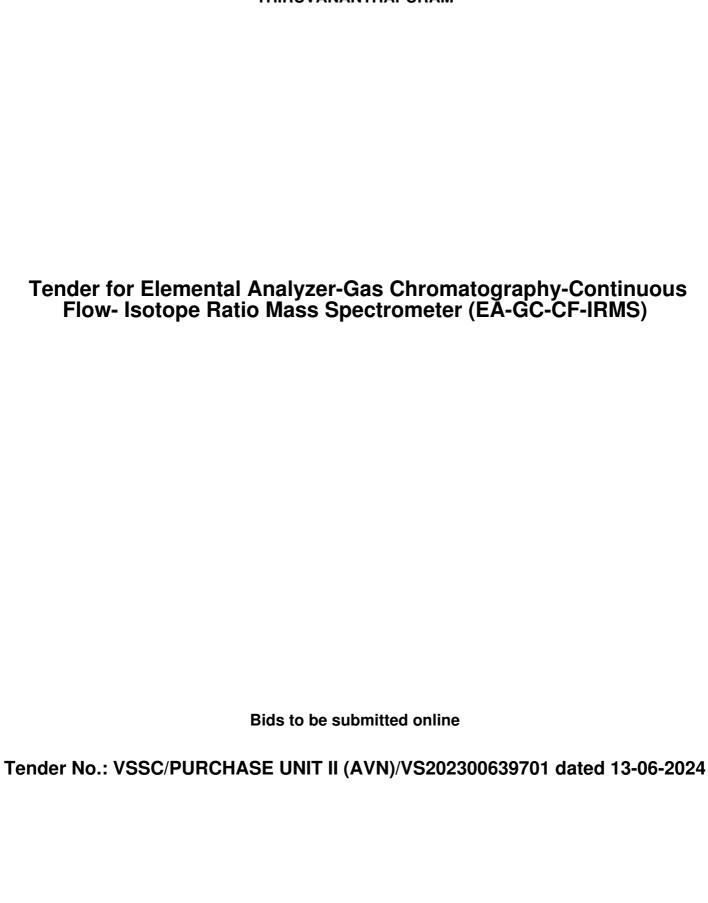
GOVERNMENT OF INDIA DEPARTMENT OF SPACE VIKRAM SARABHAI SPACE CENTRE (VSSC) THIRUVANANTHAPURAM



A. Tender Details

Tender No: VSSC/PURCHASE UNIT II (AVN)/VS202300639701

Tender Date : 13-06-2024

Tender Classification: GOODS

Purchase Entity: PURCHASE UNIT II (AVN)

Centre: VIKRAM SARABHAI SPACE CENTRE (VSSC)

Elemental Analyzer-Gas Chromatography-Continuous Flow- Isotope Ratio Mass Spectrometer (EA-GC-CF-IRMS)

Elemental Analyzer-Gas Chromatography-Continuous Flow- Isotope Ratio Mass Spectrometer (EA-GC-CF-IRMS)

A.1 Tender Schedule

Bid Submission Start Date : 14-06-2024 16:30

Bid Clarification Due Date: 27-06-2024 11:00

Bid Submission Due Date : 16-07-2024 14:00

Bid Opening Date : 16-07-2024 15:00

Price Bid Opening Date : 25-07-2024 15:00

B. Tender Attachments

Technical Write-up/Drawings

Document: Technical specifications

Instructions To Vendors

- 2. Conditions for BIDDER FROM A COUNTRY WHICH SHARES LAND BORDER WITH INDIA Restrictions under Rule 144 (XI) in GFR, 2017.
- 1. Any bidder from a country which shares a land border with India will be eligible to bid in this tender, only if the bidder is registered with the Competent Authority. Competent Authority for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).
- 2. Any false declaration and non-compliance of the above would be a ground for immediate rejection of offer or termination of the contract and further legal action in accordance with the laws.
- 3. Validity of Registration: Registration should be valid at the time of submission of bids and should be valid at the time of placement of order.
- 3. PPP Make in India(Divisible Items-Class I & II Local Suppliers)
- 1. A committee (with an external expert from a practicing cost accountant or practicing chartered accountant, if required) constituted for independent verification shall verify the self-declarations & auditor's / accountant's certificates on random basis, as per the requirements.
- 2. a) The subject item falls under divisible category. b) The offers are sought from Class I & II Local Suppliers.
- 3. Definitions: A supplier or service provider, whose goods, services or works offered for procurement, has local content: i. Equal to or more than 50%: Class-I local supplier. ii. More than 20% but less than 50%: Class-II local supplier. iii. Less than or equal to 20%: Non-local supplier.
- 4. False declarations will be in breach of code of the integrity for which a bidder or its successor's will not be eligible/debarred for purchase preference from further tenders / pending tenders for two years along with other actions as may be applicable.

