepared in accordance with the requirements specified in this EOI and in the format prescribed in this document for each of the above mentioned qualifying criteria as proof of having the minimum requirements.
- ii) Proposals must be direct, concise, and complete. All information not directly relevant to this EOI should be omitted.
- iii) The Pre-Qualification Proposal shall be sealed and super scribed "Response to" on the top right hand corner and addressed to IUAC at the address specified in this document.
- iv) The pre-qualification proposal should be submitted with two printed copies of the entire proposal, one marked ORIGINAL and the second one as DUPLICATE and a soft copy on compact discs (CDs) / USB drive with all the contents of the pre- qualification proposal. The words "Response to" shall be written in indelible ink on the CD / USB drive. The Hard Copy shall be signed by the authorized signatory on all the pages before being put along with the CD / USB drive in the envelope and sealed.
- v) In case of discrepancies between the information in the printed version and the contents of the CDs / USB drive, the printed version of the pre-qualification proposal will prevail and will be considered as the proposal for the purpose of evaluation.
- vi) The proposal should contain the copies of references and other documents as specified in the EOI.
- vii) A board resolution authorizing the Bidder to sign/ execute the proposal as a binding document and also to execute all relevant agreements forming part of EOI shall be included in this envelope.
- viii) IUAC will not accept delivery of proposal in any manner other than that specified in this EOI. Proposal delivered in any other manner shall be treated as defective, invalid and rejected.

6. Evaluation procedure of EOI:

On the receipt of EOI documents, an evaluation committee will shortlist a set of potential applicants based on the qualification criteria of EOI (**point number 4**) and the presentation made by each applicant (date and venue will be communicated later). A copy of presentation needs to be submitted during presentation.

The representatives of the interested organizations may attend the meeting at their own cost. The purpose of the meeting is to provide bidders an opportunity to present the technical details of the facility that they offer including discussion on various terms and conditions acceptable to both sides. Bidders can use the opportunity for clarifications regarding the EOI.

7. Disclaimer

All information contained in the EOI provided / clarified are in good interest and faith. The information contained in this EOI or subsequently provided to the applicant(s), whether verbally or in documentary or any other form, by or on behalf of IUAC, is provided on the terms and conditions set out in this EOI and such other terms and conditions subject to which such information is provided.

The purpose of this EOI is to provide interested parties / applicants / manufacturers with information that may be useful to them in the formulation of their application for qualification and subsequent selection pursuant to this EOI.

This EOI is not an offer by IUAC to the prospective applicants or any other person. This EOI is neither intended nor shall it be constructed as creating or requiring any ongoing or continuing relationship or commitment with any party or person. This is not an offer or invitation to enter into an agreement of any kind with any party.

Though adequate care has been taken in the preparation of this EOI document, the interested applicants shall satisfy itself that the document is complete in all respects. The information is not intended to be exhaustive. Interested agencies are required to make their own inquiries and assumptions wherever required.

Intimation of discrepancy, if any, should be given to the specified office immediately. If no intimation is received by this office by the date mentioned in the document, it shall be deemed that the EOI document is complete in all respects and firms submitting their interest are satisfied with the EOI document in all respects.

The issue of this EOI does not imply that IUAC is bound to select and shortlist applicant(s) for the next stage or to enter into any agreement(s) with any applicant(s). IUAC reserves all right to reject any application submitted in response to this EOI document at any stage without assigning any reason thereof. IUAC also reserves the right to withhold or withdraw the process at any stage.

Neither IUAC nor its employees and associates will have any liability, any loss, expense or damage which may arise from or be incurred or suffered in connection with anything contained in this EOI document or any matter deemed to form part of this EOI document, the information and any other information supplied by or on behalf of IUAC.

IUAC accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance / use of any statements / information contained in this EOI by the applicant. IUAC is not making any representation or warranty, express or implied, as to the accuracy or completeness of any information / statements made in this EOI.

The applicant shall bear all its costs associated with or relating to the preparation and submission of its application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by IUAC or any other cost incurred in connection with or relating to its application. All such costs and expenses will remain with the applicant and IUAC shall not be liable in any manner whatsoever for the same or any other costs or other expenses incurred by an applicant in preparation or submission of the application, regardless of the conduct or outcome of the EOI.

