REQUEST FOR PROPOSAL (RFP)

(ARMY INSTITUTE OF TECHNOLOGY (AIT), PUNE)

Invitation of Bids for Procurement of Computational Fluid Dynamics (CFD) Software for Department of Mechanical Engineering

Request for Proposal (RFP) No 280/2023 dated 06 May 2024

1. Bids in sealed cover are invited for supply of items listed in Part III of this RFP. Please superscribe the above mentioned Title, RFP number of the 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 –

(a) Bids/queries to be addressed to	: Project Office, Army Institute of Technology, Dighi, Alandi Road Pune – 411015.
(b) Postal address for sending the Bids	: Project Office, Army Institute of Technology, Dighi, Alandi Road Pune – 411015.
(c) Name/designation of the contact personnel	: Prof Rushikesh H Patil (Project Officer)
(d) Telephone numbers of the contact personnel	: 7249250184/185 Extn 2106
(e) e-mail id of contact personnel	: project@aitpune.edu.in

3. This RFP is divided into five Parts as follows:

(a) **Part I** – Contains General Information and Instructions for the Bidders about the RFP such as the time, place of submission and opening of tenders, Validity period of tenders, etc.

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

(c) **Part III** – Contains Standard Conditions of RFP, which will form part of the Contract with the successful Bidder.

(d) **Part IV** – Contains Special Conditions applicable to this RFP and which will also form part of the contract with the successful Bidder.

(e) **Part V** – Contains Evaluation Criteria and Format for Price Bids.

4. This RFP is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the RFP, should it become necessary at any stage.

PART I - GENERAL INSTRUCTION

5. Last date and time for depositing the Bids: Last date and time for depositing the Bids is 27 May 2024. The sealed Bids (both technical and Commercial, in case two bids are called for) should be deposited/reach by the due date and time. The responsibility to ensure this lies with the Bidder.

6. Manner of depositing the Bids: Sealed Bids should be either dropped in the Tender Box marked as TENDER BOX or sent by registered post at the address given above so as to reach by the due date and time. Late tenders will not be considered. No responsibility will be taken for postal delay or non-delivery/ non-receipt of Bid documents. Bids sent by FAX or e-mail will not be considered (unless they have been specifically called for by these modes due to urgency).

7. Time and date for opening of Bids: 29 May 2024 **at 10:00 am** (tentatively). If due to any exigency, the due date for opening of the Bids is declared a closed holiday, the Bids will be opened on the next working day at the same time or on any other day/time, as intimated by AIT.

8. Location of the Tender Box: Tender Box is placed at Reception Counter of AIT. Only those Bids that are found in the tender box will be opened. Bids dropped in the wrong Tender Box will be rendered invalid.

9. Place of opening of the Bids: **New Conference Hall, AIT**. The Bidders may depute their representatives, duly authorized in writing, to attend the opening of Bids on the due date and time. Rates and important commercial/technical clauses quoted by all Bidders will be read out in the presence of the representatives of all the Bidders. This event will not be postponed due to non-presence of your representative.

10. Two-Bid system: Only the Technical Bid would be opened on the time and date mentioned above. Date of opening of the Commercial Bid will be intimated after acceptance of the Technical Bids. Commercial Bids of only those firms will be opened, whose Technical Bids are found compliant/suitable after Technical evaluation is done by the Buyer.

11. Forwarding of Bids – Bids should be forwarded by Bidders under their original memo / letter pad inter alia furnishing details like PAN number, GST number, Bank address with EFT Account if applicable, etc and complete postal & e-mail address of their office.

12. Pre-Bid Meeting – Pre Bid meeting will be scheduled where necessary. Date and time of Pre-Bid Meeting will be intimated by the Buyer on mail or telephone/contact no provided by bidder.

13. Modification and Withdrawal of Bids: 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 fax 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.

14. Clarification regarding contents of the Bids: During evaluation and comparison of bids, the Buyer may, at its discretion, ask the bidder for clarification of his bid. The request for clarification will be given in writing and no change in prices or substance of the bid will be sought, offered or permitted. No post-bid clarification on the initiative of the bidder will be entertained.

15. 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.

16. 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.

17. Validity of Bids: The Bids should remain valid till three months from the last date of submission of the Bids.

18. Tender Fee:- Bidders are required to submit Tender Fee for amount of Cost of Tender 1,000/- along with their bids. The Tender Fee may be submitted in the form of an Account Payee Demand Draft in favour of Army Institute of Technology.

19. Earnest Money Deposit:– Bidders are required to submit Rs – 20,000/- (Twenty Thousand only) as Earnest Money Deposit (EMD) along with their bids. The EMD may be submitted in the form of an Account Payee Demand Draft in favor of Army Institute of Technology. EMD is to remain valid for a period of forty-five days beyond the final bid validity period. EMD of the unsuccessful bidders will be returned to them at the earliest after expiry of the final bid validity and latest on or before the 30th day after the award of the contract. 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. The EMD will be forfeited if the bidder withdraws or amends, impairs or derogates from the tender in any respect within the validity period of their tender.

