भारतीय प्रौद्योगिकी संस्थान, गोवा
गोवा अभियांत्रिकी महाविद्यालय परिसर, फारमागुडी, फोण्डा - ४०३४०१, गोवा
Indian Institute of Technology Goa
Goa College of Engineering Campus, Farmagudi, Ponda - 403401, Goa

Date: 26/03/2019

INVITATION OF BIDS FOR PROCUREMENT OF REGENERATIVE DYNAMOMETER TEST BENCH

ENQUIRY NO: IITGOA/2018-19/127 DTD 26/03/2019

1. Quotations are invited in two bid system for procurement of Regenerative Dynamometer Test Bench in separate envelopes. Please mention the above-mentioned Title, Enquiry number and due date for submission of Bids on the sealed cover to avoid the Bid being declared invalid.

2. The address and contact numbers for sending Bids or seeking clarifications regarding this RFP are given below –

Assistant Registrar
(Stores & Purchase)
IIT GOA, At GEC Campus,
Farmagudi, Ponda – Goa.
403401
ar_sp@iitgoa.ac.in

3. This bid enquiry is divided into three parts as follows:

   a. Part I – Contains General Information such as the time, place of submission and opening of tenders, Validity period of tenders, etc.

   b. Part II – Contains Instructions for the Bidders and essential details of the items/services required, such as the Schedule of Requirements (SOR), Technical Specifications, Delivery Period, Place of Delivery and Consignee details.

   c. Part III – Contains Price Bid format, other details etc.

4. This bid enquiry is being issued with no financial commitment and the Institute reserves the right to change or vary any part thereof at any stage and to with draw it at any stage.

Part I – General information

Tender No.	IITGOA/2018-19/127
Tender Date	26.03.2019
Tender Category	Goods
Tender Type	Open
No. of Envelopes	2

Covers Information / Submission of Bids

Cover No.	Cover Type	Description	Document Type
1	Technical	Technical Specification, Tender Document, EMD, Schedule of Requirement and Compliance, Bidders Information/Indian Agent Information, Previous Supply Order	.pdf
2	Financial	Financial Bid	.pdf

Two Bid System:

- The two-bid system will be followed for this tender. In this system bidder must submit their offer in separate sealed envelopes as – Technical Bid and Financial Bid.
- Separate technical bid and financial bid envelopes should be clearly marked as "Envelope No. 1 - Technical Bid" and "Envelope No. 2 - Financial Bid".
- Both these sealed covers are to be put in a bigger cover which should also be sealed and duly super scribed with our Tender No. & Due Date and to be submitted to the concern department/section mentioned in tender document.
- Bids should be forwarded by Bidders under their original memo / letter head inter alia furnishing details like GST number, Bank Details etc. and complete postal & e-mail address of their office.

Note:

- The technical offer should not contain any price information. If the price quoted is submitted in technical bid the tender will be rejected at the sole discretion of IIT Goa.
- Initially Technical Bids will be opened and evaluated by the purchase committee. Financial Bid of only Technically qualified bidders will be opened later.
- Contract/ Purchase Order will be awarded to the lowest bidder(L1) of Financial Bid among them.

Form of Contract	Supply

EMD Fee Details (in the form of Bank Guarantee/Demand Draft)

EMD Fee INR:	Rs.1,30,000.00

General Conditions of EMD:

a) Bidders are required to submit Earnest Money Deposit (EMD) for an amount of Rs 1,30,000/- along with their bids. The EMD may be submitted in the form of an Account Payee Demand Draft/Bank Guarantee from any Public Sector Bank authorized to conduct government business favouring "Indian Institute of Technology Goa, payable at Goa". Bids not accompanied by EMD will be rejected.

b) The EMD will be refunded to all the bidder other than the three lowest technically suitable bidder within one month from the date of opening of the Financial Bid (Cover – II). The EMD of the bidder other than the bidder whose offer is accepted will be refunded with in a period of one month after award of Contract.

c) The EMD of the bidder who are not qualified under Cover – I will be refunded within one month from the date of return of their unopened cover – II.

d) The EMD of the successful bidder will be refunded only after the remittance of security deposit.

e) Where a person whose tender has been received intimates that they are withdrawing their tender before the validity period or makes any modification in the terms and conditions of the tender which are not acceptable to IIT Goa (or) fail to furnish the security deposit within the prescribed time, IIT Goa shall without prejudice to any other right or remedy, be at liberty to forfeit the Earnest Money deposited by such person absolutely. The Bid Security of the successful bidder would be returned, without any interest whatsoever, after the receipt of Performance Security from them as called for in the contract.

f) Micro and Small Enterprises (MSEs) registered with National Small Industries Corporation are exempted from payment of Earnest Money Deposit. However, vendors covered under this category have to submit copy of registration certificate with present validity along with technical bid, failing which, the bid will be disqualified.

