

HINDUSTAN SHIPYARD LIMITED
VISAKHAPATNAM-530005

**INVITATION FOR EXPRESSION OF INTEREST FOR
INDIGENISATION OF NON-WEAPON (SYSTEM) SENSORS FOR USE IN SHIP
BUILDING UNDER MAKE – II POLICY OF HSL**

1.	Department	DESIGN
2.	EOI Ref No.	16/EOI/MKII/327/2022
3.	EOI date	05 Apr 22
4.	EOI closing date & time	30 Jun 22
5.	Description	INDIGENISATION OF NON-WEAPON (SYSTEM) SENSORS FOR USE IN SHIP BUILDING

Introduction

1. HSL invites 'Expression of Interest (EOI)' from reputed Indian manufacturers/ Startups/MSMES for Indigenous Development & Supply of Non-Weapon (System) Sensors for use in ship building for upcoming projects.

2. The item (Sensors) shall be developed under Make II procedure at HSL. The cost of developing and testing of product is to be borne by the developing agencies (DA) in accordance with MAKE-II procedure. It gives opportunity to Indian Vendors {called as Development Agencies (DAs)} to develop import substitute or new product by developing prototype with an assurance from HSL of Purchase Order for the quantity specified in this EOI, in case of successful development, evaluation and type testing of prototype in specified time frame. HSL shall have no liability to place orders if item is developed beyond the specified time frame.

3. The item developed should have Indigenous content of not less than 50% by value and content both.

4. This item is reserved for startups recognized by DIPP under eligible Domain/Category and MSMEs registered under the current MSME Act. However if, no MSME/Startups expresses interest for proposal the same would be opened up for all, including industries.

5. Indigenous development, manufacture and testing of prototype of non-weapon (system) sensors for use in ship building to be as per technical specification placed at **Enclosure I.**

Qualification Criteria

6. The interested firms must fulfill the following minimum pre qualification criteria and shall necessarily submit the relevant documents to support their claim.

(a) **Technical Qualification**:-

(i) Company profile and valid shop & Establishment registration certificate, indicating Sensors/similar items as one of their products.

(ii) List of equipment held by them with model, year/ working status along with details of their manufacturing facilities and personnel with designation, qualification and experience to determine their capabilities suitable for development of sensors.

(iii) Extent & source of import content for the subject requirement if any. Firm shall also submit, more than one source for the import content, to ward off denial regime, in an unlikely eventuality.

(iv) Draft quality Assurance plan (QAP) indicating all referred documents for inspection criteria inclusive of any stage inspection. The QAP should contain all the activities necessary to develop and produce the item including the raw material and the quality checks to be conducted and their acceptance criteria/ values. The QAP will have to be approved by IRS and concurred by HSL.

(v) The proposed development of prototype & qualification of the sensors is to be completed within the period of 24 months from Go-ahead.

(b) **Commercial Qualification:-**

(i) The bidder shall be an Indian registered firm having its registered office & manufacturing facilities in India. Self-attested copy of the registration certificate to be submitted with EOI application.

(ii) The bidder shall be an original Indian designer, developer & manufacturer of defined sensors and similar item.

(iii) The entity has to be controlled by resident Indian citizens. Entity with excess of 49% foreign investment will not be eligible.

(iv) Copies of Audited / certified Balance sheet, Profit / Loss account for past 3 years and valid solvency certificate / Banker's opinion issued by Nationalized / reputed international / scheduled bank, should be submitted with EOI application.

(v) Traders / Agents / Dealers / foreign Bidders / Consultant shall not be considered.

Future Business Potential

7. Once the prototype is successfully developed and certified by IRS / suitable agency of Indian Navy in specified time frame, the developed Item may be considered for procurement from the Vendor for use in upcoming projects. The future requirement of sensors for the period of next 12 Months post successful development of prototype is envisaged to be approx. 400 per Ship. This quantity may vary based on projects on hand / upcoming.