Part II – Essential Details of Items/Services required

20. Schedule of Requirements – List of items / services required is as follows: -

'PROCUREMENT OF COMPUTATIONAL FLUID DYNAMICS (CFD) SOFTWARE FOR DEPARTMENT OF MECHANICAL ENGINEERING'

21. Technical Details:

Ser No	Particulars	Qty	Compliance		Remarks
			Yes	No	
Base Software					
A	**PRE-PROCESSOR (MODELING, MESHING, BOUNDARY CONDITIONS, etc)**				
1	**Geometry**				
	Geometry Creation Tools				
	Features - Solid, Cut, Shell, Wire, Mirror				
	Datum geometry				
	Partitioning tools				
	Sketch Tools				
	Geometry Readers - Faceted geometry & Mesh Reader				
	Geometry Edit Tools				
	Geometry Repair/Simplification/Clean-up Tools				
	Multi-level undo & redo functionality for geometry				
2	**Meshing**				
	Mesh Types				
	Volume & Surface meshes				
	Structured & Un-structured meshes				
	Quadrilateral, Triangular, Hexahedral (brick), Cartesian, Tetrahedral, Polyhedral, Prism (wedge), Pyramid, Shell, mixed element meshes (Tetra/Prism hybrid, Hexa hybrid, Quad/tri Shell, etc)				
	Mesh interfaces - Conformal & Non-conformal (including fluid/solid)				
	Geometry Readers - Faceted geometry & Mesh Reader				
	Mesh Manipulation (Diagnosis & Repair and editing/generation**) Tools** - Translation, Rotation, Scaling, Fusion, Seperation, Deletion, Split, Move, Align, Redistribute, Merge nodes or Meshes, Deactivation/Reactivation, Replacement and Appending of cell zones, Smooth, Coarsen, Refine, Extrude, Re-mesh, Stitch, Change projection, Transform, Change Element Types, Renumber, Adjust thickness, Normal, etc				
	Hybrid Mesh generation Utilities				
	Grid-to-grid interpolation				
	Dynamic Mesh Modeling				
	Automatic Handling of Mesh motion & deformation				
	Automatic Refinement/Coarsening using sizing functions				
	Compatible with other physical models/flows				
	In-cylinder mesh motion & crevice/blowby model				
	Dynamic cell addition & deletion				
	Moving Mesh Analysis				
	Mesh motion preview				
	6DOF solver				
	Free Surface Modeling				
	Single velocity field (VoF)				
	Compressive discretization at free surface				

			Surface tension				
			Zero gradient boundary conditions for volume fractions for automatic height calculation in subcritical free surface flows				
			Supercritical flow outlets				
			Multiple velocity fields for strong mixing/entrainment with separation				
		Mesh Motion & Re-meshing					
			Automatic Handling of Mesh motion & deformation				
			Steady-state and transient				
			Diffusion of prescribed surface mesh motion - Increased mesh stiffness for small elements and near-wall mesh				
			Explicit volume mesh deformation				
			Solution-based mesh adaption				
			Integrated re-meshing control				
		Multi-level undo & redo functionality for meshing & mesh editing action					
		Queries					
3	**Materials Models/Properties**						
		User-defined materials and pre-supplied database/Library of materials					
		Constant or Variable Fluid Properties - Temperature & Composition dependent					
		Standard Fluids & Solids					
			Standard reaction mechanisms, Chemical species mixtures, Thermodynamic & Kinetic Properties				
			Particle/droplet data for standard solids, liquids, liquid fuels & coals				
		Equation of state					
			Ideal gas				
			Standard Redlich–Kwong				
			Aungier Redlich–Kwong				
			Soave Redlich-Kwong				
			Peng-Robinson				
			IAPWS IF-97 (water)				
			User defined				
		Specific heat capacity					
			Constant				
			NASA format				
			Fourth-order polynomials				
			User defined				
		Conductivity					
			Sutherlands formula				
			Modified Eucken kinetic theory model				
			User defined				
		Viscosity					
			Sutherlands formula				
			Rigid non-interacting sphere kinetic theory model				
			Rigid interacting sphere kinetic theory model				
			User defined				
		Non-Newtonian Fluid Models					
			Power law				
			Herschel-Bulkley				
			Carreau				
			Cross				
			User-defined law, with temperature-dependent fluid model parameters				
		Non-Newtonian viscosity models					
			Bingham				
			Bird-Carreau				

			Carreau-Yasuda				
			Casson, Cross				
			Hershel-Buckley				
			Ostwald-de Waele				
			User defined				
		Antoine equation for vapor pressure curves of pure substances					
		Multi-component mixtures					
		Electro-magnetic properties					
			Electrical conductivity				
			Magnetic permeability				
		Standard Real Gas Model for Refrigerants & Hydrocarbons					
		User-defined Real Gas Model for simple & complex equations of state					
		Multiple species Model with Real Gas Model					
		User-defined Property inputs					
		Additional Material Properties					
			Density				
			Material damping				
			Thermal expansion				
			Electrical conductivity				
			Piezoelectric				
			Acoustic medium Properties - Bulk modulus, Volumetric drag, Cavitation limit				
			Porous - acoustic medium				
			Hydrostatic fluid Properties - Hydraulic & Pneumatic fluids				
			Mass diffusion				
			Pore fluid flow				
			Viscous shear behaviour for fluids				
			User-defined materials				
4	**Materials sections** - Fluid section						
5	**Boundary Conditions**						
		Inlets					
			Subsonic, supersonic and mixed (combined subsonic and supersonic)				
			Velocity, mass flow and flow direction, static pressure and direction, total pressure and direction, velocity and static or total pressure (supersonic), static pressure and total pressure and direction (supersonic), zero gradient, Mass fraction for multi-component flow, etc				
			Total temperature, total enthalpy, static temperature				
			Turbulent Kinetic Energy & Dissipation Rate				
		Outlets					
			Subsonic, supersonic				
			Mass flow (with pressure profile or circumferential average pressure profile), velocity, uniform static pressure, average static pressure, radial equilibrium pressure distribution, circumferential average static pressure, degassing condition, meridional pressure profile, supercritical, zero gradient				
		Opening (mixed inflow/outflow)					
			velocity, total (in)/static (out) pressure and direction, static (in)/static (out) pressure and direction, local flow direction or entrainment, Specified flow rate weighting				
		Wall					
			Tangential wall velocity, No slip, free slip, finite slip, specified wall shear, smooth, rough, moving, adiabatic, temperature specified,				

