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**NAVAL SCIENCE & TECHNOLOGICAL LABORATORY
DRDO, MINISTRY OF DEFENCE, GOVT. OF INDIA, VIGYAN NAGAR
VISAKHAPATNAM-530027**

EOI Ref No: NSTL/NST-240/MMD/LP-II/2023-24/EOI/01

Dt: 05- Sep -2023

**EXPRESSION OF INTEREST
TO COLLABORATE AS DEVELOPMENT CUM PRODUCTION PARTNER
FOR HEAVY WEIGHT TORPEDO**

1. Naval Science and Technological Laboratory (NSTL), Visakhapatnam, is a premier Laboratory of Defence Research & Development Organisation engaged in Design & Development of cutting-edge Naval Weapon Systems to the Indian Armed Forces.
2. On behalf of President of India, EXPRESSION OF INTEREST (EOI) is invited by Naval Science and Technological Laboratory (NSTL), Visakhapatnam from Indian companies technically and financially capable to collaborate as Development cum Production Partner for Heavy Weight Torpedo of *IN* submarine platforms.

EOI REF	DESCRIPTION	DUE DATE
NSTL/NST-240/MMD/LP-II/2023-24/EOI/01	DEVELOPMENT CUM PRODUCTION PARTNER FOR HEAVY WEIGHT TORPEDO	25.09.2023

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3. The EOI has been covered under the following parts: -
- (a) Part I : General Information
 - (b) Part II : Technical Information
 - (c) Part III : Charter of DCP
 - (d) Part IV : EOI Terms & Conditions
 - (e) Part V : Industry Partner Evaluation Criteria
 - (f) Part VI : Procedure for issue of RFP
 - (g) Part VII : Appendices

PART I: GENERAL INFORMATION

1. **Introduction:** Expression of Interest (EOI) from reputed Indian Public limited/Private limited Companies, hence forth called as Industry Partners, registered as Indian Firms having relevant expertise for the purpose of engaging as a "**Development cum Production Partner (DcPP)**" for **Heavy Weight Torpedo (HWT)** is requested. Any Indian Company from the defence manufacturing sector, having experience in system engineering of complex system of systems, product life cycle of design, development, manufacturing and fabrication, Qualification, Integration, evaluation on *IN* platforms may respond. The Request for Proposal (RFP) with detailed Statement of Work will be issued to shortlisted Industry Partners qualifying the different criteria brought out in this EOI.
2. **Purpose:** The purpose of this EOI is to **short list the Industry Partners for issue of RFP for role of DcPP towards development and production of Heavy Weight Torpedo (HWT) for *IN* platforms**. The DcPP scope of work is outlined in three phases namely support during Development phase, Production and Testing Phase and Long-Term Post-delivery Support Phase. The activities envisaged during these phases, scope of work during development, production and post-delivery support phase, role of DcPP, Evaluation Criteria, Selection Procedure for issue of RFP, Terms and Conditions, Intellectual Property (IP) rights and List of documents to be submitted etc. is described in this document. The response to this EOI will be used to shortlist potential Program DcPP for issue of RFP for the HWT of P-75 Platforms.

PART II: TECHNICAL INFORMATION

3. **Heavy Weight Torpedo Overview:** Heavy Weight torpedo (HWT) is a next-generation stealth torpedo to counter contemporary Ship & Submarine threats in oceanic waters. HWT is 533mm calibre multi-role weapon engineered with advanced technologies of Acoustic Homing, Wake Homing & Fibre Optic systems to achieve highest single shot kill probability in intense countermeasure

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environment. The torpedo electrical propulsion system with contra-rotating brushless motor and skewed propellers delivers highly maneuverable torpedo speeds to engage both slow moving & fast crafts. HWT is deployable from submarine platforms in both deep and shallow waters of IOR regions. The insensitive munition warhead of HWT ensures highest level of Platform safety & detonates at the closest proximity of the programmed target. HWT is most advanced torpedo with long shelf life, ease of maintenance, and modular conversion of Combat & Exercise torpedo variants.

4. **Critical Technology Areas:** The macro technology enablers for the proposed Heavy Weight Torpedo are specified under:
- (a) **Advanced Homing:** Combination of Active Acoustic, Passive Acoustic, Wake Homing systems for target detection, classification & tracking.
 - (b) **Proximity Fuse & Exploder:** Target proximity confirmation & initiation of exploder chain.
 - (c) **High Endurance Battery:** Augmented to Primary & Secondary vehicle configuration with twin cell-based technology.
 - (d) **Embedded controllers & Wire Guidance:** Real-time high-end systems for torpedo guidance & control.
 - (e) **Motor & Actuation systems:** Contra-rotating brushless motor & skewed propellers to deliver swift torpedo maneuvers.
 - (f) **Recovery systems:** Recovery mechanisms to locate torpedo after exercise run.
 - (g) **Fire control systems:** Compatible with torpedo launch systems & loading gear of conventional submarines.
5. **Deliverables:** Total 3 Nos of HWT Carriers within delivery schedule of 30 months from signing of contract. Detailed specifications will be issued to the shortlisted firm upon signing NDA agreement.

