

## **120mm Laser Guided ATGM for Tank Guns**

EoI is invited for Assembly, Integration and Testing of “120mm Laser Guided ATGM for Tank Guns” from a reputed Indian Public limited/Private limited Companies registered as Indian Firms, hereafter referred as Lead System Integrator (LSI)/ applicant industry/ applicant firm. The applicant industry should have experience of multi-disciplinary system-based engineering products relevant to defense/aerospace, their integration and testing.

Requirement of Industrial license from Department for Promotion of Industry and Internal Trade (DPIIT) to integrate/manufacture ATGM & license from Petroleum and Explosives Safety Organization (PESO) for handling and storage of Military/Ammunition class of explosives based on DB propellant, igniters, RDX/ TNT etc is mandatory.

The applicant industry should have an established track record in engineering (including software) and manufacturing for real value addition. The Applicant Company shall be engineering and/or a process technology company having commercially supplied engineering and/ or process technology products to the Indian Armed Forces and/or DRDO. The Applicant Company should have demonstrated capability of integration of system of systems in its application.

It is important that the applicant industry should have in house manufacturing capability of a cognizable percentage of components of ATGM. The technical assessment of the applicant industry would be carried out by a committee appointed by DRDO.

The applicant industry should furnish the list of manufacturing machinery and facilities along with plant layout available with them. The details of inspection/ test equipment are covered in detail in the QAPs of respective components, sub-assemblies & assemblies of ATGM. The manufacturers of these should possess the related inspection/ test equipment Assembly line along with requisite integration tools, fixtures and inspection set up. The work load at various work centres and spare capacity available should be proven/ indicated by the applicant firm.

### **1. Essential infrastructure facility and test set up:**

The following facilities and test setups are essential for inspection and testing of ATGM. The applicant industry itself must possess these in-house.

- a) Infrastructure facility:
  - i. Modern workshop equipped with CNC machining centres, lathe machines.
  - ii. Integration building with anti-static flooring, having minimum spare size 30 m x 20 m conforming to CIL standard with integration work stations/ tables.
  - iii. Clean room facility (minimum 10000 class) of minimum size 12 m x 12 m.
  
- b) Test facility:
  - i. Environmental Test Setup:
    - 1. Vibration table
    - 2. Thermal chambers (hot & cold) for temperature cycling and burn-in
  - ii. Portable LASER Tracker based 3D CMM
  - iii. Power supplies / Multimeter etc
  - iv. Function generator
  - v. Mechanical STD tools
  - vi. Safety ohm meter

- vii. Crimping tools, sleeves or soldering rods (flux, lead rods)
- viii. Recorder for voltage measurements
- ix. Workshop facilities
- x. Integration jig, inspection and alignment jig, weight CG and inertia measurement facility
- xi. Oscilloscope
- xii. PCB design, assembly and manufacturing
- xiii. Soldering station
- xiv. FPGA & DSP programming tools
- xv. PC's

The applicant industry should furnish the list of inspection/ testing facilities available with them. Some of the facilities may be available with NABL accredited laboratories and their services can be utilised. The details of such laboratories, certified test facilities available with them and tests intended to be carried out at these laboratories should also be indicated. Dynamic flight trials of integrated ATGM will be carried out through DRDO as per policy.

**(c) ATGM storage:**

Storage magazines for filled propulsion system, filled warheads, filled igniters, propellant, warhead explosives and igniter composition are very important in the missile handling. The applicant industry should provide information regarding explosive handling and storage buildings/ magazines including quantum of explosive storage magazine to store integrated ATGMs.

**2. Explosive disposal:**

The Applicant industry should have facilities required for disposal of the explosive process waste and rejected filled warhead/ propulsion system etc. The applicant firm should provide information regarding disposal facilities available with them.

**3. Quality Assurance (QA) provisions:**

The Applicant industry should provide information regarding X-ray radiographer required for analyzing and sentencing radiography images of propellant and filled warhead. These radiographers should be at least BARC Level-II qualified.

The inspections records in respect of all components, sub-systems and systems of ATGM are required to be systematically maintained at one place (in hard copy and soft copy form) in the formats prescribed in the QAPs. The details regarding plan of maintaining the inspection records should be provided by the applicant firm.

