

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
LIQUID PROPULSION SYSTEMS CENTRE (LPSC-B)  
BANGALORE**

**Tender for DEVELOPMENT OF ADDITIVE MANUFACTURING PARTS  
FOR SPACECRAFT PROPULSION SYSTEM**

**Bids to be submitted online**

**Tender No.: LPSC-B/Liquid Propulsion Systems  
Centre,Bengaluru/LB202300012701 dated 13-05-2023**

## A. Tender Details

Tender No :	<b>LPSC-B/Liquid Propulsion Systems Centre,Bengaluru/LB202300012701</b>
Tender Date :	<b>13-05-2023</b>
Tender Classification:	<b>GOODS</b>
Purchase Entity :	<b>Liquid Propulsion Systems Centre,Bengaluru</b>
Centre :	<b>LIQUID PROPULSION SYSTEMS CENTRE (LPSC-B)</b>

## **DEVELOPMENT OF ADDITIVE MANUFACTURING PARTS FOR SPACECRAFT PROPULSION SYSTEM**

DEVELOPMENT OF ADDITIVE MANUFACTURING PARTS FOR SPACECRAFT PROPULSION SYSTEM

### A.1 Tender Schedule

Bid Submission Start Date :	<b>13-05-2023 16:00</b>
Bid Clarification Due Date :	<b>29-05-2023 14:00</b>
Bid Submission Due Date :	<b>12-06-2023 14:00</b>
Bid Opening Date :	<b>12-06-2023 14:07</b>
Price Bid Opening Date :	<b>19-06-2023 15:00</b>

## B. Tender Attachments

NA

### Instructions To Vendors

#### 1. GENERAL INSTRUCTION TO TENDERERS : SINGLE or TWO PART PUBLIC TENDER(PT)

1. All the procurement is assumed to be SEA FREIGHT ONLY, in case any change in mode of delivery, this has to be clearly specified with justification

2. ONLY CLASS I/CLASS II LOCAL SUPPLIERS ARE ELIGIBLE TO PARTICIPATE IN THE TENDER ENQUIRY.

Note: (a)CLASS I: Those suppliers/service providers whose goods/ works/ services offered for procurement meets Local content equal to or more than 50%.

(b)CLASS II : Those suppliers/service providers whose goods/ works/ services offered for procurement meets Local content more than 20%.

(c) The 'Class-I local supplier'/ 'Class-II local supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for 'Class-I local supplier'/Class-II local supplier', as the case may be. They shall also give details of the location(s) at which the local value addition is made along with the offer.

3. As far as implementation of public procurement policy (Preference to make in India) Order, 2017 is concerned, the Office Orders vide No. P-45021/2/2017-B.E-II dt. 15.06.2017, which is partially modified by Order No. P-45021/2/2017-PP(BE-II) dt. 28.05.2018, Order No.P-45021/2/2017-PP(BE-II)dt. 29.05.2019, Order No. P- 45021/2/2017-PP (BE-II) dt 04.06.2020 and Order No.P-45021/2/2017-PP (BE-II) dt 16.09.2020 and subsequent Amendments issued by the Department for Promotion of Industries and Internal Trade, Ministry of Commerce and Industry and Internal Trade, Ministry of Commerce and Industry regarding Class-I/Class-II local suppliers, Purchase preference, verification of local contents etc shall be applicable to this tender. Therefore, bidders may ensure compliance of the same while submitting tenders.

4. Based on the response to the e-Public tender Notice, LPSC(B) reserves the right to change any milestone date of the tendering activity.

5. Bidders are expected to comply with the technical & commercial and other terms and conditions given in vendor specified terms of this tender. In case of any deviation, the reasons thereof should be clearly specified in the vendor specified terms column.

6. Bids will not be entertained after the due date and time.

7. Delivery Terms:

In case of Indigenous items : FOR LPSC, BANGALORE

In case of Foreign orders: EX-WORKS / FOB /FCA

8. EARNEST MONEY DEPOSIT NOT APPLICABLE

9. Fax & Email offers are not accepted.

10. Head, Purchase and Stores, LPSC, Bangalore, reserves the right to accept or reject any/or all the tenders in part or full without assigning any reasons thereof.

11. If an agent submits bid on behalf of the Principal/OEM the same agent shall not submit a bid on behalf of another Principal/OEM in this tender for the same Item/Product.