Instruction to bidders responding to EOI

8. HSL reserves the right to consider placement of order / contract in part or in full against the quantity mentioned in scope of supply or reject any or all bids without assigning any reason. HSL also reserves the right to cancel this expression of interest without assigning any reason.

9 HSL reserves the right to make inquiries with any of the clients listed by the bidders on their previous experience record. Further HSL may ask the firm to make presentation to understand the capability of the firm w.r.t project planning, capability, experience, approach methodology etc.

10. Vendor should design, develop, manufacture prototype and undertake testing for Sensors based on Technical Specifications provided by HSL. Vendor may collect the additional technical information during Design & Development by examining the existing sensors installed on IN / ICG ships.

11. Sensors will be indigenized under Make-II procedure. As per Make-II procedure, no funding will be made available by HSL to Development Agency/s (DAs) for development of prototype (including testing & trials) but there will be assurance of orders on successful development & trials of the prototype.

12. (a) Shortlisted firms will be jointly inspected by HSL for ascertaining capacity and capability to undertake indigenous development of the item.

(b) In case of two vendors found suitable to develop the items during procurement phase, the indicated quantities may be split up in the ratio 70:30 between L1 and L2 vendor who have successfully developed the prototype provided the L2 vendor accepts to the price and terms & conditions quoted by L1 vendor.

(c) DA and HSL shall be co-owner of Intellectual property generated during the development of project and each of the co-owners will have independent right to exploit the IP rights, to their own benefit, without the consent of the other co-owner.

13. This invitation of EOI is not an assurance for order.

14. The items that are indigenously developed are to be jointly inspected by HSL and IRS / suitable IN representative as appropriate as per approved QAP. All tests required for certification by Class / IN representative as per Technical specification shall be carried out by vendor at his own cost.

Bid Rejection Criteria

15. HSL may at its sole discretion and at any time during the evaluation of proposal, disqualify any bidder, if:

(a) Bids have been received after due date.

(b) Bidder's failure to furnish sufficient or complete details for evaluation of the bids within the given period.

(c) Incomplete / misleading / false / ambiguous proof of eligibility requirements.

(d) Failed to produce timely clarifications related thereof, when sought.

(e) Declared ineligible by the Government of India. / State govt. / Public sector undertaking / IN.

(f) Bids with technical requirement and or terms not acceptable to HSL.

(g) Information relating to the evaluation; clarification and recommendation for pre-qualification shall not be disclosed to bidders or any other persons not officially concerned with such process until the pre-qualification process is completed. Any effort by the bidder to influence HSL pre-qualification process may result in rejection of his EOI.

(h) Conditional bidding and the material alterations in the Bid document will be liable for disqualification.

16. In case of any queries/clarifications please contact
Mr. Rajesh Pandey, Deputy General Manager (Design),
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E-mail - dgmmdo@hslvizag.in

OR

Capt. GV Krishna, Technical Services,
Tel: 7981511722
E-mail: indg-consultant@hslvizag.in

17. **Submission of response to EOI**

The EOI proposal document duly completed and signed should be sent to:-

GM, Commercial
Hindustan Shipyard Limited
Gandhigram
Visakhapatnam-530005
Tel: 9493792715/ 2801
E-mail: gmcommercial@hslvizag.in

(a) As an advance copy, EOI be submitted on www.eprocurehsl.nic.in and later on Hard copy of EOI response may be sent to above address with mention of EOI reference on envelope.

(b) The due date for submission of EOI proposal is 30 June, 2022 @ **17:00 Hrs IST.**

TECHNICAL SPECIFICATION AND QUALITATIVE REQUIREMENTS FOR SMOKE/HEAT/FLAME SENSORS

1. **Introduction.** There is a risk of fire or explosion in all areas containing flammable substances in the form of liquids, gases, dust or materials. Where these combustible materials are mixed with air in sufficient concentration they form flammable atmospheres and the areas containing them are designated Hazardous Areas. When a source of ignition, such as a spark is applied in a hazardous area, an explosion could take place. Hence there rises a requirement of provisioning smoke/heat/flame sensors onboard naval warships in order to curb any fire accidents.

