



राष्ट्रीय प्रौद्योगिकी संस्थान हमीरपुर हमीरपुर-177005-(हि .प्र.)

NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)-177005

[An Institute of National Importance under Ministry of Education (शिक्षा मंत्रालय)]

E-TENDER NOTICE

Sealed online e-Tender in two bid system are hereby invited by the undersigned for the supply of following items on behalf of the Director, NIT, Hamirpur from the Eligible/ Experienced/ Resourceful, manufacturer's dealer/authorized distributor etc. having experience in appropriate field and who have successfully completed works of similar type, so as to reach in the office of the undersigned as per date & time mentioned below.

Sr. No.	Name of works/item	Qty/ No.	Earnest Money In Rs.	Time Limit
1	Supply and installation of Software for EV and Transportation system Lab For detailed specifications etc please refer to SBD	1	80000	60 days

1. Availability of bid document and mode of submission:-The bid document is available online and bid should be submitted in online mode on website <http://www.eprocure.gov.in/> and <http://www.nith.ac.in/>. Bidder would be required to register in the web-site which is free of cost. For submission of bids, the bidder is required to have Digital Signature Certificate (DSC) from one of the authorized certifying authorities (CA).

2. Key dates: (1)

1	Date of online publication	29.08.2026 at 6:00 PM
2	Document download start and end date	29.08.2026 to 21.09.2026 10.30 AM
3	Bid submission start and end date	29.08.2026 to 21.09.2026 10.30 AM
4	Physical submission of EMD, technical documents and cost of tender document etc.	On or before 05.30 PM on 21.09.2026
5	Date of opening of technical bid	22.09.2026 at 11.30 AM

- (II) Objections/representation if any against the bidders will be entertained only within three days after publication/uploading of technical bid opening summary on net and thereafter that the date of opening of financial bid of technically qualified bidders will be published /uploaded on net.

3. Tender Details:-The tender Documents shall be uploaded in 2 cover:-

Cover 1:-Shall contain scanned copies of all "Technical Documents/Eligibility information".

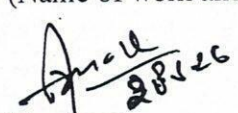
Cover 2:- Shall contain "BOQ/Financial Bid", where supplier will quote his offer for each item.

- (a) Submission of Original Documents: The bidders are required to submit (a) original demand draft towards the cost of bid document if any and (b) original bid security/Earnest Money deposit (EMD) and other technical documents in the Store & Purchase section, NIT Hamirpur-177005 (HP) as specified in the key dates of **Sr. no.2**

on tender opening dates & schedule, failing which the bids will be declared non-responsive. EMD in the form of DD/FDR must be attached with in favour of Director, NIT, Hamirpur (H.P) -177 005. The EMD should remain valid for a period of 90 days beyond the final bid validity period. EMD of unsuccessful bidders shall be returned after the expiry of the final bid validity or before the 30th day of the award of contract. The EMD of the successful bidder shall be released after successful execution of supply order.

4. BID OPENING DETAIL: - The bids shall be opened as per schedule specified in the key dates of Sr. no.2. in the store & Purchase section, NIT, Hamirpur by the authorized officer. In their interest the tenderer are advised to be present along with original documents at the time of opening of tenders. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time & venue.
5. The bids shall remain valid for acceptance for a period of not less than 120 days after the deadline date for bid submission. Other details can be seen in the bidding documents. The officer inviting tender shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt notify the bidder of any bid updates. The Employer shall not be liable for any information not received by the bidder. It is the bidders responsibility to verify the website for the latest information related to the tender.
6. The copy of enlistment order & renewals, Copy of PAN issued by Income tax Department and copy of GST Certificate must accompany in the cover-1
7. The bidder preferably must have successfully supplied similar items in recent years. The bidders shall have to produce supporting documents giving date of award, date of commencement and completion from the concerned competent authority and should be included in cover-1
8. Destination: F.O.R. destination i.e. NIT, Hamirpur (HP) and the rates must include the charges for Packing, Forwarding, Freight, etc., if any.
9. Price/Rate: The price of items may be quoted in Indian rupees.
10. GST:- All the firms may invariably mention their GST/PAN numbers on tender failing which quotations may not be considered valid. Further, this Institution does not issue any Concessional form, so the GST applicable as per actual rates must be mentioned in the offer. In case GST is not mentioned, the rates shall be treated as inclusive of all taxes.
11. The bidders/firms have to supply the complete catalogue/brochure of the products to be supplied along with the Technical bid.
12. The technical bids will be evaluated on the basis of terms & conditions of the tender and details of the product to be supplied as per condition 11 of the tender notice. The committee reserves the right to reject any technical bid on the basis of technical specifications/catalogue/brochure submitted.
13. Conditional/ telegraphic tenders shall summarily be rejected.
14. For any clarifications bidders are requested to contact FI (Purchase), NIT Hamirpur at his E-mail ID i.e. fip@nith.ac.in.
15. The tender/bid shall be kept in a sealed envelope superscribed as "Tender for (Name of work and date of opening)".
16. The jurisdiction of the law of court shall be at Hamirpur (HP).

