

REQUEST FOR INFORMATION

FOR PROCUREMENT OF FIRE WARNING SYSTEM FOR SINDHUGHOSH CLASS SUBMARINE UNDER BUY INDIAN (IDDM) CATEGORY FOR INDIAN NAVY

1. The Ministry of Defence, Government of India, intends to procure **Seven (07) Fire Warning System (FWS), to be installed onboard Sindhughosh Class Submarines.**
2. This Request for Information (RFI) consists of three parts as indicated below: -
 - (a) **Part I.** The first part of the RFI incorporates operational characteristics and features that should be met by the Equipment. Few important technical parameters of the proposed equipment are also mentioned.
 - (b) **Part II.** The second part of the RFI states the methodology of seeking response of vendors. Submission of incomplete response to the requirements of the RFI in accordance with the format (**Appendix 'C' and 'D'**) will render the vendor liable for rejection.
 - (c) **Part III.** Guidelines for Framing Criteria for Vendor Selection/ Pre-Qualification in Buy Indian (IDDM) Cases (**Appendix 'A'**).

PART-I

3. **Intended Use of Equipment (Operational Requirements).** Fire Warning System (FWS) is required for an automatic early warning of the outbreak and location of developing fire by way of an audio alarm and on a display unit, thereby alerting the watchkeeper and firefighting organization to take necessary action.
4. **Important Technical Parameters.** This document solicits information regarding compliance with critical technical specifications of the **Fire Warning System (FWS)**. A detailed response is essential so as to analyze the proposed solution of the vendor with regards to technical capabilities and features of the FWS. Certain important aspects are as follows:-
 - (a) **Operation & Technical Parameters.** The broad operational and technical characteristics for the FWS are placed at **Appendix 'B'**.
 - (b) Indicative cost for the Fire Warning System (FWS) should take into account all aspects of supply, installation, integration, training, Factory Acceptance Trials (FATs), Onsite System Acceptance Test (OSAT) and Life Cycle Support. The indicative cost should also cater the Annual Maintenance Contract (AMC) as per

details in **Appendix 'B'**. Other aspects (if any), may be mentioned specifically. The Firm has to respond to the questionnaire at Appendix 'D'.

(c) Vendor is to indicate whether he has supplied the same or similar equipment to any other customer. Additionally, the vendor is to indicate whether similar equipment is in use in any other Navy.

(d) Vendor is to indicate that whether any additional manpower will be required to operate and maintain the FWS or the existing manpower of the platform will be sufficient. The details with respect to training required for personnel is to be mentioned.

(e) Whether the vendor would be able to comply with all provisions of Defence Acquisition Procedure 2020 (DAP 2020) or not. If not, which Para/Clause of DAP 2020 would not be agreed with reasons is to be indicated.

(f) Vendors may consider RFI as advance information to obtain requisite Government clearances.

(g) **Tentative Delivery Schedule**. The overall timeframe of production, delivery with stage wise break-up of the entire project post signing of contract along with Programme Evaluation and Review Technique (PERT) details is required to be submitted.

(h) **Payment Terms**. Vendor is to indicate acceptability to the terms of payment as per DAP 2020.

(j) **Approximate Cost Estimate**. The vendor is to provide the indicative cost of the Fire Warning System (FWS) as well as the total project. The indicative cost of the Annual Maintenance Contract (AMC) is to be indicated separately. All the cost serials are to include applicable taxes and duties and are to be mentioned separately.

(k) Vendor is to indicate its capability to execute the project and provide product support including:-

(i) Technical support being provided for maintenance and support of the system during its service life, including warranty. The service life of the system should be at least fifteen (15) years.

(ii) Modalities for Annual Maintenance Contract including spares, post warranty period.

(l) Vendor is to indicate the provisions for upgradability of equipment to avoid system obsolescence.

(m) Vendor is to indicate restrictions related to imports, if any and how long will it take to get clearance.

(n) Earliest date by which Original Equipment Manufacturer (OEM) is willing to give a presentation at Naval Headquarters, New Delhi.

(p) **Confidentiality of Information.** No party shall disclose any information to any 'Third Party' concerning the matters under this RFI generally. In particular, any information identified as 'Proprietary' in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to the sub-contractors, consultants, advisors or the employees engaged by a party with equal force.

(q) The BUYER shall have the right to place separate order on the SELLER on or before Eight year from the date of Contract for the main equipment, spares, facilities or services as per the cost, terms and conditions set out in this Contract up to a maximum of 50% quantity and during the original period of Contract provided there is no downward trend in prices. The price of the system, spares etc shall remain same till Eight year from the effective date of the Contract. Price Variation Clause, FERV etc, if applicable and included in the original Contract, will also be applicable for Option Clause Contract. For arriving at prices payable, the Price Variation will be applied on the Base Contract price of the original Contract with the month and year of Effective date of Contract as Base Level Indices.