- 5. In case of a complaint received from any local supplier indicating a need for review / verification of Local content of successful vendor / awarded vendor, for accepting a complaint from such complainant (w.r.t the false declaration given by the successful vendor on the local content), a complaint fee of Rs.2Lakhs or 1% of the locally manufactured items being procured (subject to a maximum Rs. 5Lakhs), whichever was higher, to be paid by demand draft by the complainant. In case, the complaint is found to be incorrect, the complaint fee shall be forfeited. In case, the complaint is upheld and found to be substantially correct, deposited fee of the complainant would be refunded without any interest.
- 6. In cases the quoted price is in excess of Rs.1000 Lakhs (including duties, taxes and freight & Insurance) the 'Class-I & II local supplier shall provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in case of suppliers other than companies) giving the percentage of local content.
- 7. In line with Public Procurement (Preference to Make in India), Order 2017 & its amendments issued by Govt. of India from time to time with a view to support the Indian industries, ISRO has implemented "Purchase Preference Policy". The "Purchase Preference" is applicable for the "Class-I Local Supplier" for the goods/ services/ works covered in this tender, subject to the following terms & conditions:-
- 8. 'L1' means the lowest technically accepted tender / bid / quotation (i.e. lowest landed cost including duties, taxes and freight & Insurance).
- 9. 'Local content' means the amount of value added in India (i.e. indigenous items/services added in the offered products/ services/ works) be the total value of the item offered (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties/IGST) as a proportion of the total value (excluding net domestic indirect taxes), in percent.
- 10. 'Margin of purchase preference' means the maximum extent to which the price quoted by the "Class-I local supplier" above the L1 (landed cost).
- 11. Purchase Preference Policy:- Goods/Works which are divisible in nature (required quantity is greater than 1 or not a package basis):
- i.If L1 is 'Class-1 local supplier', the order/contract for full quantity shall be awarded to L1 bidder. ii.If L1 bid is not from a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference (i.e. 20%) and contract for that quantity shall be awarded to such Class-I local supplier subject to matching the L1 price (inclusive of duties, taxes and freight & insurance). iii.In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase 'preference

shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded

accordingly. In cases where none of the 'Class-I local supplier' within the margin of purchase agree to match L1 price, in such cases 100% quantity shall be ordered on original L1 bidder.

iv.In case no offers are received from 'Class-I local supplier' or none of the 'Class-I local supplier' falls within the margin of purchase preference of 20%, the order shall be processed on L1 vendor.

v.In case L1 bidder (not a 'Class-I local supplier') is not accepting splitting of order on 50:50 basis, in that case the order/contract shall be awarded to such 'Class-I local supplier' for full quantity subject to matching the L1 price.

- vi.Regarding MSEs (Indian vendors):
- a) The following additional aspect as indicated below would be applicable for procurement which are falls under divisible category (i.e., not applicable for indivisible category), in case of participation of MSEs in the tendering who are also complying to the Minimum Local Content (MLC) stipulated in the tender.
- b) If any Indian vendor satisfies the requirement of MSEs stipulation and also falls within the purchase preference margin as called for in MSME policy (in case of matching L1 price) will be considered for ordering 25% of tendered quantity, the balance quantity / works will be considered for distribution amongst all bidders (including MSEs) as per the purchase preference policy.
- c) In case no MSEs qualifies for purchase preference or do not match with L1 price then the total tendered quantity will be distributed amongst all bidders as per the purchase preference policy.
- 12. The 'Class-I & II local supplier' should provide a "Self Certification" along with technical offer indicating that the item offered meets the minimum local content [as per SI. No.(3)] as called for in the tender and provide the percentage of local content along with details of the location(s) at which the local value addition is made. In case of two bid tenders, it is mandatory to indicate compliance to MLC(minimum Local Content) in technical bid zone.
- 13. The ink-signed certificate shall be provided on vendors letter head along with the offer (in case of online tender, copy of ink-signed certificate shall be uploaded along with your offer under concerned tab. Original in Hard copy shall be produced on request). In case of non-submission of certificate, the purchase preference shall not apply.
- 14. The margin of Purchase Preference shall be up to 20%.
- 15. The Public Procurement (Preference to Make in India), Order 2017 issued by Govt. of India indicates that if there are any general or specific restrictive clauses to restrict participation of Indian companies in those countries procurement tenders, reciprocity clause need to be invoked as per the order. Hence, if ISRO or Govt. of India come across that Indian suppliers of an item are not allowed to participate and / or compete in procurement by your government, the bid submitted by you will be not be considered and excluded from eligibility for procurement. Please note this point.
- 16. Works means all works as per Rule 130 of GFR- 2017, and will also include 'turnkey works'. Works includes Engineering, Procurement and Construction (EPC) contracts and services include

