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# **Procurement Technical Specifications (PTS)**

## **Design Insourcing of Engineer's for various Defence Projects**



**BEML FPIIC**

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## **1. Introduction**

BEML is in the purview of receiving orders for Design & Development, Manufacture and Supply of various configuration of HMV's and Defence application vehicles. BEML is seeking a suitable partner to join hands for Design, Detailing, Drafting and Technical Documentation related to development of said equipments.

This document outlines the general & technical requirements for insourcing the engineering services activities, which involves conceptualization, 3D modeling, generation of engineering drawings and technical documentation using required software's.

## **2. Scope of Work**

- i) Interested vendor shall depute their manpower to BEML, Bangalore Complex for the intended insourcing work
- ii) Vendor's manpower shall be in regular roles and shall have prior experience in design of equipment involving mechanical, hydraulic, electrical, electronics, hydro-mechanical, electro-mechanical systems. The equipment would demand any one or combination of these systems
- iii) The firm shall carryout the below activities as per the requirement of BEML:

- Preparation of the 3D part and assembly models from conceptual 2D layout (3D model software platform like Creo )
- Preparation of GA drawings and engineering BOM for assemblies.
- Preparation of electrical layout with BOM in AutoCAD
- Preparation of pneumatic layout with BOM in AutoCAD
- Preparation of powertrain layout and components drawings in AutoCAD
- Preparation and release of Manufacturing drawing to production from 3D Models in AutoCAD. (Sheet Size will vary from A4 to Extended A0)
- Preparation of casting and forging drawings and 3D models from the machining drawings.
- Preparation of finalized 3D Part & Assembly models from finalized / updated drawings.
- Preparation of technical specifications of sub-systems.
- Preparation of User manual/operator's Instructions, workshop manuals, Driver's manuals, Illustrated spare parts catalogue (parts book), service manuals, Operation & maintenance manual etc.
- Conversion of Existing (common) PDF drawings to 2D AutoCAD drawings and 3D models
- Preparation of List of spares and tools along with Pictorial Illustrations
- Preparation of Detailing (Drawing creation for assy., sub assy. & child parts)

- Preparation of QC Plan, QC Check Sheets & ATP etc.
- Preparation of E-BOM, Material Schedule, Bought out Items etc.

The firm shall deploy executives having relevant experience in respective areas and shall carry out the work with minimum supervision. The firm shall carry out all quality checks for drawings, 3D models and documentation.

The replacement request by FPIIC Team, BEML for particular executive shall be honored by the firm within 2 Days from the date of official communication

### **3. Deliverables**

- 3D CAD Models in Creo 2025
- 2D Drawings in Auto CAD 2025
- 2D Drawings in Auto CAD Electrical 2025
- Detailed Design Report
- Technical Documentation as described in Scope of Work

### **4. Work Hours**

Working hours of FPIIC, will be 6 days a week, in first shift / second shift / General shift according to the BEML requirement. Saturday is a regular working day at BEML. The firm shall complete all works assigned within the given time frame.

### **5. Manpower Requirement & Qualification**

- All executives shall have relevant experience in the field of design, analysis and technical documentation
- The manpower shall have sound communication skills in English including reading and writing
- The firm shall submit police verification certificate for all executives to be placed at BEML under the contract
- The firm shall be responsible for all kinds of acts of their executives
- The executives shall work in designated areas and unnecessary movement is restricted
- The personnel will have to make their own transport and accommodations, however breakfast, lunch, dinner, tea & coffee can be availed at BEML canteen on payment basis (by purchasing coupons)

*The requirement of manpower with skillset is brought out at Table No.1*

Sl. No	Skill Set	Experience Level	No of persons for each skill set	Total Manpower Required	Remarks
1	Creo & AutoCAD mechanical	3-5 Years	5	6	1 Nos. Team Lead with 5+Years of Experience in Auto CAD & Creo and MS Office.
2	AutoCAD Electrical	3-5 Years	1		

*Table No.1 Requirement of Manpower with Skillset*

## 6. Software & Hardware

The firm shall supply following legitimate software on returnable basis for the contract period.

Sl. No	Specification	Operating system	MS Office	Creo & AutoCAD mechanical	AutoCAD Electrical
1	Software Version	Windows 10 or 11 (With Licensed Anti-virus)	2019 or Latest	2025	2025
2	Sub-Module	-NA-	-NA-	-NA-	-NA-
3	Quantity	5	5	5	1

*Table No.2 Software Requirements*

The firm shall supply following hardware on returnable basis for the contract period.

