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

Tender for Automated multi-axis multi-mode Ultrasonic C-Scan System

Bids to be submitted online

Tender No.: VSSC/PURCHASE UNIT VI (CMSE Purchase)/VS202100321401 dated 26-08-2021

A. Tender Details

Tender No :	**VSSC/PURCHASE UNIT VI (CMSE Purchase)/VS202100321401**
Tender Date :	**26-08-2021**
Tender Classification:	**GOODS**
Purchase Entity :	**PURCHASE UNIT VI (CMSE Purchase)**
Centre :	**VIKRAM SARABHAI SPACE CENTRE (VSSC)**

Procurement of Automated multi-axis multi-mode Ultrasonic C-Scan System

E-Procurement No. VSSC/PURCHASE UNIT VI (CMSE PURCHASE/CMSE/ 202100321401 . E-Tenders are invited for the supply of Automated Multiaxis Multi Mode Ultrasonic C scan system through our E-procurement site https://eproc.vssc.gov.in.

Only online tenders will be accepted. No manual / Postal / e-mail / fax offers will be entertained. No manual tender document will be issued. Parties interested to participate in this e-Tender are required to register themselves as vendors, if not already registered, in our e-procurement portal https://eproc.vssc.gov.in by downloading plugins and help demos listed on the home page of the e-procurement link mentioned above to complete the vendor registration process. They can seek help from help desk 0471-2565454 also as provided in the home page of e-procurement portal in case of any problem for registration and subsequent process. Vendors may please note that without registering in our e-procurement portal, they will not be able to quote for this e-tender.

Important Notice : Tender will be automatically closed on the due date [ie. 21/09/2021 10:00 Hrs], if at least one offer is received. If the tender could not be opened on the first day due to any technical snag, it will be opened on the subsequent day as per the schedule.

This is a two part tender, Technical & Commercial Part (Part-I) and Price Part (Part-II) shall be submitted separately. The tenderers should not attach any documents containing Pricing information along with Technical & Commercial Bid (Part-I). We do not open PART-II (Price Bid), if PART-I (Technical & commercial Offer) does not meet with our technical specification requirements. Cost split up, other price details etc. shall be uploaded as a separate document under COMMERCIAL DOCUMENTS FROM VENDOR tab.

THE TECHNICAL DOCUMENTS NEED TO BE ATTACHED ONLINE AS A SINGLE PDF FILE WITHOUT ANY PRICE INFORMATION, TECHNICAL BID CONTAINING PRICE DETAILS WILL BE TREATED AS REJECTED.

Price bid opening date indicated in the schedule is tentative only. Actual date will determine after evaluation of techno commercial bid.

A.1 Tender Schedule

Bid Submission Start Date :	**26-08-2021 17:31**
Bid Clarification Due Date :	**08-09-2021 13:42**
Bid Submission Due Date :	**21-09-2021 10:00**
Bid Opening Date :	**21-09-2021 13:00**
Price Bid Opening Date :	**27-09-2021 14:52**

B. Tender Attachments

NA

Instructions To Vendors

1. E-Procurement No. VSSC/PURCHASE UNIT VI (CMSE PURCHASE/CMSE/ 202100321401 E-Tenders are invited for the supply of Automated Multiaxis Multi Mode Ultrasonic C scan system through our E-procurement site https://eproc.vssc.gov.in.

This tender is proposed as a DOMESTIC PUBLIC TENDER. This tender is restricted only to Class-I and Class-II Local Suppliers as defined under DPIIT Order dtd 04/06/2020- Preference to Make in India Order-2017 Revision. Non-Local Suppliers need not quote.
Foreign OEMs/Agents quoting on behalf of Foreign OEMs are not permitted to quote. High Sea Sales Quotes not permitted. The bids shall be in INR only.
Purchase preference to eligible vendors are applicable as per extant notifications issued by the Government of India.
The Class-I/Class-II Local suppliers, at the time of submitting their offer, shall also indicate percentage of local content and provide self-certification that the item (s) offered meets the local content requirement for Class-I/Class-II Local Suppliers as the case may be. They shall also give details of location (s) at which the local value addition is made.
In cases if the item(s) offered exceed Rs. 10 Crores, the Class-I/Class-II Local Suppliers shall provide a Certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.
False Declarations will be in breach of the Code of Integrity under Rule 175 (1) (i) (h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.
Bids can be submitted up to 21/09/2021 [10:00 Hrs.], Technical Bid Opening date : 21.09.2021 [13:00 Hrs.].

Only online tenders will be accepted. No manual / Postal / e-mail / fax offers will be entertained. No manual tender document will be issued. Parties interested to participate in this e-Tender are required to register themselves as vendors, if not already registered, in our e-procurement portal https://eproc.vssc.gov.in by downloading plugins and help demos listed on the home page of the e-procurement link mentioned above to complete the vendor registration process. They can seek help from help desk 0471-2565454 also as provided in the home page of e-procurement portal in case of any problem for registration and subsequent process. Vendors may please note that without registering in our e-procurement portal, they will not be able to quote for this e-tender.
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This is a two part tender, Technical & Commercial Part (Part-I) and Price Part (Part-II) shall be submitted separately. The tenderers should not attach any documents containing Pricing information along with Technical & Commercial Bid (Part-I). We do not open PART-II (Price Bid), if PART-I (Technical & commercial Offer) does not meet with our technical specification requirements. Cost split up, other price details etc. shall be uploaded as a separate document under COMMERCIAL DOCUMENTS FROM VENDOR tab.
THE TECHNICAL DOCUMENTS NEED TO BE ATTACHED ONLINE AS A SINGLE PDF FILE WITHOUT ANY PRICE INFORMATION, TECHNICAL BID CONTAINING PRICE DETAILS WILL BE TREATED AS REJECTED.
Price bid opening date indicated in the schedule is tentative only. Actual date will determine after evaluation of techno commercial bid.

2. Form No 20

1. INSTRUCTIONS TO TENDERERS
1. Quotation/Open Authorization shall be submitted online [only] complying specified schedule.
2. Late tenders and delayed tenders will not be considered.
3. Quotation should be valid for at least 90 days from the date of opening of the tender. [Mandatory]
4. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.
5. a) Your quotation should be valid for 90 days (Single Part Tender) / 180 days (Two Part Tender) from the date of opening of the tender. [Mandatory]
b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
6. Preference will be given to those tenders offering supplies from ready stocks and on the basis of FOR destination/delivery at site.
7. (a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be attached along with the offer.
(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non acceptance of tender, the tenderer will have to remove the samples at his own expense.
(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.
(d) Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the

tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.
8. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.
9.The tenderer should supply along with his tender, the name of his bankers as well as the latest Income - Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.
10. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.
11. The authority of the person signing the tender, if called for, should be produced.

TERMS & CONDITIONS OF TENDER
1. DEFINITIONS :
(a) The term Purchaser shall mean the President of India or his successors or assigns.
(b) The term Contractor shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
c) The term Stores shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.
d) The term ÃÂÃÂÃÂÃÂPurchase OrderÃÂÃÂ¢ÃÂÃÂÃÂÃÂ¢ shall mean the communication signed on behalf of the Purchaser by an Officer duly authorized intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.
2. PRICES:
Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.
3. SECURITY DEPOSIT:
On acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding three percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, SECURITY and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores Contracted at the risk of the Contractor in terms of Sub-Clause (ii) and (iii) of clause 10(b) hereof and/or to recover from the Contractor, damages arising from such cancellation.
4. GUARANTEE & REPLACEMENT :
(a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications

laid down, for material, workmanship and performance.
(b) For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the purchaser who shall state in writing in what respect the stores or any part thereof are faulty.
(c) If, in the opinion of the purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the purchaser, provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of 14 months from the date of acceptance thereof.
(d) Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
(e) The decision of the purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.
(f) To fulfill guarantee conditions outlined in clause 4 (a) to (e) above, the Contractor shall, at the option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser) from a Bank approved by the purchaser for an amount equivalent to 3% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without
any interest.
(g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of the stores at purchaser's site.
(h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications then such a specification shall apply in such cases the period of 14 months referred to in Para 4 (b) & (c) shall be the asked for guarantee period plus two months.
5. PACKING FORWARDING & INSURANCE :
The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.
6. DESPATCH :
The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain' basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

7. TEST CERTIFICATE :

Wherever required, test certificates should be sent along with the despatch documents.