The applicant firm should provide the **QMS and Quality Procedures** adopted by them. The same would be reviewed by the technical assessment committee.

**4. Monitoring of Assembly, integration and testing:**

Different committees would be constituted by DRDO for monitoring and managing the integration of ATGM and its components and sub-systems. The applicant firm would have its representation in these committees. The decisions of these committees would be required to be implemented by the firm.

## **5. Certification and licenses required:**

The applicant firm who is interested in undertaking ToT should possess following certification/ licenses (these must be valid at the time of submitting the response):

- a) DPIIT license (Formerly known as DIPP license) for integration/ manufacturing of Defence store.
- b) Explosive handling license PESO (Military/Ammunition class of explosives based on RDX, TNT and their combinations with metal powders)
- c) Any other permissions and clearances necessary for explosive handling.
- d) ISO 9001(Quality Management System)

The applicant firm himself must possess the following certifications.

- a) ISO 9001 (Quality Management System), ISO 14001 (environmental management system) and ISO 31000 (Risk management)
- b) AS9100D for Aerospace and Defence related items.

## **6. Security aspects:**

The Applicant industry should ensure security of the documents, components, sub-systems as well as integrated ATGM during storage and transportation. The security plan should be submitted by the firm. Security Manual for Defence Manufacturing Companies (industries requiring ILDC) as referred to in the should be complied with.

## **7. Production capacity:**

The Applicant industry should possess adequate plant, machinery, equipment, storage, infrastructure etc. sufficient to deliver required numbers of ATGM per annum. The Applicant firm would submit a document clearly bringing out to prove their production capacity. The production capacity would be assessed by a committee constituted by DRDO.

## **8. Space requirements:**

The layout plan of manufacturing, assembly integration and testing set up should be provided by the applicant firm. The space requirements are also important for other components, sub-systems and associated manufacturing, integration and testing activities. The integration buildings should have sufficient space for:

- a. Components/ sub-assemblies required for minimum 25 ATGM\* (in loose condition)
- b. ATGM assembly fixture
- c. Sub-systems/ systems testing fixture
- d. Working space for ATGM integration and inspection
- e. Weighing machine
- f. CG and Inertia measurement set up

## **9. Track Record:**

The Applicant firm should have proven track record for manufacture/ integration of military systems. The applicant firm should have experience in integrating at least 2 systems for DRDO/ MOD which include multidisciplinary areas such as mechanical, electro-mechanical, electrical and electronics along with software. Information about same needs to be furnished

## **10. Financial status:**

The relevant documents in support should be submitted by the applicant industry.

- a) **Annual Turnover:** Minimum of Rs 80 Crores for each of last three financial years based on financial statements audited under the relevant Companies Act and adopted and approved by the board of directors/ share-holders. The above should be supported by relevant certificate(s).
- b) **Capital Assets:** Capital assets at gross book value as specified in the last consolidated financial statements audited under the relevant Companies Act and adopted and approved by the board of directors/share holders of Rs 50 Crores. The above should be supported by relevant certificate(s).
- c) **Credit Rating:** Applicant Company to have minimum credit rating (long term/issuer rating) equivalent to CRISIL/ICRA "A" (stable) as on the date of the application. Credit ratings by India Ratings and Research Pvt Ltd (Formerly Fitch Ratings India Pvt Ltd), Credit Analysis and Research Ltd (CARE), Brickwork India Ratings Pvt Ltd, SMERA Ratings Ltd and Infomerics Valuation and Ratings Pvt Ltd may also be considered by the Technical Evaluation Committee. The above should be supported by relevant certificate(s).
- d) **Audit Qualifications**  
The latest audit reports of the Applicant industry should not have any qualifications. The above should be supported by a certificate of the statutory auditors along with the last three audit reports of the firm.

**11. Production plan: At the time technology Absorption.**

**12. Manpower:**

The applicant firm should possess adequate number of trained and qualified manpower for undertaking various activities related to production of ATGM i.e. manufacture, assembly, integration, testing, QA/QC, communication, records, logistics, procurement, supervision, management etc. The details regarding this should be submitted by the firm. The present work load at various work centres and spare capacity available should be proven/ indicated by the firm.