Bid Validity (Days):	180 days
Period of Work/Delivery Period (Days):	90 days
Pre-Bid Meeting Date & Time:	Will be decided on request
Pre-Bid Meeting Place & Address:	NA
Modification and Withdrawal of Bids:	A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications sought not later than 7 (Seven) days prior to the date of opening of the Bids. Copies of the query and clarification by the purchaser will be sent to all prospective bidders who have participated the bidding documents.
Clarification regarding contents of the tender document/RFP:	A bidder may modify or withdraw his bid after submission provided that the written notice of modification or withdrawal is received by the Buyer prior to deadline prescribed for submission of bids. A withdrawal notice may be sent by email but it should be followed by a signed confirmation copy to be sent by post and such signed confirmation should reach the purchaser not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity specified. Withdrawal of a bid during this period will result in Bidder's forfeiture of bid security.
Rejection of bids:	Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected.
Unwillingness to quote:	Bidders unwilling to quote should ensure that intimation to this effect reaches before the due date and time of opening of the Bid, failing which the defaulting Bidder may be delisted for the given range of items as mentioned in this RFP.
Contract Type:	Tender

Delivery Location:	Indian Institute of Technology Goa Goa Engineering College Campus, Bhausaheb Bandodkar Technical Education Complex, Veling, Farmagudi, Ponda, Goa
Pin Code:	403401
Bid Submission End Date/Date & Time Submission:	16.04.2019 at 17:00hrs
Place of Submission of Bid:	Stores & Purchase Department, IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401
Bid Opening Date & Time:	18.04.2019 at 15:00 hrs
Bid Opening Place:	IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401
Other Terms & Conditions:	As per mentioned in technical specification
Technical Clarification:	Name: Dr. Sashidhar Sampathirao Dept: IIT Goa Email: ssd@iitgoa.ac.in
Tender Inviting Authority:	Name: Assistant Registrar (S&P) Address: Stores & Purchase Department, IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa - 403401
Signing Authority:	Assistant Registrar (S&P)

Part II: Instructions to Bidders

1. Schedule of Requirements – List of items are attached as **Annexure 'A'**

2. Technical Details: Technical details are attached in **Annexure 'B'**

3. Two-Bid System: In respect of Two-bid system, Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any.

i) The Bidders are advised to submit the following documents along with Technical Bid –

a) Compliance certificate in the following format;

Para of tender enquiry specification item-wise (As per annexure B)	Specification of Item offered	Compliance – whether YES/NO	In case of non-compliance, deviation to be specified in unambiguous terms

The offers must strictly be as per the specifications given in Annexure-A. At the same time, it must be kept in mind that mere copying of our specifications in the quotation shall not make the technical bid eligible for consideration. **A bid has to be supported with original catalogue (not of photo copy) of the quoted model duly signed by the principals and the same must be sent along with the technical bid.** The quoted model should not become obsolete for a minimum period of 5 years (This is for the availability of spares). Therefore, the model quoted should invariably be highlighted in the leaflet/literature enclosed with the quotation. Non-compliance with above shall be treated as incomplete/ambiguous and the bid may be ignored without giving an opportunity to the bidder for further clarification/negotiation etc.

b) Bidders & Indian Agent's Information **(Annexure C).**

c) A copy of Indian Agent Agreement / Authorisation letter from OEM / OEMs along with tender to be submitted by All Indian Agents, if the manufacturer/supplier is based in abroad.

d) EMD

e) GST/PAN details

f) The Bidder should provide a list of customers of previous supply of a similar/ same range of equipment to IIT's/ NIT's/Universities with contact details.

ii) The following documents should be submitted along with Financial Bid –

a) Price Bid. **(Annexure D)**

b) Previous order of supplies/Justification of quoted rates. **(Annexure E)**

4. Delivery Period – supply to be made within **90 days** from the effective date of issuance of Purchase Order. Please note that P.O. can be cancelled unilaterally by the Institute in case items are not received within the delivery period. Extension of delivery period will be at the sole discretion of the Institute, with applicability of LD clause.