8. ACCEPTANCE OF STORES:

(a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expense and cost.

(b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final.

(c) If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.

(d) If the whole or any part of the stores supplied are rejected in accordance with Clause No. 8 (c) above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

9. REJECTED STORES:

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

10. DELIVERY:

(a) The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.

(b) Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the purchaser shall be entitled at his option either.

(i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or

(ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor.

In the event of action being taken under sub-clause (ii) & (iii) of clause 10 (b) above, the Contractor

shall be liable for any loss which the purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re-purchase shall be at the discretion of the purchaser, whose decision shall be final. It shall not be necessary for the purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall be without prejudice to the right of the purchaser to recover damages for breach of Contract by the Contractor.

11. EXTENSION OF TIME :

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the purchasers right to recover liquidated damages under clause 10 thereof.

12. ERECTION OF PLANT & MACHINERY :

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the purchaser, the purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the purchaser.

13. PAYMENT :

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

14. MODE OF PAYMENT :

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

15. RECOVERY OF SUM DUE:

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the purchaser on demand the remaining balance due. Similarly, if the purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the purchaser are finally adjudicated upon and paid by the Contractor.

16. INDEMNITY :

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this

Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the contract.

17. ARBITRATION :

In the event of any question, dispute or difference arising under these conditions or any conditions contained in the Purchase Order or in connection with this Contract (except as to any matter the decision of which is specially provided for by these conditions), the same shall be referred to the sole arbitration of the Head of the Purchase office or some other person appointed by him. It will be no objection that the arbitrator is a Government servant, that he had to deal with matter to which the Contract relates or that in the course of his duties as Government servant he has expressed views on all or any other matters in dispute or difference. The award of the arbitrator shall be final and binding on the parties of this Contract.

If the arbitrator be the Head of the Centre/Unit ÃÂÃÂ¢ÃÂÃÂÂÃÂÂ

(i) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in-office either to proceed with reference himself, or to appoint another person as arbitrator, or

(ii) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Centre/Unit to appoint another person as arbitrator.

If the arbitrator be a person appointed by the Head of the Purchase Office

In the event of his dying, neglecting or refusing to act or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Centre/Unit either to proceed with the reference himself or appoint another person as arbitrator in place of the outgoing arbitrator.

Subject as aforesaid the Arbitration & Conciliation Act 1996 and the rules there under and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The Arbitrator shall have the power to extend with the consent of the purchaser and the Contractor the time for making and publishing the award. The venue of arbitration shall be the place as purchaser in his absolute discretion may determine. Work under the Contract shall, if reasonably possible, continue during arbitration proceedings.

In the event of any dispute or difference relating to the interpretation and application for the provisions of the Contracts, such dispute or difference shall be referred by either party to Arbitration of one of the Arbitrations in the Department of Public Enterprises. The Arbitration Act 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute provided however any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs. Ministry of Law & Justice, Govt. of India. The parties to the dispute will share equally, the cost of arbitration as intimated by Arbitrator.

18. COUNTER TERMS AND CONDITION OF SUPPLIERS :

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific

written acceptance thereof is obtained.
19. SECURITY FOR PURCHASE OF MATERIALS :
Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.
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3. PPP Make in India(Non- Divisible Items-Class I & II Local Suppliers Only)

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

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. 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.

8. Purchase Preference Policy:- Goods/Works which are not divisible (ie., required quantity is 1 or as a package) and Services:
a)If L1 is from a 'Class-I local supplier, the contract will be awarded to L1 bidder.
b) If L1 is not from a 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price subject to local supplier's quoted price falling within the margin of purchase preference (i.e. 20%) and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price (inclusive of duties, taxes and freight & insurance).
c) In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on, and order/contract shall be awarded accordingly. In case where none of the 'Class-I local supplier' within the margin of purchase preference agree to match the L1 price, then the order/contract shall be awarded to the original L1 Bidder.

9. 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.

10. 'L1' means the lowest technically accepted tender / bid / quotation (i.e. lowest landed cost including duties, taxes and freight & Insurance).

11. 'Margin of purchase preference' means the maximum extent to which the price quoted by the "Class-I local supplier" above the L1 (landed cost).

12. The margin of Purchase Preference shall be up to 20%.

13. '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.

14. 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.

15. a) The subject item falls under Non-divisible category. b) The offers sought only from Class-I & Class-II local suppliers

16. 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:-

4. GENERAL TERMS & CONDITONS (WITH WARRANTY)

1. 10.Security deposit : You should submit Bank Guarantee (Rs.200/- stamp paper) for 3% order value (DOS:PM:09 format enclosed) from a Nationalised/Scheduled bank valid for 2 months beyond the date of completion of order along with order acknowledgement. This security deposit without any interest thereon shall be returned to the Contractor on successful completion of the contract or shall be adjusted/forfeited against non-fulfillment of any of the contractual obligations.

2. 11.Warranty: Warranty should be indicated in the quotation if applicable

3. 12.Performance Bank Guarantee: You shall furnish performance Bank Guarantee in Rs.200/-non judicial stamp paper from a Nationalized/Scheduled Bank Equivalent to 3% of the order value which shall be valid beyond 2 months from the expiry of warranty/guarantee period.

4. 13.We would like to have more than one source of supply and the final orders will be given accordingly to the qualified bidders.

5. 14. In case if any Bidder is submitting their Offer on HIGH SEA SALES BASIS: then the Indian

Trader shall submit the following documents mandatorily along with their offer. Out station HSS Customs clearance not permitted at our scope.
a.The Import Export Code of the Indian Trader
b.Bank Authorization Code of the Indian Trader
c.GSTIN of the Indian Trader
Likewise, while executing the Purchase Order/Contract; the Indian Trader shall mandatorily submit the following:
a.High Sea Sale Agreement
b.Invoice pertaining to the Indian Trader in INR and the invoice of the foreign vendor in foreign currency.

6. 15. In case of Foreign/Import Tenders:
a.The bidder shall clearly mention the full ordering address in capital letters.
b.The bidder shall clearly mention their banker's address including their SWIFT code compulsorily.
c.Any change of address shall be compulsorily supported by Documentary proof issued either by Governmental agencies or by Chamber of Commerce.
d.Foreign Principal's Proforma Invoice/quote indicating the Agency Commission payable to the Indian Agent and the nature of after sales service to be rendered by the Indian Agent.
e.Copy of the Agency Agreement between the Foreign Principal and the Indian Agent, and the precise relationship between them their mutual interest in the business.
f.Registration and Item empanelment of the Indian Agent.

7. 16. VSSC-CMSE has a right to cancel the tender without assigning any reason etc.

8. 17. If you are unable to submit offer, the same may be communicated to us before the due date.

9. 18. "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."

10. 19. All Tax invoices issued by suppliers/Service providers on or after July 01,2017 shall invariably bear their GST Registration No.(GSTIN) applicable GST rates and HSN Code. In the absence of which, the invoices shall not be processed for payment.

11. 20. (a) 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).

12. (b) 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.

