

**REQUEST FOR INFORMATION (RFI) FOR  
GENERIC SUBMARINE COMBAT SYSTEM SIMULATOR (GSCSS)**

1. The Ministry of Defence (**MoD**), Government of India (**Gol**) intends to procure one Generic Submarine Combat System Simulator (GSCSS) and associated equipment for Indian Navy (**IN**) at Vishakhapatnam, here and after referred to as GSCSS in this document. MoD seeks information pertaining to GSCSS from Original Equipment Manufacturers (OEMs). OEMs responding to this RFI are hereinafter referred to as 'Respondents' in this document.

2. This Request for Information (RFI) consists of three parts. Submission of incomplete format will render the vendor liable for rejection:-

(a) **Part I.** The first part incorporates operational characteristics and features that should be met by the GSCSS and specific information to be provided by Respondents to this RFI. Broad operational characteristics of the GSCSS is also mentioned in this Part.

(b) **Part II.** The second part states the methodology of seeking response of vendors. Submission of incomplete response will render the vendor liable for rejection.

(c) **Part III.** Guidelines for framing criteria for Vendor Selection/ Pre-Qualification in Buy Indian (IDDM), Buy (Indian) and Buy & Make (Indian) cases.

**Part I**

3. **Intended Use of the Equipment.** The GSCSS is intended to be installed at Vishakhapatnam and required to impart shore based training to cater for hands on training for *IN* submarine trainees on Submarine Combat Management System of all classes of conventional submarines of the *IN*.

4. **Important Technical Parameters.** The broad system requirements and generic design of the GSCSS is placed at Appendix 'B'. Respondents (Vendors) are to confirm paragraph/ sub-paragraph wise compliance or non-compliance for each attribute mentioned in Appendix 'B'.

5. Respondents are to confirm that the following conditions are acceptable:-

(a) **Defence Acquisition Procedure (DAP) 2020.** Willingness to comply with all procurement and financial payment terms and conditions mentioned in DAP 2020.

(b) **Bid Process.** 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 offer would be at least 18 months from the date of submission of offers.

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

(d) Amongst the vendors cleared by GS evaluation a Contract 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 and maintenance tools/jigs/fixtures for field and component level repairs.

(f) 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) **Integrity Pact.** An Integrity pact along with appropriate IPBG is a mandatory requirement in the instant case.

(h) **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.

(j) **Service-Life.** Service-life of **GSCSS** shall be atleast 20 years. Respondents are required to specify the conditions that would ensure maximum service life.

(k) **Warranty.** A warranty of **at least two years (24 months)**, post acceptance, is sought.

(l) Earliest date by which vendors would be willing to give a presentation on the product or solution offered at Naval Headquarters, New Delhi.

6. **Important Parameters.** Respondents are to provide sub-para-wise information on the following:-

(a) **Equipment Details.** Equipment details including indicative operational/technical parameters and dimensions. Vendors may also utilise this opportunity to recommend the capabilities proposed in terms of Essential Parameters-A and Essential Parameters-B i.a.w Para 14 of Chapter II of DAP 20.

(b) **Category of Procurement.** One of the purposes of this RFI is to aid in deciding the acquisition category based on defining attributes and Decision Flow Charts as detailed in **Appendix 'D' of Chapter II of DAP 2020.** The acquisition is envisaged to be progressed under '**Buy (Indian IDDM)**'. Vendors are to specify willingness to offer their systems under Buy (Indian-IDDM). Broad guidelines for vendor selection under 'Buy (Indian-IDDM)' are placed at Part III of RFI.

(c) **Design, Manufacture and Supply Experience.** Vendors are to indicate if their Simulator or Simulator equipment is in use by any other Navy or has been offered for use to other Governmental or Non-Governmental agencies within India and if so, unit price (without taxes and custom duties) and year in which it was supplied. The difference between these versions of equipment and the equipment presently being offered is also to be highlighted.