1. **Industries are requested to submit their expression of Interest for ToT within 21 days of publishing of technology on DRDO web-page.** Interested companies/ industries are requested to apply against this EoI to following address:-

To

**Director, Armament Research & Development Establishment (ARDE)**  
**Dr Homi Bhabha Road, Armament Post, Pashan,**  
**Pune-411 021**  
**Tele : 020- 25865182**  
**Fax : 020- 25865102**  
**Email : [director.arde@gov.in](mailto:director.arde@gov.in)**

- 2). A copy of interest may be sent to following address without any attachment;

To

**Dte of Industry Interface & Quality Management (DIIQM)**  
**Room No 477, DRDO Bhawan, Rajaji Marg,**  
**New Delhi -110 011**  
**Tele : 2300 7441**  
**Fax : 2379 3008**  
**Email: [diitm.hqr@gov.in](mailto:diitm.hqr@gov.in)**

All industries interested in seeking ToT are requested to apply in the format given below. Kindly fill in the fields. The list of documents to be attached is provided in Annexure – I. Kindly provide the reference of page no. of supporting document in the relevant field of form.

### **PART-1**

#### **General Information**

(Please enclose documents in support of information provided)

1.	<b>Name of the Technology requested for Technology Transfer (Technology name and concerned Lab, Category)</b>	
2.	<b>Name of the industry/ organization</b>	
3.	<b>Complete Address and other details</b>	
	<b>Registered Office</b> State Phone No Fax Email Website	
	<b>Factory</b> State Phone No Fax Email Website	
4.	<b>Point of Contact</b>	

	Name Designation Address Mobile No Ph No Email ID	
5.	<b>NAME OF CMD/ MD /PARTNERS/ PROPRIETOR/ etc</b> Name Designation Address Mobile No Ph No Email ID	
6.	<b>Date of Incorporation of company</b>	
7.	<b>Foreign Direct Investment in company (if any in %)</b>	
8.	<b>Shareholding pattern</b>	
9.	<b>Turn over as per Audited Balance Sheet for the preceding three years.</b> Year _____ Year _____ Year _____	
10.	<b>Annual budget for R&amp;D during last three years (if any)</b> Year _____ Year _____ Year _____	
11.	<b>Income Tax returns for the preceding three years period</b> Year _____ Year _____ Year _____	
12.	<b>Nature of company</b> DPSU, Private Limited, Public Limited, Partnership, Proprietary, Ex- Serviceman Unit	
13.	<b>Category of industry</b> Large Scale, Medium Scale, Small Scale, Micro, Startup	
14.	<b>MSME Registration No</b>	
15.	<b>Certificates of registration as a manufacturing unit, if any.</b>	
16.	<b>If Startup, DPIIT Registration No</b>	
17.	<b>UDYOG AADHAR No</b>	
18.	<b>PAN Number</b>	
19.	<b>Details of Industrial license for defence manufacturing issued by DPIIT (if any)</b>	
20.	<b>Details of PESO license (if any)</b>	
21.	<b>GST Number</b>	
22.	<b>Nature of business</b> Manufacturing/ Sole Selling or Authorized	

	Agent/ Assembler/ Traders/ Dealer/ Processor/ Repacker/ Others	
23.	<b>Details of current products and services</b> Products and services Supplied (please specify Govt/ Domestic market/ Export)	
24.	<b>Record of past performance</b> (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).	
25.	<b>Details of registration</b> with NSIC / SSI, DGS&D, other Defence Department, other Govt. Dept, membership of FICCI/ASSOCHAM/CII or other Industrial Association <b>(Attach relevant copies of registration letters)</b>	
26.	<b>Have you already taken any technology from DRDO</b> (If yes, give details attaching separate sheet)  Name of the Technology, Lab, Year, License number & Status	
27.	<b>ISO/ ISI certification or any other certification</b> (If yes, give details)	
28.	<b>Relevant clearances form the authorities/ ministries</b> (if any)	
29.	<b>Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.</b>	
30.	<b>Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.</b>	