13. (c) 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

14. 7.Where an agent participates in a tender on behalf of one manufacturer, he should not quote on behalf of another manufacturer along with first manufacturer in a subsequent/ parallel tender for the same item. However the Indian agents at their option can quote on behalf of one or more principals / manufacturers provided the items pertain to different Brands/Makes and/ or with different options. The

Indian agent on behalf of foreign principal or the foreign principal directly could Bid in a tender but not both. Percentage of Agency commission if any included in the offer shall be explicitly mentioned and will be paid in Indian currency.

15. 8.In order to avail of the benefits extended to by Govt. of India to the Micro and Small Sectors, please submit attested copy of the valid Entrepreneur Memorandum Part-II signed by the General Manager, District Industries Centre / UdyogAdhar/ NSIC Registration Certification along with your offer.

16. General Conditions:

1.Payment: Our standard payment term is 100% within 30 days on receipt and acceptance of the item at our site in the case of indigenous order and SIGHT DRAFT in the case of foreign orders. Bank Charges to respective accounts.

17. 2.Please keep & confirm the offer validity minimum 90 days from the date of opening of tender.

18. 3.We are eligible for partial exemption of IGST vide Ministry of Finance, Dept. of Revenue, NotificationNo. 47/2017 Ã¢ÂÂCentral Tax (Rate) dated 14.11.2017Ã Â¤ÂÃ Â¤ÂµÃ Â¤Â/and Government of Kerala, Taxes(B) Department Notification No.169/2017/TAXES dated 15.11.2017.
Please submit your quotations accordingly.

19. 4.We are eligible for partial exemption of CGST and SGST vide Notification No: 45/2017 dtd 14/11/2017 and No: 169/2017/TAXES dtd 15/11/2017 respectively. Necessary Exemption Certificates will be issued on demand.

20. 5.5.We are partially exempted from payment of Customs duty under Notification No 050/2017 : CUSTOMS DT. 30/06/2017 AND AMENDED NOTIFICATION NO.5/2018 ÃÂÃÂÃÂÃÂ¢ÃÂÃÂÃÂÃÂÃÂÃÂÃÂÃÂ 539(a) ÃÂÃÂÃÂÃÂ¢ÃÂÃÂÃÂÃÂÃÂÃÂÃÂÃÂ CUSTOMS DTD 25/01/2018), for which necessary certificate will be issued, if required. Tenderers are requested to take note of this aspect and submit offer accordingly.

21. 6.Delivery term: Our standard delivery term is FOR : CMSE-VSSC. In case of Ex- Works, please indicate packing, forwarding & freight charges up to VSSC, separately. (For more details please see Form No. 19/20/21/22/ 23 attached)

22. 9.Liquidated damages: The delivery period quoted by you and stipulated in the Purchase Order shall be deemed to be the essence of the order and delivery must be completed not later than the dates specified therein as otherwise VSSC shall have the right to recover a sum @ 0.5% of the order value per week/part of a week or 0.5%of the value of the stores for which the delivery is delayed for each week of delay, as the case may be, subject to a maximum of 10% of the order value.

C. Bid Templates

C.1 Technical Bid - Automated multi-axis multi-mode Ultrasonic C-Scan System

1. Automated multi-axis multi-mode Ultrasonic C-Scan System

Item specifications for Automated multi-axis multi-mode Ultrasonic C-Scan System

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	1) Introduction	Composites Entity, VSSC is intends to procure an “Automated multi-axis, multi-mode Ultrasonic C-Scan System” for Non-Destructive Testing (NDT) of wide range of Composites Structures from established potential suppliers. The system shall enable ultrasonic non-destructive testing in the following modes: 1. Air-Coupled C-Scan Ultrasonic testing in Through Transmission mode 2. Water jet C-Scan Ultrasonic testing in Through Transmission & Pulse Echo mode 3. Bubbler (Contact) type Phased Array Ultrasonic C-Scan testing in Pulse Echo mode	Yes / No / Explain		

2	2) Scope of supply	Scope of supply consists of “Design, Manufacture, Performance Demonstration, Delivery, Installation, Commissioning and Training of Automated multi-axis, multi-mode Ultrasonic C-Scan System" on “turn-key basis” at Composites Entity (CMSE), Vattiyoorkavu, Trivandrum, Kerala, India. The system is intended for NDT of wide range of Composites Structures. The system shall consist of 2.1 Necessary hardware & software for a) Air-Coupled C-Scan Ultrasonic testing in Through Transmission mode (TTU) b) Water jet C-Scan Ultrasonic testing in Through Transmission (TTU) & Pulse Echo mode (PE) c) Bubbler (Contact) type Phased Array Ultrasonic C-Scan testing in Pulse Echo mode 2.2 Complete system including hardware, software & system integration for “Dual robotic type probe positioning system” to carry out the functions mentioned in Section 2.1, Section 4 & Section 6.7 on typical test articles mentioned in Section 3 as per the specifications given in this document. 2.3 Dual robotic type probe positioning system shall have minimum horizontal and vertical reach of	Yes / No / Explain		

		its Tool Centre Point (TCP) 2500 mm and 3000 mm respectively in TTU mode of testing. Linear travel of both the robots shall be 7000 mm.			
3	3) Parts to be tested	Typical part configurations and geometries to be inspected are shown in below table Note: Maximum weight of the part to be tested is 200 kg.	Yes / No / Explain		
4	1) Part Geometry: Panels of flat and double curvature; Material: CFRP sandwich, sometimes cork bonded on one of the surfaces & Air coupled TT	Thickness: 20 to 25mm; Cork thickness: 1 to 5 mm; Size and figure is attached separately as Annexure A.	Yes / No / Explain		
5	2) Part Geometry: Truncated Conical shell; CFRP sandwich & Test method: Air coupled TT	Diameter: Max 4200 mm; Thickness: 6 to 12 mm; Size and figure is attached separately as Annexure A. Note: Testing to be done by positioning the part in vertical plane without the requirement of a rotary table	Yes / No / Explain		

6	3) Part Geometry: Sector of cylinder OR Sector of cone; Material: CFRP Hat-stiffened & Test method: Water coupled bubbler PAUT	Basic shell thickness: 0.5 to 5 mm; Hat thickness: 0.5 to 3 mm; Minimum Distance between hats: 35mm; Size and figure is attached separately as Annexure A. Note: Stringer bubbler tool mechanism and probes with necessary attachment to enable positive contact of PAUT probes while testing webs and crown of hat-stiffeners.	Yes / No / Explain		
7	4) Part Geometry: Toro-spherical shell; Material: CFRP Sandwich & laminate & Test method: Simultaneous Water jet TT & PE	Opening of Small Diameter: 1000 mm; Opening of Large Diameter: Max 2500 mm; Thickness: 6 to 12mm; Size and figure is attached separately as Annexure A.	Yes / No / Explain		
8	5) Generic shapes and high curvatures, Material: CFRP Sandwich & laminate & Simultaneous Water jet TT & PE	Inner Dia.: 200mm, Depth: 250mm Length: 500mm to 5000mm; Thickness: 6 to 12mm; Size and figure is attached separately as Annexure A. Note: Active axis can be considered to access this type of curvature	Yes / No / Explain		
9	6) Tube/Cylinder, Material: CFRP laminate & Test method: Water-jet PE	Outer Dia. 125 mm minimum ; Thickness: 1 to 5mm; Size and figure is attached separately as Annexure A.	Yes / No / Explain		

