

Advanced Light Weight Torpedo (ALWT)

1. Naval Science and Technological Laboratory (NSTL) Visakhapatnam under Defence Research & Development Organisation (DRDO) has Designed and developed Advanced Light Weight Torpedo (ALWT). ALWT is a light weight class torpedo designed to be launched by Ships and aerial platforms. The ALWT is having features comparable with state-of-the-art light weight torpedoes of international navies. As part of ToT, NSTL/DRDO provides the relevant production information of the torpedo and its test systems to enable Industries to productionize torpedoes through the approved supply chain by NSTL/DRDO.
2. **Closing date of EOI:** 21 days from the date of publication on DRDO website
3. **Minimum facility/ capability required at the time of submission of EOI: -**
 - (a) The Firms turn over should be greater than Rs. 500 Cr. for preceding three consecutive years.
 - (b) Requisite documents to be submitted with EOI. The firm must provide the details given in Part-1 of 'Application cum Industry Assessment form' placed at Annexure-II to Appendix-D of DRDO Procedures for ToT 2025, as has also been appended at the end of this publication. Any additional documents as required by DRDO shall be sought based on request received from interested parties.
 - (c) Prior experience in assembly, testing, evaluation and integration of the torpedo system.
 - (d) Experienced and skilled technical manpower for assembly, testing, integration, documentation and quality control.
 - (e) Electronic lab for realization, assembly and testing of electronic / electrical sub-systems.
 - (f) ESD safe soldering, assembly and sub-system testing bench with proper flooring.
 - (g) Proper storage facility for electronic items / components / PCB's
 - (h) QA lab (Electronics / Electrical)
 - (i) Previous and on-going experience of delivery of similar systems with clearance by QA agencies like NAI, DGAQA/ ORDQA is essential and should have experience in CEMILAC certification process.

Note: NAI is inspection agency for all torpedo sub-systems. DGAQA is the inspection agency for Air launch LRUs. CEMILAC/ RCMAs are certification agencies for Air launch LRUs.

 - (j) It is essential that the participating firm shall have ISO 9001:2015 and AS-9100D certification. Valid certificate to be submitted.

- (k) The participating firm shall have in-house facilities as specified in Para 5 below at the time of absorption of this technology.
- (l) Technical man-power in subject domains of electrical, electronics, mechanical and software.
- (m) Holding valid applicable industrial license for Defence companies issued by DPIIT for manufacturing / production of Torpedo system.
- (n) PESO license for explosive handling or a valid legal agreement to comply the requirement.

4. Following documents are to be submitted by the industry:

- (a) Expertise in Defence / Naval systems based similar systems; Expertise in testing and handling of Electrical/Electronics/Mechanical systems. Relevant SO copies with technical specifications.
- (b) In-house test facilities shall be preferred, in case of external dependency, valid enforceable agreement with other industry needs to be submitted with EOI response.
- (c) Existing manpower strength: Certificate by industry to be submitted citing experience details duly signed by authorized signatory.
- (d) On-time delivery: Delivery of similar product executed / orders in time based on SO and delivery challan.
- (e) An undertaking is to be submitted by the industry that is not banned / backlisted from any Central Govt. / State Govt. / UT organization and the applicant firm should not be bankrupt: self-certificate to this effect duly signed by authorized signatory.

5. Facility/ capability Requirements at the time of Technology Absorption

Apart from the above facilities/ requirements mentioned at **Para 3** and **Para 4** above, the following are essentially required: -

A. Required Facilities.

- a) Kit preparation for sections (Mechanical, Electrical, Electronics).
- b) Preparation of Torpedo sub systems.
- c) Instrumentation of systems & sub-systems (if required).
- d) Integration of underwater sub systems and mechanical systems in sections.
- e) Functional testes on integrated sections.
- f) Section-level vibration test facility on integrated sections.
- g) Test facility for inward goods inspection of sub systems.
- h) Integration & Testing of systems in clean room environment & strong room for handling high pressure pneumatic system.
- i) MIL-STD-1553B Comm. test setup
- j) Dynamo meter test facility for propulsion motor
- k) Functional tests on electrically integrated sections
- l) Full Torpedo integration

