Form PPIM-1B
[Para 1.17(ii)]

NATIONAL INSTITUTE OF TECHNOLOGY
GOA -403401

(Form to be used for purchases above Rs.2.5 lakh)

Open Tender Enquiry

Enquiry No: NITGOA/OT/EEE/2023-24/OW/ 520 **Dated:** 05-12-2023

(Complete Tender document is available on Tender website of NIT GOA and CPP Portal).

Enquiry No: NITGOA/OT/EEE/2023-24/OW/ 520
Date: 05-12-2023

To,

Important Dates

Event	Date	Time
Pre-bid Conference	-	-
Last Date of submission of quotation	20/12/2023	11:00 AM
Technical Bid Opening date	20/12/2023	11:30 AM
Financial Bid Opening date	22/12/2023	03:00PM

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly send your offer with prices and complete terms within the time mentioned above.

The tender document is available on:-

1. CPP Portal

2. Institute web site of NIT GOA.

Yours sincerely,

5/12/23
Registrar
National Institute of
Technology Goa

National Institute of Technology Goa
Farmagudi, Ponda-Goa 403 401

Encl:

(1) Schedule of requirement, specifications, dates etc.
(2) Bid document containing detail terms and conditions.

1. **Schedule of requirements**

Sl. No.	Name of Tools	No's Required
1	**ANSYS Maxwell Finite Element Analysis Software (5 user)**	01

2. **Specifications and allied Technical Details**

Enclosed at Annexure – I

3. **Format of Quotation** (tick appropriate box)

☐ It is a Single bid; please give all technical specifications and price bid in one envelope.

OR

☑ It is a two-part bid with separate techno-commercial and price bids. Please see item 1.12 of instructions for method of bidding.

4. The bid envelope should be super-scribed with

ANSYS Maxwell Finite Element Analysis Software vide Enquiry No. **NITGOA/OT/EEE/2023-24/OW/** 520 **dated** 05-12-2023

5. Quotations should be valid for a period of 90 days from the closing date of the bid.

6. **Some important dates:**

i.	Pre-bid Conference:	Date: -	Time: -
ii.	Last date for receipt of quotation:	20/12/2023	11:00 AM
iii.	Opening of techno-commercial bid:	20/12/2023	11:30 AM
iv.	Opening of Financial bid:	22/12/2023	03:00 PM

7. **Warranty** as applicable must be provided. (Certificate should be provided).

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8(a) **Excise Duty:** Please state applicable excise duty as a separate item.

8(b) **VAT/CST/GST:** The Institute is not authorized to give C or D form. CST/ VAT/GST should be charged according to applicable rates

8(c) **Entry Tax:** The State of Goa charges entry tax on all goods entering the State. Please include it in your quotation.

9. **Bid Security** (See Item 2.8 of instructions)**: 36,000/- (Rs. Thirty Six Thousand Only).**

10. **Performance Security** (See Item 2.11 of instructions)**: N/A**

11. Please go through the enclosed "bid document" carefully for other bidding instructions.

12. For clarifications if any, please mail to **sdas@nitgoa.ac.in**

(Contd.)

Form PPIM-1B
[Para 1.17 (ii)]

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NATIONAL INSTITUTE OF TECHNOLOGY
GOA-403401

1. **Instructions to the bidders:**

1.1 Bids are invited on behalf of the Director, National Institute of Technology (NIT), Goa – 403401, from the intending bidders for supply of the goods/stores/ equipments/ services for the Institute as detailed in the enquiry letter.

1.2 The bidders should quote the technical and financial bid separately in two separate envelopes signed on the Technical bid/Financial bid for **ANSYS Maxwell Finite Element Analysis Software** and their offer/rates in clear terms without ambiguity. EMD should be submitted offline only.

1.3 The rates should be quoted both in figures and words.

1.4 In case of any discrepancy between the rates in figures and that in words, the rate in words will be accepted as correct.

1.5 Incase the financial / technical bid opening day is declared a holiday for NIT GOA, then the bids will be opened on the appointed time on the next working date for NIT GOA.