10	4) Ultrasonic tests to be carried out	The system shall enable identification of defects like delaminations, disbonds, porosity, inclusions etc., in laminated and sandwich constructions, as applicable, using the following ultrasonic modes: 4.1 Through Transmission mode (TT): It uses two separate probes which are kept on either side of the component wall. One acts as a transmitter while other as a receiver. These probes have to be aligned to each other in such a way that the transmitter probe shall be normal to the test surface and both the transmitter and receiver probes shall be collinear. 4.1.1 Air coupled Through Transmission (Air-TT): In this setup mode, probes shall maintain a predefined stand-off distance from the component surface during the testing; based on air-coupled probe characteristics. Suitable system shall be configured to maintain the specified stand-off distance on either side of the test surface. 4.1.2 Water jet Through Transmission (Water-TT): In this setup mode, probes use water-jet as coupling media. The probes shall maintain a predefined water column distance	Yes / No / Explain		

		from the component surface during the testing; based on water-jet probe characteristics. 4.2 Pulse-Echo mode (PE): It uses a single probe which acts as both transmitter and receiver. Probe has to be normal to the component surface. 4.2.1 Water jet Pulse-Echo (Water-PE): The testing will be carried out using water-jet as coupling media. The probes shall maintain a predefined water column distance from the component surface during the testing; based on water-jet probe characteristics. The probes on the independent robots shall perform pulse-echo and through transmission testing simultaneously on the same part. 4.2.2 Pulse-Echo in bubbler type using Phased Array mode (Water-PAUT): It uses a phased array probe with water as couplant. The probe shall be in contact with the surface and shall exert a constant force at each point during testing. 4.3 Suitable water management system shall be configured to maintain laminar flow with constant pressure at each point of scanning on the test surface. Additional end-effector(s), if required, such as active axis for a robot shall be provided for testing high curvature		

		products.			

11	5) System configuration	The offered system shall incorporate following features: 5.1 The entire system shall comprise of hardware and software systems. 5.2 The hardware systems shall include dual Robot type probe positioning system, control PC, ultrasonic pulser-receiver, ultrasonic probes & cables, data acquisition system, water management system, safety system, etc. 5.3 Software systems shall include modules for scan path generation, interpolated motion control, data acquisition (position data & ultrasonic data), ultrasonic data processing and presentation in different scan formats such as A, B, C etc. The system shall have the necessary Graphical User interface to enable the user to visualize, set parameters of the probe positioner & ultrasonic unit, simulate and execute the scan, visualize the post processed output. 5.4 Laser or Optical Sensors or structured light camera End-effectors shall be provided for teaching of part geometry, whenever a part model is not available or for determining the position & orientation of a part.	Yes / No / Explain		

		5.5 Laser or Optical Sensors or structured light camera shall acquire point clouds for performing the above activities as given in section 5.4. 5.6 Accuracy of reconstruction made using the acquired point clouds of part surface shall be less than 1mm. 5.7 Part program shall be generated for C-Scan from the data obtained as point clouds by laser /Optical / Structured light camera end effectors or CAD models. For CAD models the part program must be able to position the CAD model of the product at the desired location within the machine envelope and generate scan path. 5.8 Generation of part program for C-scan activity shall also be possible using a Teach-in and playback software in the absence of CAD model. 5.9 The system shall carry out ultrasonic inspection of the test articles in automated mode following the generated scan paths, acquire the ultrasonic test data, integrate the data with the positioner location data, analyse & post process the acquired information in A, B & C Scan formats, storage of the processed data, archival and retrieval. Wherever defects are located, the system shall be configured so as to			

		re-position the probe at the defective location(s) based on the scan data. The boundary of the defect shall be marked on the test article using the Automatic Defect marker. 5.10 The system shall have the capability that, if the scan is interrupted / stopped either deliberately or due to power failure, the system should be able continue the scan from the point where it was stopped, without the loss of data which were acquired till intentional stoppage/power failure. 5.11 The proposed system shall be capable of detecting typical defects like delamination in laminated construction, debond between face skin and core in sandwich, porosity, inclusion etc. 5.12 The system shall have the capability of inspecting composite parts which include laminate, hat-stiffened & sandwich of generic shape with thickness varying from 1 to 50 mm – for laminate & hat-stiffened construction and from 6 to 150mm –for sandwich construction. 5.13 The proposed system shall also have following features: 5.13.1 Scalability: System shall have capability to get upgraded easily in			

		future by addition of required electronics, end-effectors, which enable inspection in three working volume and the probes on the independent robots shall perform pulse-echo testing simultaneously. It shall also allow configuring various end-effectors (like-Radii end-effector etc.). The inspection solution software shall allow the upgrade to new requirements that may arise, as for new part programs or quality standards. 5.13.2 The cable routing conduit shall have additional space to route the cables for future addition of new end effectors. The details of such provision shall be provided. 5.13.3 Robust and Proven solution: The inspection solution shall be very robust and proven. List of the similar supplied systems to major manufacturers from the aerospace industry around the world shall be provided. 5.14 The 3D model and drawings of robotic end effector mounting plate shall be provided by the party. This is to integrate different types of end effector in future. Also, the 3D footprint of the machine elements and its assembly shall be shared as part of machine design, and the same shall be used during mutual discussions. The			

		finalized model shall be finally provided to us in standard 3D cad formats. 5.15 The system shall have the suite of image processing tools installed either in the programming station or another system with high resolution graphics for image processing, data archival and retrieval. 5.16 All axis shall be designed with adequate rigidity to ensure minimum electronic noise and vibration free 100% scanning coverage of complex 3D surfaces.			
12	6) Automated Probe Positioning System specifications		-		
13	1) General	a) A dual Robot based probe positioning System with appropriate sub-systems shall be configured in order to scan the typical parts listed in section 3. b) Robot shall be from the standard manufacturers: Kuka or Staubli or C-Scan System supplier's own make.	Yes / No / Explain		
14	2) Vertical reach of Tool Centre Point (TCP) of both robots in TTU mode of testing	3000 mm (minimum)	Yes / No / Explain		
15	3) Horizontal reach of both robots TCP in TTU mode of testing	2500 mm (minimum)	Yes / No / Explain		
16	4) Linear (X-axis) movement of both the robot	7000 mm	Yes / No / Explain		
17	5) Payload capability of the robot	80 Kg or more	Yes / No / Explain		

18	6) End-effectors	a) Air-Coupled UT b) Water Jet (Squirter) UT c) Phased array UT d) Laser/Optical Teaching/Structured light camera e) Automatic Defect marker	Yes / No / Explain		
19	7) Automatic Defect marker	Necessary hardware and software shall be provided to mark the defect on the product based on the post processing of C-Scan data	Yes / No / Explain		
20	8) Automatic Tool changer	This device shall allow exchanging all the above End-Effectors automatically. Facility shall be provided for future upgrades of the machine; as new end-effectors shall be stored on it.	Yes / No / Explain		
21	9) Number of tools to be parked simultaneously at a time on parking area of automatic tool changer	10 nos.(minimum) on a single common tool changer or two individual tool changer along with each robot with 5 nos. of tools	Yes / No / Explain		
22	10) Overall dimensions	To be specified by the supplier with a detailed lay-out	Yes / No / Explain		

23	11) Construction	a) Duly fabricated, machined, stress relieved, surface treated and painted b) Heavy duty, capable of handing the weight of end-effectors c) Operation with low noise d) Brakes for steady positioning in tilted positions without shake e) Compact size for operation inside high curvature components f) Dust proof Motors and all other electronics of the system to protect against the Jetting water. g) Robotic shall be of min. IP65 class and hand IP67 class h) Stainless steel or Anti-corrosive or corrosion protected materials for system parts which are coming in contact with water, appropriate paints for the frame and all other metal parts. i) The system is expected to work in an area where overhead cranes are working. Hence protection / isolation against EMI shall be provided.	Yes / No / Explain		
24	12) Cable management	a) Proper cable management for easy maintenance and to enable the maximum speed of the system without affecting the SNR. b) Appropriate cable tray for ease of maintenance and to avoid cable bundling.	Yes / No / Explain		
25	13) Scan Speed range	Up to 500 mm/s for PE, PAUT and Air coupled TT & Up to 1000 mm/s for water-jet TTU mode	Yes / No / Explain		

