

REQUEST FOR INFORMATION (RFI) FOR SIMULATORS
FOR REMOTELY OPERATED VEHICLE (ROV) AND SUBMARINE RESCUE
VESSEL (SRV) OF THE DEEP SUBMERGENCE RESCUE VESSEL
WITH THE INDIAN NAVY

1. The Ministry of Defence, Government of India, intends to procure **two sets of simulators to emulate the Remotely Operated Vehicle (ROV) and Submarine Rescue Vessel (SRV) of the Deep Submergence Rescue Vessel System with the Indian Navy**. The simulators would be set up at locations indicated by Indian Navy.
2. This Request for Information (RFI) consists of three parts as indicated below. Submission of incomplete format will render the Vendor liable for rejection:-
 - (a) **Part I.** The first part of the RFI incorporates operational characteristics and features that should be met by the equipment. A 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.
 - (c) **Part III.** Guidelines for Framing Criteria for Vendor Selection/ Pre-Qualification in Buy Indian (IDDM) and Buy (Indian) cases.

PART - I

3. **The Intended Use of Equipment.** The simulators are required to impart realistic hands-on training and work-up of individuals and crew for effectively handling the Remotely Operated Vehicle (ROV) and Submarine Rescue Vessel (SRV) of the Deep Submergence Rescue Vessel System with the Indian Navy.
4. **Important Parameters.** The important technical and commercial aspects to be addressed by the vendors in their responses are as follows:-
 - (a) **Important Technical Parameters.** The important technical parameters for the **Simulators for ROV and SRV** are placed at **Appendix 'A'**.
 - (b) **Approximate Cost Estimate.** The vendor is to provide the indicative cost including taxes (to be indicated separately) of the **Simulators for ROV and SRV** as well as the total project cost. This 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 of the Annual Maintenance Contract (AMC) including spares, post warranty period is to be indicated separately as per details in **Appendix 'A'**. The cost so forwarded should include all taxes/ import duty components. Other aspects (if any), may be mentioned specifically.

(c) Whether same or similar equipment has been supplied by the vendor to any other customers and if yes, then bring out the differences in the version being offered.

(d) **Field Evaluation Trials (FET)**. Field Evaluation Trials (FET) will not be applicable as there is no prototype available for conduct of NCNC trials. However, Technical Evaluation and Acceptance Trials will be carried out for the operational and technical parameters placed at Appendix 'A'.

(e) **Manpower and Training**. Vendor is to indicate the manpower required to operate and maintain the training facility. Additionally, the details of training required for such personnel is also to be indicated.

(f) **Compliance to DAP-2020**. Whether the vendor would be able to comply with all provisions of Defence Acquisition Procedure 2020 (DAP 20) or not. If not, which Para/Clause of DAP 20 would not be agreed with reasons is to be indicated.

(g) **Tentative Delivery Schedule**. The overall timeframe of production and delivery, with stage wise break-up of the entire project post signing of contract is to be submitted. The timeline for the acquisition process will be as per Appendix 'L' to Ch II of DAP 20.

(h) **Payment Terms**. Vendor is to indicate acceptability to the terms of payment as per DAP 20.

(j) Vendor is to indicate its capability to execute the project and provide product support including Technical support to be provided for maintenance and support of the simulators during its entire service life, including warranty. The technical support should be available throughout the life of the simulator viz. at least 25 years.

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

(l) In cases where in foreign vendors are responding, the vendor(s) is to indicate restrictions related to exports in his country and how long will it take to get clearance.

(m) Details of the floor space requirement, electrical power requirements and any other requirements like Heating Ventilation Air Conditioning (HVAC) etc. for creation of the ashore facility at two locations. Any special infrastructure requirement to be provisioned into the building are to be brought

out in detail (as *Indian Navy* would be providing only the bare shell building to erect the *ashore maintenance facility*).

(n) Indicate the details of agency holding Intellectual Property Right (IPR) for various hardware and software components of simulator along with OEMs for manufacture of major assemblies.

(p) Intimate the earliest date by which OEM is willing to give a presentation at Naval Headquarters, New Delhi. This is to include, detailed Technical Parameters for which pre-clearance from OEM's Government needs to be sought while indicating date for presentation at Naval Headquarters, New Delhi.

5. Vendor should confirm that the following conditions in accordance with DAP 20, 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 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) Field Evaluation Trials (FET) will not be applicable as there is no prototype available for conduct of NCNC trials. However, Technical Evaluation and Acceptance Trials will be carried out.

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

(e) Vendor would be bound to provide product support for time period specified in the RFP, which includes spares, maintenance and component level repairs.

(f) Vendor is to accept all conditions of DAP 20. If not, which Para/Clause of DAP 20 would not be agreed with reasons is to be indicated. Further, the vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VI of DAP 20.

(g) **Transfer of Technology (Not Applicable)**. Transfer of Technology is not envisaged by the Indian Navy as the Simulator is a training aid being procured as 'Onetime Procurement'.

(h) **Integrity Pact**. An Integrity Pact along with appropriate Bank Guarantee is a mandatory requirement and should be provided i.a.w DAP 20 at the time of submission of bids in respect to RFP.

(j) **Confidentiality Clause**. The OEM is not to disclose the information shared in this RFI with any third party without the permission of the MoD, GoI. Further the OEM is to ensure that the information shared in this RFI is handled only by personnel who are authorized to handle classified information. It is to be ensured that no reproduction of this document is made in hard or soft copies.