1.6 There may be a pre-bid conference in the office of the Department as per schedule given under at the top of the document. NIT Goa for clarifying issues and clearing doubts, if any, about the specification and other allied technical details of the plant, equipment and machinery projected in the bidding document. The prospecting bidders may attend this pre-bid conference at the appointed date, time and place. In case the said date is declared a holiday for the NIT Goa, the pre-bid conference shall be held at the appointed time and place on the next working day.

1.7 If a prospective bidder requires any clarification in regard to the bidding documents, he may mail to **sdas@nitgoa.ac.in** at least 02 days before the deadline for receipt of bids.

1.8 Bids should be submitted within the date and time mentioned above.

1.9 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered non-responsive.

1.10 The bidder has to sign in full at all pages of the bidding document including all annexure and price bid failing which the bidder will be disqualified.

1.11 The Director NIT GOA and its successors reserves the right to reject any or all the tenders, wholly or partly or close the tender at any stage prior to award of contract without assigning any reason whatsoever.

2. **Conditions of the bid:**

2.1 The rates quoted should preferably be net, inclusive of all taxes and duties, packing, forwarding, freight, Insurance and all other incidental charges mentioned separately.

2.2 The goods are required to be delivered at the indenting Department of NIT Goa, and must be delivered to NIT Goa within 21 days from the date of placement of the supply order .

2.3 If insisted, samples shall be provided by the supplier at the entire cost and risk of the supplier. The installation of the equipment's and training cum demo should be provided.

2.4 The bid should remain valid for a period of 90 days from the date of publishing of bid.

2.5 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.

2.6 The goods offered should strictly conform to the specification and technical details mentioned in annexure below.

2.7 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.

2.8 The bid is to be accompanied with "Bid Security" (*Earnest Money*) for an amount stated in the enquiry, in the form of Account Payee Demand Draft, in favour of **Director, NIT Goa Fees Account** from any Commercial Bank with validity period of 30 days beyond the final bid validity period. The bid security shall be forfeited, if the bidder withdraws during the bid validity period.

2.9 Period of guarantee/warranty, where applicable, should be specified in the bid.

2.10 Any liability regarding GST will be of supplier of products.

2.11 If the successful bidder, on receipt of the supply order, fails to execute the order within the stipulated period, in full or part, it will be open to the Director, NIT Goa to recover liquidated damage from the firm at the rate of 0.5 percent of the value of undelivered goods per week or part thereof, subject to a maximum of 10 percent of the order value. Alternatively, it will also be opened to the Director, to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.

2.12 The successful bidder may be required to execute a contract, where applicable.

2.13 Payment (*100 percent*) will be made by Account Payee Cheque/Bank Draft/PFMS, within 30 days from the date of receipt of the goods in good condition or receipt of the bill, commissioning of the equipment, where applicable, whichever is later/latest.

2.14 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, NIT Goa shall be final.

2.15 The bid document/resultant contract will be interpreted under Indian Laws.

2.16 Any disputes arising out of this enquiry shall be dealt in the Goa jurisdiction.

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Farmagudi, Ponda-Goa 403 401

2.17 Proof of establishment of Firms/shop/business/ manufacturing unit etc. and Dealership certificate from the principals etc.

2.18 Proof of registration with any other central government organization (if any)

Criteria for Technical evaluation:-

- Valid EMD (Valid Signed and Stamped EMD Exemption certificate should be submitted for claiming EMD exemption)
- PAN Card (duly stamped and signed)
- Photocopy of GST Registration Certificate (duly stamped and Signed).
- Technical specifications of all the items. Failing to quote for all specification will result in disqualification in technical bid
- Signed and stamped copy of entire tender document.
- Signed and stamped copy of Annexure I.

Criteria for Evaluation in Financial Bid:-

- Financial bid will be opened of only those bidders who get technically qualified in technical bid.
- The financial bid shall be evaluated on the basis of the total lowest rates quoted for all the item together.
- The words in price bid such as extra will entitle for disqualification of bidders.
- Conditional bids will not be accepted and will be liable for disqualification.