No: NIT/HMR/DoEE/S&PS/ 2026/283-385


FI (Purchase)
Dated: 28-08-2026

Copy forwarded to the following for information please:-

1. The HOD, DoEE, NIT, Hamirpur

2. Dr. Jiwanjot Singh, Assistant professor, DoEE, for information please.
3. The FI (CC), for getting the advertisement displayed in the Institute website for wider publicity under head: - **Supply and installation of Software for EV and Transportation system Lab For Electrical Engineering Department of NIT Hamirpur.**

FI (Purchase)

Shal
20/08/26



Subject: - Supply and installation of Software for EV and Transportation system Lab For Electrical Engineering Department of NIT Hamirpur.

Sealed online E-Tender in two bid system are hereby invited by the undersigned for the supply of following items on behalf of the Director, NIT, Hamirpur from the Eligible/ Experienced/ Resourceful, manufacturer's dealer/authorized distributor etc. having experience in appropriate field and who have successfully completed works of similar type, so as to reach in the office of the undersigned as per date & time mentioned in the tender notice.

Sr. No.	Name of works/item	Qty/ No.	Earnest Money In Rs.	Time Limit
1	Supply and installation of Software for EV and Transportation system Lab For Electrical Engineering Department of NIT Hamirpur. For detailed specifications etc please see below:-	1	80000	60 days

Detailed Technical Specification for **Supply and installation of Software for EV and Transportation system Lab For Electrical Engineering Department of NIT Hamirpur.**

GENERAL TECHNICAL SPECIFICATIONS

Scope: Complete simulation software academic package (multi-user) for EV & Transportation Lab with all add-on EV, transportation & power electronics modules / equipment with complete execution & operation support, and must include the following features, power electronics hardware / integration capability / modules etc.

1.	A finite element software tool, for low-frequency electromagnetic and thermal simulations, in 2D, 3D & Skew. The tool with full range of physical models to simulate the low frequency behavior of electromagnetic devices: 1.1. Magnetic: 1.1.1.1. Static, steady state AC magnetic, transient 1.1.1.2. Circuit and mechanical couplings 1.2. Electric: Electrostatic, conduction 1.3. Thermic: Steady state AC thermal, transient 1.4. Thermal couplings: Electro thermal, magneto thermal 1.5. Partial Element Electrical Circuit (P.E.E.C.) method for conductor modeling 1.6. Skewed geometries 1.6.1. The skew environment should have magneto static, steady state AC magnetic and transient magnetic capabilities.
2.	Feature extended multi parametric analysis capabilities, electrical circuit and kinematic couplings, the tool allows to analyze, design and optimize the following in single package. 2.1 Rotating machines 2.2 Linear actuators, solenoids 2.3 Transformers & inductances 2.4 Induction heating processes 2.5 Sensors 2.6 Cables, electric connections 2.7 Electromagnetic compatibility 2.8 Wireless chargers for EV's