12. In a tender, either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same Item/Product in this tender.

13. In case of any clarification to be sought to this tender you may please contact Purchase and Stores Officer (PSO) through Email: [purchase@lpsc.gov.in](mailto:purchase@lpsc.gov.in) and Ph No: 080 250 37 170/171/140

14. Instructions to Indian Agent:- Bidders are required to provide the following information in respect of their authorization from their Principal, if any, along with technical bid as the same is mandatory as it is required for consideration of the bid. Name, Address, Telephone no. , Fax no., email of the Indian Agent including the contact person to be provided.

15. LPSC(B) reserves the right to verify all claims made by the bidder.

16. Original Equipment Manufacturer (OEM) or their representative can submit bid to LPSC(B). Indian agents while quoting on behalf of their principals are requested to attach necessary authorization letter from their Principals in their bid.

17. Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs. Such MSEs shall produce documentary proof of registration as per provisions of the Policy ie: registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum or any other body specified by Ministry of MSME.

18. Request for the extension of the due date will not be considered.
19. Tenderers can participate in the said tender opening for which, the representative of the firm shall be duly authorized by Competent Authority. Against proper e-authorization only such representatives shall be allowed to attend the tender opening.
20. TENDER FEE NOT APPLICABLE.
21. Tenders which are not prepared in terms of these instructions are liable to be rejected.
22. The exact date and time of opening of price bid of successful tenderers will be intimated later.
23. The offer should be valid for a minimum period of 120 days from the due date of opening.
24. The parties are advised to download the tender and submit the bid on online at least two days prior to Tender Closing Date to avoid last minute network problem. The due date shall not be extended due to network or computer related problems.
25. The quoted price is fixed & firm. Once the offer is submitted in on line mode by the vendor and bid sealing is done by LPSC(B), vendor will not be able to provide revised offer.
26. The quote should indicate quantity wise unit rate separately which have to be filled online in Price Part-II. The Prices are to be mentioned both in figures as well as in words. The GST, Duties, etc., are to be calculated and indicated in the column provided in online forms explicitly.
27. The vendors have to compulsorily submit the compliance statement online otherwise their offer will not be considered for further evaluation. Before entering the compliance statement, vendors are advised to refer the detailed specification provided in the Technical Writeup/ Drawings document. The specification offered by the vendors may also be indicated in the compliance statement wherever necessary.
28. The vendors have to get themselves registered in above site to download the tender details. To register in above ISRO portal (<https://eprocure.isro.gov.in>) the vendors need to have Class - III Digital Certificate. The Digital Certificate can be obtained from any digital certifying authority. The following e-tokens with their current drivers are tested and working fine with our system. Aladdin, Vasco, Starkey, Moser baer, E-pass-2003, Safenet-2032, WD Proxkey Grey / SPC Token and Trustkey.

## C. Bid Templates

### C.1 Technical Bid - DEVELOPMENT OF ADDITIVE MANUFACTURING PARTS FOR SPACECRAFT PROPULSION SYSTEM

#### 1. 3D Printing / Additive Manufacturing (Metals , Polymers etc.) - Development of Additive Manufacturing Parts for Spacecraft Propulsion System (Tee Joint & IMSO)

##### Item specifications for 3D Printing / Additive Manufacturing (Metals , Polymers etc.)

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Description	Complied (Yes or No)	Yes / No / Explain		
2	Scope of Party		-		
3	3.1 To source SS 304L and Inconel 600 powders.		-		
4	3.2 Production of Additive Manufactured Coupons as per requirement mentioned in Annexure-1.		-		
5	3.3 Party should give uninterrupted access to LPSC representatives to visit party premises at any time prior and after purchase order placement.		-		
6	3.4 Packing, forwarding and delivery of additive manufactured coupons to LPSCB along with report covering powder characteristics, machine details and process parameters; along with details of heat treatment carried out.		-		

7	3.5 Party should submit the process plan document which includes the procedures followed right from powder sourcing to delivery of printed coupons to LPSCB for review and to select few operations for witnessing during the process at party's works.		-		
8	3.6 Clearance form LPSCB is mandatory for production of spacecraft propulsion parts after successful completion of coupon printing in accordance with Annexure-1.		-		
9	3.7 Party should furnish number of iterations considered for coupon printing.		-		
10	3.8 The Party should furnish the details of source from which powder is outsourced.		-		
11	3.9 Production of Additive Manufactured Spacecraft Propulsion Parts as per requirement mentioned in Annexure-2. Minimal machining on the AM printed space craft propulsion parts is allowed in order to achieve the desired surface characteristics.		-		