26	14) Absolute Positional accuracy of TCP	Within ± 0.1 mm per 1000mm and 1mm (max.) on complete inspection volume	Yes / No / Explain		
27	15) Repeatability of TCP	0.1 mm or less	Yes / No / Explain		
28	16) Alignment accuracy between two nozzles in TTU	Less than 0.5 mm in total working volume	Yes / No / Explain		
29	17) Maximum dwell time during indexing in 3D scanning mode	Less than 2 seconds	Yes / No / Explain		
30	18) Robotic motor drives with encoders	a) Shall be from the standard manufacturers like Siemens or OEM make. The spare parts and service shall be available in India. b) The motors shall be selected to avoid/minimise EMI. The EMI level must be less than 10% with respect to ultrasonic signal at max. gain used for normal testing of CFRP components. c) Secondary encoders for axes, if required.	Yes / No / Explain		
31	19) Linear Traverse drives with encoders	a) Shall be from Siemens or OEM make. b) The motors shall be selected to avoid/minimise EMI. The EMI level must be less than 10% with respect to ultrasonic signal at max. gain used for normal testing of CFRP components.	Yes / No / Explain		

32	20) Teaching, referencing and Scan path generation	a) The teaching tool acquires points of new parts' geometry and can also determine the part position within the working area, by means of three point's reference. b) Laser or Optical End-effectors or structural light camera shall be provided for teaching of part geometry, whenever a part model is not available and, for determining the position & orientation of a part. c) Laser or Optical Sensors or structural light camera shall acquire point clouds for performing the above activities. d) Accuracy of reconstruction made using acquired point clouds of part surface shall be less than 1mm. e) Part program shall be generated for C-Scan from the data obtained as point clouds by laser / optical end effectors / structural light camera or CAD models. For CAD models the part program must be able to position the CAD model of the product at the desired location within the machine envelope and generate scan path. f) Scan path generation and referencing of the components using Teach and Learn & CAD models g) The scan path generation program shall provide the scan path for different end	Yes / No / Explain		

		effectors with variables such as scan increment, indexing increment, offset distance etc. The scan path shall be visualised and shall be editable, if required.			

33	21) Motion Control for the precise execution of part program	a) Motion control based on industrial type CNC- Siemens or OEM make. b) Jog mode, MDA (Manual Data Automatic) mode and fully auto mode shall be enabled for the motion control. c) In Air/water-jet through transmission testing, the pulser probe shall be normal to the test surface and both (pulser & receiver) probes shall be collinear. d) In water-jet Pulse-Echo testing, probe shall be normal to the test surface and the probes on the independent robot shall perform pulse-echo and through transmission testing simultaneously on the same part. e) In Phased Array bubbler type testing, the probe shall be in contact with the surface and shall exert a constant pressure during testing in the scanning process. f) The probe holder of PAUT shall have suitable mechanism to hold and take care-of minor surface variation (± 50 in both planes) on the test part while testing. g) Remote teach pendent to be provided near the Dual Robot to control the movements of axis motion. h) Pulser-receiver hardware shall be housed in controlled environment (Air-conditioned). i) UPS Backup for 10 minutes minimum shall be provided for	Yes / No / Explain		

		the controller and PC's for controlled shutdown without any loss of data			
34	22) User interface for setting of the work	Each axis of motion shall be controlled from operator console and also from remote hand teach pendent to teach the point of scanning.	Yes / No / Explain		
35	23) Lubrication System	Automatic system PLC controlled with provision to collect excess lubricant, which can be discharged manually during maintenance.	Yes / No / Explain		
36	24) Universal Base Frame	The base frame shall be designed for a maximum weight (part along with test fixture) of 5 ton or more. The base shall have: a) Powder-coated steel frame b) Opening provision for Maintenance	Yes / No / Explain		
37	25) Automated probe alignment verification in TTU mode	Alignment of probes in the through transmission mode shall be done automatically and ensured 80 % of Full Screen Height (FSH) of UT signal with minimum gain before starting a scan.	Yes / No / Explain		
38	26) Automated Calibration of the System	Provisions for automated laser tracker based error mapping with automated report generation are to be provided. Customer shall be able to input the error values in the error compensation software for necessary correction.	Yes / No / Explain		

39	27) Universal part clamping Fixture	The part clamping Fixtures shall be designed catering to the typical part configurations given in Section: 3 of this document. Maximum weight of the components is 200kg. It shall have following features: a) Powder coated steel/extruded Aluminium frame b) Proven concept c) Flexible & Modular design d) Short Adaption time e) No/minimum tool requirement f) Repetitive accuracy to be specified g) Reproducible positioning h) Hand wheel adjustment in X-direction	Yes / No / Explain		
40	6.1 Ultrasonic (Air Coupled)		-		
41	1) Inspection Techniques	Air Coupled Through transmission testing	Yes / No / Explain		
42	2) Pulser-receiver (UT electronics)	Shall be from the standard manufacturers like M/s SonoTec, Germany or M/s Hillger NDT GmbH, Germany or C-Scan System supplier's own make. Shall have proven utility in automation systems. Details of the same shall be provided.	Yes / No / Explain		
43	3) Data acquisition	Automated Data acquisition in through transmission mode (Amplitude, Time of Flight & Energy), A-Scan & C-Scan.	Yes / No / Explain		
44	4) Gain(Nominal)	0- 90 dB or better	Yes / No / Explain		
45	5) Pulser Voltage	Up to 400 V (P to P) or better with variable width	Yes / No / Explain		

46	6) A/D sampling rate (Nominal)	20 MSPS, 14 bits or better	Yes / No / Explain		
47	7) Pulse repetition frequency	Minimum 500 Hz for high scan speed	Yes / No / Explain		
48	8) Frequency Range	50 KHz to 500 KHz or better	Yes / No / Explain		
49	9) Nominal frequency of transducers to be supplied along with the system	a) 50 KHz – 1 Set b) 120 KHz – 2 Sets c) 225 KHz – 2 Sets d) 400 KHz – 2 Sets ; 1 set consists of 1 pulser & 1 receiver	Yes / No / Explain		
50	10) Calibration certificate for the transducers	to be provided as per ASTM or ISO equivalent	Yes / No / Explain		
51	6.2 Ultrasonic (Water-Jet)		-		
52	1) Inspection Techniques	Water-jet through transmission and pulse echo	Yes / No / Explain		
53	2) Pulser and receiver (UT electronics)	Shall be from the standard manufacturers (RITEC or Olympus or Force Technology) or C-Scan System supplier's own make	Yes / No / Explain		
54	3) Pulser	up to 350V or better with variable pulse width	Yes / No / Explain		
55	4) Amplifier	Linear and Logarithmic	Yes / No / Explain		
56	5) Frequency	1 MHz to 25MHz or better	Yes / No / Explain		
57	6) Gain	0-95 dB for linear amplifiers or better	Yes / No / Explain		
58	7) Dynamic range	0-90 dB or better for logarithmic amplifier	Yes / No / Explain		
59	8) No. of gates	Min. 4 Nos. in each channel	Yes / No / Explain		
60	9) PRF range	20 to 2000Hz or higher (Adjustable)	Yes / No / Explain		
61	10) A/D sampling rate	100 MSPS, 14 bits or Better	Yes / No / Explain		
62	11) DAC / TCG	Up to 50 dB or Better	Yes / No / Explain		