Annexure – I

Indicative Technical specifications for design, development, supply, installation, commissioning and testing of performance acceptance of AMS/IBA system based on 6MV Ion accelerator:

IUAC is planning to procure a versatile tandem accelerator of potential 6 MV capable of performing quantitative radioisotope measurements of ^{10}Be , ^{26}Al , ^{32}Si , ^{36}Cl , ^{41}Ca , ^{44}Ti , ^{53}Mn , ^{60}Fe , $^{59,63}\text{Ni}$, ^{129}I , ^{236}U and actinides etc. The accelerator must be equipped with following facilities:

1. Three ion source for enabling broad range of isotopic measurements,
 - a) Two sputter sources with multi cathodes one at least 40 cathodes and another with at least 100 cathode. One of the sources should have gas input capabilities with gas interface.
 - b) Third ion source for producing high current beams of H, He and other gaseous species.
 - c) Provision should be there for additional ion source in future.
 - d) Enough space must be kept in the ion source-injector premises for exploring the prospect of installing facility for laser suppression of competing isobars.
2. Suitable injector to the accelerator, electrostatic steerer, magnets, bouncing systems, pulsing system etc. (The injector magnet should have high enough ME/q^2 , keeping in mind isobaric suppression while performing AMS of heavier mass elements.)
3. 6 MV Tandem accelerator with foil and gas stripper, vacuum across the accelerator tube length better than 1×10^{-7} torr. Accelerator should be able to operate at any voltage in the range of 0.3 MV to 6MV with a stability of ± 2 kV with SF_6 gas as dielectric medium.
4. Provision for earth quake protection system, essential for Seismic zone IV.
5. Suitable SF_6 gas transfer and storage system.
6. The pressure-vessel safety devices should be provided for both the accelerator tank and the gas transfer and storage system as per the relevant codal requirements.
7. Post acceleration stage for removal of isobaric and isotopic interferences with suitable mechanism should be specified e.g. gas filled magnet, post acceleration foils, magnets and electrostatic deflectors). Stability of power supplies should be specified.
8. Different beam lines with different detectors like TOF, gas detectors and one dedicated beam line for IBA with micro beam.
9. Provision for putting more beam lines in future should be there.
10. Enough provision should be kept for high current producing ion source and beam line dedicated for Nuclear-astronomy for measuring nuclear cross-sections and other research. A provision for the addition of high current ion source should be provided at low energy section as mentioned in point 1b. In view of this proposal, the radiation-shielding requirement commensurate with the highest beam current at maximum beam energy for specific ion species of interest should be provided.

11. There must be all necessary beam diagnostic components like FC's, BPM's, Valves etc. at appropriate locations like ion sources, before injector magnet, before accelerator, after accelerator, after analyzing magnet, in all beam lines. Beam defining slits must also be provided at the appropriate locations. Beam line design with all the beam line components should be indicated in the drawing.
12. Beam optics calculations with drawings should be provided.
13. Average vacuum level better than 1×10^{-7} torr should be maintained in all the beam lines during beam ON condition.
14. Input Power for complete instrument should be 240 V single phase/ 415 V three phase, 50 Hz with all protection and switch gears. Complete power requirement should be specified.
15. Building space requirement with proposed broad internal civil architecture for the proposed AMS system should be provided.
16. List of Spares and consumable for 5 years, should be provided for uninterrupted operation.
17. Manpower must be trained during assembly, operation and testing of accelerator at factory site. Similar training to be provided to manpower during installation at IUAC.
18. All documentation of power supply, cabling, vacuum pumps must be provided in digital form and hard copies. Circuit design, user's manual should be provided along with the system. Cooling requirement for the entire equipment should be specified.
19. Complete facility must be controlled via PC loaded with control software and source code should be provided to IUAC. Up gradation in the software should be provided at free of cost for lifelong.
20. All necessary analysis software must be provided. Protocol for different isotope measurements should be provided. The software must be equipped with feature of remote access and control at least through a few laptops which can be shared by concerned scientists/engineers.
21. Long term software support via remote access should be provided.
22. Long term support for supply of spares should be ensured. (Long term specified as minimum of ten years).
23. Comprehensive warranty of complete system for three years must be provided after acceptance test at IUAC.
24. One set of all necessary tools should be provided.
25. The accelerator and beam line areas must be properly and suitably interlocked against accidental radiation exposure, SF₆ leakage, power failure, vacuum failure, cooling failure, human error, earthquake and other natural hazards, Interlock should include search and secure operation, and shutdown in case of accidental or forceful human entry in radiation areas. Appropriate safety protection with regard to laser systems at ion source-injector system should also be provided.
26. All test certificates, decommissioning process, safety procedures must be documented.

27. Radiation levels at different positions with different beams at different energies must be provided. Radiation-shielding thickness details relevant to the facility should be provided.
28. Design-life estimate and decommissioning details for the accelerator system should be submitted.

