

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
ISRO INERTIAL SYSTEMS UNIT (IISU)
THIRUVANANTHAPURAM**

Tender for Single-Axis Position and Rate Table

Bids to be submitted online

**Tender No.: IISU/PURCHASE UNIT IX (IISU PURCHASE)/IU202400063501 dated
30-04-2024**

A. Tender Details

Tender No :	IISU/PURCHASE UNIT IX (IISU PURCHASE)/IU202400063501
Tender Date :	30-04-2024
Tender Classification:	GOODS
Purchase Entity :	PURCHASE UNIT IX (IISU PURCHASE)
Centre :	ISRO INERTIAL SYSTEMS UNIT (IISU)

Single-Axis Position and Rate Table

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, 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. Offer Validity shall be provided from the date of price bid opening.

A.1 Tender Schedule

Bid Submission Start Date : **30-04-2024 18:00**

Bid Clarification Due Date : **09-05-2024 10:00**

Bid Submission Due Date : **28-05-2024 14:00**

Bid Opening Date : **28-05-2024 15:00**

Price Bid Opening Date : **12-06-2024 10:00**

B. Tender Attachments

NA

Instructions To Vendors

1. Conditions for BIDDER FROM A COUNTRY WHICH SHARES LAND BORDER WITH INDIA

1. Any bidder from a country which shares a land border with India will be eligible to bid in this tender, only if the bidder is registered with the Competent Authority.

Competent Authority for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).

2. Any false declaration and non-compliance of the above would be a ground for immediate rejection of offer or termination of the contract and further legal action in accordance with the laws.

3. Validity of Registration: Registration should be valid at the time of submission of bids and should be valid at the time of placement of order.

2. PROFORMA FOR INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER where the indent value is Rs. 2.00 lakhs & above for FOREIGN SUPPLY items

1. 10. Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only.

2. 10. PORT OF ENTRY:

Thiruvananthapuram International Airport For Air Cargoes And Kochi Sea Port For Ocean Vessel Cargoes

3. 11. CONSIGNEE:

Purchase & Stores Officer(Stores), Composites Entity, Vikram Sarabhai Space Centre, Vattiyookavu, Thiruvananthapuram 695013.. Ph:04712569141

4. 11. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.

5. 12. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval

in writing by the Purchaser.

6. 12. SHIPPING MARKS.

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follows:

PURCHASE ORDER NO.

DATED

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
VIKRAM SARABHAI SPACE CENTRE
COMPOSITES ENTITY

Destination: VATTIYOORKAVU, THIRUVANANTHAPURAM-695013

Port of Entry:

7. 13. a) Part shipment is not allowed unless specifically agreed to by us.

b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through any Agency nominated by us.

8. 13. INSURANCE OF THE STORES:

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

9. 14. CONTRACTOR'S DEFAULT LIABILITY:

14.1 The purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.

b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

10. 14. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractors.

11. 15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any

additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.

15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

- a) Any completed stores.
- b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted, by the purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

12. 15. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.

13. 16. For items having shelf life, those with maximum shelf life should be supplied if order is placed.

14. 16. REPLACEMENT:

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the purchaser agrees, the price towards replacement items shall be paid by the purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

15. 17. REJECTION :

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the purchaser. If the Contractor fails to do so, the purchaser may at his option either

- a) replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or
- b) terminate the Contract for default as provided under clause 14 above, or
- c) acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice the Purchaser's rights under clause 19.

16. 18. EXTENSION OF TIME:

If the completion of supply of stores is delayed due to reason of force majeure such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.

17. 19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:

If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5 percent) of the Contract price of the 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. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.

18. 1. Quotation/Open Authorization shall be submitted online [only] complying the specified schedule with technical specifications, including pamphlets and catalogues.

19. 20. 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 are found to have developed under proper use arising from faulty materials, 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 parts thereof are faulty.
- c) If in the opinion of the purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals 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 defects 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 20 (a) to (e) above, the Contractor shall, at the

option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser - Bank Guarantee format enclosed) 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 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, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.