- m) Integrated checks facility
- n) Painting facility

B. Infrastructure / Equipment Requirements:

S.No.	Infrastructure / Equipment / Tools
1	Checkout system with GUI with required digital interfaces like Ethernet, RS422, MIL-STD-1553B etc.
2	Power supplies with required current ratings
3	20KVA industrial grade UPS
4	32 channel digital recorder
5	Assembly Trolleys
6	Work Benches, ESD safe work Benches & Anti-static tables
7	Test jigs for in-ward goods inspection
8	Wings and FIN Alignment equipment
9	Weight, CB and CG measurement setup for sub-systems and integrated torpedo
10	Three axis rate table with HILS Test facility. INS sensor calibration facility
11	<u>Armor Room Facility:</u> Armor room with a size of (LxWxD) 3m x 3m x 4m for charging of air bottles to a pressure of 450 bar (maximum)
12	<u>Acoustic tank facility with control room:</u> Acoustic Tank of size (LxWxD) 14m x 14m x 12m, Hydrophone calibration equipment, Transducer positioning system with turn table (in 3 axis), standard hydrophones (spherical, omni directional), standard test equipment like scope corders, Function Generators with probes, Oscilloscope, LCR meter, Impedance analyzer, Pre-amplifier, wide band power amplifier, digital multimeter, Insulation meter, clamp meter etc.
13	A/C integration hangar of minimum size (LxWxH) 10m x 20m x 6m with 5.0-ton EOT crane.
14	Suitable A/C storage facility for electronic equipment
15	Storage facility for explosives (Warhead, Pyros & Propulsion) with temperature and humidity control with hazard class H-1.1D certification.
16	Electrical integration tools, cables and simulators
17	Mechanical integration tools, workshop etc.,
18	Environmental Test Facilities including EMI/EMC
19	Handling equipment, Explosive Van
20	Vacuum check, Nitrogen purging, Helium leak test facilities
21	Autoclaves for External pressure testing upto 60bar (maximum), Pneumatic test facility for internal testing of shells and torpedo upto 02 bar (maximum)

- C. Safety approval from Govt. authority for explosive handling, integration and storage as per policy of Govt. of India.
- D. Fire-fighting system with trained personnel.
- E. Critical TORPEDO sub system storage facility

- F. Clean room facility for integration of TORPEDO
- G. In-house Test facilities shall be preferred, in case of external dependency valid enforceable agreement with other industry needs to be submitted.
- H. Applicable valid proofs to be duly submitted. TAC will physically assess and certify the compliances at relevant stages.

6. Requirement to issue Technology Absorption (TA)-Certificate

Compliance of **Para 5** is the requirement for issuing TA-Certificate. ToT holder industry has to produce TORPEDOES as deemed necessary and obtain necessary qualification testing by QA agencies like NAI /DGAQA / ORDQA. ToT is only for manufacturing / production of torpedoes, and associated equipment, any firing requirements from platform towards certification to be taken up by industry in coordination with Indian armed forces.

7. Information on all the points listed at Annexure -1 to this publication.

8. Any special terms and conditions:

As per DRDO policy & procedures for ToT, interested Industries are required to forward their Expression of Interest (EOI) to the following address within 21 days of publication.

Director
Naval Science & Technological Laboratory (NSTL)
Vigyan Nagar, Visakhapatnam – 530027
Phone: 0891-2586100
Fax: 0891-2559464
Email: director.nstl@gov.in

A copy of the interest may be sent to the following address without any attachment

Director
Directorate of Industry Interface & Quality Management (DIIQM)
Room No.447, DRDO Bhawan, DRDO HQrs.
Rajaji Marg, New Delhi – 110011
Phone: 011-23013209 / 23015291
Fax: 011-23793008
Email: director-diiqm-hqr@gov.in

*All industries are requested to fill in the form given below and provide supporting documents (as applicable). Kindly provide the reference of page no. of supporting documents in the relevant field of form. The list of documents to be attached is provide in **Annexure – I**.*

APPLICATION CUM INDUSTRY ASSESSMENT FORM

- i. To be submitted by industry/ organization seeking Technology Transfer
- ii. Documents in support of information provided to be enclosed
- iii. Specify the details in Part-1 and Part-2