(d) Vendors also need to indicate their experience in design, manufacture and fitment in Shore-based facilities / Simulator development of similar complexity.

(e) **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 to be submitted. **IN** desires to operationalise the GSCSS within **24 months** of signing of Contract with selected Vendor. Vendor is to indicate compliance to this delivery schedule. Alternatively, Vendor should indicate time lines other than 24 months with due justification.

(f) Vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VI of DAP 20.

(g) **Confidentiality Clause.** The respondents should not disclose the information shared in this RFI with any third party without the permission of the MoD, GoI. Further the vendors are 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

(h) Any queries / clarifications to this RFI may be clarified with the project Officer. The contact details of the Officer are as follows:-

Designation - Cdr SMAQ

E-mail - [dsmaq@navy.gov.in](mailto:dsmaq@navy.gov.in)

**Tel:** +91-11-23011031 **Fax:** +91-11-23010830 / 5863

## **Part II**

### **7. Procedure for Response**

(a) The Vendors must fill the appropriate form of response as given at **Appendix A**. Apart from filling details about the product meeting other generic technical specifications mentioned in this RFI should be carefully filled. Additional literature on the product may also be attached with the form.

(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) / GoI / or any other GoI 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 1031, Fax No.:- +91-11- 23010830/5863  
E-mail:- [dsmag@navy.gov.in](mailto:dsmag@navy.gov.in)

(c) The last date of acceptance of filled form is **16 May 2022**. The vendors shortlisted for issue of RFP would be intimated at a later stage.

8. The Government of India invites responses to this request only from **Indian Vendors** with experience of production of Training Simulators of equivalent complexity. The end user of the equipment is Indian Navy.

9. The 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 should it be so necessary at any stage. The acquisition process would be carried out under the provisions of DAP 2020.

## **Part III**

10. **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'**.

**Appendix A**  
(Refers to Para 7 of RFI)

**VENDOR INFORMATION PROFORMA**

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

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(Company profile including Share Holding pattern, 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)

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3. **Contact Details.**

**Postal Address:**

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City: \_\_\_\_\_ State: \_\_\_\_\_

Pin Code: \_\_\_\_\_ Tele: \_\_\_\_\_

Fax: \_\_\_\_\_ URL/Web Site: \_\_\_\_\_

Email: \_\_\_\_\_

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.**

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

8. **Membership of FICCI/ASSOCHAM/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 of DAP-2020 may be referred.

**(Authorised  
Signatory)**

**Appendix 'B'**

{Refers to Para 4 of RFI}

**REQUEST FOR INFORMATION (RFI) - PROCUREMENT OF  
GENERIC SUBMARINE COMBAT SYSTEM SIMULATOR (GSCSS)**

1. The broad based requirements envisaged for the Generic Submarine Combat System Simulator (GSCSS) are tabulated below. You are requested to bring out ***in detail***, all the features that you are able to offer (with numerical values where applicable) for the Generic Submarine Combat System Simulator (GSCSS). Additional information / features available other than those tabulated here may also be given:-

<b><u>Ser.</u></b>	<b><u>Particulars</u></b>	<b><u>Bidder Reply / Compliance</u></b>
(a)	Capability to set up one state-of-the-art Generic Submarine Combat System Simulator (GSCSS) catering for training of <i>IN</i> personnel (trainees and Crew) in a realistic, simulated environment for effective operation of Submarine Combat Management System	
(b)	<p>Design and Develop GSCSS with the following features:-</p> <p>(i) The core processes of the GSCSS in such a way that they can be easily configured to function for the selected type of combat management system.</p> <p>(ii) The GSCSS software should be configured so as to provide selection of the required Combat Management System (CMS) by click of a button. The software should configure itself and the GUI for the display panels.</p> <p>(iii) The software should include target and weapon simulator; and the combat management system processes like Sensor Management, Track Motion Analysis etc. going up to firing and controlling wire guided torpedo.</p> <p>(iv) The Simulator should enable training of the complete Command team, limited crew or for an individual.</p> <p>(v) The GSCSS should replicate the control</p>	