			heat flux specified, heat transfer coefficient and reference temperature specified, opaque, black body, radiation intensity				
			Two-sided walls with optional coupling				
		Fans & Vents					
		Symmetry & Axis Boundary Conditions					
		Thin surfaces/baffles					
		1-D or 2-D profile specifications for any quantity - inlet Velocity or Mass flux					
		Non-reflecting Boundary Conditions					
		Multi-phase Velocity or Mass Flux Boundary Conditions for individual phases					
		Specified Pressure Drop Periodic Boundary Conditions					
		Ability to copy or reuse Boundary Conditions					
		Fixed variable option for Computational Cells					
6	**General Grid Interfaces**						
	Connection of multiple meshes from independent sources						
	Detailed control of boundary conditions at non-overlapping portions of connections						
	Rasterized or direct mesh intersection algorithms						
7	**Multi-Domain and Domain Interface Models**						
	Translational and rotational periodic connections (Conformal & Non-conformal)						
	Translational periodic connections with pressure change or mass flow rate						
	Fluid–solid interfaces with pitch and shape change						
	Porous domains with conservative algebraic fluid-porous interfaces						
	Thin surfaces between fluid and solid domains for modeling conduction, thermal contact resistance and coatings, and additional variables transfer						
	Stationary and rotating frames of reference						
	Alternate rotation velocity advection model						
	Multiple frames of reference interface models						
		Stage interface model					
		Frozen rotor interface model					
		Transient rotor/stator interface model					
	Profile Transformation model for transient blade row simulations with pitch change						
B	**SOLVER-NUMERICAL METHODS/ANALYSIS**						
1	**Numerical Methods**						
	Conservative finite-element-based control volume method						
	Implicit, pressure-based algorithm for all flow speeds, incompressible to compressible						
	Advection modeling						
		Upwind difference advection scheme					
		First- and second-order blend factor					
		High-resolution bounded advection scheme					
	Bounded central difference scheme						
	Robust and accurate diffusion discretization scheme						
	Conservative first- & second-order transient discretization with adaptive transient time stepping						
	High-speed numerics treatment for improved shock capturing						
2	**Solver Types**						
	Implicit &Explicit						
	Stiff & Non-stiff						
	Pressure-based Solver						

		Density-based Solvers				
3		**Linear Solver**				
		Coupled solution of mass and momentum, including for multiphase flows (optionally with volume fraction equation)				
		Coupled solution of energy for multiphase flows				
		Coupled solution of additional variables for multiphase flows				
		Algebraic multi-grid				
		Incomplete lower/upper factorization smoother				
		Linear performance with increasing number of nodes				
4		**Analysis Types**				
		Flow Types				
		Linear Flow				
		Newtonian & Non-Newtonian				
		Internal & External				
		Compressible (Transonic, Subsonic & Supersonic)& In-compressible				
		Viscous & inviscid flow				
		Laminar & Turbulent				
		Steady-state & Transient				
		Multi-phase Normal & Dispersed				
		Free surface flows & cavitations				
		Reactive flow				
		Other flows				
		Buoyancy & rotation				
		Multiple rotation zones				
		Turbulence Modeling				
		Zero- and one-equation models				
		Two-equation models				
		Reynolds stress transport models (second-moment closure)				
		Explicit algebraic Reynolds stress models				
		Large eddy simulation				
		Scalable wall functions and automatic near-wall treatment with integration to the wall				
		User-defined turbulent wall functions and heat transfer				
		Rough wall treatment for ω-based models, including with transition				
		Curvature correction for swirling flow for two-equation models				
		Detached eddy simulation				
		Scale adaptive simulation				
		Predictive laminar-turbulent transition model				
		Heat Transfer & Radiation Modeling				
		Thermal energy and total energy				
		Natural convection (buoyancy)				
		Viscous heating				
		Conjugate heat transfer (CHT) solids				
		Porous CHT domains				
		Advection in rotating and translating CHT solids				
		Gray, multi-band, and multi-gray (weighted sum of gray gases) spectral models				
		Spectral material property dependencies				
		Radiation scattering				
		Radiation models (including Solar)				
		Chemical Species Transport , Reaction & Combustion Modeling				
		User-defined reactions and pre-supplied database of reactions				
		Single- and multi-step eddy dissipation model				
		Finite rate chemistry model				