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3.	The tool should have in-built overlays 3.1 It should provide in-built motor overlays such as BLDC, PMSM, and Induction Motor in 3D. 3.2 It should also provide in-built 2D overlays for BLDC Inner & Outer Rotor, PMDC, SRM, induction motor, induction motor outer rotor. 3.3 The overlays should consist geometry, mesh and windings 3.4 It should provide in-built overlay for 3-phase transformer to perform no-load and short circuit test.
4.	The solver features: 4.1 The modelling of machines should have a rotor or stator with Skew slots 4.2 Non-meshed coils which allows to create complex coils, like circular coils, rectangular coils, composed coils, multi saddle coils, and saddle coils. 4.3 Mathematical model to consider thickness of lamination of both stator and rotor core.
5.	The tool should provide the following productivity features: 5.1 Jiles Atherton model to calculate hysteresis losses 5.2 Provision for hysteresis modeling, based on Preisach's model, for accurate evaluation of iron losses and remanence effects 5.3 Preisach static vector model should be available in 2D and 3D 5.4 Efficiency maps 5.5 The tool should provide dedicated macros for automated operations for: 5.5.1 PMSM efficiency maps 5.5.2 Finding out efficiency map max speed/ max torque point 5.5.3 Finding out efficiency map corner point, I_{max}, and angle 5.5.4 Halbach Magnetization For 2D and 3D. 5.5.5 Create initial non meshed coil for radial motor etc.
6.	The tool should provide demagnetization feature, to check demagnetization in permanent magnets at design stage.
7.	Modeling techniques in the tool for accurate and fast results: 7.1. Back ground image modelling 7.2. Infinite box for open boundary problems 7.3. Non meshed coils 7.4. Thin regions represented by surface models 7.5. Fast evaluation of geometry skewing effect 7.6. Non-linear anisotropic material behavior 7.7. Hysteresis modeling 7.8. Skin and proximity losses in windings 7.9. The tool should have capability to model Shell Elements, wherein the thin regions are represented by surface models.
8.	Thermal Analysis capabilities: 8.1. The tool should provide steady state thermal and transient thermal application in 2D and 3D framework. 8.2. Thermal coupling in 2D environment 8.2.1 Steady state AC magnetic coupled with transient thermal 8.2.2 Steady state AC electric coupled with transient thermal 8.2.3 Electric conduction coupled with transient thermal 8.3. Thermal coupling application in 3D environment 8.3.1 Steady state AC magnetic coupled with transient thermal
9.	CAD Import The tool should provide import of CAD models from CATIA, Pro/E, IGES, STEP, Parasolid, NX, Solidworks.
10.	Specialized features: 10.1. The tool should be able to model both star and delta connected motors 10.2. The tool should be able to simulate streamer criterion, to evaluate breakdown voltage in order to improve the design of electrical equipments. 10.3. The tool should provide macro to drive motor with PWM signal 10.4. The tool should be able to drive through groovy language; User subroutines for hysteresis's current control. 10.5. The tool should allow both T-phi and AV formulation
11.	Geometric Description: 11.1. Sketcher of 2D geometry including parametric capabilities 11.2. Embedded 3D modeler with fully parametrized modeling constructs 11.3. Skew modeling capabilities, with 2.5D modelling 11.4. Advanced CAD import & export 11.5. De featuring & simplification capabilities 11.6. Dedicated environment for electric rotating machines design in 2D&3D
12.	Mesh Generator: Mesh types and meshing technologies that can be mixed in both 2D and 3D situations 12.1. Smart automatic mesh generation based on geometry & physic