5. Vendor is to confirm if the following conditions in accordance with DAP 2020, are acceptable:-

(a) The solicitation of offers will be as per 'Single Stage-Two Bid System'. It would imply that a 'Request for Proposal' would be issued soliciting the technical and commercial offers together, but in two separate sealed envelopes. The validity of commercial offers would be at least 18 months from the last date of submission of offers.

(b) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.

(c) Amongst the vendors cleared by TEC, a Contract Negotiation Committee (CNC) would decide the lowest cost bidder (L1) and conclude the appropriate contract.

(d) Vendor would be bound to provide product support for time period specified in the RFP, which includes spares and maintenance tools/jigs/fixtures for field and component level repairs.

(e) The vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VI of DAP 2020.

(f) **Integrity Pact.** An Integrity Pact along with appropriate Bank Guarantee is mandatory requirement and should be provided i.a.w DAP 2020 (**Refer Annexure**

I to Appendix M of Schedule I).

(g) **Performance-cum-Warranty Bond**. Performance-cum-Warranty Bond both as per rate promulgated by Ministry of Defence at the time of RFP issuance is required to be submitted after signing of contract.

(h) **ToT (if applicable)**. GOI is desirous of license production of equipment after acquiring Transfer of Technology (ToT) for design and production in the case.

6. **Contact Point for Interaction**. The details of the contact point at IHQ MoD(N) is as mentioned below: -

Designation	–	COMMANDER SUBMARINE ACQUISITION
Contact	–	011 – 2301 0096

PART II

7. **Procedure for Response**

(a) Vendor must fill the form of response as given in **Annexure II to Appendix 'A' to Chapter II** of DAP 20 (details placed at **Appendix 'C'**). Apart from filling details about company, details about the product meeting our technical specifications should also be carefully filled. Additional literature on the product can also be attached with the form. Vendors are to provide para wise compliance in a tabular format to this RFI along with reasons for non-compliance, if any, to all aspects of this RFI.

(b) Vendors must forward an undertaking that in the past they have never been banned / debarred from doing business dealing with Ministry of Defence (MoD) / Gol / or any other Gol organisation.

(c) The filled form should be dispatched at under mentioned address:-

Commodore Submarine Acquisition
Directorate of Submarine Acquisition
IHQ MoD (Navy)
Room No. 120, 'C' Wing Sena Bhawan
New Delhi – 110 010
Tel: +91-11-2301 0162
Fax No.: +91-11- 23010830
e-mail: dsmaq@navy.gov.in

(d) The last date of acceptance of filled form is **20 APR 2022**. The vendors shortlisted for issue of RFP would be intimated.

8. The Government of India invites responses to this request only from Original Equipment Manufacturers (OEM) / Authorised Vendors / Government Sponsored Export Agencies / Vendors with experience of production of Training Simulator of equivalent complexity (applicable in the case of countries where domestic laws do not permit direct export by OEMs). The end user of the equipment is the Indian Navy.

9. This information is being issued with no financial commitment and the Ministry of Defence reserve the right to change or vary any part thereof at any stage. The Government of India also reserves the right to withdraw it, should it be so necessary at any stage. The acquisition process would be carried out under the provisions of DAP 20.

**GUIDELINES FOR FRAMING CRITERIA FOR VENDOR SELECTION/
PREQUALIFICATION IN 'BUY (INDIAN-IDDMM)' CASES**

1. The guidelines prescribed for short-listing/ pre-qualification of Indian vendors in Buy (Indian-IDDMM), Buy (Indian) & Buy & Make (Indian) cases are enumerated in the succeeding paragraphs. **Paragraph 2** deals with the parameters that may be considered for short-listing of vendors, whereas **Paragraph 3** amplifies the process for applying selected parameters to the process of Vendor Short listing.

2. **Parameters.**

(a) **General Parameters.**

(i) Applicant Entity should be an Indian Vendor as defined at Paragraph 20 of Chapter I of DAP 2020.

(ii) Business dealing with applicant Entity or any of its allied entities should not have been suspended or banned, by MoD/ SHQ or any Government Department or organization (as defined in Guidelines for Penalties in Business Dealings with Entities issued vide Ministry of Defence, D(Vigilance) MoD ID No 31013/I/2006-D(Vig) Vol II dated 21 Nov 2016). None of the Promoters and Directors of applicant entity should be a wilful defaulter.

(iii) "Entities" will include companies, with whom the Ministry of Defence has entered into, or intends to enter into, or could enter into contracts or agreements.

(iv) "Applicant entity" may be a company, subsidiary, an associate company (as defined in the Companies Act, 2013), a consortium or a Joint Venture (JV).

(b) **Technical Parameters.**

(i) Vendor shall be a manufacturing entity or a system integrator of defence equipment and not a trading company, except in cases where the OEM participates only through its authorised Vendors.