System Integrator (SI) contracts.	
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C. Bid Templates

C.1 Technical Bid - Elemental Analyzer-Gas Chromatography-Continuous Flow- Isotope Ratio Mass Spectrometer (EA-GC-CF-IRMS)

1. ISOTOPE RATIO MASS SPECTROMETRY-

Elemental Analyzer-Gas Chromatography-Continuous Flow- Isotope Ratio Mass Spectrometer (EA-GC-CF-IRMS) and related accessories

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Mass range (amu)	1-146 or higher	Yes / No / Explain		
2	Mass resolution (m/Δm)	≥190 for C, N, O, S and ≥ 20 for H/D with 10% valley separation	Yes / No / Explain		
3	Mass dispersion (mm)	≥350 for CNOS and ≥150 for H/D	Yes / No / Explain		
4	lon beam acceleration	≥ 5 kV	Yes / No / Explain		
5	Sensitivity (Absolute)	At least one in 850 molecules (0.04nmol/s/5nA or better)	Yes / No / Explain		
6	lon source linearity	≤ 0.03‰ per nA ion current	Yes / No / Explain		
7	Abundance sensitivity	< 3 ppm	Yes / No / Explain		
8	Number of faraday cups	At least 7 numbers, measured masses CO2: 44, 45, 46; N2: 28, 29; O2: 32, 33, 34; SO2: 64, 66; H2: 2, 3	Yes / No / Explain		
9	Faraday Amplifier dynamic range	Amplifiers should linear dynamic range of ≥ 47 V (0-167 nA). It should allow high SNR on small ion beams with high precision on small sample size. It should be software controlled.	Yes / No / Explain		
10	H3+ factor	Contribution ≤ 10 ppm/nA and stability < 0.04ppm/nA/hr	Yes / No / Explain		

11	Vacuum system	< 2 x 10-8 mbar	Yes / No / Explain	
12	Internal precision (10)% (continuous flow)	δ13C (CO2): ≤ 0.06; δ18O (CO2): ≤ 0.08; δ15N (N2): ≤ 0.06; δ18O (CO): ≤ 0.15; δ34S (SO2): ≤ 0.10; δ2 (H2): ≤ 0.40	Yes / No / Explain	
13	Configuration	Continuous flow (CF) mode	Yes / No / Explain	
14	Interface (Continuous flow)	•It should allow the simultaneous attachment of 2 flow peripherals at least, such as elemental analyzer (EA) and Gas chromatograph (GC); should be expandable up to three peripherals •The interface connecting input peripherals to IRMS must have system for automated sample dilution, addition of reference gases and dilution of sample gases with He. •It should have simultaneous connection and management of minimum 6 gases (N2, CO2, SO2, H2, CO, and He). Heated regulator should be provided for SO2 to avoid corrosion, memory, and isotopic fractionation. •Automatic stand by position to reduce reference gas consumption to zero and carrier gas (He) consumption should be <2 ml/min •It must have two open-split gas transfers (one for sample and one from the reference gas) both should have independent capillaries leading to the ion source to eliminate the crossover.	Yes / No / Explain	