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	12.2. Fine manual control of mesh size and distribution 12.3. Mapped mesh and linked mesh 12.4. Auto-adaptive mesh refinement during solving in 2D & 3D 12.5. Fine manual control of mesh size and distribution 12.6. The tool should have be able to read the files from meshing tool Hypermesh for batch meshing, and tetra & quadrilateral mesh from Simlab or equivalent
13.	Fully Parametric solver allowing geometrical or physical parameter sweeps 13.1. Several iterative or direct linear solvers with multiprocessing 13.2. Robust non-linear solvers 13.3. Distributed parametric studies across several cores or machines 13.4. Auto-adaptive mesh and time-step parameter sweeps
14.	Post-processing in the tool 14.1. Electric and magnetic fields. 14.2. Temperature evolution for duty cycles 14.3. Magnetic Flux, inductances, energy 14.4. Iron losses and Joule losses 14.5. Position, velocity, force, torque, speed. 14.6. Skin effect visualization 14.7. User defined quantities 14.8. Maps, isovalues and vector plots 14.9. Animations 14.10. 2D and 3D curves 14.11. Spectral analysis 14.12. Cutting planes 14.13. Look up tables for system simulation 14.14. Export capabilities 14.15. Results preview during solving process
15	The tool should provide a dedicated module for the pre-design of electric rotating machines. 15.1. Design environment to build a machine from standard or customized parts, add windings and materials to run a selection of tests and compare results. 15.2. Effective machine parts management (slots, magnet shapes, etc.) with possible customizations. 15.3. Automated tests ready to be performed: 15.3.1 Maps vs (Id, Iq): Flux, inductance, torque, iron losses, etc 15.3.2 Open circuit tests with cogging torque and back-emf 15.3.3 Torque-speed curves & efficiency maps considering thermal, mechanics, electronics constraints. 15.3.4 Should allow to describe duty cycle for Efficiency maps computation 15.3.5 module should allow to do FE based tests at predesign stage. 15.3.6 module should couple with optimization tool to perform optimization at predesign stage. 15.3.7 Automatically export results with design data as document
17	Implementing an Efficient Motor Drive - Must provide the co-simulation features for drive and control analysis for the machines with its associated control strategy. Several levels of couplings must available in 2D and 3D, from lumped model extraction to full co-simulation. Tool must help users to generate optimized and high-performance products, in less time and with fewer prototypes with analysis, design and optimization of modern applications features. • Tool must do complex multidisciplinary and multiphysics analysis and design problems involving combinations of phenomena including motors, vibrations, temperature, systems and electromagnetics. • Must provide global design workflows, and provides import of CAD models like CATIA, Pro/E, IGES, STEP, Parasolid, NX, Solidworks; allowing to deal with complex 3D CAD input files in an efficient way. • Thermal applications in software / tool. • Build-in magneto thermal coupling in 2D and 3D • Magneto Thermal analysis: Couple with CFD simulation tools • To deliver reliable analysis results, tool must have the most advanced numerical methods available in it, to deal with complex modeling situations. Must have multi-parametric capabilities allow an efficient search of the design space for optimal performance of your device. Customization, automation and connection to CAD tools are available for maximum productivity. • Different options must available to fine tune the models and the solvers, bringing accurate results in the most efficient way. With its embedded scripting tools and the ability to write macros, It must captures simulation processes and automates them, thus speeding-up the everyday use of the software.

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	• It should provide true Multiphysics Capabilities: Design efficient, silent and robust machines via the seamless connections to the global creative environment. • Advanced physical properties for high-performance calculations • Software tool must provide a full range of physical models to simulate the low frequency behavior of electromagnetic devices. • Magnetic: Static, steady state AC magnetic, transient • Electric: Electrostatic, conduction, steady-state AC electric • Thermal: Steady state AC thermal, transient • Thermal couplings: Electro-thermal, magneto-thermal • Embedded electric circuits and rigid body motion capabilities
18	A dedicated e-Motor environment with automated tests • A user-friendly environment facilitating explorations to non-experts, or accelerating standard analysis to daily users • Automates e-Motors computations for performance mapping • Various maps available for efficient post-processing activities • Available in 2D, 3D and skew for the magnetic transient application • Must have a Simple and Flexible Mesh Generator • Smart automatic mesh generation based on geometry • Fine manual control of mesh size and distribution • Linked and extrusive mesh • Mixed mesh (Tets and quads) • Auto-adaptive mesh refinement during solving • Volume tetrahedral mesh generator, that enables high quality meshes to be achieved in a reduced time. • Quickly get a precise mesh for accurate results. • Circuit coupling: • Advanced embedded electrical circuit editor • Allows to model the drive of the actuator in the same model • Modeling motion: Easy modeling of motion thanks to electromechanical coupling. • Translation • Constant or variable speed • Coupled load (mechanical dynamics) Solving of the mechanical equations • Model both star and delta connected motors. • Provide macros to drive motor with PWM signals • The tool must able to drive through groovy language; user subroutines for hysteresis's current control. • Demagnetization of permanent magnets during solving process • The modelling of machines have a rotor or stator with Skew slots. • Non- meshed coils which allows to create complex coils, like circular coils, rectangular coils, composed coils, multi saddle coils, and saddle coils. • Mathematical model to consider thickness of lamination of both stator and rotor core. • Efficiency maps
19	Design of energy efficient electric drive systems • Must have capability to design complex drives to the study of load impact. Co-simulation must available for 2D, 3D and Skew models and devices such as rotating machines, sensors, transformers, or linear actuators can be considered. Considering motion and eddy currents, the coupling allows the implementation of control strategies and the computation of all the associated losses, giving insight into the global performance of the system. • Tool must provide an open integration platform for modeling, simulating, and optimizing multi-disciplinary systems-of-systems using inherent 1D block diagrams. Users have the option to include subsystem models either from 3D tools or from 3rd-party tools. Models can also be imported from Simulink • Other Features: • Hierarchical systems-of-systems defined as parameterized models • Signal-based and physical modeling can be conveniently combined to define a system model • Built-in block libraries can be easily managed and extended • Model exchange or co-simulation achieved through FMI / FMU • Multi-disciplinary models can include multi-body models, electromagnetic models, FEA models, CFD models, and more • 0D, 1D, and 3D modeling can be used together, allowing the best approach for different types of subsystems • Tool must provide features to Improve System Level Performance Simulate and improve the dynamic behavior of multi-disciplinary systems. Easily model, simulate, and validate smart systems where users can incorporate functions of sensing, actuation, and control coming from diverse components. • Perform what-if analyses at the system level to quickly test numerous designs and investigate the interactions of all components and subsystems comprising a system. Gain Product-level Functional Insight Early Identify product-level problems early in the design process while