PART III: CHARTER OF DCP

6. **Role of DCP:** The role of DCP and framework of activities towards HWT development are enumerated below:
- (a) Associate in the development of HWT as per design specifications of NSTL DRDO. Towards this, design, development and testing of weapon system elements of HWT will have to be carried out by the selected DCP under the guidance of NSTL team. System Engineering process defined by NSTL is to be followed by DCP during the development phase.
 - (b) Article subsystem realization from nominated supply chain of HWT.

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(c) Article Integration and Factory Acceptance Testing of HWT.

(d) Pilot Production of Article for validation trials vis a vis User trials/FET, Technical & Environmental Evaluation, Maintainability Evaluation Trial & EMI/EMC Evaluation etc.

(e) As part of Post-delivery support, DcPP will be the single point of contact for maintenance, support and upgradation in consultation with NSTL. The DcPP will give willingness certificate to provide Maintenance support, & Spares support for the HWT during its life cycle of 20 years, as part of response to EoL.

(f) In production phase and thereafter, DcPP(s) shall be the single point of contact and shall be responsible for manufacture, supply, integrations, evaluations, maintenance and support during entire life cycle of the Torpedo.

(g) The selected DcPP should conform to the nominated supply chain & the benchmarked price during HWT production.

(h) DcPP nomination will be governed by DISB guidelines post successful completion of technical trials.

7. **Detailed Scope of work:** The DcPP scope of work during various phases of project namely Development phase, Production and Testing Phase and Long-Term Post-delivery Support Phase is enumerated.

7.1 Development Phase:

- (a) Selected DcPP will associate with NSTL, DRDO for a period of 30 Months to design and develop the industrially engineered models based on the design data evolved by NSTL during design and development of laboratory prototype.
- (b) The DcPP will prepare production/working drawings, material specifications and other documents for the industrially engineered model. The DcPP would guarantee for the design, material, workmanship and performance of the article for a specific period.
- (c) DcPP will familiarise with the Bill of material (BOM), Standard of Preparation (SOP), Quality Assurance Plan (QAP) and Qualification of systems and Acceptance Test Procedures (ATP) requirements. The DcPP will carry out article realization from the nominated supply chain.

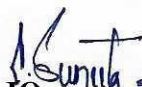
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- (d) The DcPP will associate in design, development, analysis, implementation, supply chain management, Integration, checkout quality control activities of all the subsystems of the project including trials during development phase of project. The DcPP will prepare relevant know-how documentation for design, development and validation of HWT. DcPP will also prepare the production documents for HWT.
- (e) The DcPP will be responsible for article Integration, checkout & support on submarine platforms, validation trials vis a vis User trials/FET, Technical & Environmental Evaluation, Maintainability Evaluation Trial, EMI/EMC Evaluation etc., training and documentation.
- (f) DcPP will design and develop test Jigs, Tools and Handling equipment for ease of integration.
- (g) A Contract Monitoring Committee would be constituted with heterogeneous team to monitor the progress of activities.
- (h) The DcPP will position experienced manpower to understand the design and development process of respective HWT sub-systems. Position a team of experienced Engineers along with Project managers (about 14) with minimum 3 years of experience and Technicians (about 8) having minimum 2 years of experience at specified Work centers of DRDO for at least 30 months. Each selected DcPP should position 50% of man power mentioned above for at least 30 months from date of selection. The selected DcPPs need to extend the man power support after 30 months from selection till DRDO project phase completion due to any delays in project development phase up to 45 months. Expenditure is to be borne by the vendor for the period of delay.

7.2 Production, Evaluation & Validation Phase:

- (a) The DcPP shall manufacture the required number of HWT and carry out the procedure jointly agreed between NSTL and DcPP.
- (b) Production of HWT as per design provided by the designers of NSTL. Towards this, establish Infrastructure for Production, Integration facilities etc in vendor premises within 24 months after nominated as DcPP. Infrastructure cost to be borne by the nominated DcPP.
- (c) Integration of specified number of Carriers is to be done at Industry facilities.
- (d) Ensure Quality Assurance (QA), Quality Testing (QT) and Quality Control (QC) for all systems as per Quality certification standards.
- (e) Participate in all User Trials as decided from time to time.

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(f) Preparation and printing of various Operator, Technical and Maintenance manuals for all systems and sub-systems of HWT.