Documents required for processing of bills:-

- Filling of PFMS Mandate Form.
- Filled bidder information sheet mentioned at the end of tender document.

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Registrar
National Institute of Technology Goa

National Institute of Technology Goa
Farmagudi, Ponda-Goa 403 401

Technical bid (Refer Annexure I)

Item Name: ANSYS Maxwell Finite Element Analysis Software

Sr. No	Description		Vendor	
		Qty	Technical specification (YES / NO)	Remark
1	**ANSYS Maxwell Finite Element Analysis Software (5 User)**	01		

Note: The above format should be on letter head of the firm with the signature of Authorized Signatory

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Price Bid (Refer Annexure II)

Item Name: ANSYS Maxwell Finite Element Analysis Software

Sr. No	Item Name	Rate	Quantity	Total
1	**ANSYS Maxwell Finite Element Analysis Software (5 User)**		01	
			Total	
			Other Charges (if any)	
			Total	
			Taxes	
			Grand Total in Rs.	
Grand Total in Words:				

Note: The above format should be on letter head of the firm with the signature of Authorized Signatory

Date:-

PFMS Mandate Form

Sr. No	Details Required	Information
1	Name of Vendor/Supplier	
2	Date Of Birth / Date of Incorporation	
3	Father/Husband Name	
4	Aadhaar Number	
5	GST No	
6	PAN No	
7	Complete Address	
8	City	
9	Country	
10	State	
11	District	
12	PIN Code	
13	Mobile No.	
14	Telephone No.	

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15	E Mail Address	
16	Account Holder Name	
17	Bank Name	
18	Bank (Branch)	
19	Bank Address	
20	Account No.	
21	IFSC Code	
22	Swift Code	

I/We hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information I/we would not hold the user Institution responsible.

Name:

Stamp/Seal &Signature of Vendor/Supplier

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Farmagudi, Ponda-Goa 403 401

Bidder Information Sheet

1	Company Name	
2	company Registration Number	
3	Registered Address	
4	Name of Partners / Directors	
5	Bidder Type (Indian/Foreign)	
6	City	
7	State	
8	Postal Code	
9	PAN/TAN Number	
10	Company's Establishment Year	
11	Company's Nature of Business	
12	Company's Legal Status ***(Limited Company, Undertaking, Joint venture, Partnership and others)***	
13	Company Category ***(micro unit as per MSME, Small unit as per MSME, Medium unit as per MSME, Ancillary unit, Project Affected person of this company, SSI, Others)***	
14	Contact Person Name	
15	Date Of Birth (DD/MM/YYYY)	
16	Correspondence Email	
17	Designation	
18	Phone	
19	Mobile	

Note: If the information is not pertaining to the bidder, in third column he should specify as "Not Applicable"

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Annexure III

Technical Specifications: ANSYS Maxwell Finite Element Analysis Software

Finite Element Analysis Software-Maxwell	
Simulation	Low-frequency electromagnetic field simulation and analysis using FEM for 3D/2D structures. Solve static, frequency domain and time-varying electromagnetic and electric fields including quasi static parameters
Modelling	Electric motors and generators, transformers, bus bars, relays, solenoids, power electronics both individually and as a complete system including any or all of the above
Types of analysis	Electromagnetic Analysis Magnetostatic Analysis Eddy Current Analysis Transient Magnetic Analysis Electrostatic Analysis DC Conduction Analysis Electric Transient Analysis
Transient-nonlinear analysis	Motion-rotation, translational, non-cylindrical rotation including animation for various parameters
Capability of solvers	Solvers that accurately solve for force, torque, capacitance, inductance, resistance, and impedance, as well as generate both nonlinear equivalent circuits and state-space models to be employed into the further system and circuit simulation analysis
Extended Analysis	External circuit coupling
	Permanent magnet demagnetization analysis
	Core loss computation
	Time domain Multiplexing Capability for the transient solver
	Lamination modelling for 3-D
AC electromagnetic	Analysis of devices influenced by skin/proximity effects, eddy/displacement currents
Magnetostatic	Nonlinear analysis with automated equivalent circuit model generation