## PART-2

### Infrastructure and other Information

1.	<b>Total area of factory</b> Covered (m <sup>2</sup> ), Uncovered (m <sup>2</sup> ), Bonded space available (m <sup>2</sup> )	
2.	<b>Ownership of factory</b> Self-owned, partnership, rental	
3.	<b>Electric power</b> Sanctioned Installed Standby (if any)	
4.	<b>Availability of adequate infrastructure</b> (List of machines and their production capacities) and technical expertise	

<b>5.</b>	<b>Name of bank &amp; A/c No</b> Name of bank A/c type A/c no Address of the bank Phone: Email:	
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**6. Details of current products:**

S.No	Type	Description	Licensed/installed capacity	Annual production for preceding 3 years

**7. Details of foreign collaboration, if any**

S.No	Product	Name and address of collaborator	Year	Remarks

**8. Details of products developed for services**

S.No	Nomenclature of stores	Order No. and date	Remarks

**9. Please give details of important facilities & infrastructure as per following format for:**

- (a) Production
- (b) Unconventional, special m/c
- (c) Testing & quality control facilities

S.No	Description of m/c	Make & model	Qty	Date of purchase	Remarks

**10. Furnish the following details with relevant certificates and documents**

- (a) R&D facilities available :
- (b) Inspection quality control of raw material components :
- (c) Assistance from central agency for testing / calibration etc.:
- (d) laboratory and drawing office facility :

**11. Principal customers:**

S. No	Name & address	S.O No and date	Date of last supply	Products supplied	Value

**12. Future plans (if any) in respect of expansion programme/ installation of additional machines/ test facilities etc.**

**13. Name of the technology requested for transfer**

(give self-assessment of your capability to absorb the technology)

**14. Details of employee as on date on firm's pay roll**

<b>PERMANENT</b>				
Category	Post Held	Number	Qualification	Total Service
Technical	Prod. Manager Q.C. Manager Supervisor Testing Staff (QC) Skilled workers Unskilled workers, etc			
Administrative	Purchase Manager Accounts Officer Office Superintendent Clerical Others, etc			

<b>TEMPORARY</b>				
Category	Post Held	Number	Qualification	Total Service
Technical	Prod. Manager Q.C. Manager Supervisor Testing Staff (QC) Skilled workers Unskilled workers, etc			
Administrative	Purchase Manager Accounts Officer Office Superintendent Clerical Others, etc			

**DECLARATION:**

I / we confirm that the information furnished in Part 1 & 2 above is correct. In the event of any information given by me / us is found incorrect / false at any time, I / we understand our EoI for ToT will be cancelled/ rejected without notice, beside any other appropriate action against me / us.

Industry seal

Authorized signatory

Name(s) in capital

Designation and seal of authorized signatory

Date:

Place:

**List of Support documents to be attached with EoI**

- (a) Memorandum and Articles of Association (Should be incorporated as per Indian Companies Act, as amended time to time)
- (b) Certificates of registration as a manufacturing unit, if any.
- (c) Audited Balance Sheet for the preceding three years.
- (d) Income Tax returns for the preceding three year period
- (e) Details of shareholding/ownership pattern especially foreign partners/ shareholders, foreign employees, directors, etc. The company must adhere to the prevailing Govt of India policies and regulations on Foreign Direct Investment (FDI)/DIPP norms as applicable.
- (f) Annual budget for R&D during last three years.
- (g) Numbers and details of IPR or patents, etc., held by the company.
- (h) Number of technically or professionally qualified personnel.
- (i) Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).
- (j) Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise.
- (k) List of Testing and Support equipment's
- (l) ISO/ ISI certification or any other certification
- (m) Relevant clearances form the authorities/ ministries (if any)
- (n) Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.
- (o) Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.
- (p) PESO and DPIIT license for explosive handling if ToT is for high energy Material, explosives, propellants, and component/ system dealing with it etc.
- (q) Under taking form company seeking ToT that none of its Directors, Independent Directors, non-executive Directors, Key management personnel are involved in any corrupt practices, unfair means and illegal activities.
- (r) Details of the industrials license for defence manufacturing be provided by the industry seeking ToTs.
- (s) Application cum Industry Assessment Form