(ii) Minimum two year experience in broad areas like manufacturing/ electronics etc as applicable in the instant procurement case. If not, then cumulative experience of at least three years in above areas, resulting in gaining of competence for manufacturing the proposed product. (In case

the IHQ feels that for a particular equipment a lesser experience could be accepted, then the same should be got approved by the competent authority before including the same in the RFP).

(iii) Where product involves integration, previous experience of not less than one year/ one project in integration of systems/ equipment shall be required.

(iv) **Turnkey Projects**. Experience of successful completion of one Turnkey project of similar nature within last five years with value of at least 20% of AoN cost or currently executing a contract involving system development, installation, trials, commissioning and life support onboard a sea going marine vessel / platform with value of at least 30% of the AoN cost. In case of no experience in Turnkey projects, the vendor for main component of the Turnkey project may be selected if it has experience as per paragraph 2 (b) (ii) above and experience of installation or integration of similar equipment/system or system of systems.

(v) **Information & Communication Terminals (ICT) Cases**.

(aa) Certification to be included if linked to scope of work – Gartner Quadrant/ ISO9001/ CMMi3 or more (specifying development/ service/ acquisition models)/ ISO27001. For Information Security and large value projects preferably CMMi5 may be specified.

(ab) Compliance with IEEE/ ITU standards depending upon nature/ type of project or solution required.

(c) **Financial Parameters**.

(i) **Average Annual Turnover**. Minimum average annual turnover for last three financial years, ending 31st March of the previous financial year, should not be less than 30% of estimated cost of the Buy (Indian-IDDM) should not be less than 30% of estimated cost of the Make portion.

(ii) **Net Worth**. Net worth of entities, ending 31st March of the previous financial year, should not be less than 5% of the estimated cost of the Buy (Indian-IDDM) and Buy (Indian) project and for Buy & Make (Indian) should not be less than 5% of estimated cost of the Make portion. Net worth of entities should not be negative.

(iii) **Credit Rating (Desirable Financial Parameter)**. Long term credit rating equivalent to CRISIL rating on Corporate Credit Scale as CCR-BBB or better, and SME-04 or better for SMEs issued by credit rating agencies recognized by SEBI. Credit rating should be as on 31st March of the

previous financial year.

Note 1 : The turnover and net worth of the vendor shall be rounded off to the nearest lower ten/ hundred crore so as to keep the estimated cost of procurement confidential).

(d) **Other Parameters.**

(i) **Industrial License (IL).** Vendors should be either holding a valid defence industrial license or should have applied for the same before responding to RFP. In any case the vendor must confirm holding of IL before commencement of FET. (Items requiring IL will be as per DIPP Press Note 3 of 2014 as amended from time to time).

(ii) **Registration.** Registered for a minimum of two years (one year for SMEs). Minimum number of years not applicable for JVs constituted specifically for a project.

3. **Stipulations for Applying Parameters.**

(a) Areas like manufacturing/ electronics/ explosives etc. referred to at Paragraph 2(b)(ii) should be defined in each case of procurement.

(b) In case the Applicant Entity is unable to meet the Financial Parameters by itself, it may rely on its Holding Company (as defined in the Companies Act, 2013 and amendments thereof) ('Companies Act') for fulfilment of the Financial Parameters, in which case reliance must be placed on the Holding Company towards fulfilment of ALL the Financial Parameters.

(c) In case the Applicant Entity is unable to meet one or more of the Technical Parameters by itself, it may rely on a Group Company(ies) for fulfilment of the Technical Parameters. A Group Company in relation to the Applicant Entity may be:-

(i) A company of which the Applicant Entity it is an Associate Company. Such company should have ownership, directly or indirectly, of at least 26% of the voting shares of the Applicant Entity.

(ii) A company which is an Associate Company of the Applicant Entity. The Applicant Entity should have ownership directly or indirectly, of at least 26% of the voting shares of such Associate Company.

(iii) A Company with whom the Applicant Entity is commonly owned, directly or indirectly, for at least 26% of the voting shares by another company. For example: An Applicant Company A is an Associate Company

of Company B, in which B holds at least 26%. Further, C is also an Associate Company of B, in which B holds at least 26%. In this case the Applicant Company may use the credentials of C as well.

(iv) The Holding Company and Subsidiary Companies (as defined under the Companies Act) of the Applicant Entity.

(d) The Applicant entity may be a single entity or a group of entities (the "Consortium"), coming together to implement the project. In such case:-

(i) The credentials of only those members or their related entities may be counted, who have at least 26% equity stake in the Consortium.

(ii) Each Consortium should have a designated Lead Member.

(iii) For Technical Parameters, any of the Consortium members or their Group Companies may meet the criteria.

(iv) For Financial Parameters; the Turnover and Net Worth of the Consortium Member shall be reckoned proportionate to Consortium Member's equity stake in the Consortium, and each Consortium member should meet the other criteria pertaining to Insolvency and Credit Rating. In case the Consortium Member relies on its Holding Company for any one of the above-mentioned Financial Parameters, then reliance must be placed on the Holding Company for meeting all the financial Parameters.

