

WRITE UP FOR SEEKING EOI FROM INDUSTRY

1. **Name of the Technology:** Low Cost Plug-n-Play Thermal Target System (LC-TTS)
2. **Developed By:** Defence laboratory, Jodhpur (DLJ)
3. **Brief Details:** Thermal Targets are appropriate targets for the testing of Heat Seeking Missiles, considering the fact that firing practice trials of missiles cannot be carried out on real targets. The specially tailored Thermal targets may be used to address the issues related to the evaluation of firing accuracy and efficacy of any weaponry system employing thermal sights. Depending on the system to be tested, they may be made in the form of simple Zeroing Thermal Targets, or advanced Imaging Thermal Targets. Thermal Targets are a special class of thermal targets that can emulate the thermal signatures of a given object, such as a tank, with the desired spatial distribution in two dimensions (planar). LC-TTS has been developed at DLJ for Tanks. Presently, the LC-TTS has been developed in frontal aspect, which represents the average thermal signatures of Frontal view of Real Tank in field conditions.
4. **Salient Features:** The salient features of the LC-TTS as a whole are summarized below:
 - i. The average temperature at TTS to be adjusted within a narrow range wrt actual tank
 - ii. Sufficient signature details to be achieved in the field condition
 - iii. Maximum 02 Years with termite and moisture treated storage conditions
 - iv. Portable, Rugged, High Thermal Inertia and High Brightness Index
5. 03 Nos. of Prototypes of LC-TTS may be submitted by the firm for enabling DLJ to issue **Technology Absorption Certificate**.
6. **Minimum facility/Capability required at the time of submission**
 - i. The firm must have Electric Arc Thermal Spraying facility
 - ii. The firm must have XY Manipulator, CNC Engraving Machine
7. **Requirements of Technology Absorption Certificate (if any) and accordingly number of samples/product/prototypes required to issue certificate. Cost of sample and testing & evaluation cost to be borne by ToT recipient industry.**
 - i. 03 Nos. of Prototypes of LC-TTS may be submitted by the firm for enabling DLJ to issue Technology Absorption Certificate.
8. **Information on points (a) to (r)**
 - i. Memorandum and Articles of Association (Should be incorporated as per Indian Companies Act, as amended time to time)
 - ii. Certificates of registration as a manufacturing unit, if any.
 - iii. Audited Balance Sheet for the preceding three years.
 - iv. Income Tax returns for the preceding three-year period

- v. 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.
- vi. Annual budget for R&D during last three years.
- vii. Numbers and details of IPR or patents, etc., held by the company.
- viii. Number of technically or professionally qualified personnel employed.
- ix. Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).
- x. Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise.
- xi. List of testing and support equipment.
- xii. ISO/ ISI certification or any other certification.
- xiii. Relevant clearances from the authorities/ ministries (if any).
- xiv. Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.
- xv. Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.
- xvi. Industrial license for defence manufacturing issued by DPIIT (if any)
- xvii. PESO and DPIIT license for explosive handling if ToT is for high energy Material, explosives, propellants, and component/ system dealing with it etc. Any other special license compliance requirement to be specified by the lab.
- xviii. Undertaking from company seeking ToT that none of its Directors, Independent Directors, non-executive Directors, Key management personnel are involved in any corrupt practices, unfair means/ illegal activities.

9. Any Special Terms and Conditions

- i. The Respondent firm must have prior experience in design, development, integration, or supply of systems involving one or more of the following domains:
 - a. Thermal signature generation / management systems
 - b. High-power heating elements (Nichrome/Carbon/Kapton or equivalent)
 - c. IR signature augmentation / simulation systems
- ii. The respondent firm must submit the previous Supply Order of any Government Entity related to Thermal Signature Generation/ Thermal Target System/ Thermal Signature Simulation

10. Interested Firms may forward their Expression Of Interest (EOI) along with Application Cum Industry Assessment Form (Given in Annexure-II of Appendix 'D') to following Address: -

To
The Director
Defence Laboratory, DRDO
Ratanada, Jodhpur
PIN-342011
Phone: 0291-2567401
Email: director.dl@gov.in