12	3.10 Packing, forwarding and delivery of additive manufactured spacecraft propulsion parts and coupons to LPSCB along with 0.25kg of SS 304L and Inconel 600 powder each with necessary certificates and relevant documents envisaged in the RFP.		-		
13	Terms & Conditions		-		
14	5.1 Mandatory Eligibility Criteria:		-		
15	5.1.1 The party should have additive manufacturing facility in India.		-		
16	5.1.2 The party should have Heat treatment facility, CNC Machining Facility, Sand blasting, CNC Wire EDM Facility and other post processing facility required for realization of coupons and parts.		-		
17	5.1.3 The party should have experience of having successfully executed similar work production of Additive manufacturing components during the last three years.		-		
18	5.1.4 Documentary evidence in support of the above need to be submitted.		-		
19	5.1.5 The party should permit LPSCB team to visit the facilities prior to Purchase Order placement.		-		
20	5.2 Intellectual Property:		-		



21	<p>5.2.1 Intellectual property developed if any, shall be the property of LPSCB-ISRO and party. The entire work must be strictly confidential and deliverables are the property of LPSCB-ISRO. Any part of the work, if outsourced to any other agency, a Non-Disclosure Agreement (NDA) shall be signed with the third party also. The copy of the agreement shall be provided to LPSCB-ISRO. Any part of the work shall not be published without prior approval of LPSCB-ISRO.</p>		-		
22	<p>5.3 Addition/Deletion:</p>		-		
23	<p>5.3.1 LPSCB reserves the right to delete part of the work during operation of the contract. Additional work shall be incorporated on mutual consent with the party.</p>		-		
24	<p>5.3.2 As the work involves iterative procedures, the amendment of <math>\pm 10\%</math> of order value is acceptable.</p>		-		
25	<p>5.4 Contract Validity and Duration:</p>		-		
26	<p>5.4.1 The Purchase Order shall remain in force for 12 months from the date of issue or supply of all LPSC deliverables as per scope of work whichever is earlier.</p>		-		
27	<p>5.4.2 The validity period of order can be extended upon mutual consent between LPSCB-ISRO and Party.</p>		-		

28	5.5 Secrecy:		-		
29	Annexures - 5.5.1 The drawings and documents sent along with the order form part of the vital documents and same should be kept on top secret. Under any situations, the vendor should not part with or transfer the technology/contents of drawings and documents whatsoever to any third party/agency/without our prior consent.		-		
30	5.5.1 If at any time, it is brought to our notice that the secrecy has been transferred by the vendor intentionally, or otherwise to any third party/agency, the vendor shall be liable to identify the loss/damage to Government of India.		-		
31	I have read and understood the Annexure-1 1.0 Powder Characterization, 2.0 Coupon level testing & characterization, 2.1 Chemical Composition, 2.2 Microstructure, 2.3 Mechanical Properties evaluation, 2.4 Intergranular corrosion (ICG) test, 2.5 Non-destructive testing, 2.5.1 Visual Inspection, 2.5.2 Dye Penetrant Testing, 2.5.3 Ultrasonic Inspection, 2.5.4 Radiography Test, 2.5.5 Computed Tomography, 2.6 Re-sampling and re-testing.		-		

32	I have read and understood the Annexure-2 1.1 Tee Joint drawing (Material: SS 304L) 1.2 Integral Mounting Stand off drawing (Material: Inconel 600) 1.3 Testing of the printed hardware				
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**Document : Request for Proposal Document**