5. Delivery and Transportation - Place for supply / installation is **'Indian Institute of Technology Goa, Ponda – Goa'.** The transportation cost & Insurance charges up to the destination is to be borne by the bidder.

Part III: Conditions of Contract

1. Award of Contract:
   i. IIT Goa shall award the contract to the technically qualified eligible BIDDER whose bid has been determined as the lowest evaluated financial bid.
   ii. If more than one BIDDER happens to quote the same lowest price, IIT Goa reserves the right to award the contract to more than one BIDDER or any BIDDER.

2. Prices:
   For Import Supplies –
   a) It is mandatory to quote price in **CIF/CIP Goa basis only** with separate cost breakup.
   b) In case of Multiple options of same product, bidders are requested to quote only one best option and not multiple options.
   c) All local taxes, customs duty and clearance charges will be borne by the Institute as applicable.
   d) The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.

   i.
   For Indigenous Supplies –
   a) In case of Multiple options of same product, bidders are requested to quote only one best option and not multiple options.
   b) The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.

3. Pre-installation:
   i. Please also mention the pre-installation requirements for the equipment like ambient temperature, humidity, civil work, weather specifications, power specifications, etc. When items are provided full performance satisfaction should be demonstrated.

4. Installation:
   i. Supplier shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty period and thereafter as mentioned in the contract.
   ii. Installation / demonstration to be arranged by the supplier free of cost and the same is to be done within 15 days of the arrival of the equipment at site.

5. Training:
   i. The supplier shall submit training proposal for the operation and maintenance to the personnel of IIT Goa on the offered equipment/machinery.
   ii. Wherever needed, our technical persons should be trained by the supplier at the project site free of cost. In case the person is to be trained at supplier's site abroad or in India it should be mentioned in the quotation clearly. The supplier should bear all the expenses for such training including 'to & fro' fares and lodging & boarding charges.

6. Terms of Payment:
   i. 90% Payment on delivery or by Letter of credit and balance 10% will be paid after satisfactory installation and commissioning. IIT Goa do not pay any advance payment to supplier.

7. Legal Matter:
   i. All disputes are subject to Goa jurisdiction only.

8. Penalty/ Liquidated Damages:
   i. Timely delivery is essence of the contract and hence if any consignment be delayed, liquidated damages at the rate 0.5% of the price of the delayed consignment, for each week or part whereof shall be levied and recovered subject to maximum of 10% of total purchase order value.
   ii. IIT Goa reserves the right to cancel the order in case the delay is more than 10 weeks. Penalties if any will be recovered by forfeiting PBG at vendor's cost and risks.

9. Supervision of Erection and Commissioning:
   i. Successful BIDDER shall depute concerned specialist, for supervision of erection & commissioning of the machine to be carried out. The successful BIDDER shall make necessary arrangement at their own expenses for stay, transport and other expenses of their Specialist during their stay in Goa which also includes imparting free of cost training to IIT Goa personnel.

10. **Performance Guarantee (GFR 2017 Rule 171):**

   i. Performance Guarantee Bond is mandatory.
   ii. Successful tenderer/ bidder should submit performance guarantee as prescribed above to be sent to The Assistant Registrar, Stores & Purchase Department, IIT Goa on or before 15 days from the due date of issue of order acknowledgement. The PBG to be furnished in the form of bank guarantee as per proforma or annexure of the tender documents, for an amount covering 5 % of the purchase order value.
   iii. The Performance Guarantee should be established in favour of "The Registrar, IIT Goa".
   iv. PBG to be established through any of the National Banks (whether situated at Goa or outstation) with a clause to enforced the same on their local branch of Goa or any scheduled bank (other than national bank) situated at Goa. Bonds issued by co-operative banks will not be accepted.
   v. Performance Guarantee Bond shall be for the due and faithfully performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded or agreed to between the successful tenderer and the purchaser under the terms & conditions of acceptance to the tender.
   vi. The successful tenderer is entirely responsible for due performance of the contract in letter and spirit and all other documents referred to in the acceptance of tenders.
   vii. The PBG shall be kept valid during the period of contract and shall continue to be enforceable for a period of one year/two years (as mentioned in the tender document) or upto warranty period whichever is later from the date of order acknowledge. In case PBG needs extensions upto warranty period then supplier shall initiate extensions to PBG one month prior to expiry of PBG.
   viii. For successful suppliers, if PBG is not submitted within 15 days from the date of Order Acknowledgement, then the Purchase Order will be cancelled with forfeiting of EMD.
   ix. <u>No interest shall be payable by the buyer to the Bidder on PBG.</u>

Annexure A

List of items required

Sl. No.	Description of Items	Qty
1	**REGENERATIVE DYNAMOMETER TEST BENCH**	01 No.