2. **Addressable Optical Smoke & Heat Detector.** Ionization / Photoelectric type smoke detectors smoke detector. It should operate in a number of approved modes and sensitivities that can be dynamically selected to suit different environmental conditions.

3. **Addressable Heat Detector.** The heat sensor should ~~can~~ operate in fixed temperature and rate-of rise modes with a number of approved sensitivities. Most often these sensor will be used in areas where high levels of dust are present or where the environment precludes the use of smoke detectors.

(a) **4B-C 4" Continuity Base.** The detector bases are designed to screw fix direct to the deck head or onto a deck head mount. A park position allows the detector to be mechanically attached to the base without making electrical connection to facilitate the testing of electronic free bases. The 4" Continuity Base is for use with the 850/851 Series detectors that have built in line isolators. The 4B-C base provides continuity when the detector is removed.

(b) **Deck head Mountings.** Deck head Mountings are designed for use in Machinery Spaces or where steel deck heads exist and mechanical and environmental protection is required.

4. **Addressable Ex. Optical Smoke & Heat Detector** The Intrinsically Safe Optical Smoke & Heat Detector would require to mount in AVCAT compartment, POL store, Magazines, armory compartment, battery room etc.,. The detector should plug into an Ex base. The detector is to be designed to transmit to fire controller, digital signals which represent the status of the optical smoke and heat elements of the detector. Software within the controller is used to interpret the returned optical and heat values to raise an alarm or other appropriate responses according to the type of detector configured.

(a) The mode of detector may be:-

- i. Optical smoke only detector (sensitivity High, Normal or Low)
- ii. HPO smoke detector (sensitivity High, Normal or Low)
- iii. Heat only rate-of-rise (A1R) detector (no sensitivity selection)
- iv. Heat fixed temperature 60oC (A2S) (no sensitivity selection)

- v. Optical (sensitivity High, Normal or Low) combined with heat fixed temperature 60 Degree C (A2S)
- vi. HPO (sensitivity High, Normal or Low) combined with heat fixed temperature 60 degree C (A2S)

These detectors are designed to comply with EN 50 014 and EN 50 020 for intrinsically safe apparatus. They are certified:

- i. ATEX Code: Ex II 1G
- ii. Cenelec Code: EEx ia IIC T5

3. The WT / NWT addressable manual callpoint (MCP) with programmable status LED need to be designed, manufactured and supplied. The MCP are to be designed for LPCB approvals. The MCPs should provide high speed communication to the panel of a manual fire alarm.

4. **Operational functionalities and capabilities expected.**

- (a) Compact, rugged & resistant to high temperature.
- (b) Easy to install, maintain & handle.
- (c) High precision & reliability.

5. **Technical Parameters & Attributes.**

- (a) Weight constraints, if any – Weight shall be as less as possible.
- (b) Power Supply: 24V DC
- (c) Environmental Conditions:
 - (i) System expected to function between - 10 degree to + 70 degree Celsius
 - (ii) It should function in Fresh water, Seawater, Lubes and Fuel oil mediums.
- (d) Reliability
- (e) Compatibility constraints: Shall be compatible to be integrated with IPMS controls.
- f) Dimensional Constraints, if any - Shall be easily installed, the fittings shall be easily removable
- g) Design Constraints: Shall be suitable for all type of tanks.
- h) Specific Maintainability Guidelines & Expectations, if any – Shall be easily repaired, maintained, removable and reusable.

i) Material of construction: Infra-Red flame detectors-FR110 'Bay blend',
Sounder beacon- Housing ABS FR & Polycarbonate,

5. Test and trial requirements: Type Testing of each type of sensor by any IACS /
Applicable Class and Naval standard.

6. Applicable QA Standards.

7. Offered Test Sites, Labs & Technical Infrastructure.