(k) **Performance-cum-Warranty Bond**. A Performance-cum-Warranty Bond of 5% value of the Contract (or at the rate as promulgated by MoD at the time of tender submission) inclusive of taxes and duties would be furnished by the vendor in the form of a Bank Guarantee after signing of Contract.

(l) **Tentative Delivery Schedule**. The overall timeframe of procurement of equipment, associated gear and services for setting up of two sets of Simulators for Remotely Operated Vehicle (ROV) and Submarine Rescue Vessel (SRV) of the Deep Submergence Recue Vessel with the Indian Navy, 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.

(m) **Indigenisation Content (IC)**. In line with the 'Make in India' initiative of the GoI, the OEM is to ensure that all efforts are made to maximize the Indigenous Content (IC) of the project without any deterioration in performance standards as specified at Appendix 'A'. OEMs are to indicate in percentage the extent of Indigenous Content (IC) that can be offered to aid in arriving at the categorisation of the proposal (Appendix 'D' to Chapter II of DAP 20 refers).

6. **Interaction with Vendors**. The vendors may contact the Directorate to seek clarifications, if any, pertaining to the RFI. Details for the same are as follows:-

Captain Submarine Acquisition
Room No. 121, 'C' Wing Sena Bhawan
Directorate of Submarine Acquisition
IHQ MoD (Navy)

New Delhi – 110 011
Tel: 011-2301 0096
Fax No.: +91-11- 23010830
E-mail: dsmaq@navy.gov.in

PART – II

7. **Procedure for Response.**

(a) Vendors must fill the form of response **within eight weeks** of issuance of this RFI, as per **Annexure II to Appendix 'A' to Chapter II of DAP 20** (details placed at **Appendix 'B'**). Apart from filling details about company, details about the exact product meeting our generic 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 RFI form should be dispatched to the under mentioned address:-

Commodore Submarine Acquisition
Directorate of Submarine Acquisition
IHQ MoD(Navy)
Room No. 120, 'C' Wing Sena Bhawan
New Delhi – 110 011

Tel: +91-11-2301 0093
Fax No.: +91-11- 23010830
E-mail: dsmaq@navy.gov.in

(d) Last date of acceptance of filled RFI form is **14-03-2022 (14 Mar 2022)**. The vendors short listed for issue of Request for Proposal (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 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 reserves the right to change or vary any part thereof at any stage. The Government of India also reserves the right to withdraw this RFI should it be so necessary at any stage.

10. The acquisition process would be carried out under the provisions of DAP 20.

PART III

11. **Vendor Selection Criterion.** The guidelines for Framing Criteria for Vendor Selection/ Pre-Qualification in Buy Indian (IDDM) and Buy (Indian) cases are placed at **Appendix 'C'**. Vendors must fill the form as to enable Vendor Analysis prior issue of RFP.

Appendix A

{Refers to Para 4(a)}

**OPERATIONAL AND TECHNICAL PARAMETERS FOR
SIMULATORS FOR REMOTELY OPERATED VEHICLE (ROV) AND
SUBMARINE RESCUE VESSEL (SRV) FOR INDIAN NAVY**

1. **Introduction.** The requirements contained herein represent the qualitative requirements for the **Simulators to emulate the Remotely Operated Vehicle (ROV) and Submarine Rescue Vessel (SRV) of the Deep Submergence Recue Vessel with the Indian Navy** capable of replicating display and indications following logic and interlocks on all onboard systems associated with ROV and SRV, hereinafter referred to as “**Simulators for ROV and SRV**”.

2. **Scope.** The scope covers the functional, technical, design, documentation and support requirements of the **Simulators for ROV and SRV**.

3. **Aim.** To procure equipment, associated gear and services for setting up of two sets of Simulators to emulate the Remotely Operated Vehicle (ROV) and Submarine Rescue Vessel (SRV) of the Deep Submergence Recue Vessel with the Indian Navy, both to be located ashore at indicated locations, catering for hands-on training and work-up of individuals and crew in effective handling of the ROV and SRV of the DSRV with the Indian Navy.

4. **Type.** The **Simulators for ROV and SRV** and associated requirements shall comprise the following:-

(a) A Training Simulator should be a fully functional replica of the SRV having a motion platform with **Two Degrees of Freedom (2 DOF)**, i.e. Rolling and Pitching motion and a Front Facia replica of the ROV with **no motion requirement**. The Training simulators should have the same look, feel, functionalities, man-machine interface and response time of the ROV and SRV. The following facilities will be contained within the simulator:-

(i) Replica of the SRV with appearance and configuration of equipment similar to those with Indian Navy's DSRV and dynamic characteristics of defined equipment and the platform as per design (the required internal facilities are described subsequently).

(ii) Adaptors and connections for Ventilation and Air Conditioning (VAC) of the simulator from an external VAC System.

(b) An Instructor Station.

(c) A Briefing and Debriefing facility with capability to record and replay simulation sessions.

(d) A Technical facility which will accommodate all electrical and electronic components not required to be located at the operator, trainer, trainee stations, components of the VAC system, storage facility for documentation and spares, fault detection, fault localization and fault analysis components and a maintainer station.

5. The scope of supply for the Simulators for ROV and SRV, to enable functioning as per desired characteristics and safety of operation is to include the facilities as follows:-

(a) Suitable Ventilation and Air Conditioning (VAC) facilities to be provided for the cabins of the ROV and SRV simulator, simulator complex building housing the motion cabin, associated technical facilities, briefing and debriefing room(s), instructor station. Also, provide VAC facilities for the building and rooms housing its respective Briefing and Debriefing room(s), Technical facilities and Instructor station to maintain a temperature of 18-20°C at all times at all the facilities.