Electric field	Transient, electrostatic/current flow analysis with automated equivalent circuit model generation
Mesh Creation	Automatic, adaptive mesh creation
	Fault-tolerant meshing algorithms
	Mesh-generation feedback
	Mesh-based model resolution
Display of data/visualization of results	Field visualization and animations (shaded, contour and vector plots)
	Mesh visualization (full, partial)
	Current, induced voltage, flux linkage
	Power loss, stored energy
	Core loss, eddy, excess, hysteresis loss (including the minor loop effects)
	Impedance, inductance, capacitance
	Flux linkages, Back emf - readymade plots apart from Torque, speed, current
	Custom reports of user-defined solution data
Multiphysics Analysis	Project schematic view for multiuser environments and coupling with Multiphysics tools- Link to Thermal, Fluent, Structural analysis
Scripting	VB Script, Java Scipt and Python Scipt support
Excitation	Data table, current, voltage, function, external circuit, Circuit editor within the FE tool for external excitation and link to Simplorer for co-simulation
Automatic Post Processing	Machine design toolkit for automated post processing of IPM and SPM machine FEM analysis with Python scripting support
Calculator	Field calculator for evaluating complex equations and set convergence criteria for parametric analysis
Magnetisation	Element-by-element or object-based magnetization capability based on the original non-remnant B(H)-curve for both ferromagnetic materials and permanent magnets. Study the permanent magnet demagnetization characteristics extended into the third quadrant
Rotating Machine Design-RMxprt	
Design Templates for	Induction machines

these machines	Single-phase motors Three-phase motors Wound-rotor motors and generators Synchronous machines Line-start PM motors Salient-pole motors and generators Non-salient pole motors and generators Brush commutated machines DC motors and generators Permanent magnet DC motors Universal motors Electronically commutated machines Brushless DC motors Adjustable-speed PM motors and generators Switched reluctance motors Claw-pole generators Synchronous Reluctance Motor
Machine-specific template editor	Rotor, Stator, Slots, Running strategies, Drive circuits, Auto-design feature Slot size, Coil turns and wire diameter, Starting capacitance, Winding arrangement, Graphical winding editor, Cross section Editor, Customizable design sheet, Entry of insulation thickness
Slot and winding editor	Option to draw any slot shape using predefined templates and winding table entry option for variable pitch, variable turns winding
Machine Design Evaluation	Performance curves, Torque, Power, Efficiency, Output waveforms, Current Cogging torque, Flux in the air gap, Cost evaluation
Load Options	Fan load, constant torque, constant speed, constant power
FE Model generation	Create Finite element 2D & 3D models for all the motor mentioned above including automatic setup of external circuit for permanent magnet machines
Complete system design- Twinbuilder/Simplorer	

Model, simulate, analyse and optimize complex systems including electromechanical, electromagnetic, power electronics and other mechatronic designs	
Prototype all aspects of a system including the electronics, sensors/ actuators, motors, generators, power converters, controls and embedded software	
Modelling Techniques	Circuits - fast and numerically stable circuit simulation. Includes multilevel semiconductor modeling, and powerful data exchange between models Block Diagrams - signal flow based models for linear, nonlinear, continuous, time-discrete hybrid-systems. State Machines - event driven approach for complex modeling and logic control (i.e. space vector control, PWMs) Equation Blocks - quickly include equation based modeling in the system State Space Modeling - based on External matrix of multi-domain components
Modelling Languages	VHDL-AMS, C/C++, SML, Python
Design domains	Analog, digital, and mixed signal multi-domain designs
Device Characterisation	Characterisation of IGBTs and other semiconductor devices
Integrated Development Environment	Develop virtual prototypes that can be shared among hardware and software design groups allowing users to emulate hardware and simulate the software
Statistical Analysis and Optimization	Parameter sweep, Statistical Analysis (Monte Carlo) including the SAE (Society of Automotive Engineers), VHDL-AMS Statistical Package, Sensitivity, Optimization, Sequential nonlinear programming, Sequential mixed integer nonlinear programming, Quasi Newton, Pattern search, Genetic algorithm, Tune
Library	Auto library SMPS library VHDL-AMS capability System Level components Library Device Level Component Library Sensor library
Requires Facilities	System Level Simulation Partial pivoting access setting Jacobi update settings Time step settings
Post-processing	2-D and 3-D families display 2-D and 3-D polar families display views