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-System should have dual furnace (lone for combustion (~1100°C) and one for reduction (~650°C)] with separate temperature control for C, N and S isotopesShould have complete pyrolysis (~1450°C) set-up and accessories for O and H isotope analysisIt also includes a water trap, GC column, thermal conductivity detector and other necessary parts for the installation of EAIt must have an automatic switching device exists between CNS and OH modes controlled by software. EA must consists isolink CNOSHAutosampler (-30) samples) for the Elemental Analyzer should be providedElemental Analyzer should be capable of operating as a standalone unit for CNS elemental analysis. It must be possible to directly elemental ratios and elemental composition of weight %Precision: The external precision (10)% should be 813C (CO2) 90.10 %. sample size 125 up C; 815N (N2) 20.15 %., sample size 49 µg N; 834S (SO2) 0.20 %., sample size 50 µg Si BO (H2) 53 %., solid sample size 50 µg O, soli	

16	Gas Chromatograp hy (GC)	•GC should be capable of operating as a standalone unit for quantitative measurements of individual C and D/H compounds (mass concentrations). •GC should include a split/splitless injector; capillary columns (60m x 0.25mm x 0.25μm film thickness); GC Oven with temperature controlled programmable (40-300○C); Detector (FID); auto samplers (≥20 samples); should have USB and LAN ports; GC syringes; interactive display for peak editing. GC is directly connected by the GC isolink. •IRMS software must allow different GC method, autosampler and injector; it must allow different GC methods for each analysis (combustion and pyrolysis modes) from the software in an automated sequence without manual intervention •GC must be consistent with principles of continuous flow, which require unchecked and unrestricted flow of sample entrained in He carrier gas, from the point of sample introduction, through conversion to the analyte, to ionization of the analyte in the mass spectrometer. •Precision: The external precision (1σ)% should be: δ13C (CO2) 0.18 % for 10 ngC (on column); δ15N (N2) 0.5 % for 42 ngC; δ18O (CO2) 0.8 % for 80 ngO; δ2(H2) 2.5 % for 80 ngO; δ2(H2) 2.5 %	Yes / No / Explain		
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		for 30ng H •Software must be provided the control of entire IRMS system, and it must be used for		
17	Data System and Software	obtaining, processing and reporting the data. •It must be possible to automatically check all valves of system. •Software must display both ion beam voltages and updated delta value of sample in real time. •Parameters such as stability and linearity must be monitored and determined automatically during acquisition of samples •Software must allow full access to all raw data and processed data, full access to ion correction algorithms and intermediate data	Yes / No / Explain	

I I X	Additional Requirements	Spares and Consumables: Consumables and spare parts should be provided for minimum 300 measurements of C, N, O, S, and H isotope ratios along with IRMS system. Additional consumables: • Consumables for 5000 measurements of C, N and S isotopic ratios analysis- this includes quartz reactor tubes, oxidation catalysts (Cr2O3), reduction catalyst (copper grains), silvered cobaltous oxide to trap SO2 and halogens, unhydrone for water-trap, quartz wool, O-rings for quartz reactors, sample holders, and tin capsules and related consumables. •Consumables for 2000 OH Analyses in EA- this includes Glassy carbon chips, silver wool, graphite crucibles, quartz wool, O-rings, Aluminum ferrules, stainless steel nuts, silver capsules and related consumables. •Consumables for 2000 δ13C (compound specific) analyses in GC. this includes tubes/connectors for FID, glass liners, septums, GC syringes, and sample trays Additional spare parts: Quartz reaction tubes (n=4) for EA; and GC columns (n=2) •Spare parts and consumables for IRMS for minimum three years of operation. •All diagnostic and mechanical tools required for installation/servicing/re pair should be provided by the		

vendor.		
•IRMS system should		
have interactive		
display along with		
possibility to print the		
chromatograms and		
isotope ratio peaks of		
compounds		
Upgradation of all		
software installed		
along with the		
complete system,		
should be provided		
should be provided		
free of cost, as and		
when it is released.		
This support should be		
provided for 10 years		
beyond the standard		
warranty period.		
•Manuals: Soft copies		
of Operation and		
Service Manuals for all		
modules including		
Third party manuals if		
any, must be provided		
with the System. Must		
provide at least 3		
publications in referred		
journals supporting all		
modes of operation		
and all types of		
measurements		
requested.		
 Vendor should 		
provide complete user		
list (including email id		
and phone numbers)		
of their IRMS systems		
installed within India.		
The technical		
specifications		
demonstrated		
elsewhere has to be		
provided. The vendor		
should be maintaining		
minimum 2		
instruments on current		
date (copy of AMC		
contract to be attached		
along with the tender).		
•Hard or soft copies of		
all electronic circuit		
diagrams of IRMS		
system (including		
peripherals) is		
preferred.		
•Complete onsite		
installation,		
demonstration,		
calibration and		
performance test as		
per specification.		