(b) Suitable Local Area Network (LAN) to interconnect all devices of the Training Simulator including Instructor station, Briefing and Debriefing facility and the Technical facility for conducting, monitoring and analyzing training, uploading tasks, fault analysis and BITE tests.

(c) Suitable safety arrangements to cater for electrical safety, mechanical and motion safety, high temperature safety etc.

(d) The Simulators for ROV and SRV should include but not be limited to all furniture, lighting, broadcast, and communication means for all the stations and facilities. The Training Simulator should also include all unrelated mock-ups required to replicate the near real environment in the motion platform as existing in the DSRV's ROV and SRV.

(e) A courseware and trainee evaluation package which should provide an assessment of the performance of the trainees.

6. The Simulators for ROV and SRV would have the following broad capabilities for training: -

(a) Various programmed scenarios for the following:-

(i) Familiarisation with the functioning of the ROV and SRV.

- (ii) Conduct of basic submarine rescue drills.
 - (iii) Conduct of crew training.
 - (iv) Conduct of emergency procedures.
- (b) Suitable provision to enable *IN* to design and modify the training scenarios (as per training requirements).

System Details

7. **SRV.** The 'DSAR 650L', Submarine Rescue Vehicle (SRV) is a manned rescue submersible comprising of two compartments namely the Command Module (CM) and the Rescue Chamber (RC). The SRV is controlled from the CM which is manned by the Mission Pilot who manoeuvres the SRV and the Pilot-2 who is in-charge of sensors, controls and communication. The purpose of the SRV is to rescue trapped submariners from a DISSUB on the seabed and the submersible accomplishes this task by achieving a seal between its transfer skirt and the outer hull of the DISSUB.

8. **Technical Specifications.** The technical specifications for the SRV simulator is to be in accordance with the SRV characteristics and the limits of the same are as tabulated below:-

| <u>Ser.</u> | <u>Specification</u> | <u>Parameters</u> |
|--------------------|-----------------------------|--|
| (a) | Maximum Depth of Operation | 650 m. |
| (b) | Operating Speed | (i) Maximum Dived Speed (ahead) – not less than 3.0 kn. (ii) Maximum Dived Speed(astern) – not less than 3.0 kn. (iii) Maximum Lateral Speed - not less than 0.5 kn. (iv) Maximum Vertical Speed - not less than 1kn. |
| (c) | Operating Conditions | Should be suitable for undertaking operations upto Sea State 4 and 2 Kn sea current. |
| (d) | Conditions for Mating with | (i) Max trim - 45 ° |

| <u>Ser.</u> | <u>Specification</u> | <u>Parameters</u> |
|-------------|----------------------------------|---|
| | DISSUB | (ii) Max list - 45° |
| (e) | Main Propulsion | (a) Suitable thrusters with centralised control. (b) Provision for Secondary Control. (c) Thrusters should facilitate DSRV operations under specified operating conditions including mating with DISSUB. |
| (f) | DSRV Control | (a) Dual Redundant Control System. (b) Provision for emergency control in case of failure of primary control. |
| (g) | Integral DSRV Tools | (a) The SRV Simulator should be provided with two manipulator arms with associated tooling with provision for control from SRV Simulator. (b) Manipulator arms should facilitate performance of various submarine rescue related tasks such as clearing cables from the vicinity of escape hatch. |
| (h) | Navigation and Control Equipment | The SRV Simulator is to be equipped with simulations of the following navigation aids of specifications suitable for undertaking SRV Simulator operations safely under specified operating conditions:- (a) Auto Pilot System. (b) Inclinometers. (c) Echo Sounder. (d) Doppler log. (e) Gyro compass. (f) Depth gauges (Mechanical and Electronic). (g) Navigation Sonar. (h) Pinger homing/location system (intended to home on to location of acoustic pinger dropped at DISSUB location by ROV or other means and distress pinger of <i>IN</i> submarines). |

9. **Operational Characteristics.** The System should comprise of at least two stations. The first would consist of one 'Trainer's Console' where the environment and target parameters can be set. This may also have controls for the Deck Manager/ Chief Operations Officer and the LARS Operator to undertake their

specific actions on the LARS Deck to enable launch of the SRV in varying sea conditions. The second console would consist of a 'SRV Command Module Display Console' (*for surface and dived condition*) which would display the simulation of manoeuvring, sensors, controls and communications, similar to that in an actual SRV. The system should be user friendly and menu driven with displays as per actuals for visual appreciation however **without motion simulation**. The system should be able to simulate the launch, deployment, mating and recovery of the SRV in different sea conditions. The SRV Simulator should be able to perform following tasks:-

- (a) The SRV Simulator should be able to allow Pilots and Rescue Chamber Operator (RCO) to become familiar with the vehicle's systems and their operation. These include:-
 - (i) Pre and post dive procedures.
 - (ii) Launch and Recovery of SRV.
 - (iii) Home onto the DISSUB location with the help of its integral Sonar as well as its 'Pinger Locator'.
 - (iv) Execution of Standard Operating Procedures *iaw* user provided documentation.
 - (v) Dry transfer operating procedures.
 - (vi) Life support management emergency procedures.
- (b) The System should be able to simulate Communication between CM and RC compartment. Also simulate communication between the Mother Ship (MOSHIP) {Bridge, Deck etc} and SRV using the UWT.
- (c) The System should be able to simulate Launch procedure of DSRV from Launch and Recovery System (LARS), Main lift point disengaging mechanism, Aft tow point disengaging mechanism. This will provide training value to the LARS operators.
- (d) The System should be able to simulate surface control on a console for surface run for DSRV till it reaches Diving position {Thrusters control, Operation of Vents, Blowing of tanks and inflation of Inflatable Freeboard Extender (IFE)}.
- (e) The System should be able to simulate controls for dived manoeuvring (Thrusters control, Operation of Vents, Blowing of tanks).