20. 21. REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

21. 22. PACKING:

a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing.

b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.

c) The Contractor shall notify the purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.

d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.

e) Transshipment of equipment shall not be permitted except with the written permission of the purchaser.

f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:

a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt. (Two Non-negotiable copies)

b) Invoice (3 copies)

c) Packing List (3 copies)

d) Test Certificate (3 copies)

e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

22. 23. ARBITRATION:

If at any time any question, dispute or difference whatsoever shall arise between the purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.

23. 24. LANGUAGE AND MEASURES:

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

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

25. 26. COUNTER TERMS AND CONDITIONS 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.

26. 27. SECURITY INTEREST:

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the purchaser in accordance with the terms of the Contract. Such security interest of the purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

27. 28. BANK CHARGES:

While the purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising

amendment commissions.

28. 29. TRAINING:

The Contractor shall, if required by the purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores, number of such personnel to be mutually agreed upon.

29. 2. A Proforma Invoice may also be given which should contain the following Information:

- a) The FOB/FCA value, the C & F value for import by Sea freight / Air freight up to and for air parcel post up to Trivandrum should be separately indicated.
- b) Agency Commission: The amount of commission included in the price and Payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent immediately after Customs clearance of the goods in India.
- c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent.
- d) The earliest delivery period and country of origin of the Stores.
- e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.
- f) The approximate net and gross weight and dimensions of packages / cases.
- g) Recommended spares for satisfactory operation for a minimum period of one year.
- h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.

30. 2. PRICES:

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotations 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 variations.

31. 30. APPLICABLE LAW:

The Contract shall be interpreted, construed and governed by the laws of India.

32. 3. TERMS OF PAYMENT:

3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.

3.2 The Sight Draft / Letter of Credit will be operative on presentation of the undermentioned documents:

- a) Original Bill of Lading / Airway Bill
- b) Commercially certified invoices describing the stores delivered, quantity, unit rate and their total value, in triplicate. The invoice should indicate the discounts, if any, and Agency Commission separately.
- c) Packing List showing individual dimensions and weight of packages.
- d) Country of Origin Certificate in duplicate.
- e) Test Certificate.
- f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
- g) Warrantee and guarantee Certificate/s vide Clause 20 hereinbelow

33. 3. The FOB/FCA and C & F prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.

34. 4. IMPORTANT LICENCE:

Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide para 3.2

35. 4. The offer should be valid for a minimum period of 90 days (Single Part Tender) / 180 days (Two Part Tender) from the due date of opening of the tender.

36. 5. DEMURRAGE:

Supplier shall bear demurrage charges, if any, incurred by the purchaser due to delayed presentation of shipping documents as prescribed in para 3.2 to the bankers within a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

37. 5. Samples, if called for, should be sent free of all charges.

38. 6. ADDRESS OF INDIAN AGENTS:

39. 6. Late and delayed tenders will not be considered. Quotations by cable must be followed by detailed offers.

40. 7. GUARANTEED TIME DELIVERY:

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

41. 7. Offers made by Indian Agents on behalf of their Principals, should be supported by the proforma invoice of their Principals.

42. 8. INSPECTION AND ACCEPTANCE TEST:

8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under this Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.

8.2 For tests on the premises of the Contractor or of any of his sub-Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the purchaser's representative to carry out the tests efficiently.

8.3 When the stores have passed the specified test, the purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the purchaser as may be required.

43. 8. The details of Import Licence will be furnished in the Purchase Order.

44. 9. MODE OF DESPATCH:

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

45. 9. The authority of person signing the tender, if called for, shall be produced.

46. DEPARTMENT OF SPACE

VIKRAM SARABHAI SPACE CENTRE
CMSE, VATTIYOORKAVU P.O.,
THIRUVANANTHAPURAM- 695 013

47. FORM 22 FOR FOREIGN CASE

48. II. TERMS AND CONDITIONS

1. DEFINITIONS:

(a) The term 'Purchaser' shall mean the President of India or his successors or assignees.

(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, representatives, heirs, executors and administrators unless excluded by the Contract.

(c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorised 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 of plant, machinery or equipment of part thereof.