Vendor to include the
list of tests that will be
carried out during
Installation and
Acceptance.
 Vendor should also
provide a standard
reference
materials/gases.
Pre-installation
requirements and Site
specifications: All the
Pre-installation
r 16-1115tallation
requirements have to
be mentioned clearly
like Instruments' and
peripherals' Footprint
area, floor space for
instruments and
peripherals, working
space around the
instruments and
peripherals, Power
requirements, UPS
configuration, Air
conditioning, Gas vent,
working bench area for
source cleaning,
humidity control,
dehumidifier, thermo
by are motor, the into
hygrometer, any other
specific operating
environment –
cleanliness level, etc.
•Warranty: should
provide minimum 1
year of warranty of the
IRMS system including
all input peripherals
from the date of
Installation and
Acceptance of
performance test. A
separate price quote
of non-comprehensive
AMC for 5 years
should provide after
the warranty period (It
should contains the
number of proventive
number of preventive
calls and breakdown
calls per year).
•The complete system
should be supplied &
supported by single
vendor (multiple
vondore ore not
vendors are not
accepted).
·Vendor shall ensure
thorough installation,
demonstration &
relevant application
. 5.5 tant application

training at the time of		
installation.		
•Training: Meticulous		
training for minimum 3		
persons for complete		
operation and		
maintenance of the		
IRMS system should		
be provided on site by		
factory trained and		
certified Specialist for		
minimum 4 days.		
•Vendor must have an		
India-based service		
organization, for which		
detailed		
documentation is		
required, including full		
disclosure of names,		
locations, training, and		
years of experience.		
Availability of		
telephone support,		
including telephone		
numbers and email		
addresses, must be		
detailed. Information		
must allow contact to		
be made during bid		
evaluation, in order to		
evaluate the length of		
time and quality of		
response to technical		
and procedure		
questions.		
It is essential to		
provide a pre-		
demonstration of the		
installation of IRMS		
system interfaced with		
input peripherals (EA-		
GC-CF-IRMS),		
followed by isotope		
ratio measurements of		
a few particulate		
matter samples, either		
online or offline.		

Supporting Documents required from Vendor

- 1. Calibration certificate from original manufacture company
- 2. pre-installation requirements, Hard copies of manuals,
- 3. At lease three publications in referred journals supporting all modes of operation of IRMS
- 4. A complete user list (including email and telephone numbers) of their IRMS installed within

India				
5. Cost of AMC (Price Bid Related)				
6. price split-up statement (Price Bid Related)				
5 additional documents can be uploaded by the vendor				
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C.2 Commercial Terms / Bid

SI. No.	Description	Compliance	Vendor Terms
1	After standard warranty period, the non-comprehensive AMC Charges for next 5 years should be quoted separately. Number of preventive calls and number of break-down calls should clearly be mentioned in the AMC quote.	Yes / No / Explain	
2	Other requirements: on-site Installation, commissioning and calibration of the instrument, training of VSSC scientists on the instrument operation and routine maintenance to be undertaken at user site	Yes / No / Explain	
3	Warranty: 1 year (it includes the whole system)	Yes / No / Explain	
4	It is essential to provide a predemonstration of the installation of IRMS system interfaced with input peripherals (EA-GC-CF-IRMS), followed by isotope ratio measurements of a few particulate matter samples, either online or offline.	Yes / No / Explain	
5	Brochure: Brochure in English obtained from the original manufacturer with well-defined technical details (specifications sheet for technical compliance) is to be enclosed with the quotation	Yes / No / Explain	
6	Authorisation from manufacturer: Authorisation letter from the original equipment manufacturer, manufacturing date and calibration certificate with the tender number to be included with the quote.	Yes / No / Explain	
7	Safety requirement: The system should conform to International safety standards, designed and manufactured under a quality system, should also provide all manuals for equipment.	Yes / No / Explain	