- (f) The System should be able to simulate Operation of soft seal system.
- (g) The System should be able to simulate Life Support Monitoring (Oxygen system).
- (h) The System should be able to simulate operation of Sonar, Camera display, Navigation Display (*comprising of Gyro, Doppler Velocity Log, Sonar display, Depth Gauge*), Emergency buoy, Xenon flasher.
- (j) The System should be able to simulate mating of the SRV on a target and Simulated DISSUB.
- (k) The System should be able to simulate opening and shutting of Hatch 1 (for receiving *rescuees*).
- (l) The System should be able to simulate the SRV achieving of Hard seal and Soft seal.
- (m) The System should be able to simulate Battery Management System display in consonance with the manoeuvring of the SRV.
- (n) The System should be able to simulate Manipulator Operation.
- (p) The System should be able to simulate trim control, operation of bow plane, movement of battery trim for creating angled mate, transfer of water between internal tanks by simulating the effect of the actions on the manoeuvring of the SRV.
- (q) The System should be able to simulate actions taken on the HP Air system and its effect on the maneuvering of SRV.
- (r) The System should be able to simulate actions taken on Hydraulic System and its effect on the maneuvering of SRV.
- (s) The System should be able to simulate Alarm system based on injection of situations by the trainer.

10. **ROV.** The system comprises of a Remotely Operated Vehicle (ROV), with integrated Launch and Recovery System (LARS) and a containerised ROV Control Cabin. The ROV is used as part of the intervention spread of the DSRV system which is *tasked with survey of a Distressed Submarines (DISSUB) in-case of a rescue operation/exercise and preparing DISSUB for rescue operation/training*. This equipment is used for survey of DISSUB at the position which has been localised by

the Side Scan Sonar System. The system should provide a realistic simulation platform for equipment staging, development of procedures, design validation, and training. ROV pilots can test and hone their skills, learning job tasks before performing the actual work. Computer simulation of subsea operations has repeatedly proved itself as a means of driving up profit with the following benefits:-

- (a) Quickly generate visualisations of scenarios that delivers 'as real' behaviour and vision for training.
- (b) Repeatable and quantifiable training in a completely safe environment.
- (c) Enable subsea mission planning and training, improving the project resources and assets.
- (d) Create a wide range of physics based operational scenarios.
- (e) Provide detail in one area or fly-through of an entire subsea field.
- (f) Decrease risk; work is virtually tested and planned out, ensuring safety for the task and equipment, with early identification of problems and solutions implementation.

11. **Technical Specifications.** The technical specifications for simulators to be in line with the ROV of the DSRV System and the same are as tabulated below:-

| Ser. | Specification | Parameters |
|-------------|-------------------------|---|
| (a) | Sea State | Deployment and recovery in Sea State 4. |
| (b) | Time on Task | Minimum 4 hrs at 3 kn. |
| (c) | Operating Depth | Should be capable of operating at depths upto 1000m in currents upto 2.5 kn within a radius of 200m (or more) from the mother ship. |
| (d) | Speed | The ROV should have minimum speeds as follows:- - Ahead/Astern-3.0 kn - Lateral-1.5 kn - Vertical Up/Dn- 1.0 kn |
| (e) | Manoeuverability | Control of ROV in all planes (forward, reverse, sideways, up & down) in current upto 3 kn. |
| (f) | Weight | Capability to set the ROV Neutral or positively buoyant by the Trainer. |
| (g) | Video Camera | Color video camera capable of full tilt/pan as appropriate to the design and for identification of contacts. |
| (h) | Identification | Sonar should be capable of target recognition in |

| Ser. | <u>Specification</u> | <u>Parameters</u> |
|-------------|--|--|
| | Sonar | zero visibility. |
| (j) | Search Sonar | Capable of identifying small contacts at approximately 100m. |
| (k) | Sensors/payload | (i) Compass, depth meter and deployed cable meter. (ii) Acoustic camera for investigation of contact in poor/nil visibility conditions. (iii) Provision of two manipulator arms along with associated tooling to undertake underwater operations in support of DISSUB rescue operations. (iv) Facility for water jetting and intensification of hydraulics for tooling operation. |
| (l) | Console | (i) Self-contained and standalone console to control the ROV. The operator shall be able to control all sensors, accessories and system function from this console. (ii) Two Stations to be provided with corresponding displays for the ROV Pilot and Tool Operator. |
| (m) | Video Recorder | System should be equipped with a digital video recorder for recording 3 channels simultaneously for analysis and training. |
| (n) | Launch and Recovery Arrangement | Suitable arrangement for providing training on Launch and Recovery procedure by means of a display and control console for LARS. |

12. **Operational Characteristics.** The System should comprise of two stations i.e. 'Trainer's Console' where the environment, target parameters and scenarios can be set and the 'ROV Control Cabin Display Station' which has the capability to interface with the Display System in the ROV Control Cabin for visualization of the settings and environment fed in the Trainers Console. The system should be able to simulate the deployment of ROV in different sea conditions with selectable simulated targets, selectable environmental conditions and different classes of simulated submarines as targets. The ROV simulator should be able to perform following tasks:-

- (a) Complete replica of the ROV System console with control joystick, full ROV power switching and tether control, ancillary and tooling equipment

control panels and controls of the (Schilling/ Hydrolek) manipulator and grabber.