63	12) Frequency filters	Digital programmable and/or Hardware filters	Yes / No / Explain		
64	13) Data Acquisition	a) Simultaneous Through Transmission (TT) data and Pulse Echo (PE) Amplitude, PE Time of Flight data during UT inspection b) Full waveform capture; Amplitude and Time of Flight data, as required, for the above mode(s). c) Data acquisition using logarithmic and linear amplifiers.	Yes / No / Explain		
65	14) Nominal frequency of transducers to be supplied along with the system	a) 1 MHz- 2 Sets b) 2.25 MHz- 2 Sets c) 5 MHz- 2 Sets d) 10 MHz – 1 Set; 1 set consists of 1 pulser & 1 receiver	Yes / No / Explain		
66	15) Dual frequency transducer	2.25 MHz and 5 MHz – 1 set; 1 set consists of 1 pulser & 1 receiver	Yes / No / Explain		
67	16) Water jet Nozzle Diameter	a) Ø 6mm – 12 pairs (24 nos.) b) Ø 4mm – 4 Pairs (8 nos.) c) Ø 8mm – 4 pairs (8 nos.)	Yes / No / Explain		
68	17) Calibration certificate for the transducers	to be provided as per ASTM E 1065 or EN 12668 or ISO equivalent	Yes / No / Explain		
69	18) Ultrasonic System Calibration setup	The supplied system should have capability for calibrating water coupling UT instruments according to related standards (As per ASTM E 317 or EN 12668 or ISO equivalent	Yes / No / Explain		
70	6.3 Ultrasonics (Linear Array Module)		-		
71	1) Inspection method	Bubbler type Phased Array ultrasonic in pulse-echo mode	Yes / No / Explain		

72	2) Pulser-receiver (UT electronics)	Shall be from the standard manufacturers (M2M, Force Technology) or C-Scan System supplier's own make	Yes / No / Explain		
73	3) Aperture & 4) Active channels	1 to 32 elements & 32	Yes / No / Explain		
74	5) Nos. of channels	64 minimum	Yes / No / Explain		
75	6) Pulser Type	Negative square and/or Spike wave	Yes / No / Explain		
76	7) Pulse Voltage	up to 100 V or better with 1V steps	Yes / No / Explain		
77	8) Pulse width	20 to 100 ns or better	Yes / No / Explain		
78	9) PRF	20KHz or better	Yes / No / Explain		
79	10) Frequency bandwidth	1 MHz to 20 MHz or more	Yes / No / Explain		
80	11) Pulser rise time	<15 ns	Yes / No / Explain		
81	12) Electronic Scan types	Linear, Focussing	Yes / No / Explain		
82	13) Data acquisition	Pulse-echo Amplitude, Time of flight	Yes / No / Explain		
83	14) Gain Range	0 to 80dB or better with 0.1 dB steps (analog gain) 0 to 40dB or better with 0.1 dB steps (digital gain)	Yes / No / Explain		
84	15) A/D sampling rate	100 MSPS, 14 bits or better	Yes / No / Explain		
85	16) Gates	Full A-scan acquisition, 4 gates or more, 1 gate for interface echo synchronization.	Yes / No / Explain		
86	17) Signal modes	RF, True Envelope, Rectified (full, +/-), Logarithmic (digital & analog)	Yes / No / Explain		
87	18) Frequency filters	Digital programmable and/or Hardware filters	Yes / No / Explain		

88	19) Noise reduction filters	To be specified	Yes / No / Explain		
89	20) Nominal frequency of the transducers/Array Probes to be supplied along with the System	a) 1.5 MHz: 32 elements (1 No.) b) 2.5 MHz: 32 elements (1 No.) c) 2.5 MHz: 64 elements (1 No.) d) 5.0 MHz: 16 elements (1 No.) e) 5.0 MHz: 32 elements (1 No.) f) 5.0 MHz: 64 elements (1 No.)	Yes / No / Explain		
90	21) Accessories for testing hat-stiffener section (crown & webs)in test parts	Stringer bubbler tool mechanism and probes of 5MHz frequency with necessary attachment to enable positive contact of PAUT probes while testing webs and crown of hat-stiffeners.	Yes / No / Explain		

91	6.4 Water management:	1) The Water System shall be a closed loop system providing laminar couplant flow to the end effector tooling and shall consist of all necessary valves, pumps, filters and a storage tank of 2000 litres. Each end effector tool shall have water supply through its own water supply plumbing, automated flow control and flow meter. The inlet pressure at the effector must be kept constant automatically on both sides in spite of differential height, positions and orientations of feed system. The following components shall be included in the water management system: - Dual zone cartridge filters for continuous operation - UV-lamp for bacteriological control - Couplant flow control for each End Effector - Remote I/O operation - Level sensor with automated refill - Optical level control (tube) - Multistage return line filtration (Sand Filter) - Sand filter with flush back function for dust removal 2) Water column sustainability: The entire scan envelope shall have the uniform water pressure, water path shall have a laminar	Yes / No / Explain		

		flow without drooping at 50mm nominal water path distance or more on either side of the component for ultrasonic testing using water-jet technique. 3) Water Path should be computer controlled to minimize the time to get correct water path with probe change. 4) Curtains shall be provided around the scan envelope to prevent water splashing. Any kind of splashed water should not come out of scanning envelop area. 5) Water system shall have facility to remove air bubble and facility to minimize the splashing during scan. 6) Proper water management system with automated water regulation for bubbler type Phased Array Ultrasonic Testing to be provided. Details of the water management system shall be provided.			

92	6.5 Computer and Accessories:	1) Industrial grade Personal Computer for on-line scanning and Data Acquisition: a. Processor- Intel i7 or higher (Latest Generation) b. RAM- 64 GB c. Hard Disk- 4TB SSD (Minimum) d. Display Card- with 12 GB memory e. Display monitor – High definition 40 inch (or better) Dual monitor with supporting SMPS, Keyboard and Mouse with the latest advanced configuration f. Network Attached Storage (NAS) Device shall be provided. - Processor Speed: 1.7 GHz or better - Standard Memory: 8 GB - Total Hard Drive Capacity: 16 TB - Interfaces: Gigabit Ethernet & USB 3.0 Ports 2) PC for post-processing and analysis: a. Processor- Intel i7 or higher (Latest Generation) b. RAM- 64 GB c. Hard Disk- 4TB SSD (Minimum) d. Display Card- with 12GB memory e. Display monitor- High definition 55 inches (or better) With supporting SMPS, Keyboard and Mouse. (or with the Advanced/ latest configuration) 3) Colour Laser Printer (copier, scanner): Heavy duty, minimum speed 20 copies per minute. 4) Remote teach pendent to control	Yes / No / Explain		

		the movements of axis motion near the system – 1 no.			
93	6.6 Software Requirements:		-		

94	1. General	a) Software suite shall integrate all the necessary functionalities to complete the entire inspection process module such as planning, UT calibration, data acquisition and evaluation, part geometry capturing and processing, inspection programming, dual robotic control and reporting of results. b) It shall allow the operator to specify/adjust all the parameters needed to define, configure and carry out the inspection. c) It shall facilitate storage of all data needed for the inspection in a data base. All the modules shall share the same data. d) Planning module shall collect and store all the information about the component to be tested such as: Project information, Part name & ID, Part geometries, Inspection plan etc. e) All software package provided shall be compatible with latest generation windows operating system. f) All software packages shall be part of original equipment. g) The software upgrades if available shall be provided at no cost for a period of 5 years after the supply. h) Perpetual license shall be provided for all Software supplied. i) All backup	Yes / No / Explain		

		software's shall be provided in DVD / USB Hard Drives.			
95	2. Calibration	a) Calibration module shall allow the user to select the ultrasonic signals and perform calibrations of time (sound path) and signal amplitude using reference signals from standard or reference parts. The user shall be allowed to carry out this operation with real-time display of the signals. b) All the parameters established during the calibration process shall be saved in a file and provision to recall during both the acquisition process and subsequent calibrations. c) It shall have features to configure the following: Channel management, Pulser/receiver, A/D conversion, Gates, Filters, TCG, Focal laws, Saturation alarm, Back- wall echo synchronized gates, Reference curve dB/mm.	Yes / No / Explain		