(d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

C. Bid Templates

C.1 Technical Bid - Single-Axis Position and Rate Table

1. Single-Axis Position and Rate Table

Item specifications for Single-Axis Position and Rate Table

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	This table is capable of rotating about one axis very precisely. It is used for testing gyros or angle sensors. It is capable of rotating the sensor either to a very precise angle (within 2 arc secs) or rotate it at a very stable and accurate rate	Refer RFP for detailed specifications, terms and conditions etc.	Yes / No / Explain		
2	Travel Range and Axis Configuration	Continuous rotation in both CW and CCW direction with axis of rotation in vertical configuration	Yes / No / Explain		
3	Mode of Operation	Position mode, rate mode, profile Mode&	Yes / No / Explain		
4	Rate Range	± 0.005 deg/s to ± 600 deg/s (100 rpm)	Yes / No / Explain		
5	Rate Accuracy	± 5 ppm or better (over 360 deg)	Yes / No / Explain		
6	Instantaneous Rate Accuracy sampled at 1 KHz	± 500 ppm or better	Yes / No / Explain		
7	Rate Stability over 360 deg	± 5 ppm or better and this is to be demonstrated over 360 deg rotation for 4 deg/s	Yes / No / Explain		
8	Rate Stability over 90 deg	± 20 ppm or better to be demonstrated over 90 deg at 1 deg/s	Yes / No / Explain		
9	Rate Stability over 10 deg	± 180 ppm or better to be demonstrated for 10 deg at 0.1 deg/s	Yes / No / Explain		

10	Rate Stability over 1 deg	±1800 ppm or better to be demonstrated for 1 deg at 0.01 deg/s	Yes / No / Explain		
11	Bandwidth	>70 Hz with 0.2 kg.m2 inertia	Yes / No / Explain		
12	Rate Command resolution	0.0001 deg/s	Yes / No / Explain		
13	Rate Display Resolution	0.0001 deg/s	Yes / No / Explain		
14	Position Command and Display Resolution	0.00001deg	Yes / No / Explain		
15	Position Accuracy	±1.5arc sec to be demonstrated for at least 16 discrete positions throughout 360 deg	Yes / No / Explain		
16	Position Jitter	<0.5 arc sec	Yes / No / Explain		
17	Position repeatability	±0.5 arc sec	Yes / No / Explain		
18	Table Acceleration		-		
19	Maximum angular acceleration with payload	5000 deg /s2 with expected load inertia of 0.2 kgm2	Yes / No / Explain		
20	Minimum angular acceleration	0.005 deg/s2	Yes / No / Explain		
21	Angular acceleration resolution	0.005 deg/s2 (To be programmable)	Yes / No / Explain		
22	Bearings	Precision Ball bearings	Yes / No / Explain		
23	External Analog Command and Response	Analog Input and Analog Output	Yes / No / Explain		
24	Interface and Connectors		-		
25	Slip-Rings	20 numbers (10 number of twisted shielded lines	Yes / No / Explain		
26	Slip-ring Voltage and Current Rating	100V DC, 2 A	Yes / No / Explain		
27	Slip-Ring Static resistance	<0.5 ohms	Yes / No / Explain		
28	Slip-ring dynamic noise	<10 milli ohms per ring tested at 1A	Yes / No / Explain		

29	Maximum Frequency	1 MHz for the signal lines	Yes / No / Explain		
30	Cross talk	<-60 dB	Yes / No / Explain		
31	Insulation between lines to the ground	>100 Mega ohms @ 100V DC	Yes / No / Explain		
32	Number of revolutions	10 million revolutions	Yes / No / Explain		
33	Cables	Type-low (or ultra-low) capacitance cables	Yes / No / Explain		
34	Payload Mass and Size	30 kg with size 350mm (L)x 350mm (B)x 300mm(H) (Typical)	Yes / No / Explain		
35	Table Top	Independent Stator and Rotor Interface with precision dowels and position toleranced interface threads with a clear and through aperture of >15 mm at the centre (refer figure in Annexure 2 in RFP)	Yes / No / Explain		
36	Flatness: Table top	<20 microns (for stator and rotor)	Yes / No / Explain		
37	Shaft Specifications		-		
38	Shaft Axis Tilt	<5 arc seconds	Yes / No / Explain		
39	Shaft Axis Run-out	<5 microns	Yes / No / Explain		
40	Shaft Axis Wobble	< 1.5 microns	Yes / No / Explain		
41	Axial Error Motion	< 1.5 microns	Yes / No / Explain		
42	Power Supply	230V±10% AC Supply, Single phase: 50 Hz	Yes / No / Explain		
43	Levelling provision	3 point	Yes / No / Explain		