(b) Six LCD monitors provided as viewing screens selectable to show simulated ROV camera pictures, sonar displays, system settings and diagnostics.

(c) A separate desk and PC console to be positioned behind the trainees for the instructor to control and log the simulated scenarios or adjust any ROV or environmental settings whilst being able to view the ROV monitors and advise the trainees.

(d) Importing standard electronic drawings into the *IN* ROV system's simulator should allow the software to create a powerful and efficient project preview and assessment tool.

(e) The user should be able to study, map and simulate entire fields accurately from the earliest stages of conceptual development through analysis by means of replay of the task simulated by trainer and performed by the trainee.

(f) Should easily be configured to depict various levels of visibility, sonar noise, bottom type, surface action and water current conditions.

(g) Hazard identification, procedure development and equipment integration testing.

(h) Multiple camera view, virtual 3-D image rotation and zoom features should allow real time viewing of all major equipment and task in hand.

(j) Provision to simulate various equipment failures in response to hard collisions and excessive pull on the umbilical.

(k) The system should be able to provide for trainees to practice the Standard Operating Procedures *iaw* user provided documentation.

13. **Scope of Simulation.** The Simulators for ROV and SRV should be able to simulate the ROV and SRV of the Indian Navy's DSRV and their associated equipment functions corresponding to the following (but not limited to) in both normal and emergency conditions.

Additional Requirements

14. **Instructor Station**. The Simulators for ROV and SRV shall have an exclusive Instructor Station. The Instructor Station should be managed by upto two trainers or instructors. The Station should have instructor control console(s) mounted in the Instructor Station and provide the means for following:-

- (a) Managing training sessions with pre-defined and stored training scenarios.
- (b) Editing and modifying training scenarios prior to and during training session.
- (c) Starting and Stopping the training session, freeze, record, replay, backtrack, reset the simulation to a desired time frame or to initial condition.
- (d) Insert or delete failures, accidental events or modify environmental parameters prior to or during training session.
- (e) Create and load a snapshot.
- (f) Recording and storing of new training scenarios.
- (g) Execute training scenarios.
- (h) Play one scenario or several scenarios simultaneously.
- (j) See the screens and consoles to observe trainees' actions and operate local commands on simulated installations.
- (k) View a current training session and stop the training session when required.
- (l) Watch and hear the current training session by video and audio means (with an option to mute) for evaluation and safety purpose.
- (m) Communicate with the trainees by audio means.
- (n) There should also be a provision to modify and or enhance the training content by the Trainer (or the Instructor).

15. **Briefing and Debriefing Station**. The Simulators for ROV and SRV should have an exclusive Briefing and Debriefing Station. The essential facilities to be provided in the Station are to cater for the following requirements:-

- (a) Brief the trainees (***minimum capacity of at least 04-06 trainees and 02 training staff***) about training session to be played. This should include the environmental conditions, tactical situation and objective of the session.
- (b) Replay the concluded training session, including earlier recorded sessions.
- (c) Pause, rewind, fast forward the elapsed training sessions at various speeds.
- (d) Replay the audio and video recording of the trainees in the motion platform during an elapsed training session.
- (e) Station to include suitable movies for understanding of operation of equipment, rescue situations, actions to be taken in case of emergencies.
- (f) Display snapshots (with the time and state of the platform with respect to course, speed, depth) of the scenario within the simulator and any of the Multi-Function Control Consoles (MFCCs) operated by the trainees.
- (g) Data analysis tools for training sessions to compare data from database and provide comparative analysis reports to ascertain progress of a particular training session or trainee (as applicable).
- (h) User profiles for all trainees should be maintained, that shall carry information of scenarios a trainee has completed, training time and individual performances of each trainee.

16. The minimum hardware that needs to be provided for each Briefing and Debriefing facility for the Simulators for ROV and SRV to achieve the above mentioned functionality are as follows:-

- (a) Furniture for seating 10 personnel at each facility.
- (b) One contemporary LED based heavy duty projector at each facility.
- (c) Two contemporary networked PC stations at each facility to control the briefing/debriefing along with accessories.
- (d) Two contemporary LED TV screens of size 55 inches or above with HDTV or better functions at each facility.
- (e) One contemporary smart board with all accessories at each facility.

- (f) One remote controlled white screen for video projector at each facility.

17. **Technical Facility**. The Simulators for ROV and SRV should have exclusive Technical facilities. Each of the technical facility shall comprise the following requirements:-

- (a) Accommodate all the electronic and electrical devices located outside training, trainer and instructor station (*COTS computers, storage disks, audio and video distribution matrix etc.*).
- (b) Provision for storing the following:-
 - (i) Documentation (both hard copies and in digital format) and back-up software.
 - (ii) Onsite spares and tools.
 - (iii) Main and emergency power supply distribution boards etc.
- (c) A maintainer post should be provided with appropriate jigs and test benches for onsite fault analysis and repair.
- (d) The facility should accommodate the requisite support arrangements that would ensure seamless operation and maintenance of the simulator.
- (e) Ventilation and Air conditioning units (central to the facility) should also be housed inside the technical facility.
- (f) Facility to carry out calibration of instrumentation of the simulator to check conformity with actual behaviour as per equipment fitted on DSRV.