Sl. No.	Hardware (WorkStation)	Specification
1	Hard Disk	1 TB / SSD
2	CPU	I9-intel Core or equivalent processor with high Clock speed of 5.5 GHz or higher
3	GPU	NVIDIA RTX/16GB VRAM (Minimum) or equivalent
4	RAM	64 GB / DDR5 or higher
5	Monitor	24 inch or higher
6	Key Board	Standard (Dell, HP or any other reputed Make)
7	Mouse	Standard (Dell, HP or any other reputed Make)
Note: Workstation shall be capable of handling large assemblies with 1,00,000+ components with zero lagging.		

*Table No.3 Hardware Requirement*

- Only workstations are allowed to handle high configuration 3D models
- Min. 6 systems with above configurations shall be deployed by vendor
- All systems shall have basic and necessary software like MS office, WinZip, pdf reader and writer, latest antivirus .etc
- All cables, adaptors, junction boxes as required
- The computer systems shall have preloaded software as mentioned above. The hard disk shall be empty before the systems are brought inside BEML. (This will be verified by BEML IT department)
- Any glitch in software or hardware shall be rectified by the firm within a day
- No internet shall be provided to the computer systems as a measure of cyber safety
- BEML shall provide the space and electricity free of cost to firm
- The firms shall note that, hard disk will be retained with BEML from computers on completion of contract work to safeguard the confidential data. (This will be verified by BEML IT department)
- All 6 personnel of the vendor will work on 3D CAD Modeling and detailing, drawings generation, documentation as per the requirement of BEML during the contract period using suitable software
- The vendor and his personnel shall co-ordinate and co-operate with BEML FPIIC team to meet the stringent delivery schedules for modeling, drawings and documentation
- Vendors are wholly responsible for usage of legitimate licensed software for the above scope of work. BEML shall not be responsible for any violation in this regard
- Vendor shall provide 1 computer system to each of the personnel placed by him per shift at FPIIC, BEML during the contract period

- All computer systems deployed by the vendor shall comply BEML's cyber security policies

## **7. Acceptance of Work**

All the work will be verified by FPIIC - Team, BEML. The firm shall carryout necessary corrections, if required in modeling, drawings and documentation as suggested by the FPIIC - Team, BEML before finalizing the documents.

A daily log sheet of the work carried out shall be maintained by both BEML and the firm.

## **8. Qualification Criteria**

- The vendors shall have proven track record in executing similar projects at customer place, preferably at government agencies and PSU's. The vendor shall submit the documentary evidence for at least 2 projects in last five years.
- The Vendor shall sign NDA with BEML
- Vendor shall ensure the availability of manpower, software and hardware on all BEML working days
- Firms debarred / restricted by any central government or state government, PSU's and other government agencies are not eligible to participate in the tender
- The firm shall agree to supply manpower, software and hardware for period of 3 months and also agree to extended the contract period for 3 months if required, at the same cost
- Vendor shall supply manpower, software and required hardware as a complete package
- The unit of measurement for work will be in terms of job. Each job is described as below:

1 Job = Availability of 1 personnel as per PTS for a minimum of 10  
Hours on BEML working day  
+  
Availability of 1 computer as per PTS on BEML working day  
+  
Availability of software as per PTS on computer on BEML  
working day

- Non-Availability of manpower or software or hardware on any working day or incomplete jobs, will have to be compensated with extra working day



- Each contract engineer shall work for 78 BEML working days during the contract period of 3 months. Any substitutions made at later stages, will carry forward from predecessor
- The firm shall deploy manpower, computers with software within two weeks from placement of PO
- Smart phones and pen-drives are not allowed inside the BEML premises as measure of data security
- The firm shall not use the 3D models or drawings or generated data for any other purposes
- BEML reserves the exclusive rights on all data generated during the contract period
- Vendor shall ensure the insurance for all their assets deployed at FPIIC - Team, BEML including software & hardware. BEML shall not be liable for damage to vendor assets due to fire accident and any electrical mishap or any other reasons

The firm shall adhere to BEML information technology policies. Any breach on policies or unauthorized data transfer shall be dealt as per BEML IT policies.

**9. Documents to be submitted along with the offer**

1. Documentary evidence of proven experience
2. License Information of software
3. Qualification certificates of proposed Manpower
4. Clause by Clause Compliance to PTS (Procurement Technical Specification)
5. Firms shall submit relevant documents, if it is a MSME