(e) Vendors should provide all necessary self-authenticated documentation in support of their achievement of criteria. Such documentation should inter-alia include:-

(i) Details of projects/ supply orders successfully executed in the last two years.

(ii) Annual reports for three years of applicant entity, parent and associate companies, consortium and JV partners.

(iii) Details of shareholders, promoters, associated, allied and JV companies.

(iv) Details of vigilance action, viz. ongoing investigation and suspension/ debarment/ blacklisting actions against the applicant entity or any of its allied entities, parent company or consortium and JV partners, if any by any Department/agency of Central Government.

- (v) A certificate from CA/CS indicating the financial parameters for the last three years as per Paragraph 2(c).

(Note: If a vendor is already a supplier to MoD and/ or has already provided the above documents in such cases, it should be necessary for the vendor to resubmit only such documentations as is necessary to update the above).

- (f) Any vendor furnishing false information will be liable for action as per existing guidelines.

- (g) Based on these generic parameters, more specific criteria should be evolved by the SHQ with regard to Technical and Financial parameters {Paras 2(b) and 2(c) above} in each procurement case depending upon requirements peculiar to each case keeping in view the overall need to ensure wider vendor participation. The specific criteria evolved by the SHQ for each case, as per these guidelines, may be got approved by the competent authority before including the same in the RFPs.

4. **Start Ups/ MSMEs**. Start ups would be defined as per G.S.R. 127 (E) dated 19 Feb 2019 (as amended from time to time). For procurement cases where the estimated cost is not exceeding ₹100 crore/ year based on delivery schedule at the time of seeking AoN or ₹ 150 crore, whichever is higher, to encourage the Start Ups/ MSMEs and build Industrial ecosystem, the recognized Start Ups/ MSMEs in the relevant fields may be considered for issue of RFP without any stipulation of Financial parameters, except Paragraph 2(c)(iii) above (Insolvency) and with General and Technical parameters to be decided on case to case basis.

(Note: Start Ups should not be confused with New entrants who may be high/ mid-sized groups having financial support and manufacturing experiences and now venturing into Defence Production).

5. The criteria for vendor selection shall be clearly stipulated in RFPs so as to maintain transparency. Care shall be taken to ensure that the stipulated criteria are not open to subjectivity and arbitrary interpretation.



**REQUEST FOR RESPONDING (RFR) - PROCUREMENT OF
FIRE WARNING SYSTEM (FWS)**

PART I

OPERATIONAL AND TECHNICAL CHARACTERISTICS

Introduction

1. The Project is for installation, commissioning, trials and maintenance of Fire Warning System onboard seven (07) Sindhughosh Class submarines. The submarine consists of six water tight compartments and two Battery pits. The compartment composition consists of Living spaces, Galley, Machinery spaces (Engine Room, Motor Room, Ammunition deck, Shafting Space). The system will require different sensors viz, smoke sensor, temperature sensor, hot spot detection sensor, flash detector etc. The system's cabling will require to pass through compartments that are water tight and bifurcated using Bulkheads. The compartments are air pressure tested to 10 Kg/cm². The system has to be functional under marine environment and higher atmospheric pressures.

System Information

2. **Basic Function of a Fire Warning System.** A key aspect of safety against fire is to identify a developing fire emergency in a timely manner and alert the watchkeepers and the firefighting organizations of the submarine to fight fire. This is achieved by a Fire Warning System which gives an automatic early warning of the outbreak and location of developing fire by way of an audio alarm and on a display unit, thereby alerting the watchkeeper and firefighting organization to take necessary action. Such advanced systems may shut down electrical equipment and may also be used to initiate automatic fire extinguishing / suppression system.

3. **Proposed Addressable Fire Alarm System.** This system is to be viable and capable for providing fire warning capability onboard Sindhughosh class of submarines. The system should be able to perform the following activities: -

(a) To detect gradient temperature rise, hot spots, smoke, gradient increase in smoke, movement / presence of personnel in manned and unmanned space, machinery space, living space).

(b) To initiate visual / sound alarm in all the compartments and in the central monitoring console (Central Display Unit (CDU) of FWS) installed in Control Room.

(c) Environment. The sensors should be able to function and perform in marine environment and under higher atmospheric pressures (minimum 10 Kg/cm²). Depending on the requirement or location viz. smoke sensor, flame sensor, heat sensor, motion sensor, multifunction sensor etc can be used.

(d) There should be *Manual Call Point (MCP)* to raise the alarm in case the fire warning system fails to detect the fire.

4. There should be a central *Control and Display Unit (CDU)* in Control Room (C/R) and *Planetary Subunits (PS)* in other compartments for indication and action. The size of the CDU and PS should be compact and ruggedized.

5. System design should not be based on Ethernet Over Power Line (EOPL) as the same is not compatible with the Fire Warning System in other sea going platforms.