			Combined EDM/finite rate chemistry, single- and multi-step				
			EDM maximum flame temperature model				
			Flame extinction model				
			Spark and auto-ignition (knock and ignition delay) models				
			Laminar flamelet with presumed PDF model for diffusion flames				
			Premixed/partially premixed combustion (coupled with flamelet PDF for post-flame front mixing and reaction)				
			Burning velocity model				
			Extended coherent flame model, including wall quenching model				
			Exhaust gas recirculation model				
			Weighted reaction progress model for partially premixed combustion				
			Choice of predefined or user-defined turbulent and laminar burning velocity correlations				
			NOx models				
			Magnusson soot model				
			Single- or multi-phase combustion				
			Coal combustion with proximate/ultimate hydrocarbon fuel analysis				
			Chemistry post-processing mode				
			Real gas combustion				
			Component-dependent turbulent Schmidt numbers				
			User-definable turbulent Schmidt and Prandtl numbers				
		Additional User-Defined Transport Equations					
			Scalar and vector additional variables				
			Advective and diffusive transport				
			Purely diffusive transport				
			Poisson equation				
			User-defined algebraic equation				
			Conjugate additional variables and additional variables in solid domains				
		Lagrangian Particle Tracking Modeling					
			One-way or fully coupled two-way momentum transfer				
			Steady-state or transient				
			Moving mesh support				
			Detailed control of injection locations, size distributions, etc				
			User-defined and predefined particle drag models				
			Non-drag forces (virtual mass, pressure gradient and turbulent dispersion)				
			Primary breakup models				
			Secondary breakup models				
			Advanced particle-wall interaction				
			Virtual wall model for particle reflections at rough walls				
			Quasi-static wall film model				
			Wall erosion models				
			Stochastic particle-particle collision model				
			Extensive spray penetration diagnostics				
			Convective, latent, and radiative heat transfer				
			Evaporating and boiling single- and multi-component liquid droplets				
			Coal combustion model with proximate/ultimate hydrocarbon fuel analysis				
			Particle track quantities averaged onto fluid				

		mesh				
		User Fortran control of particle injection and particle models				
		Fully parallelized				
		Choice of particle termination criteria				
		Eulerian Multi-phase Flow Modeling				
		Homogeneous or fluid-dependent				
		Mass and momentum equations				
		Turbulence equations				
		Energy equations				
		Unlimited number of phases				
		Drag force models				
		Non-drag force models				
		Interphase				
		Heat transfer				
		Variable transfer				
		Mass transfer				
		Multiple size group model for poly-dispersed with breakup and coalescence				
		Algebraic slip multiphase model				
		Noise/Acoustics Modeling				
		Lighthill stress output				
		Export of monopole, dipole and rotating dipole sources for acoustics solvers				
		General Source Term Models				
		Isotropic and directional loss models				
		Linear and quadratic resistance models				
		Permeability and loss coefficient models				
		User-defined volumetric sources of mass, momentum, energy and species				
		User-defined boundary sources of mass, momentum, energy and species				
		Six Degree-of-freedom Rigid Body Solver				
		Implicit motion of mesh regions and domains				
		Detailed rigid body solution and coupling control				
		Expression language access to all rigid body state variables				
		Immersed Solids Modeling				
		Capture of motion of solids completely or partially overlapping with fluid domains - Unlimited general solid motion without re-meshing				
		Implicit motion of immersed solids based on rigid body solver solution				
		Fluid Structure Interaction (FSI) Modeling				
		One-way FSI coupling with structural mechanics solutions for steady-state analysis				
		Two-way FSI capability for transient or steady-state analysis with moving/deforming geometry				
		Conservative profile-preserving interpolation for fluid dynamic forces and heat flows				
		Fluid-structure Interaction (FSI) Applications Domain Capability				
		Automotive				
		HVAC				
		Rotating/Turbo Machinery				
		Sensors & Actuators				
		Manufacturing				
		Bio-Medical/Bio-Mechanics				
		Aero-space				
		Under-water Application				
		Chemical/Petrochemical/Petroleum				

		Thermal Analysis				
		Analysis Types				
		Steady state - Heat transfer & Mass diffusion, Transport Analysis				
		Transient - Heat transfer & Mass diffusion				
		Thermal Modelings				
		Conduction				
		Convection				
		Radiation				
		Conjugate Heat Transfer				
		Phase change				
		Acoustics Analysis				
		Multiphysics/Coupled problems - Thermo-mechanical, Thermo-electrical, Piezoelectric, Pore fluid flow-mechanical, Shock & structural-acoustic, multi-field general purpose solver				
		Co-simulation - Fluid-structure interaction (FSI), Conjugate heat transfer (CHT)				
		Flow analysis - Incompressible - Laminar & Turbulent				
		Coupled Eulerian-Lagrangian				
C		**POST-PROCESSOR**				
1		**Results**				
		Plots - Contour, Vector/tensor, Iso-surface displays, Slicing Planes (.xls, XML formats)				
		2D/3D Animation (.avi, .mpeg, .VRML formats)				
		Extraction of results at any location				
		Automatic Result listing & exporting				
		Platform-neutral output database				
2		**Visualizer**				
		X-Y Plot (Contour, Vector, Iso-surface displays, Slicing Planes, forcing vectors/tensors, etc)				
		Section plots (velocity, pressure, vorticity, temperature, mass fraction, etc)				
		Particle Tracing (2D, 3D Plot)				
		Display of flow trajectory inside/outside or around the model with animated bands, 3D arrows, pipes or spheres				
		Animation (2D, 3D) - .avi, .VRML formats, saving & playback facility				
		Dynamic interference, Collision checking/detection				
		Diagnostic messages				
3		**Reports**				
		Quantitative Calculations				
		Automation Report generation (.doc, .xls, .bin, .html, .XML formats)				
		2D/3D Plots/Images (.jpeg, .bmp, .tiff, .png format)				
		Porting of Data - X-Y plots for parts, joints, forces & moments, motions & actuators				
		Data (of inertial loads, gravity, joint forces/moments/torques) for stress analysis				
		System should automatically generate documentation, and these outputs should be in **ASCII** text or **.html** format				
D		**INTEGRATED NEUTRAL SIMULATION PLATFORM**				
1		**Optimisation & Design Studies**				
		Topology, shape/geometry, weight optimization				
		DOE				
		Scripting				
		Parametric study				
2		**Multiple/Integrated Simulations**				
		Performance Testing				

