Ref No. 1000050196   **Rfx No. 6100002419**

Technical Specifications: Integrated CAM Software – Bundled CAD CAM Software (Qty: 1)

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
01	**Integrated CAM Software – Bundled CAD CAM Software**	1. Machining environment should have direct integration with 3D Manufacturing Modelling workspace. Changes in the 3D Model should automatically update toolpaths & associated parameters. 2. Complete 3D Modelling Capabilities should be available in the Machining environment for supporting the tool path generation process & should be directly integrated inside SolidWorks OEM Edition. 3. Users should be able to define & verify all machining operations without leaving the Parametric Modelling & Assembly environment during machining. 4. Manufacturing Modelling Visualisation capabilities should show all associated fixturing, Tooling, Vices etc. for Interference checking & Simulation purposes. 5. CAM Software should generate tool paths for all machining processes like Roughing, Rest Roughing, Finishing, Rest Finishing & Pencil Milling operations. 6. Software must generate tool paths for 2.5D Milling, 3D Milling, High Speed Machining, High Speed Surfacing along with 4 Axes Positional, Simultaneous Milling operations & Swiss/Sliding Head Machining Operations. 7. It should have capability to generate all the required fixtures & tooling within the CAM environment & easily toggle between CAD & CAM without exiting the current working session.		

		8. CAM software should have provision for machine definition, material definition & generate machine-specific or cutting-condition-specific toolpaths that completely synchronise with the associated cutting parameters for efficient machining.		
		9. CAM software should automatically generate the most optimum & efficient cutting parameters like feed, RPM, step over & provide the ability to alter the same based on machine, cutting tool & cutting conditions.		
		10. It should provide automatic stock definition, feature-based machining, local area machining, fillet machining, without the need to define boundaries.		
		11. Software should be capable of generating smooth and powerful machining toolpaths of localized surface areas and undercuts, using standard as well as shaped tools. It should also provide advanced gouge control of Holder, Arbor & Tool.		
		12. Software should have an inbuilt tool library with ability to create both standard & shaped tools within the system & ability to define parameters for same diameter tools.		
		13. The software should have different kinds of simulation & verification capabilities for simulating the actual cutting on the machine & provide collision detection & avoidance capabilities for a gouge-free toolpath through all machining processes listed above.		
		14. Simulation should support both Tool Simulation, Solid Simulation & Machine Simulation based on G-Code generated.		
		15. Software should include a Technology Template wizard that can capture all the operation & process information of a Proven part & provide the ability to reuse the same for program automation without compromising on quality of output. Operation & process templates, after validation, should be editable during the tool path generation of the subsequent parts by applying the technology templates.		
		16. Software should integrate with a generic spreadsheet like MS Excel for generating tool sheets & shop documentation with all the process & tool information.		
		Sliding Head (Swiss-type) Machining Capabilities:		
		17. CAM software should support complete Sliding Head (Swiss-type) machining with main and sub spindle operations, including front/back turning, drilling, threading, cross and axial milling, and part-off.		
		18. Software must provide full control over turret and spindle assignments, with multi-channel synchronization and wait code management.		

19. Support for bar feeder control, guide bushing positioning, and part transfer between spindles should be included.		

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20. A dedicated post processor must generate accurate G-code tailored to machine-specific kinematics.

21. Simulation must include full machine kinematics, dynamic toolpath verification, collision detection, and gouge-free toolpath generation.

22. The system should feature tooling libraries for Swiss-type machines, including standard and custom tools.

23. Seamless integration with the CAD/CAM environment must ensure automatic updates of toolpaths when the model changes, preserving synchronization logic.

24. **Warranty and Maintenance, and commissioning**

A. The supplier shall provide feedback on the software from other customers, specifically from any government institutions (At least one copy).

B. The supplier is required to provide necessary training to engineers following the installation of the software. Training for all employee and certificate for ten people.

C. Three sets of the user manuals, in English, must be supplied with the software.

D. A comprehensive warranty covering both hardware and software shall be provided for a period of three years following the commissioning of the system.

E. If the system becomes non-functional and remains down for 15 days after a complaint has been filed, the warranty period shall be extended for the duration between the reported issue and its resolution.

F. The supplier shall offer free software upgrades for a period of three years following commissioning.

G. Complete installation of the entire system is required.

H. The license key must be delivered within four weeks from the purchase order date.

I. Three years of technical support, including bug fixes, software patches, and version upgrades, will be provided.

J. For delayed delivery or non-compliance, the supplier will be held accountable as per the terms agreed upon.

K. Data Privacy & Cybersecurity: The supplier shall ensure no unauthorized access to data and compactible for internal firewall/proxy settings.

| | | L. Training & Documentation: The vendor is responsible for providing onboarding and user manuals. Additionally, hands-on training sessions must be provided.

M. Support for software to be provided free of charge for a period of three years.

Payment Terms: 100% payment shall be released upon delivery through funding agency on behalf of IIT Bombay. | | |