6. Cable laying. The cable laying if it involves passing from one compartment to the other then manufacturing of Bulkhead Cable Gland (to ensure water tight integrity of submarine) will be required to be undertaken for ensuring Water Tight (W/T) integrity of the platform. The cable laid has to be tagged from end to end and are to be secured in accordance with the standards as mentioned at Para 10 below.

7. System Architecture and Power Supply. The System architecture to have redundancy to operate and function without any hindrance even if main loop or circuit is damaged or cutoff. The power supply proposed for fire warning system is 220V/ 50Hz electrical supply. The use of UPS is not recommended keeping in view EMI/ EMC issues. Alternative power supply source (DC) from submarine battery similar to Emergency lighting can be explored for uninterrupted power supply. During refit, when batteries of submarine are not fitted, dedicated shore supply source through a UPS placed outside submarine may be provided to the system for uninterrupted operation.

8. Cable Schedule/ Cable Route/ Cable Glands. Cable Schedule, cable route and gland schedule are to be provided. The cable glands, entry, termination and junction components are to conform to *NES 514*.

9. EMI/ EMC Analysis. Conduct of Type Testing as per *MIL-STD-461E/F* prior to installation of proposed system has to be undertaken to identify and take remedial actions against interference.

10. Standards. *EN 54* is a mandatory standard that specifies requirements and laboratory test for every component of fire detection and fire alarm system. This standard is widely recognized around the world. The system design must additionally be compliant to following Standards: -

(a) NES 514 standard.

(b) NES 603 standard.

(c) NES 723 standard.

11. **Bill of Material (BoM)**. Recommended Bill of Materials (BoM), including spares, tools and accessories are to be provided along with the response to RFI. The Firm is to mention the details of indigenous military materials that are being used in the system and are already being manufactured in the country.

12. **Documentation**. The installation Manual, Technical description, Operating Instructions, Troubleshooting Manual, Repair Manual and other relevant diagram needs to be submitted by the OEM/ Vendor. All units to have tallies and circuit and schematic diagram plates conforming to NES 723 standards (equivalent or updated extant documents in vogue).

13. **Field Evaluation Trials (FETs)**. For the system / equipment to be accepted the system has to either undergo FETs or should be available Commercially Off-The-Shelf (COTS), meeting requisite IS/BIS or equivalent certifications, based on vendor certification without conduct of Technical, EMI-EMC and Maintainability Evaluation Trials (MET). Firm has to indicate the parameters for which evaluation can be done and by which mode viz., through simulation/certification/documentation/demonstration during FET.

14. **Onsite System Acceptance Test (OSAT)**. The system has to be installed in the platform (submarine) whilst following the phases viz-a-viz installation of system, Setting to Work (STW), Harbour Acceptance Trials (HATs). The Trial documents will be drafted by the Firm and will be examined and approved by *IN* prior to undertaking STW and HATs. The installation phase will include following: -

- (a) Nomenclature of system components and tagging.
- (b) Cable laying, tagging and securing.
- (c) Bulkhead gland packing to ensure water and gas tightness. Gland should withstand 1.5 times of the compartment pressurising limits (10 Kg/cm²).
- (d) The following are expected of the system: -
 - (i) Ability of the system to undertake system self-check at regular intervals.
 - (ii) To detect presence of smoke, hot spots, temperature gradients.
 - (iii) To initiate visual and sound alarm in the affected compartment at Planetary and the Central Display Unit (CDU)

15. **Maintenance Envelope**. The system has to be ruggedized and should not require any maintenance except in case of replacement of damaged components. The maintenance envelope / space for replacement of defective units and for routines / calibration would be required and same to be ensured while formulation of Working Level Drawings (WLDs). Six monthly calibration of sensors by the OEM and checks and routines by end user of the system is envisaged.

16. **Additional Lighting.** Requirement of additional lighting is to be ascertained post installation of the Fire Warning System. If required the additional lighting has to be provided in accordance with the existing compartment lighting system in the submarine.

17. **Scope of Work.** The scope of work for proposed system along with man days are to be provided along with the response to RFI.

18. **Onboard Maintenance Tools and Spares.** List of onboard maintenance tools, Onboard spares (OBS) and Base and Depot (B&D) spares are to be provided along with the response to RFI.

19. **Consequential Alteration.** Alteration to any existing equipment for fitment of the proposed system should be avoided to the extent feasible. However, in case of unavoidable alterations that are to be undertaken, the same has to be mentioned in the response to RFI.