			Stress and Deflection analysis under dynamic loads				
			Quasi-static Load Predictions				
			Fatigue & Durability Analysis				
			Life Cycle Analysis				
		Drag & drop simulation capabilities					
		Data Porting for Viewing					
		Diagnostic messages					
		Photo-realistic Rendering					
3		**Control & Co-simulation**					
		In-built Library and Interaction between					
			Mechanical elements				
			Pneumatic elements				
			Electrical/Electronic elements				
			Mechatronic elements				
		Interface for Feedback control (with Simulink/MatLab, LabView, etc)					
E		**GENERAL REQUIREMENTS**					
1		**File Translators/Reader**					
			Geometry Translators/Readers				
				Neutral Translator (IGES, DXF/DWG, STEP, ACIS, STL, VRML, PARASOLID)			
				All types of commercially available solid-modeller data Translators (SolidWorks, SolidEdge, ProE, CATIA, UG, NX, ANSYS, Plot3D, Rhino3D, Viewer XML, CAPRI etc)			
			Mesh Translators/Readers				
				Neutral Translator (Input -)(Output-CGNS)			
				Solver Interfaces (ABAQUS, ADAMS, ANSYS, DADS, FLUENT, LS-DYNA, MADYMO, MARC, Matlab/Simulink, MotionSolve, NASTRAN, OptiStruct, PAMCRASH, RADIOSS, Star-CD/CCM)			
2		**Documentation**					
			Analysis User's Manual				
			Getting Started Manual				
			Example Problems Manuals				
			Interfaces User's Manual				
			Tutorials				
			Release Notes				
F		NOTE					
		Computer Hardware and software, Operating System specification for the said software installation					
		Supports and Training to the staff					
		Software Support & Update Policy - 3Year AMC					
		License Policy - Permanent/Perpetual/Term and Stand-alone/Server based; Please clearly specify License schemes (user-based/ token-based/ task-based, Processor-specific/Core-specific) for parallel/simultaneous use of all capabilities of software from 25 users; and also specify any in-built Cluster-computing schemes developed by software company for advanced/heavy-duty computation					
		unlimited nodes or **limited intermediate-level nodes**					
		one software or set of bundled modules or three software from different companies, but interfacable to each other for analysis					
		Any Specific Additional Hardware/Software Requirements					

22. Two-Bid System - Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any. The Bidders are advised to submit the compliance statement in the following format along with Technical Bid-

Para of RFP specifications item-wise	Specification of item offered	Compliance to RFP specification – whether Yes / No	In case of noncompliance, deviation from RFP to be specified in unambiguous terms
21			

23. Delivery Period - Delivery period for supply of items would be Three weeks from the effective date of contract. Please note that Contract can be cancelled unilaterally by the Buyer in case items are not received within the contracted delivery period. Extension of contracted delivery period will be at the sole discretion of the Buyer, with applicability of LD clause. The Vendor should provide in hardcopy as well as softcopy of the following :-

(a) Analysis User's Manual
(b) Getting Started Manual
(c) Example Problems Manuals
(d) Interfaces User's Manual
(e) Tutorials
(f) Release Notes

24. Installation & Commissioning - Installation & Commissioning would be within two weeks from the effective date of delivery.

25. Consignee Details.

Project Officer
Army Institute of Technology,
Dighi, Alandi Road
Pune – 411 015

Tele : 7249250184/185 Extn 2106
Email: project@aitpune.edu.in

Part III – Standard Conditions of RFP

The Bidder is required to give confirmation of their acceptance of the Standard Conditions of the Request for Proposal mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e. Seller in the Contract) as selected by the Buyer. Failure to do so may result in rejection of the Bid submitted by the Bidder.

26. Law: The Contract shall be considered and made in accordance with the laws of the Republic of India. The contract shall be governed by and interpreted in accordance with the laws of the Republic of India.

27. Effective Date of the Contract: The contract shall come into effect on the date of signatures of both the parties on the contract (Effective Date) and shall remain valid until the completion of the obligations of the parties under the contract. The deliveries and supplies and performance of the services shall commence from the effective date of the contract.

28. Arbitration: All disputes or differences arising out of or in connection with the Contract shall be settled by bilateral discussions. Any dispute, disagreement or question arising out of or relating to the Contract or relating to construction or performance, which cannot be settled amicably, may be resolved through arbitration. In all these matters the decision of the Director, AIT shall be final and binding.

29. Non-disclosure of Contract documents: Except with the written consent of the Buyer/ Seller, other party shall not disclose the contract or any provision, specification, plan, design, pattern, sample or information thereof to any third party.

30. Liquidated Damages: In the event of the Seller's failure to submit the Bonds, Guarantees and Documents, supply the stores/goods and conduct trials, installation of equipment, training, etc as specified in this contract, the Buyer may, at his discretion, withhold any payment until the completion of the contract. The BUYER may also deduct from the SELLER as agreed, liquidated damages to the sum of 0.5% of the contract price of the delayed/undelivered stores/services mentioned above for every week of delay or part of a week, subject to the maximum value of the Liquidated Damages being not higher than 5% of the value of delayed stores.