18. **Safety Arrangements**. The Simulators for ROV and SRV should have the following minimum safety arrangements as per design:-

- (a) Stanchions and guardrails.
- (b) Motion warning lights.
- (c) Emergency STOP buttons with redundancy.
- (d) Automated fire detection system for motion platform and simulator complex as also for the spaces housing the associated systems.

(e) Adequate portable fire extinguishers suitably placed for motion platform, simulator complex and Front Facia (Extinguishers used should be commercially available in India / available in *IN*).

(f) Suitable arrangements need to be provided in the Simulators for ROV and SRV in design to ensure that electrical hazards to personnel are prevented. Further, suitable protection is to be provided to personnel from moving parts as well as components which may reach higher temperature.

System Architecture

19. The Simulators for ROV and SRV shall be based upon state of art digital computers and simulation software technologies at the time of placement of order. Distributed architecture systems shall be used for all electronics and computer resources with provisions for upgrade of software and hardware.

20. The equipment hardware and software is to be designed with open architecture with a modular approach where software design should be independent of the hardware design. The proposed solution should be configured around technologies which have already been used in similar submarine motion control and platform machinery simulator applications.

21. The system is to be designed with dual redundancy for main processors and other important functions. Further, the system shall be designed such that the features viz., fault tolerance, graceful degradation, inter-changeability, commonality, standardisation etc. are given due importance.

22. An Ethernet network with dual redundancy is to be provided for various consoles of the Instructor Station, Motion Platform, Technical facility and Briefing/Debriefing facility to operate.

23. **Man Machine Interface (MMI)**. The MMI of Training Consoles should be identical to the MMI of ROV and SRV of DSRV with Indian Navy. The MMI of Instructor Consoles and Briefing and Debriefing facility should be user friendly identical to the MMI of ROV and SRV of DSRV with Indian Navy.

24. **Application Software**. The software should enable the following:-

(a) Simulation of dynamic behaviour of the ROV and SRV of the Indian Navy's DSRV.

(b) Simulation of ROV Console.

- (c) Simulation of SRV Console.
- (d) Training Management.
- (e) Recording, replay and briefing and debriefing features.
- (f) On-line and off-line processing of training sessions.
- (g) Editing, modification, generation of training scenario.
- (h) Generation of Training Session Report.
- (j) Online and Offline Built In Test Equipment (BITE).
- (k) Identify defects and failures in the Simulators.

25. **Data Recording System.** The Data Recording System should cater for the following requirements:-

- (a) A facility to record and replay all simulated parameters and data relevant to the operation of Simulators for ROV and SRV along with video and audio footage of the training session for a minimum duration of ten hours.
- (b) Facility for backing up the recorded training session in the system's hard disk and provision to transfer the same onto portable storage media in encrypted form.
- (c) There should be a facility to replay training scenarios and training sessions from the system's hard disk or from previously stored portable digital media.

26. **Software Requirements.** A reliable and robust software environment shall be used. The latest version of software installed akin to Indian Navy's DSRV is to be loaded and used on the simulators. The simulation models generated using the above environment shall reside in the simulation computer and provide high fidelity (with resolution and least count similar to onboard systems and equipment) simulation models of the submarine's main and auxiliary machinery. All system software required for operation of the simulator, fault detection, fault analysis, fault localisation, network connectivity etc. are to be supplied as a back-up on suitable storage media to cater for the contingency of system failure due to software malfunction/corruption.

27. **Power Supply.** The Simulators for ROV and SRV along with associated systems should be powered from a main supply with an emergency and back-up

supply for safety and redundancy reasons and should provide for safe shut down of system computers in case of interruption and failure of main supply. Arrangement for automatic glitch-free switchover from main to emergency supply and back shall be provided. The Simulators for ROV and SRV should be designed to operate on 440V or 220V, 50Hz, 01 Phase or 03 Phase power supply (exact input supply to be as per supplies available at intended installation location) and should include a suitable UPS unit to provide reliable and filtered power supply throughout, for efficient running of the system. The UPS should provide back-up for operation of the simulator equipment in the event of power failure till such time that the simulator shuts down and reverts to initial condition. All power convertor and or stabilisation and or shaping hardware from mains shall be provided by the simulator supplier and shall be based on static power circuitry.

28. **Test and Workshop Equipment.** The test and workshop equipment to be supplied for Simulators for ROV and SRV are as follows:-

- (a) Equipment that would be needed for undertaking pre-operation checks and routine preventive maintenance.
- (b) Specific to Type Test Equipment (STTE, along with Maintenance and Diagnostic Laptop with backup software) that would be needed to undertake repairs of the system.
- (c) Equipment required for carrying out detailed analysis of defects.
- (d) Backup copy of all software shall be supplied.

Physical Characteristics

29. **Life.** The Simulators for ROV and SRV should have a service life of at least twenty five (25) years. The vendor shall undertake to provide product support for twenty five (25) years including for porting of application software in line with the commercially available upgrades of computers and Operating System (OS) etc. on expiry of service life of computers or end of support for Operating System, as applicable.

30. **Exploitation Pattern.** The Simulators for ROV and SRV should be robust and rugged to support extended operation upto the following limits:-

- (a) 10 hours per day.
- (b) 15 days in a calendar month.
- (c) 200 days in a year.

31. **Environmental Specifications.** The Simulators for ROV and SRV should comply with following standards and specifications or equivalent standards:-

(a) Shock and vibration specifications in accordance with European Standard 2006/42/CE or nearest equivalent standard as per industrial norms in country of OEM and/or designer.