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	<p>desk for each type of CMS as a detachable / attachable panel. By physically attaching the concerned panel to the DMFC and connecting through rugged electronic connector.</p> <p>(vi) The GSCSS should include courseware and a trainee evaluation package. The pre-installed courseware should provide lessons of incremental complexity (ranging from basic familiarisation, normal functioning, combat and emergency procedures).</p> <p>(vii) The Simulator shall be designed with sufficient redundancy for main processors and important functions. An Ethernet network with sufficient redundancy is to be provided for the Instructor Console(s) to communicate with the Training Consoles.</p> <p>(viii) The instructor should be able to view and communicate with trainees during the simulated training.</p> <p>(ix) The GSCSS shall have an 'Instructor Station' for online monitoring, recording and control of a training session by the Instructor(s). The Instructor(s) shall be enabled to create a training scenario, start and stop the training session, freeze, record, replay and reset the simulation and the connected trainee-consoles to a selected initial condition as well as to inject faults and situations during the course of ongoing training exercise. The Instructor Station shall provide for online assessment of the performance of the trainees on the Simulator</p> <p>(x) The Instructor Station should be designed to enable preparation, control and recording of the training sessions and is to be equipped with requisite IT hardware. The recording of training sessions should take place on standard COTS digital storage devices. A minimum recording capacity of a single training session should be 72 hours</p> <p>(xi) The GSCSS should also include the following sub-systems:-</p>	

<u>Ser.</u>	<u>Particulars</u>	<u>Bidder Reply / Compliance</u>
	<p>(aa) Auto plotter</p> <p>(ab) Periscope Emulator</p> <p>(ac) Steering Control Emulator</p> <p>(ad) Mast Status Panel</p>	
(c)	<p><b><u>Application Software.</u></b> The software should enable the following:-</p> <p>(a) Open-architecture.</p> <p>(b) Simulation of all operational capabilities of selected CMS of the submarine and associated equipment.</p> <p>(c) Simulation of realistic environment, own ship (submarine) behaviour, target (air, surface and sub-surface) behaviour and weapon/projectile (torpedo, missile) behaviour.</p> <p>(d) Editing, Modification, Generation of Training Scenario.</p> <p>(e) Recording, replay and Briefing/Debriefing features.</p> <p>(f) On-line and Off-line processing of training sessions.</p> <p>(g) Generation of Training Session reports.</p> <p>(h) Online and Offline BITE.</p> <p>(j) Identify defects/ failures in the GSCSS.</p>	
(d)	<p><b><u>System Simulation.</u></b> It shall simulate the functionalities, MMI and performance in terms of response time as the CMS currently fitted onboard the <i>IN</i> conventional submarines. The Simulator shall include an environment and target behaviour data generator allowing preparation and running of realistic tactical situation. The platform behaviour including manoeuvrability and dynamics shall be faithfully simulated providing feedback of own ship</p>	

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	<p>parameters. <b>However, the platform motion is not needed to be simulated.</b></p> <p>(i) The Simulator should provide inputs to and accept simulated outputs from interfaced systems and sub-systems of submarines viz. Weapon Control System, Weapon Handling and Launching System, Sonar Detection System, Air and Surface Detection System, Navigation System, Communication System, Hoisting System, Torpedo Counter Measure, Own platform and Target Situations.</p> <p>(ii) The Simulator shall include functionalities of the Sonar suite, Navigation complex, Radar, ESM suite, including Target Motion Analysis and manoeuvring.</p>	
(e)	<p>(i) The GSCSS Simulator should be able to simulate CMS functions on <b>IN</b> conventional submarines in both normal and emergency conditions corresponding to the following:-</p> <p>(ii) Operational capabilities similar to the original operational capabilities of the CMS onboard conventional <b>IN</b> submarines (including MMI).</p> <p>(iii) <b><u>Simulation of Environment, Platform Motion and Targets Motion.</u></b> The Simulator should have an advanced environment and target behaviour data generator allowing preparation and running of realistic tactical situations. The platform behaviour including manoeuvrability and dynamics shall be faithfully simulated. The simulation shall take into account the real status of the submarine (diving depth, speed, course, position, propulsion, battery capacity, motion limitation etc.).</p> <p>(iv) Generic, programmable self-noise levels and tonals of various typical ship machinery should be simulated with corresponding effect on sonar performance. Environmental parameters such as visibility (day/night), sea state and hydrology should be programmable.</p>	