31. Termination of Contract: The Buyer shall have the right to terminate this Contract in part or in full in any of the following cases :-

(a) The delivery of the material is delayed for causes not attributable to Force Majeure for more than (8 weeks) after the scheduled date of delivery.

(b) The Seller is declared bankrupt or becomes insolvent.

(c) The delivery of material is delayed due to causes of Force Majeure by more than (12 Weeks) provided Force Majeure clause is included in contract.

(d) The Buyer has noticed that the Seller has utilised the services of any Indian/Foreign agent in getting this contract and paid any commission to such individual/company etc.

(e) As per decision of the Arbitration Tribunal.

32. Transfer and Sub-letting: The Seller has no right to give, bargain, sell, assign or sublet or otherwise dispose of the Contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the present Contract or any part thereof.

33. Patents and other Industrial Property Rights: The prices stated in the present Contract shall be deemed to include all amounts payable for the use of patents, copyrights, registered charges, trademarks and payments for any other industrial property rights. The Seller shall indemnify the Buyer against all claims from a third party at any time on account of the infringement of any or all the rights mentioned in the previous paragraphs, whether such claims arise in respect of manufacture or use. The Seller shall be responsible for the completion of the supplies including spares, tools, technical literature and training aggregates irrespective of the fact of infringement of the supplies, irrespective of the fact of infringement of any or all the rights mentioned above.

34. Amendments: No provision of present Contract shall be changed or modified in any way (including this provision) either in whole or in part except by an instrument in writing made after the date of this Contract and signed on behalf of both the parties and which expressly states to amend the present Contract.

35. Taxes and Duties

(a) General

(i) If Bidder desires to ask for excise duty or GST extra, the same must be specifically stated. In the absence of any such stipulation, it will be presumed that the prices include all such charges and no claim for the same will be entertained.

(ii) If reimbursement of any Duty/Tax is intended as extra over the quoted prices, the Bidder must specifically say so. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duty/tax will be entrained after the opening of tenders.

(iii) If a Bidder chooses to quote a price inclusive of any duty/tax and does not confirm inclusive of such duty/tax so included is firm and final, he should clearly indicate the rate of such duty/tax and quantum of such duty/tax included in the price. Failure to do so may result in ignoring of such offers summarily.

(iv) If a Bidder is exempted from payment of any duty/tax upto any value of supplies from them, he should clearly state that no such duty/tax will be charged by him up to the limit of exemption which he may have. If any concession is available in regard to rate/quantum of any Duty/tax, it should be brought out clearly. Stipulations like, the said duty/tax was presently not applicable but the same will be charged if it becomes leviable later on, will not be accepted unless in such cases it is clearly stated by a Bidder that such duty/tax will not be charged by him even if the same becomes applicable later on. In respect of the Bidders, who fail to comply with this requirement, their quoted prices shall be loaded with the quantum of such duty/tax which is normally applicable on the item in question for the purpose of comparing their prices with other Bidders.

(v) Any change in any duty/tax upward/downward as a result of any statutory variation in excise taking place within contract terms shall be allowed to the extent of actual quantum of such duty/tax paid by the supplier. Similarly, in case of downward revision in any duty/tax, the actual quantum of reduction of such duty/tax shall be reimbursed to the Buyer by the Seller. All such adjustments

shall include all reliefs, exemptions, rebates, concession etc. if any obtained by the Seller.

Part IV – Special Conditions of RFP

The Bidder is required to give confirmation of their acceptance of Special Conditions of the RFP mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e. Seller in the Contract) as selected by the Buyer. Failure to do so may result in rejection of Bid submitted by the Bidder.

36. Performance Guarantee: - The Bidder will be required to furnish a Performance Guarantee by way of Bank Guarantee through a public sector bank or a private sector bank authorized to conduct government business (ICICI Bank Ltd., Axis Bank Ltd or HDFC Bank Ltd.) for a sum equal to 5% of the contract value within 07 days of receipt of the confirmed order. Performance Bank Guarantee should be valid up to 60 days beyond the date of warranty.

37. Payment Terms for Sellers – 100% payment on receipt of stores in working conditions and installation on verification of a Board of Officers detailed by AIT.

38. Risk & Expense clause –

a. Should the stores or any instalment thereof not be delivered within the time or times specified in the contract documents, or if defective delivery is made in respect of the stores or any instalment thereof, the Buyer shall after granting the Seller 45 days to cure the breach, be at liberty, without prejudice to the right to recover liquidated damages as a remedy for breach of contract, to declare the contract as cancelled either wholly or to the extent of such default.

b. Should the stores or any instalment thereof not perform in accordance with the specifications / parameters provided by the SELLER during the check proof tests to be done in the BUYER's country, the BUYER shall be at liberty, without prejudice to any other remedies for breach of contract, to cancel the contract wholly or to the extent of such default.

c. In case of a material breach that was not remedied within 45 days, the BUYER shall, having given the right of first refusal to the SELLER be at liberty to purchase, manufacture, or procure from any other source as he thinks fit, other stores of the same or similar description to make good:-

i. Such default.

ii. In the event of the contract being wholly determined the balance of the stores remaining to be delivered thereunder.

d. Any excess of the purchase price, cost of manufacturer, or value of any stores procured from any other supplier as the case may be, over the contract price appropriate to such default or balance shall be recoverable from the SELLER. Such recoveries shall not exceed 10% of the value of the contract."