(b) Only the components mounted on dynamic motion platform should be capable of withstanding vibration and shock standards as specified above.

(c) All components used for Simulators for ROV and SRV should be capable of withstanding the tropical climate. The system should be capable of withstanding following ambient temperature conditions:-

(i) For Operation: 0° C to 35° C, upto 90% humidity

(ii) For Storage: 0° C to 48° C, upto 95% humidity

32. The system design should account for Electro Static Discharge (ESD) control and protection at PCB, module, assembly and unit level by use of appropriate shielding, grounding, earthing arrangements.

33. **Software Development and Documentation.** The software development and software documentation is to be in accordance with IEEE 12207 or equivalent standard. The firm would be required to undertake Software Verification and Validation, Software Quality Assurance (SQA). The utilization of indigenous software, if applicable, is to be indicated (Para 13 of Ch II DAP-20 refers). Also, one set of documentation each for Training Simulator and Front Facia in hard copy and soft copy (in IETM format or prevailing latest format as specified by IN at the time of signing the contract). The applicable specification shall be equivalent or superior to the following standards:-

(a) JSS-0251-I for documentation of simulators.

(b) IEEE 12207: 2008 on Software Life Cycle processes.

(c) IEEE 730: 2002 on Software Quality Assurance Plan.

(d) IEEE 830: 1993 on Software Requirement Specifications.

(e) IEEE 828: 1998 on Software Configuration Management Plans.

(f) IEEE 1012: 1998 on Software Verification and Validation.

- (g) IEEE 1028: 1998 on Software Reviews and Audits.
- (h) ISO/ IEC 15288: 2015 on System Life Cycle Processes.

34. **Material Used.** The material used in Simulators for ROV and SRV should be suitable for tropical climate (0° C to 50° C, upto 95% humidity) in coastal areas. Corrosion resistant surface protection coatings are to be used. The utilization of indigenous military material, its availability in the country, equivalent source/ code, sourcing of material etc are to be indicated (Para 11 of Ch II of DAP -20 refers).

35. **Design Data.** The vendor is to provide design data viz. cycle fatigue, material composition, MTBF and MTTR of critical components of the motion platform viz. (but not limited to) motors, hydraulic system, simulator consoles, control consoles, PLC cabinets, training aids, ventilation and air conditioning.

36. **Lifting Arrangement.** Units weighing more than 40 kgs shall be provided with collar eyebolts or suitable lifting arrangements. Provision is to be made for securing arrangement on the unit for the eyebolts, after the unit has been installed.

37. **Hardware Requirements.** The compliance and/ or conformity to various industrial and military standards related to hardware should be indicated. The hardware and technical approach shall comprise the main elements listed herein under:-

(a) **Operator Consoles.** These shall be replica consoles (ROV and SRV consoles) with the same design, look and feel as the onboard consoles realised with ruggedised commercial off-the-shelf (COTS) components. The consoles should be packaged with necessary simulator electronics so that cable lengths are reduced to the maximum extent practicable. Soft panels shall not be used in lieu of control elements as these do not provide the maximum realism required for operator training.

(b) **Training Simulator Design.** The Simulators for ROV and SRV shall be designed using open architecture. If more than one electronic card cage is used, these shall be interconnected using the Ethernet. The Simulators for ROV and SRV shall interface with the simulation computer using the Ethernet.

(c) **Simulation Computer.** The simulation computers for Simulators for ROV and SRV shall be a commercial off-the-shelf (COTS) item made by an internationally reputed firm and supportable locally in India.

Operation and Maintenance

38. **AMC.** The Simulators for ROV and SRV provider would be required to provide an all-inclusive AMC for the entire service life (on completion of the warranty period). The AMC would initially be contracted for 10 years. Thereafter, AMC would be extended based on experience gained.

39. **Ease of Maintenance.** The systems shall be designed with modularity of hardware and software. The design should cater for easy accessibility of all panels (particularly top, side and rear panels) and test points for ease of checks and maintenance. Cabinets are to be designed to ensure sufficient cooling and circulation of air.

40. **MTBF and MTTR.** The system should be designed for high MTBF (not less than 1000 hrs) and low MTTR (not to exceed 60 minutes). The vendor is to furnish MTBF and MTTR values.

41. **Built-in Test Equipment.** The design of the system shall include an integrated built-in test (BIT) facility to enable offline and online monitoring, fault-diagnosis, automatic fault localisation and failure identification such as to identify, locate and indicate to the instructor and maintainer any fault that has occurred in the simulator during operation in all modes. The BIT shall isolate at least 95% of all detected faults to one PCB, Line Replaceable Unit (LRU) and 100% of all detected faults to two or three PCBs, LRUs. BIT messages shall be displayed on the instructor's screen. This should include facility to test and calibrate all subsystems of the Simulators for ROV and SRV.

42. **Inter-changeability/ Commonality.** The vendor is to mention the level of commonality achieved within the system at the Module, Sub module level, PCB level and Component level. The system should be designed such that the PCBs, modules (similar in physical construction and functions), are interchangeable within the system.

Other Requirements

43. **Test and Software Loading Terminal.** A suitable PC and Laptop based Test and Software Loading Maintenance Terminal is to be provided with the Simulators for ROV and SRV to facilitate checks of the system and reloading of system software. Back up copy of software is to be provided with each of the software loading terminal.