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ensuring that all the design requirements are met. Must provides its users with a standard set of predefined blocks that can easily be combined to model systems.

- Users must easily leverage the large library of Modelica® physical components to further describe the plant and the controller. CapabilitiesBuild Diagrams Intuitively
- Drag, drop, and connect paradigm to rapidly construct models
- Multiple window configuration with the ability to modify diagrams between windows using the drag-and-drop and copy-and-paste operations
- Support for concurrent loading of multiple models in a session Hybrid Modeling Model and simulate continuous and discrete dynamic systems. Multi-disciplinary Modeling software must allows users to model and simulate the combined system behavior of real-world systems with support for multiple domains such as Mechanical, Electrical, and more.
- Hierarchical and Parametric Modeling
- Should support build hierarchical component-based models of a real-world system using 1D block diagram modeling libraries
- Should have mix signal-based and physical modeling blocks in the same model, when modeling large or complex systems, easily create super blocks by encapsulating multiple blocks in a diagram into a single block
- Software should have super blocks that are modular, reusable, can be masked, and fundamentally behave like regular blocks allowing more flexibility
- Hierarchical and parameters must be defined at different levels, should provide an 'all available parameters' option which lets users navigate in a diagram and get a report of all parameters that are known or defined at a current level Built-in Block-based Model Libraries Tool must include large variety of predefined blocks available in an easy-to-use library of palettes. Users can also create their own custom blocks in C or math scripts in OML and save them to new or existing libraries.
- Library Management Easily create components and assemble custom applications. Library manager needed to create and edit custom libraries. Should also provide an IDE along with API functions for users to further leverage library management. Hybrid Simulator provides users with several high-performance numerical solvers that accurately and robustly solve dynamic systems including continuous, discrete-time, and event-based behaviors.
- Optimization
- Must formulate optimization problems to improve the system parameters and design robust control strategies with multiple options. Graphical optimization tool: • The simplest way to formulate and solve optimization problems
- Script-based optimization:
- Model Exchange and Co-simulation via Functional Mock-up Interface (FMI)
- Must support FMI 2.0 standard for both model exchange and co-simulation of dynamic systems including the ability to import and export FMUs (Functional Mock-up Units).
- Co-simulation with Multi-body Models
- The co-simulation interface lets users simulate a complex system that includes a multibody system (MBS) and one or more control subsystems. In order to effectively simulate the entire system, the MBS is simulated with a multi-body simulation solver while the control subsystem should simulate
- Linearization Tool must allow users to create linear models from blocks by linearization. The operating point can be computed either by running the simulation at a given time instant or by computing a steady-state point by imposing constraints on inputs, outputs, states, and state derivatives. Compiling Models Into Executable Code Tool must support code generation for system performance & IP protection
- Extensive Commands and Math Libraries • Elementary math • Logic operators • Linear algebra • Vectors & matrices • System commands
 - Time commands • Trigonometry commands • Polynomial math • Calculus • Differential equations • Signal processing • Statistical analysis • Control design • Optimization • CAE data readers • String operations • Plotting
- Data Visualization, Plotting and Reporting
- Support for various 2D & 3D plots, Plot properties and attributes can be modified easily and interactively with context menus to set plot titles, labels, axis labels, legends & tick mark labels
- Zoom and pan support • Report generation Connectivity Tools to read and extract data from CAE results, with especially tight connectivity, Open Matrix Language (OML) Interpreter
- Interpreter for enhanced interaction to support interruption of long scripts • Provides an extension to the variable browser to support additional objects; includes syntax highlighting and auto completion, and provides all the debugging features Integrated Development Environment
- Command window with command completion, code editing, and display print command outputs during script execution from the editor allow for visual and interactive code inspections during runtime
- Modern script editor with syntax highlighting, smart indentation, collapsible sections including code folding, bookmarking, searching and toggle to display on/off line numbers • Script editor allows users to split the screen into multiple views for more interactive authoring and execution • Multi-language environment with support for OML, Python, & Tcl/Tk