39. Force Majeure clause.

a. Neither party shall bear responsibility for the complete or partial non-performance of any of its obligations (except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the present

contract), if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earth Quake and other acts of God as well as War, Military operation, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.

b. In such circumstances the time stipulated for the performance of an obligation under the present contract is extended correspondingly for the period of time of action of these circumstances and their consequences.

c. The party for which it becomes impossible to meet obligations under this contract due to Force Majeure conditions, is to notify in written form the other party of the beginning and cessation of the above circumstances immediately, but in any case not later than 10 (Ten) days from the moment of their beginning.

d. Certificate of a Chamber of Commerce (Commerce and Industry) or other competent authority or organization of the respective country shall be a sufficient proof of commencement and cessation of the above circumstances.

e. If the impossibility of complete or partial performance of an obligation lasts for more than 6 (six) months, either party hereto reserves the right to terminate the contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

40. Specification.

The following Specification clause will form part of the contract placed on successful Bidder - The Seller guarantees to meet the specifications as per Part-II of RFP and to incorporate the modifications to the existing design configuration to meet the specific requirement of the Buyer Services as per modifications/requirements recommended after the Maintenance Evaluation Trials. All technical literature and drawings shall be amended as the modifications by the Seller before supply to the Buyer. The Seller, in consultation with the Buyer, may carry out technical upgradation/alterations in the design, drawings and specifications due to change in manufacturing procedures, indigenisation or obsolescence. This will, however, not in any way, adversely affect the end specifications of the equipment. Changes in technical details, drawings repair and maintenance techniques alongwith necessary tools as a result of upgradation/alterations will be provided to the Buyer free of cost within 10 working days of affecting such upgradation/alterations.

41. OEM Certificate.

In case the Bidder is not the OEM, the agreement certificate with the OEM for sourcing the spares shall be mandatory. However, where OEMs do not exist, minor aggregates and spares can be sourced from authorized vendors subject to quality certification.

42. Quality.

The quality of the stores delivered according to the present Contract shall correspond to the technical conditions and standards valid for the deliveries of the same stores for in Seller's country or specifications enumerated as per RFP and shall also include therein modification to the stores suggested by the Buyer. Such modifications will be mutually agreed to. The Seller confirms that the stores to be supplied under this Contract shall be new i.e. not manufactured before (Year of Contract), and shall incorporate all the latest

improvements and modifications thereto and spares of improved and modified equipment are backward integrated and interchangeable with same equipment supplied by the Seller in the past if any. The Seller shall supply an interchangeability certificate along with the changed part numbers wherein it should be mentioned that item would provide as much life as the original item.

43. Quality Assurance.

Seller would provide the Standard Acceptance Test Procedure (ATP) within 1 week of after delivery of the items. Buyer reserves the right to modify the ATP. Seller would be required to provide all test facilities at his premises for acceptance and inspection by Buyer. The details in this regard will be coordinated during the negotiation of the contract. The item should be of the latest manufacture, conforming to the current production standard and having 100% defined life at the time of delivery.

44. Inspection Authority.

The Inspection will be carried out by Board of Officers appointed by Buyer.

45. Pre-Dispatch Inspection.

The Pre-Dispatch Inspection will be carried out where applicable by Board of Officers appointed by Buyer.

46. Franking clause.

The following Franking clause will form part of the contract placed on successful Bidder –

a. Franking Clause in the case of Acceptance of Goods "The fact that the goods have been inspected after the delivery period and passed by the Inspecting Officer will not have the effect of keeping the contract alive. The goods are being passed without prejudice to the rights of the Buyer under the terms and conditions of the contract".

b. Franking Clause in the case of Rejection of Goods "The fact that the goods have been inspected after the delivery period and rejected by the Inspecting Officer will not bind the Buyer in any manner. The goods are being rejected without prejudice to the rights of the Buyer under the terms and conditions of the contract."

47. Warranty and Maintenance Backup -

(a) Warranty. Vendors will provide free onsite comprehensive warranty for software with the following or as provided by OEM whichever is more:-

(i) Perpetual license with one year update and lifetime warranty.

(ii) Term Licence of minimum period of three years with every year update and three year warranty.

(b) Warranty shall include hardware, software and any other pre-loaded software as ordered from the date of acceptance. During the warranty, the vendor will repair/replace without any cost any equipment/part/accessory, which becomes, defective. During the warranty period all warranty benefits received by vendor from the OEMs, for any equipment pertaining to third parties will be passed on in to the Customer. The Customer may invoke the bank guarantee in case vendor fails to ensure rectification of defects within one week of the defect being intimated. Vendor

will ensure 99% systems availability during the warranty period. Items of consumable nature that may not be replaced free on account of defect/malfunction must be specified clearly in the offer. Failure to provide this Information shall be treated as all items components consumables are covered under warranty. Software update will be provided free of cost during warranty.

(c) Maintenance during Warranty - In order to ensure functionality of systems items supplied during warranty period, vendor shall provide software support. Vendor will provide the following: -

i. Vendor will ensure that the system continues to perform in exactly the same manner as at the time of acceptance.

ii. Software Maintenance. Maintenance/Updation of software should be onsite and done as per the agreed Terms & Conditions.

48. Software/ Hardware Support beyond Warranty Period. In order to ensure functionality of system during the life time vendor shall guarantee to provide system support for this entire duration. Vendor will provide the following: -

a. Commercial / Bought out Software/ Hardware by Vendor. Vendor shall provide all updates/upgrades/patches that may come free of cost from the principles. As and when customer wishes to upgrade commercial software so supplied, vendor shall also provide complete assistance.