20. **List of Abbreviations.**

(a)	BH	-	Bulk-Head
(b)	W/T	-	Water Tight
(c)	F/E	-	Fore-Ends
(d)	C/R	-	Control Room
(e)	III rd	-	Third Compartment
(f)	CDU	-	Control and Display Unit
(g)	PS	-	Planetary Subunits
(h)	OBS	-	Onboard spares
(j)	B&D	-	Base and Depot
(k)	NES	-	Naval Engineering Standards
(l)	EN 57	-	Stainless Steel
(m)	IEEE	-	Institute of Electricals and Electronics Engineers Standards Association
(n)	ITU	-	International Telecommunication Union
(p)	MIL-STD-461E/F	-	Department of Defence Interface Standard Requirement for the control of EM interference characteristics of subsystems and equipment.
(q)	ICT	-	Information & Communication Technology

VENDOR INFORMATION PROFORMA

1. **Name of the Vendor/Company/Firm.**

(Company profile including Share Holding pattern, in brief, to be attached)

2. **Type (Tick the relevant category).**

Original Equipment Manufacturer (OEM)
Authorised Vendor of foreign Firm

Yes/No
Yes/No (attach details,
if Yes) others (give
specific details)

3. **Contract Details.**

Postal Address:

City:_____

State:_____

Pin Code:_____

Tele:_____

Fax:_____

URL/Web Site:_____

4. **Local Branch/Liaison office/Agent (if any).**

Name & Address: _____

Pin code: _____ Tel: _____ Fax: _____

Email:_____

5. **Financial Details.** Category of Industry (Large/ Medium/ Small Scale):

6. **Certification by Quality Assurance Organisation.**

Name of Agency	Certification	Applicable from (Date & Year)	Valid till (Date & Year)

7. **Details of Registration.**

Agency	Registration No.	Validity (Date)	Equipment
GeM			
DGQA/DGAQA/DGNAI			
OFB			
DRDO			
Any other Government Agency			

8. **Membership of FICCI/ASSOHAM/CII or other Industrial Associations.**

Name of Organisation

Membership Number

9. **Equipment/Product Profile (to be submitted for each product separately)**

(a) Name of Product: _____

(IDDM Capability be indicated against the product)

(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature): _____

(c) Whether OEM or Integrator: _____

(d) Name and address of Foreign collaborator (if any): _____

(e) Industrial Licence Number: _____

(f) Indigenous component of the product (in percentage):

(g) Status (in service/design & development stage):

(h) Production capacity per annum:

(j) Countries/ agencies where equipment supplied earlier (give details of quantity supplied):

(k) Estimated price of the equipment_____

10. Alternatives for meeting the objectives of the equipment set forth in the RFI.

11. Any other relevant information:_____

12. **Declaration**. It is certified that the above information is true and any changes will be intimated at the earliest.

Note: *Paragraph 44 and Appendix F to Chapter II may be referred.*

(Authorised Signatory)

Appendix 'D'**QUESTIONNAIRE TO BE ANSWERED**

1. In case your company is interested in manufacturing and supplying the Fire Warning System (FWS), the details of the same may be forwarded to this office in the format given below: -

<u>Ser</u>	<u>Particulars</u>	<u>Bidder Reply</u>
(a)	Name of Fire Warning System (FWS)	
(b)	<p>Whether the FWS is available or can be custom made as per <i>IN</i> requirements. If yes, then following to be indicated: -</p> <p>(i) Is the system existing in any of the marine platform (ships, submersibles, submarines, tugs) ?</p> <p>(ii) Operational life of the system.</p> <p>(iii) Whether any modification is required to be undertaken in the <i>IN</i> platform ?</p> <p>(iv) Maintenance and supportability as per sub Para (c) below.</p> <p>(v) Timelines for supply is to be indicated.</p> <p>(vi) No limitations on the envisaged operations of the product by the Buyer.</p>	
(c)	<p>Capability to execute the project and provide product support including:-</p> <p>(i) <u>Warranty</u>. Technical support being provided for maintenance and support of the FWS during its service life including warranty. The <i>IN</i> service life of FWS should be at least fifteen (15) years.</p> <p>(ii) <u>AMC</u>. Modalities for Annual Maintenance Contract with spares post warranty period.</p> <p>(iii) <u>Rate Contract Agreement (RCA)/ Annual Maintenance Contract (AMC)</u>. Modalities for RCA for spares/services in addition to AMC post warranty period.</p>	
(d)	<u>Timelines for Supply</u> . The delivery schedule of	

<u>Ser</u>	<u>Particulars</u>	<u>Bidder Reply</u>
	the Seven (07) FWS is to be indicated.	
(e)	<u>Installation Time</u> . The duration for Installation, Setting to Work (STW), Trials and Commissioning are to be mentioned separately.	
(f)	Indian Organisation / Firm to which such system may have been supplied / planned to supply	
(g)	Foreign Nations / Organisation to which such system may have been supplied / planned to supply	
(h)	Whether company has manufacturing / servicing setup in India. If Yes, the details of all the installations pertaining to the firm to be placed. If not, what are the future plans to set up a manufacturing / servicing setup in India ?	
(i)	Annual turnover during the preceding three (03) years.	
(j)	Import content (if applicable).	
(j)	Restrictions related to import of any item related to the FWS system? If yes, how long will it take to get clearance?	
(k)	Whether Transfer of Technology (ToT) is possible ?	
(l)	Earliest date at which OEM/ Firm is willing to give a presentation to Naval Headquarters, New Delhi.	
(m)	Budgetary cost estimate of system. Indicative cost for manufacture of the FWS should take into account all aspects of integration, training, FATs, Onsite System Acceptance Test (OSAT), life cycle support. Other aspects may be mentioned separately.	
(n)	Indicative cost for Annual Maintenance Contract (AMC) the Fire Warning System (FWS)	
(p)	Number of pages enclosed in the reply.	