In addition to the above, the vendor should provide the following documents duly signed and stamped.

1. List of installation of similar 6MV AMS system with year and model number and contact details of concerned persons.
2. List of publications (soft copies) during last five years arising out of these installations.
3. Details of onsite technical, research support provided to the existing users
4. Details of the availabilities of technical and service support in India.
5. Company/organization status (Proprietaries/Partnership/Private Ltd. etc) with name and address of the partners, board of directors etc.
6. Address of the websites containing relevant technical specifications of 6MV AMS system

Annexure - II

(To be submitted on Company's letter head)

[Date]

To,

Director

Inter University Accelerator Centre ,

Aruna Asaf Ali Marg New Delhi - 110067

Subject: Submission of EOI for design, development, supply, installation, commissioning and testing of performance acceptance of AMS/IBA system based on 6MV Ion accelerator

Dear Sir,

Having examined the Expression of Interest (Eoi), the receipt of which is hereby duly acknowledged, I/We, the undersigned, intend to submit a Pre-qualification requirements proposal in response to the Expression of Interest (Eoi) for design, development, supply, installation, commissioning and testing of performance acceptance of AMS/IBA system based on 6MV Ion accelerator.

I/We attach hereto the response as required by the Eoi, which constitutes our proposal.

Primary and Secondary contacts for our company are:

	Primary Contact	Secondary Contact
Name:		
Title:		
Company Name:		
Address:		
Phone:		
Mobile:		
Fax:		
E-mail:		

I/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 Inter University Accelerator Centre (IUAC) 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 department in its short-listing process.

I/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 contract during the implementation of project, if selected to do so.

I/We agree for unconditional acceptance of all the terms and conditions set out in the EoI document.

I/We shall abide by the rules and regulations of the Institute in regard to the selection process of the agency and the final decision.

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.

Dated this Day of 2023

(Signature) (In the capacity of)

(Name)

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,....., the (*Your profile in the company*) of, certify that who signed the above Bid is authorized to do so and bind the company by authority of its board/ governing body.

Annexure – III

Details of the Organization	
Name of organization	
Nature of the legal status in India (attach copies of original document defining legal status) a) A proprietary firm b) A firm in partnership c) A limited company or Corporation	
Year of Establishment	
Legal status reference details	
Nature of business in India	
Date of Incorporation	
Date of Commencement of Business	
Address of the Headquarters	
Address of the Registered Office in India	
Number of full time Experience manpower to execute the project	
Other Relevant Information	
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	

Annexure – IV

Financial Information			
	FY 2019-20	FY 2020-21	FY 2021-22
Revenue (in INR crores)			
Profit Before Tax (in INR crores)			
Revenue from IT services and system integration services (in INR crores)			
Other Relevant Information			
Mandatory Supporting Documents:			
a. Auditor Certified financial statements for the Last three financial years; 2019-20, 2020-21, and 2021-22 (Please include only the sections on P&L, revenue and the assets, not the entire balance sheet.)			
b. Unaudited financial statements certified by the Company auditor for the latest year (2021-22) (in case the auditor certified statement for 2021-22 is not available)			
c. Certification by the company auditors supporting the revenue break-up for IT Services and System Integration Services			

Annexure – V

Similar Project undertaken in the past 10 years (multiple copies may be attached for different projects)	
General Information	
Name of the project	
Name and contact details of the client	
Current Status, publications etc.	
Project Details	
Description of the project	
Applications	
Technologies Used	
Infrastructure	
Other Details	
Provision of Training at Factory site while manufacturing	YES / NO
On-site training during installation	
Duration of execution of project (From date of receipt of order to commissioning of project)	
Total cost of the project	
Other Relevant Information	
Mandatory Supporting Documents: Letter from the client duly indicating the salient points like cost, period (time to complete the installation), post – installation support etc .	
Desirable Document: List of publication arising out of the mentioned installation carried out in past	
Project Capability Demonstration Complete details of the executed project shall be provided to indicate the relevance to the pre-qualification criterion (which is part of minimum qualification criteria).	

Annexure – VI

Self-declaration certificate

[To be submitted on Company's letter head]

Ref. No. Date:

To

The Director

Inter University Accelerator Centre

New Delhi – 110067

India

With reference to my/our expression of interest of IUAC, it is hereby declared that (name of company) was not declared ineligible for corrupt and fraudulent either indefinitely or for a particular period by any Govt. or other agency. (Name of applicant) also declare that there are no contractual restrictions or legal disqualifications or other obligations which will prohibit me/us from submitting the application for the EOI.

Signature of the Applicant:

Designation

Name of the applicant

Date:

(seal)