96	3. Data acquisition	a) Full 3D acquisition so that correlation to the position on part is ensured. b) Ultrasonic tools: Frequency analysis (FFT), Interface gate monitoring, Dynamic echo. c) Software shall have tools to import CAD files to generate scan program/part program. d) The part program stored in the system's memory shall be available for repetitive scan. e) If the scan is interrupted / stopped either by pausing or due to power failure, the system should be able continue the scan from the point where it was stopped, without the loss of data. f) Ultrasonic setup details are to be stored in scan file which shall be recalled by the operator at a later date along with motion control parameters. g) Front-Wall, back wall tracking option shall be provided in pulse echo mode of scanning. h) Multiple files to be allowed to be opened and evaluated at the same time, with synchronized cursors. i) Curvature compensation algorithms for curved parts is preferable.	Yes / No / Explain		

97	4. Post Processing	a) Parameters to be evaluated such as: Attenuation, distance, time of flight, etc. b) Defect marking and measurements on scan images: Tools for marking indications: line, angle, point, text; Measurements: length, angle; Data base storage of evaluated areas for report generation. c) Automatic Report generation d) The following tools shall be provided for the operator to position the probe anywhere in the scan envelope selectable in the C-scan image without touching the part for verifying the data. i. Go-to-point ii. Re-test iii. Defect marking e) Evaluation tools: i. Automatic defect sizing ii. Statistical analysis of area. iii. Position tool with information display for each pixel iv. Histogram analysis v. Conversion from linear to logarithmic scale. vi. Size correction for indications inside radius area: to be specified vii. SNR calculation tools f) Post-scan software edit for full A-scan acquired data: TCG, gates, gain, velocity of sound g) Automatic analysis thickness mapping tool to identify thickness variation in the TOF C-Scan. Features to compare measured	Yes / No / Explain		

		TOF C-Scan and Calibrated UT Sound or the design value that is entered in the tool is preferable h) Porosity measurement tools: i. Tool to identify automatically region of porosity in a part based on established criteria. ii. Automatic analysis tool that shall detect and group discordant values in an image. iii. To detect the pixels of the image that exceed the threshold value. Provision to ignore those groups whose area is smaller than the specified one. Provision to join those groups of defects whose distances are less than the specified distance. i) Saving the Region of interest image with C-scan data from the full image C-scan data j) Comparison of different parts scanned at different times: to be specified			

98	5. Display of Post processed data	a) A, B, C and any other views in amplitude and sound path. b) Overlay of UT data (C-scan) on CAD model / 3D model c) Simultaneous display of multiple A Scan, B Scan and C Scan or combinations of two or more scan data on screen for comparative study. d) Configurable layout of UT views e) Colour palette: upto 256 Colour and shades of grey. Discrete and continuous. f) Scaling and Zoom	Yes / No / Explain		
99	6. Storage and Reports	a) Printing: Colour and scales of grey equivalent to those on screen, Real size (1:1) printing b) Exporting: i. Images: PNG, TIFF ii. C-scan data for customised post processing c) Reports: Automatic generation of MS Word and PDF reports including images and data. User-configurable templates for MS Word reports d) Backup: User configurable automatic copy of data files after inspection	Yes / No / Explain		

100	6.7. Defects and Defect Sizes:	1) The system shall be able to detect the defects in the specimen supplied by CMSE/VSSC like % of porosity – 2% in monolithic carbon composite; delamination; inclusion; debond/disbond in honeycomb/sandwich interface; in composite structural parts. a) The defect sizes that system must detect on flat panels are given below: i) In Water-Jet P/E and PAUT Testing Mode: Monolithic Construction with minimum size of defects : 5mm x 5mm (Nominal) to be detected with 500 mm/s Scanning speed (minimum). ii) In Water-jet TTU Testing Mode: Sandwich Construction with minimum size of defects : 10mm x 10mm (Nominal) to be detected with 1000 mm/s Scanning speed (minimum). iii) In Air Coupled TTU Testing Mode: Sandwich Construction with minimum size of defects : 20mm x 20mm (Nominal) & Monolithic Construction with minimum size of defects : 10mm x 10mm (Nominal) to be detected with 500 mm/s Scanning speed (minimum). b) Scanning on the specimens shall be planned such that the defects inbuilt in the specimens get detected at the scanning speed specified above.	Yes / No / Explain		

		2)Scanning uniformity test on defect free 3D part within the entire scanning area for water-jet TTU mode of testing shall be demonstrated. It shall be within 2.0 dB over 95% area without application of any filters. (Supplier can use a “Plexiglass/ Perspex” plate for demonstrating the uniformity).			

Document : Annexure A : Product Profile

Document : Detailed Sub-system cost break-up format

Document : pdf documents containing specificaiton and Annexure A

Common Specifications (Applicable for all items)

Sl No	Specification	Value	Compliance	Offered Specification	Remark

1	7) Safety Requirements	1) The two sides of the scanner area shall be surrounded by hard fence and remaining one side shall be with photo-electric cell mechanism – so called photo-electrical fence. During part scanning operations, an "intrusion" into the scan area shall activate these modules and thereby the scanner will commence into "emergency stop" mode and the motion will be stopped. 2) Emergency stop buttons shall be located at 4 corners of the manipulator. An emergency stop to be provided through Scan computer (Operator console) and HMI provided near the manipulator. 3) Appropriate sensor(s) shall be a provided to prevent collision of probe with the inspection parts. 4) To ensure fail-safe operation of the system, all the axes shall have Electrical limit switches, Mechanical limit switches and Mechanical stoppers. 5) Fail safe braking of motors 6) IP cameras shall be provided at a suitable line of sight for inspection area. The image from the camera shall be presented on additional monitor on the operator desk. 7) High power and low power cables, control panel and other major items shall be “Rodent Proof” and in conformance with relevant safety standard. 8) The system shall be	Yes / No / Explain		

		capable to run continuously for minimum 16 hours per day without failure.			

2	8) Vendor Selection Criteria:	1) Offer shall be from Original Equipment Manufacturer (OEM) only. 2) Parties shall have proven capability in implementing a fully Automated Robotic Based Ultrasonic C-scan system with at least two modes of testing specified in this tender document; preferably for aerospace applications. Testimonials shall be provided for the same. 3) Parties shall provide the list of customers to whom similar equipment under offer including the probe positioning system, motion control, electronics & ultrasonics as an integral unit has been supplied. Vendor shall provide detailed addresses of customers along with contact person's details. 4) The parties who have supplied at least two similar systems (dual robot based C-scan system) and which are working in a production environment satisfactorily only will be considered for evaluation. 5) Party from abroad shall have a local representative in India for providing spares and service support for at least ten years. 6) Detailed compliance statements with supporting document shall be provided in the bid (mere yes/compliance or no/not compliance will not be considered). 7) As part of techno-commercial evaluation, parties	Yes / No / Explain		

		need to present the detailed design and layout of the automated ultrasonic C-scan system, make and features of all sub-systems, material of construction, compliance with specifications in full; to a Technical Evaluation Committee. Based on the compliance, presentation and clarifications if any, parties will be short listed for further processing.			

3	9) System Acceptance Criteria:	1) Design Phase: After order placement, party shall present detailed design and layout of the automated ultrasonic c-scan system, make and features of all sub-systems, material of construction. Fabrication and assembly of the system shall start only after getting overall design approval from VSSC. It is the responsibility of the party to make proper design and realise the entire system to meet the end requirements. The 3D footprint of the machine elements and its assembly shall be shared as part of machine design, and the same shall be used during mutual discussions. The finalised model shall be finally provided to us in standard 3D CAD formats. 2) Pre-Delivery Inspection at party's site: The pre-delivery inspection shall be carried out at manufacturer place in fully operational configuration, demonstrating all features and functional requirements conforming to purchase order specifications. The party shall demonstrate detectability of defects on reference specimens supplied by VSSC as per section 6.7 of this document; during pre-delivery inspection. 3) Final Acceptance: Installation and commissioning shall be carried out by the party on turn-key basis at CMSE, VSSC. The	Yes / No / Explain		

		components to be tested will be provided by VSSC. Also, all features and functional requirements of the integrated system shall be demonstrated in compliance with purchase order specifications in full.			