**Document : Price bid**

**Document : Machine Description and Iteration**

**Supporting Documents required from Vendor**

1. As per Request for Proposal (RFP)
2. Price bid (Price Bid Related)
3. Machine Description and Iterations

5 additional documents can be uploaded by the vendor

## C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	As per Request for Proposal (RFP)	Yes / No / Explain	
2	This is a Two Part Tender. Do not mention price element in Techno Commercial Bid. If any Price element mentioned in technical bid, your offer will not be considered.	Yes / No / Explain	
3	GST: Kindly mention exact percentage of GST (HSN Code, if applicable) IGST@5% concessional rate for supply of Goods: IGST concessional rate @ 5% is applicable for the following goods mentioned under Sl. No. 243B as per Department of Revenue Notification No. 07/2018: "Scientific and technical instruments, apparatus, equipment, accessories, parts, components, spares, tools, mock ups and modules, raw material and consumables required for Launch Vehicles and Satellites and Payloads" Kindly mention the nature of Goods.	Yes / No / Explain	
4	P & F charges (if applicable)	Yes / No / Explain	
5	Payment Term: - 100% payment shall be made through RTGS within 30 days of receipt and acceptance of the items at our site.	Yes / No / Explain	
6	Delivery Period : You should deliver the items within 12 months from the date of receipt of purchase order. (Please mention in specifics Delivery schedule as per specifications)	Yes / No / Explain	
7	Liquidated Damages (LD): - Since delivery is the essence of this order, LD @ 0.5% per week or part thereof subject to a maximum of 10% of the order value of undelivered Stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the contract price of the unit or units so delayed.	Yes / No / Explain	

8	Jurisdiction: The Courts in and around the City of Bangalore alone shall have jurisdiction to deal with and decide any matter or dispute whatsoever arising out of this agreement including those arising under the Arbitration Act.	Yes / No / Explain	
9	Warranty : Warranty for the offered item shall be from the date of installation/acceptance of the item at our site for a minimum period of one year or as specified in the tender document. Warranty certificate shall be provided along with supply.	Yes / No / Explain	
10	Performance Bank Guarantee (PBG) : You have to submit a PBG from a Nationalised / Scheduled Bank in Rs.200/- Stamp Paper for 10% of the order value towards the performance of the system at the time of supply valid till the completion of warranty period plus 60 days (as claim period) as per the format provided by the Department. OR 10% of the order value shall be with held till the completion of Warranty Period plus 60 days.	Yes / No / Explain	
11	Security Deposit (SD) : You have to furnish a Bank Guarantee from a Nationalised / Scheduled Bank in Rs.200/- Stamp Paper for 10% of the order value within 10 days of receipt of order towards the faithful execution of the order valid till the completion of the scope of work as per order plus sixty days(as claim period). (This will be returned to you immediately on execution of the order satisfactorily as per order terms. In case of non-performance / poor performance, the amount will be forfeited).	Yes / No / Explain	
12	Security Deposit cum Performance Bank Guarantee (SD cum PBG):In case, if parties are unable to provide two separate BGs i.e. one for SD and one for PBG, they can submit a combined BG for SD cum PBG from a Nationalised / Scheduled Bank in Rs.200/- Stamp Paper within 10 days of receipt of order for 10% of order value valid till the completion of total contractual obligation (i.e. supply period plus warranty period plus 60 days) as per the format provided by the Department.	Yes / No / Explain	
13	Freight charges : If any, mentioned as EXTRA OR INCLUDED in your quote, please mention the percentage in Vendor Terms.	Yes / No / Explain	

14	Installation Charges: If any, mentioned as EXTRA OR INCLUDED in your quote, please mention the percentage in Vendor Terms.	Yes / No / Explain	
15	In case two or more tenders are received from an Indian agent on behalf of more than one foreign Principal/OEM, in the same tender for the same item/product will not be considered.	Yes / No / Explain	
16	Insurance : Being a Government of India Department, Insurance is not required at our cost. Please ensure the safe delivery of the ordered item with proper AIR / SEA / ROAD worthy packing.	Yes / No / Explain	
17	In case of foreign orders:(a) Please specify whether any Export clearance is required. If it is required please provide End User Certificate format along with offer. (b) Please specify whether any Agency Commission is involved or not. If YES mention the percentage of Agency Commission. [Agency Commission shall be claimed by the Indian Agent through an Invoice. The Agency Commission shall be paid to the Indian Agent in Indian Rupees worked out on the basis of Telegraphic Transfer buying rate of exchange prevailing on the date of placement of the Purchase order/Contract and shall be paid within 30 days from the date of satisfactory acceptance of the item at our site. Distributers are not eligible for Agency Commission]	Yes / No / Explain	
18	Arbitration: In the event of dispute or difference arising out of or in connection with this purchase order/contract, which cannot be resolved through amicable settlement by mutual consultation, the same shall be settled under the Rules of Arbitration & Conciliation act 1996 under the Indian statue only, whose decision shall be final and binding on both the parties.	Yes / No / Explain	