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(f)	<p><b><u>Simulation of Entities / Targets.</u></b></p> <p>(i) The Simulator will be required to simulate air, surface and sub-surface entities / targets including their sensors and weapons. Sample generic capabilities of the targets and their sensors and weapons must be provided. The Instructor must have data fields to feed in target data in respect of a minimum of 300 entities / targets of various types. Programming of entity / target parameters (motion and weapons) must be possible by the Instructor.</p> <p>(ii) Respondents are to indicate in detail the parameters in respect of aircraft, helicopters, ships and submarines that their product will cater, for e.g., altitude, depth, speed, weapons types and parameters, sensor parameters, search patterns etc. In addition, provision for simulating the radiated target characteristics relevant for sonar processing (radiated noise levels, tonals etc) is to be provided. The echo characteristics for simulating active sonar modes are also to be simulated.</p> <p>(iii) The instructor console should be capable to provide the following data:-</p> <p style="padding-left: 40px;">(aa) Target Class</p> <p style="padding-left: 40px;">(ab) Target manoeuvre plan</p> <p style="padding-left: 40px;">(ac) Target machinery</p> <p style="padding-left: 40px;">(ad) Target sensors</p> <p style="padding-left: 40px;">(ae) Target weapons</p> <p>(iv) <b><u>Simulation of Situation Scenario.</u></b> One unique scenario, shared by all consoles involved in the training session, must be enabled by the Simulator. Instructors should be</p>	

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	<p>able to select, generate, run and modify any scenario.</p> <p>(v) Global coherence of the simulated data (for example a given surface target will be detected by the sonar, seen from the periscope and detected by the radar depending on local tactical situation in a realistic, coherent manner).The visual display through periscope should provide realistic aspects, ranges etc. at different visibility conditions.</p> <p>(vi) <b><u>Simulation of Weapons Control System.</u></b> Capability for preparing, pre-setting and launching of torpedoes and missiles, as would be done from an operational CMS of <i>IN</i> conventional submarine, is to be simulated. However, physical replica of torpedo room equipment is not envisaged.</p> <p>(vii) <b><u>Simulation of Weapon Handling and Launching System.</u></b> This includes the software simulation for behaviour of weapon launching tubes as well as handling system. MMI indications from the weapons compartment that would normally appear on the MFCCs on execution / completion of commands/tasks pertaining to preparation and firing of weapon must be realistically simulated. However, provision of physical replica of the Weapon Handling and Launching systems is not envisaged.</p> <p>(viii) <b><u>Simulation of Sonar Detection System.</u></b> The simulator will consider all these aspects and allow the user to specify the following:-</p> <p>(aa) Detection levels at various relative bearings.</p> <p>(ab) Blind Zone.</p> <p>(ac) The instructor will specify the detection levels at the relative bearings keeping in mind the condition of Sonar, planned speeds, environment etc. The Blind Zone could be treated as more-or-less-fixed, but the instructor has the option</p>	