2. Further, the broad based requirements envisaged for the Fire Warning System (FWS) are tabulated below. The firm is requested to bring out in detail, all the features

that the firm will be able to offer (with numerical values where applicable) for the Fire Warning System (FWS). Additional information / features available other than those tabulated here may also be provided.

<u>Ser</u>	<u>Description</u>	<u>Amplifying Remarks</u>	<u>Bidder Remarks</u>
(a)	Roles	<p>(i) Detection of hot spot/ high temperature, Flash, Smoke, Gradient rise in temperature, Personnel movement/ presence in a compartment.</p> <p>(ii) The firm has to bring out the details with respect to type and quantity of the detectors that are required for system configuration:-</p> <ul style="list-style-type: none"> (aa) Smoke (ab) IR-IR (ac) IR-UV (ad) Heat Sensors (ae) Rate of rise Sensors (af) Proximity Sensors (ag) Acoustic Sensors (ah) Any other <p>(iii) Raising of Alarm – Audio</p> <p>(iv) Visual</p>	
(b)	Visit to Platform	<p>The representatives of the firm to visit the Platform (Sindhughosh Class Submarine) for a better estimate and understanding. Following details of the representatives visiting the Platform are to be forwarded on Firm's letter head to <i>IN</i> for security clearance: -</p> <ul style="list-style-type: none"> (i) Name. (ii) Designation. (iii) Nationality – INDIAN. (iv) Aadhar Card Number and copy. (v) Firm details. (vi) Present Address & Permanent Address. (vii) Recent Passport Photo – 01. 	
(c)	Capabilities	<p>(i) Capable of detecting features mentioned at Para 2(a) above.</p> <p>(ii) Capable of actuating visual and sound alarm.</p> <p>(iii) Capable of comprehensive logging of every alarm and emergency detected by the system. The duration for logging should be for 30 days minimum.</p>	

<u>Ser</u>	<u>Description</u>	<u>Amplifying Remarks</u>	<u>Bidder Remarks</u>
		(iv) The logged data should be compatible with Windows and LINUX based Operating system and should have the capability to transfer data. The FWS has to be compatible for recording and editorial activities.	
<u>System Description</u>			
(d)	System	<p>(i) The FWS should broadly comprise of the following:-</p> <p>(aa) Sensors to detect temperature, smoke, temperature gradient, personnel movement.</p> <p>(ab) <i>Central Display Unit (CDU) and Planetary Subunits (PS)</i> to tap, store and process data acquired through the sensors as described at Para 2(a)(i) above and Para 2(b)(iii). The CDU should be able to give a pattern of temperature profile in a selected compartment and location (to the extent feasible) of hot spots or areas that are a cause of concern.</p> <p>(ac) Cables and connectors for interconnecting all the components and peripherals of the system and interfacing connectors and cables to connect with existing platform (submarine) system.</p> <p>(ad) Stowage and Support Systems.</p> <p>(ii) Interchangeable/ Modular sensors and components with a universal interface to facilitate inclusion of new/ different sensors/ components.</p> <p>(iii) The sensors/ components should be able to operate simultaneously without interference up to the maximum limits set in accordance with the system configuration.</p>	
<u>System Dimension and Operating Environment</u>			
(e)	Principal Dimensions	Size to be compact.	
(f)	Able to work in Atmospheric pressure	Minimum 10 Kg/cm ²	
(g)	Maximum humidity	95%	

<u>Ser</u>	<u>Description</u>	<u>Amplifying Remarks</u>	<u>Bidder Remarks</u>
(h)	Environment	Should be able to function in marine environment and tolerate occasional sea water / bilge water splash	
(j)	Rolling & Pitching	Roll - 45° (Port and Stbd) Pitch - 25° (forward and aft)	
(k)	EMI / EMC	As per MIL STD 461 D & E	
(l)	Magnetic Discretion	System magnetic signature is to be close to neutral, so as to not to add any fraction to the overall submarine magnetic signature.	
(m)	Power Requirements	(i) The FWS to have MAIN and ALTERNATE source of power supply. (ii) Power supply - 220V/50Hz (or) - 24V DC. (iii) The use of UPS is not recommended, view EMI/EMC issues. (iv) In case of failure of MAIN supply, ALTERNATE inbuilt provision for emergency supply for energising critical systems is to be indicated. (v) Provision for conversion to stabilised voltages for use by various systems and sub-systems is to be included. (vi) Pressure tolerant up to 30 Kg/cm ² .	
(n)	Sensors	Availability of following sensors/ sensor suite / alternative sensor is to be indicated:- (i) IR capable (ii) Recorder Module for Acoustic and Magnetic Signatures. (iii) Recorder CTD and Bathymetric Data.	
(p)	Safety and Recovery Features	Information on safety and recovery features is to include the following: - (i) System should be able to conduct self-health check up upon switching on and should be able to do the same at regular intervals.	