Annexure – B

Regenerative Dynamometer Dynamic Load Test Bench for Electrical Vehicle, Traction & BLDC Motor performance Test Rig

Parameter	**Specifications**
Application	To study performance characteristics of test motors used for Electrical Vehicle and other industrial applications
Operational Mode of Dynamometer	4 Quadrant Operation Mode - Regenerative Type to plot the characteristic in Motoring & Generation Mode
Ramp-up	User selectable ramp up time for dynamic response of the dynamometer
Type of Unit Under Test	BLDC Motors (Fixture should be generic to accommodate any type of motors/generators like SRM, Synchronous Reluctance Motors, Induction Motors, etc. & replaceable type for future models)
Direction of rotation	Counter clockwise & Clockwise
Operating speed	0 to ± 15000 rpm
Speed resolution	+/-5 rpm
Test motor type	Used for constant speed control application
Noise	Less than 70dBA
Safety	Electrical, Mechanical, Environmental, machine & operator safety should be considered as per standard
Emergency stop	The DUT should be disconnected and the motor shall come to standstill when emergency is actuated and system should shut off.
Measuring Parameters	1. Test motor speed in RPM 2. Test motor voltage in Volts AC 3. Test motor current in Amps AC (3 Phases) & DC (Battery) 4. Test motor torque in Nm 5. Test motor temperature in ^{0}C 6. Cycle time in hours 7. Efficiency 8. Cogging torque (BLDC motor) 9. Battery Voltage (or) Power supply voltage 10. Back Emf 11. Friction Torque 12. Moment Of inertia 13. Efficiency contour 14. Controller Efficiency

Calibration	All measuring parameters should have external calibration facility and all indicators with sensors must have third party calibration certified
Remote access	External Ethernet interface to control the rig, log the data and generate reports through remote PC
Control panel lock-out & tag-out facility	Control panel door & power ON/OFF switch should be lock-out and tag-out facility as per safety standard
Cogging torque	To be measured from 0 to 2 Nm (lower range can be in mNm).
Case Temperature	Motor frame temperature should be monitored continuously using non-contact type temperature sensor (K type / RTD (Pt-100))
Friction measurement	To be measured
Machine constant	The device should calculate torque constant and back emf constant of the system
Torque ripple	To be measured
Efficiency	Motor efficiency, controller efficiency and system efficiency shall be calculated. Losses should be taken in account during efficiency calculation.
Rating	Torque Range: 50 Nm **Speed Range: 15000 or Higher** Should have Instantaneous Torque and Speed Measurement: Torque transducer and speed encoder capable of measuring the above speed and torque ranges (instantaneous values). Should have in-built Power Analyser (Range) : • Power Analyzer (High Switching Frequency Measurement) • PWM Measurement • Voltage range- 3 phase- 90 to 500 Volt • Current range – 1 to 90 Amps • Power Analyser – DC • Voltage range 50 to 300 Volt • Current range 1 to 90 Amps
Accuracy	Within IEC 60034-2-1 2014 Standards Limits 0.1 % of complete system and individual components
Mandatory Compliance/ Acceptance statement	Supplier should have prior experience of similar system supplied earlier to minimum 5 customers. Contact details / Installation to be submitted along with the tender.
Warranty, Installation and Training	Minimum 3 years warranty should be included. Basic training should be provided upon installation. Installation should be done at the IIT Goa campus.

(To be printed on letterhead of the bidder)

Annexure C

Bidders Information

1.	Name of the Bidder	
2.	Address of the Bidder	
3.	PAN No.	
4.	GSTN No.	
5.	State of GST Registration	
6.	E-mail	
7.	Contact Person's Name & Designation	
8.	Mobile No.	

Indian Agent's Information

1.	Name of Indian Agent	
2.	Address of Indian Agent	
3.	Indian Agent PAN No.	
4.	Indian Agent GSTN No.	
5.	State of GST Registration	
6.	E-mail	
7.	Contact Person's Name & Designation	
8.	Mobile No.	