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	<p>to change it. The instructor will be facilitated to input the data in terms of the expected ranges in different directions. Alternatively, the instructor could specify the detection thresholds against relative bearings. The simulation software will compute the expected detection ranges along the relative bearing for the target in question.</p> <p>(ix) <b><u>Simulation of Air &amp; Surface Detection System.</u></b> The Simulator shall provide capability to operate Attack Periscope/ Search/ Optronic Mast, Navigation Radar and ESM by a behavioural simulator at MMI level.</p> <p>(x) <b><u>Simulation of Navigation System.</u></b> Scenario to be simulated will require platform as well as target motion. Navigation behaviour is to be simulated through software and associated data broadcasted to each sub-system. The instructor should be able to modify navigational data at any time.</p> <p>(xi) <b><u>Simulation of Communication System.</u></b> Communication system is not required to be fully simulated. Limited capability for external communication through dedicated interphones simulating Tx/Rx is to be provided for connection to Instructor desk.</p> <p>(xii) <b><u>Periscope Emulator.</u></b> The mockup periscope will allow the operator to get view of the scenario through periscope. The periscope view will show the targets in the field of view with respect to the target aspect, sea state, time of day, etc. The periscope emulator will provide following features:-</p> <p>(aa) Generic periscope with raise / lower control emulation.</p> <p>(ab) View to provide target picture corresponding to the target class through the view-finder.</p>	

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	<p>(ac) Processor card, HDD and Ethernet connectivity.</p> <p>(ad) The Simulator must enable environment simulation including simulation of Sea States from Sea State 1 to 6 and Instructor-programmable hydrological conditions and resulting simulated effects on target detection and appearance.</p>	
(g)	<p><b><u>Control Panels.</u></b> The Control Panels will be dedicated to selected type of CMS with the following major attributes:-</p> <p>(i) The control panels should be attachable /detachable control panels specific to the type of CMS.</p> <p>(ii) Physically match the control desk of the selected CMS.</p> <p>(iii) Control switches, panels, tracker ball corresponding to the control desk of the selected CMS.</p> <p>(iv) Interface card / processor card with standard USB output for electrical connection to the CMS.</p>	
(h)	<p><b><u>Steering Control/Console Emulator.</u></b> The Steering Control / Console emulator will provide following features:-</p> <p>(i) Generic steering control/control with plane and rudder control handles, control panels and display panel.</p> <p>(ii) Processor / interface card with Ethernet connectivity.</p> <p>(iii) The Simulator must include simulation of all safety procedures and drills conducted from the selected operational CMS.</p>	

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(i)	<p><b><u>Training Capacity.</u></b> The Simulator shall be managed by not more than two Instructors. The Instructor's Control Console(s) should be mounted in the Instructor Room and be provided with means for the following:-</p> <ul style="list-style-type: none"> <li>(i) Managing training sessions with pre-defined and stored training scenarios.</li> <li>(ii) Editing/ modifying training scenarios prior to and during training session.</li> <li>(iii) Insert or delete failures, accidental events or modify environmental parameters prior to or during training session.</li> <li>(iv) Create and load a snapshot of a selected console screen.</li> <li>(v) Recording/ storing of new training scenarios.</li> <li>(vi) Execute training scenarios.</li> <li>(vii) See the screens and consoles to observe trainees actions and operate local commands on simulated installations.</li> <li>(viii) View a current training session and stop the training session for safety or pedagogical reasons.</li> <li>(ix) Watch and hear the current training session by video/ audio means (with an option to mute) for evaluation and safety purpose.</li> <li>(x) Communicate with the trainees by audio means.</li> <li>(xi) Recording, re-play (with the option to skip to a selected time of the training session), evaluation of the training sessions and manage recorded training sessions.</li> </ul>	
(j)	A Briefing / Debriefing Facility for the instructor and trainees for briefing / debriefing before / after the training session, with seating capacity of twenty (20) personnel, visualisation of a	