<u>Ser</u>	<u>Description</u>	<u>Amplifying Remarks</u>	<u>Bidder Remarks</u>
		(ii) FWS should have a Built In System Checks (BITE) in it. The defect thus detected during BITE should be visible in Central Display Unit (CDU) and respective Planetary Subunits (PS).	
<u>Command, Control and Communication (C³) System</u>			
(q)	Command, Control and Communication (C ³) System	(i) The FWS should have an option of being controlled from PS and CDU. The overriding protocols of controls and functionality of the panel has to be defined. (ii) There should be an option of giving command from CDU to PS in respective posts/ compartment/ location.	
<u>Handling, Maintenance, Reliability and Through Life-Support</u>			
(r)	Handling, Maintenance Reliability and Through Life-Support	Information is to include the following:- (i) Total service life and capability of life extension with scheduled maintenance periods. (ii) Operational and Maintenance requirement for the entire life cycle of the FWS. (iii) High MTBF (Mean Time Between Failure) not less than 10000 hours for PS, CDU and various sensors. (iv) MTTR (Mean Time to Repair) should not be more than 45 minutes. (v) Suitable monitoring systems with autonomous controls for fault detection and taking corrective actions. (vi) Modular design to enable replacement of components and through-life upgrades. List of spares should include individual components and not whole equipment. (vii) Use of material and coatings resistant to prolonged exposure to sea water and marine environment.	
(s)	Training and Documentation	(i) Training requirements for operator (onboard personnel) and maintainer (Repair yard personnel) for operating the FWS and its associated Control System are to be indicated.	

<u>Ser</u>	<u>Description</u>	<u>Amplifying Remarks</u>	<u>Bidder Remarks</u>
		(ii) Detailed documentation on functional, operational and maintenance aspects should be supplied for the FWS and its associated support equipment.	
(t)	Standards, Certifications & Specifications	Details of compliance to various MIL standards and specifications.	
(u)	Trial methodology / protocol	The various stages of trials that will be required to ascertain the readiness of the components and the system.	
(v)	Comprehensive Maintenance & Product Support Package	Including Manufacturers Recommended List Of Spares [MRLS {Onboard Spares (OBS) and Base and Depot (B&D)}] for maintenance for a period of at least fifteen (15) years.	
(w)	Field Evaluation Trials (FETs)	<p>(i) The system / equipment should either be offered for FETs or should be available Commercially Off-The-Shelf (COTS), meeting requisite IS/BIS or equivalent certifications, based on vendor certification without conduct of Technical, EMI-EMC and MET. Firm to mention the same.</p> <p>(ii) Firm has to indicate the parameters for which evaluation can be done and by which mode viz., through simulation/ certification/ documentation/ demonstration during FET.</p>	
<u>Indigenisation Percentage</u>			
(a)	Percentage wise distribution of items of Fire Warning System.	<p>Composition of system includes designing, manufacturing/developing, integrating, Setting to Work (STW), Energising, Trials, Endurance checks, Derisking phase and finally commissioning of the FWS.</p> <p>The same has to be distributed amongst the following three categories, viz., percentage of items that are : -</p> <p>(i) Indigenously Designed and developed in India.</p> <p>(ii) Indigenously developed / manufactured / assembled in India.</p> <p>(iii) Imported.</p>	
(b)	Bill of Material (BoM)	(i) Recommended Bill of Materials (BoM), including spares, tools and accessories are to be placed at enclosure along with the response to RFI.	

<u>Ser</u>	<u>Description</u>	<u>Amplifying Remarks</u>	<u>Bidder Remarks</u>
		(ii) The Firm is to mention the details of indigenous military materials that are being used in the system and are already being manufactured in the country.	
Percentage of Cost			
(c)	Percentage of cost	<p>Indicative cost of FWS items should include designing, manufacturing/developing, integrating, STW, energising, trials, endurance checks, derisking phase and finally commissioning of the FWS.</p> <p>(i) Percentage of cost of items that are indigenously designed and developed in India.</p> <p>(ii) Percentage of cost of items not designed in Indian but are only manufactured/ assembled in India.</p> <p>(iii) Percentage of items imported.</p> <p>(iv) Percentage of cost of system integration, STW and Trials by Indian or Foreign personnel or by both.</p>	