44	PC required for operating the rate table with other peripherals and cables- Controller and GUI interface to be included along with licensed OS and associated softwares.	Refer RFP for more details	Yes / No / Explain		
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Document : Single Axis Table RFP

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Travel Range and Axis Configuration	Continuous rotation in both CW and CCW direction with axis of rotation in vertical configuration	Yes / No / Explain		
2	Mode of Operation	Position mode, rate mode, profile Mode&	Yes / No / Explain		
3	Rate Range	± 0.005 deg/s to ± 600 deg/s (100 rpm)	Yes / No / Explain		
4	Rate Accuracy	± 5 ppm or better (over 360 deg)	Yes / No / Explain		
5	Instantaneous Rate Accuracy sampled at 1 KHz	± 500 ppm or better	Yes / No / Explain		
6	Rate Stability over 360 deg	± 5 ppm or better and this is to be demonstrated over 360 deg rotation for 4 deg/s	Yes / No / Explain		
7	Rate Stability over 90 deg	± 20 ppm or better to be demonstrated over 90 deg at 1 deg/s	Yes / No / Explain		
8	Rate Stability over 10 deg	± 180 ppm or better to be demonstrated for 10 deg at 0.1 deg/s	Yes / No / Explain		
9	Rate Stability over 1 deg	± 1800 ppm or better to be demonstrated for 1 deg at 0.01 deg/s	Yes / No / Explain		
10	Bandwidth	> 70 Hz with 0.2 kg.m ² inertia	Yes / No / Explain		
11	Rate Command resolution	0.0001 deg/s	Yes / No / Explain		
12	Rate Display Resolution	0.0001 deg/s	Yes / No / Explain		

13	Position Command and Display Resolution	0.00001deg	Yes / No / Explain		
14	Position Accuracy	±1.5arc sec to be demonstrated for at least 16 discrete positions throughout 360 deg	Yes / No / Explain		
15	Position Jitter	<0.5 arc sec	Yes / No / Explain		
16	Position repeatability	±0.5 arc sec	Yes / No / Explain		
17	Table Acceleration		-		
18	Maximum angular acceleration with payload	5000 deg /s2 with expected load inertia of 0.2 kgm2	Yes / No / Explain		
19	Minimum angular acceleration	0.005 deg/s2	Yes / No / Explain		
20	Angular acceleration resolution	0.005 deg/s2 (To be programmable)	Yes / No / Explain		
21	Bearings	Precision Ball bearings	Yes / No / Explain		
22	External Analog Command and Response	Analog Input and Analog Output	Yes / No / Explain		
23	Interface and Connectors		-		
24	Slip-Rings	20 numbers (10 number of twisted shielded lines	Yes / No / Explain		
25	Slip-ring Voltage and Current Rating	100V DC, 2 A	Yes / No / Explain		
26	Slip-Ring Static resistance	<0.5 ohms	Yes / No / Explain		
27	Slip-ring dynamic noise	<10 milli ohms per ring tested at 1A	Yes / No / Explain		
28	Maximum Frequency	1 MHz for the signal lines	Yes / No / Explain		
29	Cross talk	<-60 dB	Yes / No / Explain		
30	Insulation between lines to the ground	>100 Mega ohms @ 100V DC	Yes / No / Explain		