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	training session and replay on latest projection system/Smart Board. Networked PC stations to control the briefing / debriefing along with accessories.	
(k)	<p><b><u>Data Base Management.</u></b> The Data Base Management should cater for the following requirements:-</p> <p>(i) The database should contain all parameters and data relevant to reliable operation of GSCSS and faithful conduct of crew training.</p> <p>(ii) Data base should be capable of being backed up on storage media in encrypted form.</p> <p>(iii) There should be a facility to store training scenarios and training sessions for replay at a later date.</p>	
(l)	<p><b><u>Test and Workshop Equipment.</u></b> Respondents are to indicate the following:-</p> <p>(i) Equipment that would be needed for undertaking pre-operation checks and routine preventive maintenance.</p> <p>(ii) Specific to Type Test Equipment (STTE) that would be needed to undertake repairs of the system.</p> <p>(iii) Equipment required for carrying out detailed analysis of defects.</p>	
(m)	<p>(i) <b><u>Test and Software Loading Terminal.</u></b> A suitable PC or Laptop based Test and Software loading Maintenance Terminal is to be provided to facilitate checks of the system and reloading of system software. Back up copy of software is to be provided with the software loading terminal.</p> <p>(ii) <b><u>Cyber Security.</u></b> Vendors are to indicate protocols/ security features being followed by them to maintain cyber security of the simulator system.</p>	

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	(iii) Willingness for implementation of provisions w.r.t cyber security / malicious code as per DAP-20.	
(n)	Technical Facility to accommodate all electronic and electrical devices located outside training and trainer/ instructor stations (COTS computers, storage disks, audio and video distribution matrix etc.), documentation, onsite spares, onsite tools, jigs and test benches, main and emergency power supply distribution boards etc. The facility should have a Maintainer's post, suitable IT work stations and furniture for maintainers.	
(o)	<b><u>Software Development and Documentation.</u></b> Respondents are to indicate their acceptance for undertaking Software Verification and Validation/ Software Quality Assurance (SQA) at the appropriate time / stage of procurement.	
(p)	<b><u>Design Data.</u></b> Vendors are to indicate design data viz. cycle fatigue, material composition, MTBF and MTTR etc.	
(q)	<b><u>Built-in Test Equipment.</u></b> The design of the system shall cater for an integrated Built-In Test (BIT) facility to enable both offline and online monitoring, fault-diagnosis, automatic fault localisation and failure identification such as to identify, locate and indicate to the instructor/ maintainer any fault 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 and Maintainer's screen. This should include facility to test all sub-systems of the GSCSS Simulator.	
(r)	<b><u>Interchangeability and Commonality.</u></b> Respondents are to mention the level of commonality within the system at the Module/ Sub-module, PCB and Component levels. The Simulator is envisaged to be designed such that the PCBs/ Modules similar in physical construction and functions are interchangeable within the system.	

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(s)	<p><b><u>Hardware Requirements.</u></b> The hardware and technical approach shall comprise the main elements listed herein under: -</p> <p>(i) <b><u>Operator Consoles/DMFC.</u></b> The system will have three Dual Multi-Function Consoles with following specifications:-</p> <p>(aa) Number of display panels – Two LED panels 21” / 24”, high resolution; vertically stacked</p> <p>(ab) Dual processors intel i5 processor or latest</p> <p>(ac) Power supply module with IPS</p> <p>(ad) Provision to attach external control panel and connect through USB</p> <p>(ae) High speed Ethernet connectivity</p> <p>(af) USB Port for connecting external keyboard</p> <p>(ii) <b><u>Instructor Station.</u></b> The Instructor Station should have following specifications:-</p> <p>(aa) Two side-by-side mounted 21” / 24” high resolution LED display panels.</p> <p>(ab) Keyboard, touch-panel, mouse etc.</p> <p>(ac) Software to support the control of training and simulation.</p> <p>(ad) Ethernet connectivity.</p> <p>(ae) Two processors with terabyte HDD.</p> <p>(iii) <b><u>Auto Plotter.</u></b> Tactical Plotting Table functionally replicating any one of the plotting table installed on conventional <i>IN</i> submarines with W-ECDIS feature, interfaced with the CMS over Ethernet.</p>	