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- Debugger with options to easily monitor variable values via watch window, track paths traced while executing scripts via call stack window and display all breakpoints in the debugging session via the breakpoints window
- Intuitive project browser with a hierarchical structure of all the scripts, plots and matrices for easy navigation
- File browser allows direct access to existing program files on disk
- Variable browser displays all the user generated and global workspace variables including name, value, type and scope. Options to easily monitor variable values during debugging
- Command history window not only displays all commands entered while programming but also enables quick execution with support for double-clicking on each command or drag/drop into the command window
- Easy GUI Creation • Scripts tailoring option, should also have dialog boxes to build your own customized graphical user interfaces (GUIs)
 - Must enable easy and intuitive re-usability of your specialized utility programs
- Allows users to deploy many tools to end users • Enables flexibility and convenience when providing program inputs
- Rapid Development of Control Systems tool must provide a complete tool chain for the development of embedded control systems covering Software-in-the-Loop, Processor-in-the-Loop, as well as Hardware-in-the-Loop simulations. Users can make changes to a control diagram, and compile and download it to the target MCU in seconds. Then, while the system is operating, you can interactively update the control parameters. Using powerful data logging, buffering, and digital scoping blocks, you can gain insight into the control algorithms deployed on the target MCU in real time.
- No Hand-Coding Required Turning control diagrams into executable, real-time capable code used to require an experienced embedded software developer. With code generator, a control design users can easily try out new algorithms on a target hardware without the need for hand-coding.
- Affordable and Easily Configured Solution needed for embedded development including state charts, target support, fixed-point algorithms, efficient code generator, motor control libraries, and a lot more, results in an affordable and easy configurable development environment.
- Capabilities Diagram-to-Code: Tool must generate efficient and compact yet readable ANSI C code for discrete, continuous, and hybrid systems created using diagrams. For example, code generated for closed-loop motor control – including PI controller, digital output, PWM, and encoder peripherals – runs at 300KHz on a 150MHz F28335 MCU with a memory footprint of 2095 bytes for code, 501 bytes for initialized data, and 504 bytes for uninitialized data.
- Interactive Hardware-in-the-Loop Simulations
- In MCU-in-the-loop (MIL) simulation, control algorithm must runs in real time on the target MCU. Real-time communication between the target MCU and is performed via a JTAG hotlink. Ability to tune parameters and monitor real-time data transfer.
- Must support a PIL-synchronous communication mode that runs the target in lock step with the simulation, allowing easy verification of embedded algorithms. Auto-scaling speeds fixed-point development, while in-line code generation creates fast target code.
- Target Hardware Support hardware agnostic code with abilities to also extend it for using target-specific blocks for any embedded targets
- Software must support micro-controllers from Texas Instruments (C2000, MSP430/Concerto), Atmel (Atmega 328/2560/32u4) popularly used in the Arduino, and Generic MCU support to extend to other silicon families. Should also provides device driver blocks that include analog ADC, ePWM, eCAP (event capture), SPI, SCI (RS232 serial), I2C, digital GPIO, QEP (quadrature encoder), and CAN 2.0.
- Must provide a library of components and subsystem models tailored to digital power applications (including power converters, controllers, compensators, sources, and more) and feature to model end-to-end communication systems at the signal or physical level.

- 20 The tool should include functionalities for designing power supplies and motor drives, simulating power electronics and motor drive systems with analog and digital control, and automatically generating embedded C code for TI microcontroller hardware. The tool should:
- Design LLC resonant power supplies automatically for a given input specification with minimum effort
 - Design buck, boost, and flyback power supplies automatically with peak current mode control with minimum effort. Implement control in both control block and PWM IC hardware for easier implementation.
 - Design common-mode and differential-mode EMI filters of power converter and motor drive systems automatically and with minimum effort based on EMI noise levels and required EMI standards.
 - Design motor drive systems with current controller and speed/torque controller determined automatically.
 - Design of HEV (Hybrid Electric Vehicle) and PHEV (Plug-in Hybrid Electric Vehicle) powertrain systems with current controller, speed/torque controller, and voltage controller determined automatically.