4	10) Training:	1) Minimum two-weeks training on all the features of the system shall be imparted to VSSC personnel at CMSE, VSSC, Vattiyoorkavu, Trivandrum, Kerala, India. 2) Training shall be provided on all aspects of system operation and maintenance including the following: I. Operator training shall include: a) guidance on all functions of the machine and operating software. b) general description of the machine construction and motion c) general description of the supplied ultrasonic system d) routine start-up operations e) scanning parts using pre-existing scan plans f) scanning parts using Laser end-effectors g) set-up of scan plans from CAD model h) set-up of scan plans by teach and learn i) set-up & part programme generation for non-uniform thick parts in PAUT mode j) description of ultrasonic variables with respect to the supplied system k) selection of gates for amplitude and time of flight l) image processing and measurement functions m) image processing tool options n) full waveform capture and processing o) routine operator maintenance p) fault diagnosis & corrections	Yes / No / Explain		

		q) automated calibration of the system II. Maintenance training on all aspects including the following: a) system mechanisms b) electrical layouts and schematics c) boards and controls d) software features e) routine maintenance, lubrication and servicing of mechanical parts f) routine maintenance and servicing for electronics g) fault finding & corrections h) Recalibration of Entire system			
5	11) Delivery Schedules:	The offer shall clearly indicate the delivery schedule for the following milestones from the date of receipt of order. a) T0: Receipt and acknowledgement of the purchase order. b) T1: Submission of design for clearance from VSSC. c) T2: Readiness of components and sub-systems if required. d) T3: Pre-dispatch inspection at the party's site. e) T4: Installation, Commissioning & Training at CMSE, VSSC, Vattiyoorkavu, Trivandrum, Kerala, India. The party shall mention the duration of T1, T2, T3 & T4 with respect to T0.	Yes / No / Explain		

6	12) Electrical Requirements:	a) The line voltage is 415V ± 10%, 3 Phase, 50 Hz supply. The system should be protected against voltage fluctuation, spikes and frequent power interruption with suitable AVR. b) All electrical and electronic systems should be in a cabinet with built-in air conditioner. c) Necessary electrical layout requirement shall be furnished by the party. d) Special earthing requirements if any, shall be intimated to VSSC along with full foundation details. e) UPS power requirement to be provided if required. f) Total power requirement for the entire system shall be provided.	Yes / No / Explain		

7	13) Warranty and Annual Maintenance Contract:	1) Warranty shall be provided by OEM only. 2) System must be warranted for trouble free service for a period of two years from the date of successful installation, commissioning and acceptance at VSSC, Vattiyoorkavu, Trivandrum, Kerala, India. 3) Post- warranty AMC (Non-Comprehensive) including two Preventive Maintenance visits per year and any number of break-down calls shall be quoted for at least three years. Essential spares with price breakup shall be quoted separately for trouble free operation of C-scan system for at least five years. 4) Consumable spares (free of cost) shall be provided to ensure the trouble free operation during warranty period. 5) Party shall agree to provide AMC for the system for a period of 10 years. 6) The vendor from abroad shall have a local representative. Party shall provide spares support for at least next ten years. 7) The software upgrade if available shall be provided at free of cost for a period of 5 years after the supply. 8) All necessary tools shall be supplied for operation and maintenance of the system.	Yes / No / Explain		

8	14) Documents:	Detailed manuals and drawings pertaining to all the aspects of system electronics, controls, transducers and mechanical hardwares; for general maintenance and troubleshooting are to be provided in English language. Back up copy of the entire system software to be provided in USB/HD. Complete documentation shall include the following: a) Description of system and sub-assemblies b) Operating procedure for routine scanning c) Operating procedure for teach and learn functions d) Software manual e) Routine maintenance instructions f) Mechanical assembly drawings g) Foundation details and drawings h) Recommended spare parts list i) Electrical wiring schematics j) Electronics circuit schematics k) Technical reference manuals for standard modules l) Back-up CDs for the system software. m) Recalibration procedure for the geometrical calibration of the mechanical system	Yes / No / Explain		

9	15) Other Information Requested in Offer:	1) Drawings of civil works requirements including foundation, trenches and associated civil engineering works, and all other requirements for installation and commissioning of the equipment at CMSE, VSSC, Vattiyoorkavu, Trivandrum, Kerala, India, are to be provided at the time of design approval. VSSC shall provide the foundation as per supplier requirement. 2) Other infrastructural support if any, shall be intimated to VSSC well in advance. 3) The responsibility of unloading the system at CMSE/VSSC site lies with the party.	Yes / No / Explain		

10	16) Commercial Terms:	1) The parties participating in the tender have to submit their offers in two-parts i.e., Technical Bid (including price bid with prices masked) and Price Bid separately in sealed covers. Technical bids shall include commercial terms and conditions also. 2) In part 1- Technical bid, the party has to fill the compliance matrix for all the specifications/requirements. Descriptive statements to be provided, as applicable, in the compliance check list. Relevant proof/supplementary document for the compliances are to be furnished and shall be referenced to the technical bid. 3) Technical leaflet/ brochure (in English) and write-up (in English) of the proposed model of the system must be furnished by the party along with the quotation. 4) In part 2- Price Bid, detailed system cost break-up shall be furnished as per the format attached. 5) All other commercial terms as per VSSC norms.	Yes / No / Explain		

Supporting Documents required from Vendor

1. List of customers along with contact persons details shall be provided to whom similar equipment under offer including the probe positioning system, motion control, electronics & ultrasonics as an integral unit has been supplied.

2. Technical data sheet with full drawing and material details

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	AMC shall be quoted for separately for three years after Warranty period	Yes / No / Explain	
2	Warranty	Yes / No / Explain	
3	Training	Yes / No / Explain	
4	Delivery Period	Yes / No / Explain	
5	Delivery Terms	Yes / No / Explain	
6	In case of Ex-Works, please indicate packing, forwarding & freight charges up to VSSC, separately	Yes / No / Explain	
7	Liquidated Damage - As detailed in Annexure	Yes / No / Explain	
8	Taxes and Duties if any (Concessional rate applicable for GST and Customs Duty as per notifications mentioned in our special conditions)	Yes / No / Explain	
9	Payment Terms [within 30 days after receipt and acceptance of item for indigenous/Sight Draft for import cases]	Yes / No / Explain	
10	Warranty	Yes / No / Explain	
11	Performance Bank Guarantee	Yes / No / Explain	
12	Security Deposit (Where ever the offer value is Rs 5.00)-You should submit Bank Guarantee (Rs.200/- stamp paper) for 3% order value (DOS:PM:07 format enclosed) from a Nationalised/ Scheduled Bank valid for 2 Months beyond the date of completion of order along with order acknowledgement. This security deposit without any interest thereon shall be returned to the Supplier on successful completion of the Purchase Order or shall be adjusted/forfeited .against non-fulfillment of any of the contractual obligations.	Yes / No / Explain	
13	Port of Despatch & Mode of despatch	Yes / No / Explain	

14	Quote Validity : Minimum 180 days [for Two Part Tender]	Yes / No / Explain	
15	Name and Address to Which order to be placed. Please include contact details like mobile no. and email id	Yes / No / Explain	
16	Any other conditions . Attach your quotation in PDF format	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	Automated multi-axis multi-mode Ultrasonic C-Scan System	1.00 Sets		-		

Common charges (Applicable for all items)

P&F (Amount)	
Freight (Amount)	
Discount (Amount)	
Any Other Charges (Amount)	