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	<p>(iv) <b><u>Mast Status Panel.</u></b> The Mast Status emulator will provide following features:-</p> <p>(aa) Emulator to show the status of masts raised / lowered with indication.</p> <p>(ab) Communication with CMS.</p>	
(t)	<p>(i) Automatic fire detection system to be incorporated.</p> <p>(ii) Suitable Ventilation and Air Conditioning (VAC) facilities for tropical Indian climate.</p>	
(u)	<p><b><u>Power Supply.</u></b> Respondents are to indicate the power supply for their proposed solution that would be used for operation (preferably 440V/ 220V, 50Hz, 1Phase/ 3 Phase). Online Uninterrupted Power supply to provide emergency back-up, saving of data and safe shut-down is required. Vendors are to indicate type, hardware, capability, safety and space likely to be occupied by the Power Supply units of the Simulator.</p>	
(v)	<p><b><u>Life.</u></b> The Simulator should have a service life of at least twenty (20) years. Accordingly, respondents to this RFI are to propose methodology to provide through-life logistic support for hardware as well as application software.</p>	
(w)	<p><b><u>Exploitation Pattern.</u></b> The Simulator is expected to be robust and to support extended operation not less than:-</p> <p>(i) 10 hours per day.</p> <p>(ii) 25 days per month.</p> <p>(iii) 300 days in a year.</p>	
(x)	<p><b><u>Environmental Specifications.</u></b> Respondents are to indicate the environmental specification standards that their products shall meet. These standards should be contemporary and internationally accepted.</p>	

<u>Ser.</u>	<u>Particulars</u>	<u>Bidder Reply / Compliance</u>
(y)	<b><u>Endurance (Burn-in) Test.</u></b> Respondents are to indicate readiness to undertake Endurance (Burn-in) test on successful completion of Factory Acceptance Trials for mutually agreed duration of not less than Eight hours.	
(z)	Respondents are to specify the contemporary, internationally accepted technical standards their product meets with regards to the following:-  (a) Documentation.  (b) Requirements of Electrical Installations.  (c) <b><u>Environmental Test Specifications.</u></b> With specific reference to Indian tropical conditions.	
(aa)	Vendors are to indicate the manpower that would be required to operate and maintain the GSCSS. Details of training required for such personnel are also to be indicated.	
(ab)	(i) <b><u>Warranty.</u></b> Technical support being provided for maintenance and support of the platform during its service life including warranty.  (ii) <b><u>Comprehensive Annual Maintenance Contract (CAMC).</u></b> Respondents are to indicate scope and terms of CAMC and Support Package for a period of atleast 15 years, including the period of Warranty.  (ii) Rate Contract Agreement (RCA)/ Annual Maintenance Contract (AMC). Modalities for RCA for spares/services in addition to AMC post warranty period is also to be indicated.	
(ac)	The delivery schedule for GSCSS is to be indicated	
(ad)	<b><u>Approximate Cost Estimate.</u></b> The indicative cost (on unit basis) for setting up the the GSCSS <b>inclusive of taxes</b> (to be indicated separately) shall be provided by respondents in detail. Respondents are to take into account all aspects of supply of production material, manufacture, installation, integration, training, documentation, Factory Acceptance Trials	