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	Digital plots with families display Rectangular stacked families display Bode and Nyquist families display Interactive data table view Histogram Sensitivity report Range function capabilities
Scripting	Visual Basic, Java
Co-Simulation	Direct coupling with FE Analysis tools for analysing the component modelled using
Coupling	Finite element methods for further system analysis (including circuit, thermal, stress etc)
Co-Simulation and Model Generation	Third Party products- MATLAB/Simulink, MathCAD, C/C++, ModelSim, QuestaSim, RTW, HFSS, Unigraphics, SIwave, Fluent, ANSYS Rigid Dynamics, ANSYS Mechanical
Inductor Design and Transformer Design -PExprt	
Library	Epcos, Magnetics, Ferroxcube manufacturer libraries
Design	Template driven Waveform based inductor and transformer design
	Template driven inductor and transformer design for boost, buck, flyback converter etc.
Machine sizing , thermal, structural and drive cycle based analysis software-Motor CAD	
Motor Topologies	Evaluate motor topologies and concepts across the full operating range and produce designs that are optimized for size, performance and efficiency
Modules	Electromagnetic, thermal, structural, laboratory
E Mag	Calculation of torque, power, losses, voltages, currents, inductances, flux linkages and forces. Input and optimize designs easily with the module's extensive range of parameterized templates and geometries.
Thermal	Calculate the temperature of the motor components in steady-state and transient operating conditions for accurate modelling of thermal behaviour within seconds of calculation. Understanding the main heat transfer paths gives motor designers opportunities to significantly improve motor efficiency power output and make design decisions with confidence

Laboratory	Rapid and accurate analysis of any electric machine design over the full operating envelope. It couples to both the EMag and Therm modules and provides outputs such as efficiency maps and torque/speed characteristics. Generates efficiency and loss maps. Calculates the peak torque/speed characteristic. Calculates the continuous (thermally constrained) torque/speed characteristics. Analyses performance over complex driving cycles. Uses maximum torque/amp and maximum efficiency control strategies
Structural	Calculates stress and displacement in rotors during operation. Optimizes the design of the rotor to maximize electromagnetic performance within the mechanical limits.
Coupling	Coupling With Ansys Multiphysics Packages
	Ansys Motor CAD
Library	MOTOR CAD package with Template-Based Electromagnetic and Thermal Design Electromagnetic-Thermal-Control Coupling Simulation Design for Field Weakening Temperature Dependent Continuous-Torque and Peak-Torque Simulation Manufacturing Effects and Housing Interfaces. Ratio-Based Optimization Magnetic Force Analysis Rotor Stress Analysis

Annexure-IV

Service/ Support Terms and Conditions

Sl. No.	Terms and Conditions
1.	Software Support has to be provided for ANSYS Maxwell Software with 5 User Network License.
2.	Duration of Warranty and technical support/service for all software upgrades and updates must be for a period of 3 years from the date of start of the contract/P.O.
3.	Any latest updates/versions of the ANSYS Maxwell software released during support/service/warranty period has to be supplied along with user manual.
4.	All perpetual licenses-latest versions must be provided.
5.	The software versions must support operating systems such as Windows 10, 11 or higher and Linux.
6.	The software upgraded version should be delivered within the dates mentioned in purchase order and **onsite (i.e. at NIT Goa premises) installation, training and demos of the software must be given by the service provider**.
7.	During support/service/warranty period, if any issue arises in the functioning of the software license, then it has to be immediately rectified for free of cost by the support provider through online or by physical visits at the buyer premises.
8.	Resource Person must be provided for a technical talk at NIT Goa by the support/service provider as and when requested by NIT Goa.
9.	The price quoted must be for complete package of the software with seamless integration through workbench.
10.	Proprietary and authorization letter from the software developer must be provided in original.