8	This is a TWO-PART tender i.e. Techno-Commercial Bid (C1 & C2 of tender document) and Price Bid (C3 of tender document) shall be submitted separately. All technical and commercial terms and conditions shall be furnished in the Techno-Commercial Bid while price shall be indicated only in the Price Bid. Uploading price details anywhere else other than the price-bid shall lead to unconditional rejection of the tender. Please make note of the same. Tenderers are advised NOT TO UPLOAD any documents revealing the price in technical & Commercial bid other than area marked as price related documents	Yes / No / Explain	
9	Technical Bids will be opened at the scheduled due date & time. No further intimation will be sent in this regard. The schedule for price bid opening shown is only indicative. Price bids will only be opened in the case of parties who have been techno-commercially accepted, the details of which will be communicated at a later stage	Yes / No / Explain	
10	GST extra as applicable. Please quote applicable G.S.T rates with HSN code. Your GST Reg.No. and details shall be furnished in your quotation	Yes / No / Explain	
11	Delivery Terms [Normal delivery terms - FOR VSSC (for Indigenous cases) & FOB/ FCA or Ex-works (for Import cases).	Yes / No / Explain	
12	Delivery Period [Please Specify the period, LD shall be applicable in case of delayed delivery]. Mention the time required for supply and installation wherever applicable.	Yes / No / Explain	
13	Payment Terms [Within 30 days after receipt and acceptance of Item at our Stores for indigenous / Sight Draft for import cases].	Yes / No / Explain	
14	Liquidated Damages @ 0.5% per week subject to maximum of 10% of order value is applicable beyond the promised delivery schedule.	Yes / No / Explain	
15	Warranty [Minimum One year required.]	Yes / No / Explain	
16	Performance Bank Guarantee for 3% of order value valid 2 months beyond the Warranty Period to be provided.	Yes / No / Explain	

17	Security Deposit: Successful Tenderer shall submit Security Deposit equivalent to 3% of the order value valid for a period of 60 days beyond the date for completion of the Purchase Order. This security deposit is collected towards the performance of the Contract. The said Security Deposit shall be submitted either in the form of Bank Guarantee or Fixed Deposit receipts from Nationalised/Scheduled Banks. No exemption is applicable for MSE vendors from submission of Security Deposit. In case PSU/Autonomous bodies/Central Government organizations, Indemnity Bond shall be accepted. Wherever SD and PBG are involved, the same can be submitted in consolidated SD cum PBG, valid till completion of warranty obligations under the contract. Necessary formats will be issued to the successful tenderer along with Purchase order.	Yes / No / Explain	
18	GeM Seller Unique ID	Yes / No / Explain	
19	Country of Origin	Yes / No / Explain	
20	PO ordering address in full with Contact Persons Name, E-mail id, Phone No. [also attach your Quotation in PDF format].	Yes / No / Explain	
21	Quote Validity: Minimum 180 days [for Two part Tender] from the date of Tender opening.	Yes / No / Explain	
22	As per the provisions of Office Memorandum No. F. No. 6/18/2019-PPD dtd. 23.07.2020 (i.e., Rule No. 144 (xi) of GFR) and its Amendments, issued by Department of Expenditure, Ministry of Finance. I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.	Yes / No / Explain	
23	If any of the bidders submit any forged or false documents along with the Tender, such tenders will be summarily rejected and such bidders will be blacklisted for all future tenders.	Yes / No / Explain	

24	Non Local suppliers shall also be eligible to bid along with Class I local suppliers and class II local suppliers. Class I local supplier is eligible for purchase preference as Govt of India Public Procurement preference Make in India Order 2017 dt 16.09.2020	Yes / No / Explain	
25	Any other terms	Yes / No / Explain	

C.3 Price Bid

SI. No.	Item	Quantity	Unit Price	Currenc y	Total Price	Packing & Forwardi ng	Freight	Other costs	Remark
1	ISOTOP E RATIO MASS SPECTR OMETR Y- Elementa I Analyzer- Gas Chromat ography- Continuo us Flow- Isotope Ratio Mass Spectro meter (EA-GC- CF- IRMS) and related accessori es	1.00 Unit		-					

Common charges (Applicable for all items)

AMC Charges for 1st Year after warranty period	
AMC Charges for 2nd Year after warranty period	
AMC Charges for 3rd Year after warranty period	
AMC Charges for 4th Year after warranty period	

AMC Charges for 5th Year after warranty period	
Optional Accessories-Lumpsum	
Optional Spares Cost (lumpsum)	