(To be printed on letterhead of the bidder)

Annexure D

PRICE BID FORMAT

(For Imported Supplies)

S.No.	Item description & short specification	HSN Code/ SAC Code	Qty in Units	GST %	Price Basis	Total Bid Price
1.	**REGENERATIVE DYNAMOMETER TEST BENCH** (As per technical specification)					
2.	**Installation and Commissioning Charges** (if any, quote in INR)					
3.	**Agency Commission** (if any, quote in %)					
4.	Other Charges (if any, please specify)					
Grand Total						

#HSN Code: "Harmonized System of Nomenclature Code No." and SAC Code: "Service Accounting Codes Code No."

1. Delivery Period: ..... days
2. Terms of Payment

(a) 90% payment by Letter of Credit and balance 10% will be paid by wire transfer after satisfactory installation and commissioning.

3. Validity of the bid: 180 days from the date of submission of quotation/tender.
4. Mode of Shipment: .....
5. Port of Shipment: .....…

Signature.....
Name .....
Place: Company Name & Address: .....

Date: Affix Rubber Stamp: .....

Note: Price Bid should be submitted in given format only. For additional information/extra items above format may be typed and used.

PRICE BID FORMAT

(for Indigenous Supplies, Quotes in INR only)

S.No.	Item description & short specification	HSN Code/ SAC Code	Qty in Units	GST %	Price Basis	Total Bid Price
1.	**REGENERATIVE DYNAMOMETER TEST BENCH** (As per technical specification)					
2.	**Installation and Commissioning Charges** (if any, quote in INR)					
3.	**Agency Commission** (if any, quote in %)					
4.	Other Charges (if any, please specify)					
Grand Total						

#HSN Code: "Harmonized System of Nomenclature Code No." and SAC Code: "Service Accounting Codes Code No."

1. Delivery Mode: Delivery at IIT Goa, at site only.
2. Terms of payment: 100% payment within 30 days after the delivery and successful installation at IIT Goa.
3. Validity of the bid: 180 days from the date of submission of quotation/tender.

Signature.....
Name .....
Place: Company Name & Address: .....

Date: Affix Rubber Stamp: .....

Note: Price Bid should be submitted in given format only. For additional information/extra items above format may be typed and used.

Annexure-E

Reasonability of Prices

Please quote best minimum prices applicable for a premier Educational and Research Institution. The party must give details of at least two purchase orders identical or similar equipment, supplied to any IITS/Research Institutions/ other organisation as per below Format (to be enclosed in Technical Bid) along with the final price paid and details are mandatory.

Previous Supply Orders

Name of the Firm _____

S.No.	PO No. & Date	Description & Quantity of ordered equipment	Value of Order	Date of completion of delivery as per contract	Remarks indicating reasons for late delivery, if any and justification of price difference of their supply order & those quoted to us	Has the equipment being installed satisfactorily (attach a certificate from the Purchaser/ Consigner)	Contact Person along with Telephone no., Fax No. and e-mail address

Place: _____

Date: _____ Signature and Seal of the Manufacturer / Bidder

FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT GOA OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT GOA OR ANY SCHEDULED BANK SITUATED AT GOA. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.

To,
The Registrar,
Indian Institute of Technology, Goa
Farmagudi, Ponda,
Goa – 403401

LETTER OF GUARANTEE

WHEREAS Indian Institute of Technology, Goa (Buyer) have invited Tenders vide Tender No..... Dt. ..... for purchase of .....
AND
WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of **"Registrar, Indian Institute of Technology, Goa"** in the form of Bank Guarantee for Rs ..... (**5% (five percent) of the purchase value**) and valid till **one year or upto warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 15 (Fifteen) days from the date of Order Acknowledgment as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology, Goa on demand and without protest or demur Rs..... (Rupees.....).

This Bank further agrees that the decision of Indian Institute of Technology, Goa (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, ... (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Indian Institute of Technology, Goa (Buyer).

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs. ..... . (Indian Rupees ..... only).
2. This Bank Guarantee shall be valid up to .....(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT Goa serve upon us a written claim or demand on or before ..... (date).
4. This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at ..... situated at ..... (Address of local branch).

Date:

Yours truly,
Signature and seal of the Guarantor:

Name of Bank:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.