31	Number of revolutions	10 million revolutions	Yes / No / Explain		
32	Cables	Type-low (or ultra-low) capacitance cables	Yes / No / Explain		
33	Payload Mass and Size	30 kg with size 350mm (L)x 350mm (B)x 300mm(H) (Typical)	Yes / No / Explain		
34	Table Top	Independent Stator and Rotor Interface with precision dowels and position toleranced interface threads with a clear and through aperture of >15 mm at the centre (refer figure in Annexure 2)	Yes / No / Explain		
35	Flatness: Table top	<20 microns (for stator and rotor)	Yes / No / Explain		
36	Shaft Specifications		-		
37	Shaft Axis Tilt	<5 arc seconds	Yes / No / Explain		
38	Shaft Axis Run-out	<5 microns	Yes / No / Explain		
39	Shaft Axis Wobble	< 1.5 microns	Yes / No / Explain		
40	Axial Error Motion	< 1.5 microns	Yes / No / Explain		
41	Power Supply	230V±10% AC Supply, Single phase: 50 Hz	Yes / No / Explain		
42	Levelling provision	3 point	Yes / No / Explain		
43	PC required for operating the rate table with other peripherals and cables- Controller and GUI interface to be included along with licensed OS and associated softwares.	Refer RFP for more specifications, terms and conditions	Yes / No / Explain		

Supporting Documents required from Vendor

1. Detailed compliance matrix against the RFP and quotation as two part tender (Price Bid Related)

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	1 year warranty from manufacturer. PBG required. Refer RFP for more details.	Yes / No / Explain	
2	Warranty	Yes / No / Explain	
3	Training	Yes / No / Explain	
4	Tax: (IGST is charged at 5 % in terms of Notification No. 01/2017-IGST dated 28-06-2017 as amended by Notification No. 07/2018 IGST dated 25-01-2018 and Notification No. 25/2018 IGST dated 31-12-2018, necessary IGST/CGST/SGST certificate will be issued.)	Yes / No / Explain	
5	Installation/ Commissioning: (Installation/ Commissioning at IISU shall be under the scope of the supplier)	Yes / No / Explain	
6	Delivery period: (Please specify the applicable delivery period including the time period required for installation/ commissioning.)	Yes / No / Explain	
7	Liquidated Damages: (L/D clause @ 0.5% per week subject to a maximum of 10% of the order value is applicable for delays beyond the promised delivery schedule.)	Yes / No / Explain	
8	<p>Delivery Term: (Please accept our preferred delivery term i.e., FOR IISU. In case of Ex Works, please mention the applicable freight/ P&F values for delivering upto IISU Thiruvananthapuram. For import cases, we are having authorised freight forwarder, who will collect the items on Ex Works/ FOB basis)</p> <p>Being a Govt of India Dept., insurance is not required at our cost. Please ensure safe delivery of the ordered item with proper worthy packing.</p>	Yes / No / Explain	

9	Security Deposit: (In the event of placement of order, for PO value above INR 5.0 lakh, you should submit Security Deposit at 3% of the order value of the P.O. The Security Deposit shall valid for a period of 60 days beyond the date of completion and acceptance of P.O/Contract. The Security Deposit will be discharged without any interest after completion and acceptance of the Contractual obligations.)	Yes / No / Explain	
10	Warranty: (The items supplied against this purchase order shall be covered under warranty for a period of 1 year from the date of receipt of items at our Stores.)	Yes / No / Explain	
11	Performance Bank Guarantee: (Supplier shall provide a Performance Bank Guarantee for 3 % of the PO value, valid upto 60 days beyond the date of completion of guarantee/ warranty period for ensuring the due performance of the supplied items during the warranty period.)	Yes / No / Explain	
12	Payment Term: (Our standard payment term is 100% within 30 days from the date of receipt & acceptance of items at our Site for indigenous orders and 100% through Sight Draft for import orders.)	Yes / No / Explain	
13	Make/ Country of Origin: (Please mention make of the quoted product and Country of Origin for import components)	Yes / No / Explain	
14	Authorization Certificate: In case of Indian Agents are quoting, copy of Authorization letter from OEM/ Principal and a copy of Agency Agreement shall be uploaded.	Yes / No / Explain	
15	Percentage of Agency Commission: Percentage of Agency Commission included in the quoted price. Agency Commission will be paid to Indian Agent in equivalent INR.	Yes / No / Explain	
16	PO ordering address in full with Contact Person Name, E-mail id, Phone No. [also attach your Quotation in PDF format without price details]	Yes / No / Explain	
17	Quote Validity: Minimum 90 days	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	Single-Axis Position and Rate Table	1.00 Counts		-		

Common charges (Applicable for all items)

Freight charge	
P&F Charges	