**Expression of Interest**
**Mist based Infrared Suppression Technology (MIST)**

**1.Introduction**:
 Naval Science and Technological Laboratory (NSTL), Visakhapatnam, a Research &DevelopmentLaboratory under DRDO, MoD, invites Expression of Interest (EOI) fromIndianmanufacturers having sufficient experience, expertise and willingness to undertake theproduction, certification and installation of Infrared Signature Suppression (IRSS) Systems based on **Mist based Infrared Suppression Technology (MIST)**.

**2. System Description:**

 The Exhaust gas from main propulsion Gas Turbine engines of ships provides a very high thermal (infrared) signature which is used by the IR seekers in the Missile homing systems for passive detection. It is therefore required to reduce the infrared signature by reducing the exhaust gas temperature using water mist injection. NSTL has designed “Mist based Infrared Suppression Technology (MIST)”, in which sea water at ambient temperature is injected into the hot exhaust gas as very fine mist and a large amount of heat absorption takes place due to latent heat of vaporization. A dedicated control system has been developed to meter the quantity of sea water to prevent corrosion due to excess un-evaporated sea water being deposited at other parts of the ship.

2. Salient features of the MIST system are as follows:-

(a) Fabrication drawings of the MIST systemintegrated with ship’s exhaust ducting

(b) Nozzles selected to ensure 80% droplet evaporation within the available stack length

(c) Design of Flow control system for variable delivery operation at various loads which includes design of piping system, flow control valves, sensors etc.,

(d) Dedicated control system for injection of sea water mist with interlocks to prevent operation at low exhaust gas temperature and low sea water pressure

(e) Design of integrated systems for automatic drainage of sea water from manifolds on completion of system operation

(f) Design of automated operation of Blow through system to enhance maintainability of system

(g) Integration with shipboard Sea Water system

The Transfer of Technology will include dimensional drawings for manufacture of individual systems, integration details and documentation for operation and maintenance of the system.

**3. TOT TERMS:**

The TOT terms and Conditions are as per the following:-

(a) TOT will be given on non-exclusive basis only. The number of licenses on non-exclusive
basis will be restricted. However, additional licence if required will be given by DRDO on
need basis. The intellectual property rights shall always remain with DRDO.

(b) The amount and payment stages of TOT fee will be as prescribed by DRDO.

(c) Royalty fee @ 2% of the annual sales to Indian Govt. Estt, Armed Forces and @ 6% of
the annual sales to Export Market (based on invoice value declared to Customs
authorities). Export is subjected to due approval from DRDO/MoD.

(d) Technical assessment of the industries submitting EOI will be carried out by a Technical
Assessment Committee (TAC) for verification of the technical and financial
capability/capacity of the industry.

(e) Eligible parties will have to sign Confidentiality & Non-Disclosure Agreement (CNDA)
with DRDO for technical discussion including specifications, following which they shall be
considered for giving Transfer of Technology (TOT) on non-exclusive basis.

(f) TOT to industry will be given based on their manufacturing capability, assurance on
quality and capacity of production apart from other terms and conditions.

(g) The Licensing Agreement for Transfer of Technology (LATOT) which is to be signed will be as per appendix-K of DRDO Guidelines for Transfer of Technology and its amendments time to time.

(h) 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.

**4. Submission of EOI**

Interested industries may write along with their company profile, financial & technical capabilities etc. as per the following format to Director, NSTL, Visakhapatnam and copy to Director DIITM on the following addresses

**Director, NSTL**
DRDO, Min. of Defence,
Vigyan Nagar

Visakhapatnam, Andhra Pradesh - 530027

FAX :0891 - 2559464
Email: director@ nstl.drdo.in

**Director, DIITM**
Room No 446 DRDO Bhawan
DRDO HQrs Ministry of Defence
RajajiMarg New Delhi – 110011
Contact No - (011) 23016216 / 23007446
FAX No. 011-23793008