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- Tool must be able to simulate power converter systems and motor drive systems with control implementation in s-domain block diagram, z-domain block diagram, op. amp. circuit, custom C code, or VHDL or Verilog code.
- Tool must provide integrated models to simulate power converters with different levels of fidelity based on simulation needs.
- Tool must provide the capability to simulate magnetics of any structures.
- Simulate power converter transient and conducted EMI of power electronics and motor drive systems, including effect of cables.
- Must be able to calculate power converter losses with devices from different manufacturers. Provide the capability to capture semiconductor device datasheet information graphically.
- Must be able to calculate inductor losses based on inductor structure and magnetic materials.
- Tool must provide link / interface to power electronics, motor design, embedded and digital twin third-party software etc.
- Tool must provide the capability to run simulation in scripts so that a simulation run of hundreds or thousands of simulations can be automated.
- Tool must provide the capability to generate efficiency maps of power converter and motor drive systems.
- Integrated with power electronics hardware module, capability with complete setup execution and support.
- Programmable Digital Signal Processors (DSP) boards // kits with motor for HIL Validation & Simulation supported by Software.
- Generate embedded C code automatically for TI microcontroller hardware. Provide the capability to simulate the schematic before code generation. Complete EV / DSP Hardware setup with computing facility must be supplied / integrated as per the onsite requirement for HIL validation purposes.
- Tool must provide the function to visualize waveforms and modify parameters of TI microcontroller code in real time for easy debugging.
- Tool must provide PIL (Processor-In-the-Loop) simulation with the power stage in the software and the control stage in the actual control hardware.
- Tool must provide integrated environment to run SPICE simulation (e.g. LTspice) through co-simulation link.
- Tool must provide link / interface to use real-time simulator Typhoon HIL.
- Tool must provide support to VHDL and Verilog code through co-simulation link with software like ModelSim/Questa.
- Tool must provide link to power converter design software SmartCtrl and RidleyWorks.
- Tool must provide FMI interface to link with FMI supported software.

Other Terms & Conditions

- Vendor participating can be called for onsite demonstration with sample product for quality and feature analysis during the technical evaluation.
- The bidder shall quote the required licenses as a complete, legally authorized commercial/academic engineering license, Perpetual, minimum three user licenses or more. It is vendor responsibility to demonstrate and integrate software with hardware.
- Technical committee/Indenter accepts or reject any bid based upon the product quality & unsatisfactory operation of the software.
- Bids will be rejected in case of any technical deviation in compliance.
- Vendor participating must have the previous past experience in providing similar type of simulation software in other IIT/ NITs or central / state institutes / university.
- Vendors should provide a Warranty & support: 01 year.
- No extra cost will be provided for delivery and installation of the equipment.
- Vendor has to give demonstration and training for the supplied software at NIT Hamirpur, Department of Electrical Engineering.
- Payment will be only done according to the institute norms after supplying and installation of the software