<u>Ser.</u>	<u>Particulars</u>	<u>Bidder Reply / Compliance</u>
	(FATs), Onsite System Acceptance Test (OSAT) and life cycle support for a period of 20 years.	
(ae)	Vendors also need to indicate their experience in design, manufacture and fitment in Shore-based facilities / Simulator development of similar complexity.	
(af)	<u>Standards, Certifications and Specifications.</u> Details of compliance to various MIL standards and specifications w.r.t operation and safety for various components and sub-components of the simulator	
(ag)	<p>(i) <b><u>Key Technologies</u></b>. Vendors shall mention key technologies and materials required for manufacturing the GSCSS and the extent of their availability or accessibility in case they are not available in India. Vendor shall also indicate utilisation of Indigenous Military material and software, and plan for material sourcing and cost implications vis-à-vis foreign sourcing of materials.</p> <p>(ii) <b><u>Indian Vendors</u></b>. Capability of Indian Vendors to indigenously design, develop, manufacture, deliver, maintain and provide life-time support for the GSCSS is to be elaborated in detail. Details of collaboration with a Technology Partner is also to be brought out in the response to this RFI.</p> <p>(iii) Vendors are to indicate the Indigenous Content percentage for their product.</p> <p>(iv) Import content (if applicable).</p> <p>(v) <b><u>Software Codes and Intellectual Property Rights</u></b>. Willingness to supply software source codes for software used in the GSCSS. Any reservations in this regard are to be indicated specifically. Cost of supplying these codes is to be indicated separately. Respondents are to clearly indicate the details of agency holding Intellectual Property Right (IPR) for various hardware and software components of the proposed Simulator along with OEMs for</p>	

<u>Ser.</u>	<u>Particulars</u>	<u>Bidder Reply / Compliance</u>
	<p>manufacture of major assemblies.</p> <p>(vi) <b><u>Manpower and Training.</u></b> Vendors are to indicate the manpower that would be required to operate and maintain the GSCSS. Details of training required and tentative training schedule for such personnel are also to be indicated.</p> <p>(vii) <b><u>Trials/Acceptance.</u></b> Respondents are to propose in detail the acceptance procedure in respect of their product, i.e, through Demonstration, Certification, Simulation or Documentation or combination thereof.</p> <p>(viii) <b><u>Obsolescence Management.</u></b> Vendors are to indicate the provisions for upgradeability of equipment to avoid system obsolescence.</p> <p>(ix) <b><u>Suggestions.</u></b> Suggestions for alternatives (in terms of Simulation technologies, hardware design configuration, materials, standards, life-cycle support etc.) to meet the same objective as mentioned in this RFI may be offered</p>	
(ah)	<p>Dimensions of various facilities of the Simulator are to be given. The details of the floor space requirement and electrical power requirements for creation of the training facility are to be stated. Any special infrastructure requirement to be provisioned into the building is to be brought out in detail.</p>	
(ai)	<p><u>Transfer of Technology</u> Vendors are to indicate willingness to provide Transfer of Technology along with scope of ToT and transfer of maintenance technology.</p>	
(aj)	<p>Vendors are to indicate restrictions related to export of outsourced components (if any) and how long will it take to get clearance.</p>	
(ak)	<p>No. of pages enclosed in the reply.</p>	

**Appendix C**

(Refers to Para 10 of RFI)

**CRITERIA FOR VENDOR SELECTION/  
PREQUALIFICATION IN 'BUY (INDIAN-IDDM)' CASES**

1. The criteria for vendor selection for Buy (Indian-IDDM) is enumerated in succeeding paragraphs. Respondents (Vendors) are to furnish reply paragraph/ sub-paragraph for each attribute.

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.

(ii) Minimum **two (02) years of experience in manufacturing and simulator development of similar complexity.** If not, then cumulative experience of at **least three years in above areas,** resulting in gaining of competence for manufacturing the proposed product.



(c) **Financial Parameters.** The financial criteria for shortlisting of Vendors are as follows:-

(i) **Net Worth.** Net worth of entities, ending 31<sup>st</sup> March of the previous financial year, should not be negative.

(ii) **Insolvency.** The entity should not be under insolvency resolution as per Indian Bankruptcy Code at any stage of procurement process from the issuing of RFP to the signing of contract.

(d) **Other Parameters.**

(i) **Industrial License (IL).** Vendors should be either holding a valid Industrial license or should have applied for the same before responding to RFP. In any case the vendor must confirm holding of IL before Contract conclusion. (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) 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.

(b) 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.

(c) 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.

(d) 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 of similar complexity/ nature successfully executed in the last three 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).
- (e) Any vendor furnishing false information will be liable for action as per existing guidelines.