(g) Conduct of Initial Training for User personnel.

7.3 Post Delivery Support Phase:

(a) Written Consent for the post-delivery support is to be given by the Industry partner for up to 20 years, as part of response to EOI.

(b) DcPP will be the single point of contact for maintenance, support and upgradation in consultation with NSTL, DRDO.

PART IV: EOI TERMS & CONDITIONS

1. The Director, NSTL reserves the right to accept/reject any or all the EOI without assigning any reason and also will not be responsible for postal delays.
2. **EOI Clarification:** Industry Partners are required to submit their queries/clarifications by mail/fax to NSTL, DRDO on or before **due date**. DcPP can seek clarifications in writing or by e-mail / fax within 15 days from issue of EOI.
3. **Last Date and Time for submission of EOI:** The relevant documents should be submitted within the Due Date and Time. Responsibility to ensure this lies with the Industry partners.
4. **Documents to be submitted by EOI respondent:** The following list of documents to be submitted along with EOI before the due date and time
 - (a) Information proforma as per Appendix A.
 - (b) Duly signed compliance statement of all evaluation criteria under Financial, Technical, Management and Manufacturing category along with all proof of documents as per Appendix B.
 - (c) Compliance to the Scope of work and Terms & conditions.
5. **Submission of EOI:** Interested Industries may write along with their company profile, financial & technical capabilities etc. as per the formats enclosed at Appendix to Director, NSTL, Visakhapatnam within due date published in this advertisement.

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The Director, NSTL, DRDO,
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6. Critical Dates:


EOI Submission End Date	25.09.2023 (14:00 Hrs.)
EOI Opening Date	26.09.2023 (14:00 Hrs.)

7. Corrigendum / amendment if any will be intimated through E-mail / Post before opening of EOI
8. Clarifications if any may be sought by mail ID: buyer41.odm.ts@gembuyer.in & srinadh.m.nstl@gov.in
9. Director, NSTL reserves the right to shortlist or reject any or all the proposal or to scrap entire process without assigning any reason thereof.

PART V: INDUSTRY PARTNER EVALUATION CRITERIA

1. The DcPP qualification criteria are categorized into four criteria namely Financial, Technical, Manufacturing and Management criteria placed at Appendix. All Industry Partners interested to be a DcPP are to peruse the same in detail, and enlist their self-assessment in the designated column and submit along with necessary documents for scrutiny by selection committee. Without the documentary evidences the response to EOI will not be considered, for short listing.
2. A company shall be considered as owned by resident Indian citizen, if more than 50% of capital is directly owned or beneficially owned by resident Indian.
3. The DcPP shall meet the evaluation qualification criteria either on its own or through its Indian Holding company/ subsidiary /associate company or Group companies.
4. Participation in EOI does not guarantee that RFP will be offered. Shortlisted firms only will be provided with RFP after submitting NDA. DRDO reserves the right to reject any offer or proposal without assigning any reasons.
5. The Industry Partner must submit information pertaining to blacklisting by any government agency including blacklisting of domestic/foreign technology partner (if any).


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PART VI: PROCEDURE FOR ISSUE OF RFP

1. DcPP need to submit the following documents.
 - a) Authorization letter from CEO/MD/Director of the firm.
 - b) Duly Signed Industry Partner Information proforma as per appendix A
 - c) NDA as per format provided at Appendix C.
 - d) Duly signed compliance statement wrt each evaluation criteria under all categories with all proof of documents.
2. All the responses from Industry Partners will be scrutinized by an Expert Committee as per PM 2020 guidelines. The expert committee may request for a presentation at NSTL and/or will visit Industry Partner premises to assess their capabilities to take up the work.
3. RFP will be issued only to the short-listed Industry Partners who meet all the qualification criteria/requirements after submitting duly signed NDA documents.
4. **Intellectual Property (IP) Rights:** Intellectual rights of HWT will lie with NSTL, DRDO. Firm will not be able to manufacture the torpedo to a third party without the express consent of NSTL/Indian Navy. DRDO shall have the march-in rights to use the IP for its own use in the interest of the Govt. of India without any restrictions, irrespective of the nature of licence granted.
5. **TOT Terms:** Transfer of Technology (TOT) will be as per the DRDO guidelines. The priority may be given to the industry associated during development to ensure high quality of manufacture within the limitations in hand-holding support of DRDO provided if Industry meets DRDO requirements as per ToT guidelines.

PART VII: APPENDICES

- Appendix A : Industry Partner Information
- Appendix B : Mandatory Compliance Criteria
- Appendix C : Non-Disclosure Agreement Format
- Appendix D : Marking Methodology

Encl: **As per PART VII: APPENDICES**

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