TERMS AND CONDITIONS:-

1. **Validity:** Minimum validity of the quotation will be 03 months from the date of opening of the quotation/tenders.
2. **Time Limit:** - The firm/supplier has to supply and install the equipments within 60 days from the date of the award letter.
3. **Guarantee/warranty:** - The supplier has to provide equipment guarantee/warranty supplied for 01 years from the date of successful installation of the equipment supplied. (Certificate of the same to be given by the supplier)
4. **Demonstration & Training:-** The supplier will have to demonstrate and impart training to concerned users at NIT, Hamirpur after successful supply & installation. (Certificate of the same to be given by the concerned user/indenter).
5. **EMD: EMD in the form of DD/FDR /Bank Guarantee must be attached in favour of Director, NIT, Hamirpur (H.P) -177 005.** The EMD should be remained valid for a period of 120 days beyond the final bid validity period. EMD of unsuccessful bidders shall be returned after the expiry of the final bid validity or before the 30th day of the award of contract. The EMD of the successful bidder shall be released only after submission of 3 % **Performance bank Guarantee** which should be valid till expiry of warranty period. EMD/PBG exemption is permissible as per Govt. rules.
6. **Make in India preference:-** NIT Hamirpur shall compare all substantially responsive bids to determine the lowest evaluated bid. The Institute is following and abide with the revised Public Procurement (Preference to Make in India), Order No. P- 45021/2/2017 – PP (BE-II) dated 16.09.20 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India & subsequent instructions of Ministry. Accordingly, preference will be given the make in India products while evaluating the bids. However, it is sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India along with respective documentary evidence in the technical bid itself.
7. **Technical Evaluation:-** Technical evaluation of the participating firms will be done strictly on the basis of catalogues/brochures/literature/technical details of the product to be supplied along with relevant experience & fully complying all the terms & conditions of the SBD & tender notice. **It is mandatorily to physically submit the technical literature/catalogue of the product to be supplied along with make & model no. failing which the technical bid of the participating bidder will be straightforward rejected.** NIT Hamirpur also reserves the right to seek clarification from any of the participating firm during technical evaluation. The participating bidder has to submit undertaking that they fully complies to our above-mentioned technical specifications.
8. **Destination:** F.O.R. destination i.e. NIT, Hamirpur (HP) and the rates must be quoted inclusive of all taxes and charges.
9. **Penalty:** In case the firm/vendor fails to supply the equipments within the stipulated period penalty without assigning any reasons @ 1/2% (half percent) of the total value of the item covered in order as penalty per day subject to a maximum of 5% (five percent) will be imposed unless extension is obtained in writing from the office on valid ground before expiry of delivery period
10. **Price/Rate:** The price of equipment/items may be quoted as per BOQ clearly mentioning the Basic rate & GST in the specified columns of BOQ in Indian rupees. **Tender will be awarded to the participating bidder who will be lowest in terms of total of all items**
11. **GST:** - All the firms may invariably mention their GST/PAN numbers on quotation/tender failing which quotations may not be considered valid. Further, this Institution does not issue any C/D Concessional form, so the GST applicable as per actual rates must be mentioned in the offer. In case GST is not mentioned, the rates shall be treated as inclusive of all taxes.

12. **NIT/NIQ Opening:** Representative of the firm may be present at the time of opening of the Quotations, if it wishes.
13. **Payment:** 100% payment shall be made immediately after receipt of material in good condition and successful installation of the same.(Certificate of the same to be given by the indenter/inspection committee NIT, Hamirpur)
14. **Right of Acceptance/Rejection:** Right of acceptance and rejection of any tender/quotation in part or full without assigning any reason are reserved with the institution authorities. The number of items to be purchased could be increased or decreased depending on the requirement of end user.
15. In case of any dispute the jurisdiction of Hamirpur (HP) Courts shall apply. For any clarifications please contact:- Dr. Jiwanjot Singh (Mobile 9872581018)


FI (Purchase) 28.8.26

Annexure I - Bidder's Information

(Bidder should duly fill and send with technical documents via post/courier)

1	Name of the Bidder	
2	Address of the Bidder	
3	PAN No.	
4	GSTIN No.	
5	E-mail ID	
6	Contact Person's Name & Designation	
7	Mobile No.	
8	Email ID	

Annexure II -Questionnaire

(Bidder should duly fill and send with technical documents via post/courier)

Sr.No.	Questions	Response
1	Whether all the terms and conditions of the NIT document have been complied. Compliance (Yes/No)	
2	Whether all the items specified in the technical specification has been compiled and have been quoted in the bidding engine. Compliance (Yes/No)	
3	Confirm that you have read all the instructions carefully and have complied with the instructions accordingly. Compliance (Yes/No)	
4	In case bidder does not manufacture goods offers to supply have submitted Manufacturer's Authorisation letter. Compliance(Yes/No)	
5	Mention Delivery period	
6	Mention Warranty of the material	
7	Mention HSN/SAC code of the material	
8	In case of import supplies whether you have mentioned nearest international port of shipment in the technical bid (if not applicable please mention 'NIL')..	

Signature and Seal of the Manufacturer / Bidder

Place: _____

Date: _____

ANNEXURE III – DECLARATION OF LOCAL CONTENT

(To be given on company letter head - For tender value below Rs.10 crores)
(To be given by Statutory Auditor/Cost Auditor/Cost Accountant/CA for tender value above Rs.10 crores)
(Bidder should duly fill and send with technical documents via post/courier)

Date: _____

To,

The Faculty Incharge Purchase,
National Institute of Technology,
Hamirpur-177005 (HP)

Sub: Declaration of Local content

Tender Reference No: _____

Name of Tender: - _____

1. Country of Origin of Goods being offered: _____

2. We hereby declare that items offered has _____ % local content.

3. Details of Location at which local value addition is made _____

"Local Content" means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

The bidders cannot claim services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc as local value addition.

*"*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law."*

Yours faithfully,
(Signature of the Bidder, with Official Seal)