19	Force Majeure: Neither LPSC, Bangalore nor party shall be considered in default of the performance of their obligations under this Purchase Order if such performance is prevented or delayed for any causes beyond the reasonable control of the parties to the order getting affected, such as Acts of God, war, riots, civil, commotion, illegal strikes, legal lock-outs, epidemics, fire accidents of any Government thereof, provided notice in writing of any such cause with necessary proof that the obligation under the Purchase Order is hereby affected or prevented or delayed is given within 14 days from the happening of the event. As soon as the cause of force majeure has ceased to exist, the party whose ability to perform his obligation has been affected shall notify the other party of the actual delay that has occurred due to such force majeure condition.	Yes / No / Explain	
20	Details of Indian Agent: Address, contact details like Telephone Number, Fax, e-mail etc., (if applicable)	Yes / No / Explain	
21	Address, contact details like Telephone Number, Fax, e-mail etc., on which order to be placed.	Yes / No / Explain	
22	Details of Principal:Address, contact details like Telephone Number, Fax, e-mail etc., (if applicable)	Yes / No / Explain	
23	You shall provide suppliers bank details such as name of the bank, IFSC code, IBAN Number, SWIFT etc., along with your offer which shall be not be changed till completion of payment.	Yes / No / Explain	
24	Offers received through fax or email or unsigned will not be considered.	Yes / No / Explain	
25	Any other terms shall be mentioned in Vendor Terms column.	Yes / No / Explain	

26	Special conditions against Indian Agents submitting quotations in Foreign Currency: (a) Foreign Principals proforma invoice indicating the commission payable to the Indian Agent and nature of after sales service to be rendered by the Indian Agent. (b) Copy of Agency agreement with the Foreign Principal and Indian agent, precise relationship between them and their mutual interest in the business. (c) Copy of registration and item empanelment of the Indian agent.	Yes / No / Explain	
27	The tenders received from Indian agents on behalf of their foreign Principals/OEMs (in cases where the Principals/OEMs also submit their tenders simultaneously for the same item/product in the same tender) the same will be not be considered.	Yes / No / Explain	
28	Purchase/Preference to MSEs: Purchase/Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs formulated under the Micro, Small & Medium Enterprises Development Act 2006. Necessary authenticated documentary evidences shall be submitted along with your offer. NOTE: This is not applicable for foreign Suppliers.	Yes / No / Explain	
29	Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs. Such MSEs shall produce documentary proof of registration as per provisions of the Policy ie: registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum or any other body specified by Ministry of MSME.	Yes / No / Explain	



30	As far as implementation of public procurement policy (Preference to make in India) Order, 2017 is concerned, the Office Orders vide No. P-45021/2/2017-B.E-II dt. 15.06.2017, which is partially modified by Order No. P-45021/2/2017-PP(BE-II) dt. 28.05.2018, Order No.P-45021/2/2017-PP(BE-II)dt. 29.05.2019, Order No. P-45021/2/2017-PP (BE-II) dt 04.06.2020 and Order No.P-45021/2/2017-PP (BE-II) dt 16.09.2020 and subsequent Amendments issued by the Department for Promotion of Industries and Internal Trade, Ministry of Commerce and Industry and Internal Trade, Ministry of Commerce and Industry regarding Class-I/Class-II local suppliers, Purchase preference, verification of local contents etc shall be applicable to this tender. Therefore, bidders may ensure compliance of the same while submitting tenders.	Yes / No / Explain	
31	Delivery Terms : In case of Indigenous Supplier : LPSC, BANGALORE.	Yes / No / Explain	
32	Validity of Offer : The validity of the offers should be 120 days from the date of opening of the tenders.	Yes / No / Explain	

### C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	3D Printing / Additive Manufacturing (Metals , Polymers etc.) - Development of Additive Manufacturing Parts for Spacecraft Propulsion System (Tee Joint & IMSO)	10.00 Nos.		-		

### Common charges (Applicable for all items)

<b>Installation &amp; Configuration</b>	
<b>Other Costs, if any (Value)</b>	
<b>Taxes, if any (Percentage)</b>	