PART – 1**General Information:**

S No	Information	Detail	Attachment Reference
1.	Name & Technology requested for Technology Transfer		
2.	Name of the Industry / Organization		
3.	Complete Address and other details:		
	Registered Office: State Phone No Fax Email Website		
	Factory: State Phone No Fax Email Website		
4.	Point of Contact Name Designation Address Mobile No. Ph No. Email. ID		
5.	Name of CMD / MD / Partners / Proprietor / etc. Name Designation Address Mobile No. Ph No. Email. ID		
6.	Date of Incorporation of company		
7.	Foreign Direct investment in company (if any in %)		
8.	Share holding pattern		
9.	Turn over as per audited balance sheet for the preceding three years Year: Year: Year:		

S No	Information	Detail	Attachment Reference
10.	Annual Budget for R&D during last three years (if any) Year: Year: Year:		
11.	Income tax returns for the preceding three years period: Year: Year: Year:		
12.	Nature of company DPSU / Private Limited / Public Limited/ Partnership / Proprietary/ Ex- Servicemen Unit		
13.	Category of Industry Large Scale / Medium Scale / Small Scale / Micro / Start-up		
14.	MSME Registration No.		
15.	Certification of registration as a manufacturing unit, if any		
16.	If startup, DPIIT Registration No.		
17.	UDYOG AADHAR No.		
18.	PAN Number		
19.	Details of industrial license for Defence manufacturing issued by DPIIT (if any)		
20.	Details of PESO license (if any)		
21.	GST Number		
22.	Nature of Business Manufacturing/ Sole Selling of Authorized Agent /Assembler/Traders/Dealer/Processor/Repacker/Others		
23.	Details of current products and Services Products and services supplied (Please specify Govt. / Domestic market/Export)		
24.	Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any)		

S No	Information	Detail	Attachment Reference
25.	Details of Registration with NSIC / SSI, DGS&D, other Defence Department, other Govt. Dept., membership of FICCI/ASSOCHAM/CII or other industrial Association. (Attach relevant copies of registration letters)		
26.	Have you already taken any technology from DRDO? (If yes, give details attaching separate sheet) Name of the Technology, Lab, Year, License Number & Status		
27.	ISO/ISI certificate or any other certificate (if yes, give details)		
28.	Relevant clearances from the authorities / Ministries (if any)		
29.	Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.		
30.	Capacity / Capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.		

PART – 2**Infrastructure and other Information:**

1.	Total Area of factory Covered (m ²) Uncovered (m ²) Bonded space available (m ²)	
2.	Ownership of factory Self-owned, partnership, rental	
3.	Electrical power Sanctioned Installed Standby (if any)	
4.	Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise	
5.	Name of Bank & A/c No. Name of Bank Account Type Account No. Address of the Bank Phone Email	

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. Give details of important facilities & infrastructure as per following format for:

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

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 programmes/installation of additional machines / test facilities etc.

13. Give self-assessment of your capability to absorb the technology

14. Any additional condition specified in the Eol compliance (to be submitted on separate sheet) to be enclosed with this form.

15. Details of employee as on date on firm's pay roll:

PERMANENT				
Category	Post Held	Number	Qualification	Total Service
Technical	Production Manager QC Manager Supervisor Testing staff (QC) Skilled Workers Unskilled Workers etc.			
Administrative	Purchase Manager Accounts Officer Office Superintendent Clerical & Other, etc.			
TEMPORARY				
Category	Post Held	Number	Qualification	Total Service
Technical	Production Manager QC Manager Supervisor Testing staff (QC) Skilled Workers Unskilled Workers etc.			
Administrative	Purchase Manager Accounts Officer Office Superintendent Clerical & Other, 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**

Dated:

Place:

Annexure – 1**LIST OF SUPPORTING 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 employed
- (i) Record of past performance (e.g., supply orders executed against of Ministry of Defence orders, public sectors and paramilitary force, if any)
- (j) Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise.
- (k) List of testing and support equipment
- (l) ISO/ISI certification or any other certification
- (m) Relevant clearances from the authorities / ministries (if any)
- (n) Capacity and Capability to undertake developmental work and to accept attendant financial and commercial risks.
- (o) Capacity and Capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.
- (p) Industrial license for Defence manufacturing issued by DPIT (if any)
- (q) 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.
- (r) Undertaking from company seeking ToT that none of its Directors, Independent Directors, Non-Executive Directors, Key management personnel is involved in any corrupt practices, unfair means / illegal activities.