49. Conditions during Warranty. The vendor should fulfil the following conditions during the warranty :-

(a) Any failure in the system or a subsystem thereof should be rectified within a maximum period 48 hours of lodging a complaint including loading of operating software if required.

(b) If the system is down beyond 48 hours, penalty at the rate of Rs 500/- (Rs Five hundred only) per day will be charged or recovered out of the Bank Guarantee held towards the warranty. In case of any system/sub system being down for more than seven working days, Customer has the option to get it repaired from any suitable agency at the risk and cost to be borne by the vendor, which will be deducted from the Bank Guarantee due to vendor.

(c) Any system failing at subsystem level three times within a period of three months or displaying chronic faulty behaviour or manufacturing defects or quality control problems will be totally replaced by the vendor at his risk and cost within 30 days of being intimated.

Part V – Evaluation Criteria & Price Bid issues

50. **Evaluation Criteria** - The broad guidelines for evaluation of Bids will be as follows:

(a) Only those Bids will be evaluated which are found to be fulfilling all the eligibility and qualifying requirements of the RFP, both technically and commercially.

(b) In respect of Two-Bid system, the technical Bids forwarded by the Bidders will be evaluated by the Buyer with reference to the technical characteristics of the equipment as mentioned in the RFP. The compliance of Technical Bids would be determined on the basis of the parameters specified in the RFP. The Price Bids of only those Bidders will be opened whose Technical Bids would clear the technical evaluation.

(c) The Lowest Bid will be decided upon the lowest price quoted by the particular Bidder as per the Price Format given at Para 2 below. The consideration of taxes and duties in evaluation process will be as follows:

i. In cases where only indigenous Bidders are competing, all taxes and duties (including those for which exemption certificates are issued) quoted by the Bidders will be considered. The ultimate cost to the Buyer would be the deciding factor for ranking of Bids.

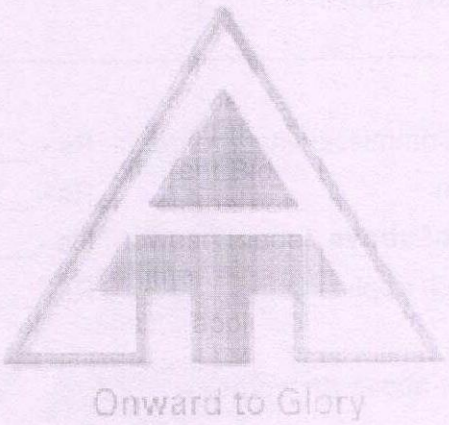
ii. In cases where both foreign and indigenous Bidders are competing, following criteria would be followed –

(aa) The Bidders are required to spell out the rates of GST, Customs duty etc in unambiguous terms; otherwise their offers will be loaded with the maximum rates of duties and taxes for the purpose of comparison of prices. If reimbursement of GST/Customs duty is intended as extra, over the quoted prices, the Bidder must specifically say so. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duties will be entrained after the opening of tenders. If a Bidder chooses to quote a price inclusive of any duty and does not confirm inclusive of such duty so included is firm and final, he should clearly indicate the rate of such duty and quantum of excise duty included in the price. Failure to do so may result in ignoring of such offers summarily. If a Bidder is exempted from payment of Customs duty / Excise Duty / VAT duty upto any value of supplies from them, they should clearly state that no excise duty will be charged by them up to the limit of exemption which they may have. If any concession is available in regard to rate/quantum of Customs duty / Excise Duty / VAT, it should be brought out clearly. Stipulations like, excise duty was presently not applicable but the same will be charged if it becomes leviable later on, will not be accepted unless in such cases it is clearly stated by a Bidder that excise duty will not be charged by him even if the same becomes applicable later on. In respect of the Bidders who fail to comply with this requirement, their quoted prices shall be loaded with the quantum of excise duty which is normally applicable on the item in question for the purpose of comparing their prices with other Bidders. The same logic applies to Customs duty and VAT also.

(ab) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the total price will be corrected. If there is a discrepancy between words and figures, the amount in words will prevail for calculation of price.

(ac) The Lowest Acceptable Bid will be considered further for placement of contract / Supply Order after complete clarification and price negotiations as decided by the Buyer. The Buyer will have the right to award contracts to different Bidders for being lowest in particular items. The Buyer also reserves the right to do Apportionment of Quantity, if it is convinced that Lowest Bidder is not in a position to supply full quantity in stipulated time.

(ad) Any other criteria as applicable to suit a particular case.



51. **Price Bid Format**: The Price Bid Format is given below and Bidders are required to fill this up correctly with full details, as required under part – II of RFP.

(a) Basic cost of the item/items:

Sr No	Item	Quantity	Unit Price	Total
1	Procurement of Computational Fluid Dynamics (CFD) Software for Department of Mechanical Engineering	As per Part –II of this tender document		
			Total of Basic Cost	
Total of Basic Cost (Amt in Words)				

(b) Installation / Commissioning charges - Rs -_____/-

(c) Any other item - Rs -_____/-

(d) Grand Total of above : Rs -_____/-

(e) GST Amount (If applicable) - Rs -_____/-

Grand Total of above (In words) –

Note – Determination of L1 vendor will be done based on Grand total of Basic Price [(a) to (d)] (not including GST).

AIT/0810/180/2023-24/Proj

Dated : 07 May 2024

(MK Prasad)
Col
Jt Director
For Director