44. **Configuration Control.** The configuration control of the Simulators for ROV and SRV system is to be maintained. The Configuration Baseline Document

(CBD) Version 1 is to be submitted prior to Factory Acceptance Trials (FATs). Final Configuration Baseline Document (CBD) Version 2 is to be submitted within two months of completion of On-Site Acceptance Trials (OSATs), incorporating all hardware and software changes undertaken up to OSATs stage.

Appendix 'B'
 {Refers Para 7(a)}

INFORMATION PROFORMA
(INDIAN VENDOR)

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

(Company profile, in brief, to be attached)

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

Original Equipment Manufacturer (OEM) Yes/No

Authorised Vendor of foreign Firm Yes/No (attach details, if yes)

Others (give specific details) _____

3. **Contact Details.**

Postal Address: _____

City: _____ State: _____

Pin Code: _____ Tele: _____

Fax: _____ URL/Web Site: _____

4. **Local Branch/Liaison Office / Authorised Representatives in India (if any).**

Name & Address: _____

Pin code : _____ Tel : _____ Fax : _____

5. **Financial Details.**

(a) Category of Industry (Large/medium/small Scale): _____

(b) Annual turnover: _____ USD (INR for Indian

Vendor)

(c) Number of employees in firm: _____

(d) Details of manufacturing infrastructure: _____

(e) Earlier contracts with Indian Ministry of Defence/Government agencies:

| Agency | Contract Number | Equipment | Quantity | Cost |
|--------|-----------------|-----------|----------|------|
| | | | | |
| | | | | |

6. **Certification by Quality Assurance Organisation (If Applicable).**

| Name of Agency | Certification | Applicable from (date & Year) | Valid till (date & year) |
|----------------|---------------|-------------------------------------|--------------------------------|
| | | | |
| | | | |

7. **Details of Registration (Only for Indian Vendors)**

| Agency | Registration No | Validity (Date) | Equipment |
|-----------------------------|-----------------|-----------------|-----------|
| DGS&D | | | |
| DGQA/DGAQA/DGNAI | | | |
| OFB | | | |
| DRDO | | | |
| Any other Government Agency | | | |

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

| Name of Organization | Membership Number |
|----------------------|-------------------|
| | |

9. **Equipment/Product Profile**

(a) Name of Product : _____
(IDDM capability be indicated against the product)

(Should be given category wise for eg. 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 License 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 RFR.
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.

(Authorised Signatory)

INFORMATION PROFORMA
(FOREIGN VENDOR)

1. Name of the Vendor /Company /firm. _____
(Company profile, in brief, to be attached. In the eventuality of the firm emerging as L1, Contract will be concluded in the name and address of the firm, as indicated here). Vendors are to submit an undertaking that any subsequent proposal for change in name of firm or address, will be intimated to IHQ MoD (N) at the first available opportunity and supporting documents be furnished within five working days of approval by relevant competent authority.

2. Type (Tick the relevant category).

Original Equipment Manufacturer (OEM)

Yes/No

Government Sponsored Export Agency

Yes/No (Details of Registration to be provided)

Authorised Vendor of OEM

Yes/No (give specific details)

Others (give specific details) _____

3. **Contact Details.**

Postal Address: _____

City: _____

Province: _____

Country: _____

Pin/Zip Code: _____

Tele: _____

Fax: _____

URL/Web Site: _____

Email: _____

4. **Local Branch /Liaison Office/Authorised Representatives, in India (if any).**

Name & Address: _____

City: _____

Province: _____

Pin Code: _____

Tel: _____

Fax: _____

Email: _____

5. **Financial Details.**

- (a) Annual Turnover: _____ USD
- (b) Number of Employees in firm _____
- (c) Details of manufacturing infrastructure available _____
- (d) Earlier contracts with Indian Ministry of Defence/Government agencies:-

| <u>Agency</u> | <u>Contract Number</u> | <u>Equipment</u> | <u>Quantity</u> | <u>Cost</u> |
|---------------|------------------------|------------------|-----------------|-------------|
| | | | | |

6. **Certification by Quality Assurance Organisation (if applicable).**

| <u>Name of Agency</u> | <u>Certification</u> | <u>Applicable from (Date & Year)</u> | <u>Valid till (Date & Year)</u> |
|-----------------------|----------------------|--|---|
| | | | |

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

- (a) Name of 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) Status (in Service/Design Development stage): _____
- (e) Production capacity per annum: _____
- (f) Countries where equipment is in service: _____
- (g) Whether export clearance is required from respective Government: _____
- (h) Any Collaboration/Joint Venture/Co-production/Authorised dealer with Indian Industry (give details):
Name & Address: _____
Tel: _____
Fax: _____

- (j) Estimated price of the equipment _____
8. Alternatives for meeting the objectives of the equipment set forth in the RFI.
9. Any other relevant information _____
10. **Declaration.** It is certified that:-
- (a) The above information is true and any changes will be intimated at the earliest.
- (b) The _____ (name of firm) has never been banned/ debarred for doing business dealings with MoD/ Gol/ any other Government organisation and that there is no inquiry going on by CBI/ ED/ any other Government agency against the firm.

(Authorized Signatory)

**GUIDELINES FOR FRAMING CRITERIA FOR VENDOR SELECTION/
PREQUALIFICATION IN 'BUY (INDIAN-IDDMM)' AND 'BUY (INDIAN)' 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/ explosives 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 of similar nature 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) **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) and Buy (Indian) project 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 crores 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 crores/ year based on delivery schedule at the time of seeking AoN or ₹ 150 crores, 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.