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Room No 3, D-II Wing  
Sena Bhawan  
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TM(MS)/0025/DSMAQ/GSCSS

31 Jan 24

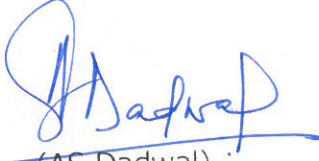
To,

All Concerned

**SUBJECT: FORWARDING OF PRE-BID REPLIES FOR  
PROCUREMENT OF ONE GENERIC SUBMARINE COMBAT SYSTEM  
SIMULATOR (GSCSS)**

Sir,

1. Refer to TM(M)/0025/DSMAQ/GSCSS dated 29 Nov 23 regarding issuance of RFP for Procurement of one Generic Submarine Combat System Simulator (GSCSS)& discussions during Pre-Bid Meeting held at New Delhi on 10 Jan 24.
2. The consolidated reply to all pre-bid queries raised by participating vendors and discussed during the above mentioned meeting is forwarded herewith.



(AS Dadwal)

Commodore

DDG Acq Tech(Maritime)

MoD Acq Wing

**Encl** : As above

**Copy to :**

The Commodore (Submarine Acquisition)  
Naval Headquarters/DSMAQ  
Room No 119, 'C' Wing, I Floor  
Sena Bhawan  
New Delhi – 110 011



PRE BID QUERIES REPLY- GSCSS

ENCLOSURE TO TM(MS)/0025/PSMAB/GSCSS  
dt 31 JAN 24

Ser	RFP reference	RFP Clause	Query	Reply
1	Para 11 of the RFP	<b>Warranty.</b> The goods supplied shall carry a warranty for 24 months from date of-successful completion of Acceptance trials.	The date of signing of Project Completion Certificate by the Navy would be the date of commencement of warranty - Date of commissioning is a Naval function and can be undertaken post handing over by the Vendor.	To be complied as per RFP
2	Para 15 of RFP	15.Training of Crew & Maintenance Personnel. A training package for training of operators, operator trainers and maintenance personnel to undertake operation and maintenance of equipment, along with tools and test jigs of Personnel nominated by the Indian Navy would be required to be carried out in English language. This training shall be designed to give the operators and maintainers necessary knowledge and skills to operate & maintain equipment as applicable. The syllabus will be defined by the Bidder in consultation with the Buyer. The maintenance training will be imparted to the satisfaction of the Buyer and Bidder will ensure that the training content and period will be to impart working proficiency up to the required level. All training requirements such as training aids, projection system, complete equipment with accessories / optional, technical literature, spares, test equipment / test set up, charts, training handouts, power point presentations, Computer Based Training (CBT), Documentation, Simulators etc will be catered by the Bidder	What level of maintenance training is expected to be imparted? Is only simulator expected to be used for training or any other means is also expected?	To be complied as per RFP
3	Para 28 of RFP	28.Technical Offer. The Technical Offer must enable detailed understanding of the functioning and characteristics of the equipment GSCSS as a whole and each sub-system independently. It must include the performance parameters as listed at Appendix A and any other information pertaining to the technical specifications of the GSCSS considered important/ relevant by the vendor. The technical proposal should also include maintenance schedules to achieve maximum life and expected life of each assembly/subassembly {or Line Replaceable Unit (LRU)/Shop Replaceable Unit (SRU)} of each equipment of the GSCSS, storage conditions/environment condition recommended and the resultant guaranteed in-service/shelf life. The range and depth of spares included in the proposal should be supported by necessary reliability and prediction model or authenticated by past data on similar equipment in use. The Technical Offer should clearly indicate and elaborate the following: -  (a)Provide detailed plan for development of all the pages of the three classes of Submarine Fire Control System. (b)The offer should clearly indicate the details of the algorithm, methodology for calculation of the Target Motion Analysis (TMA) and methodology for solution generation. (c)Detailed description on the algorithm being deployed in the GSCSS and how the algorithm would cater to meet the diverse requirements of the FCS for all three classes of the submarine. (d)The offer should step wise/ flow chart based describe the process for data flow for the GSCSS including sensor data transfer to the Operator Consoles / DMFCs and to instructor station. (e)The Technical offer should bring out the detailed timelines for development of pages for the submarine Fire control system and integration and interfacing of the data with the Operator Consoles / DMFCs. (f)The Technical offer should indicate the following with respect to the algorithm: -  (i)IPR for the algorithm. (ii)License and its validity.  (g)The algorithm being utilised for the GSCSS should have a lifetime License validity.	What documents would be made available by IN to capture the details as specified in various sub paras of this paragraph?	To be complied as per RFP
4	Para 35 of RFP	The range and depth of spares included in the proposal should be supported by necessary reliability and prediction model or authenticated by past data on the similar equipment in use. Any Bidder found to be providing lesser ESP/MRLS in terms of range and depth will have to be made good the deficiency by the Vendor at no extra cost. The Buyer would also have the option to amend the MRLS proposed by the Bidder within 02 years of the expiry of the warranty period.	What type of reliability and prediction models are expected?	To be in accordance with Bidder design philosophy
5	Para 39 of RFP	39. Bidder is to submit a Draft Acceptance Test Procedure (ATP) within six months post signing of contract. Based on the draft ATP, the ATP will be finalised by the Board/Committee nominated by Indian Navy. The Buyer reserves the right to modify the ATP if necessary. ATP will lay down the tests to be carried out during PDI and JRI. It shall be ensured that there is no repetition of QA tests in PDI and JRI. The JRI would normally be restricted to quantitative checks only, except where check proof is required to be carried out. In case PDI/JRI are planned to be conducted by authorised Third Party Inspection (TPI) Agencies, the same will be spelt out in the QA instructions and the details included in the finalised ATP. QA of equipment will be carried out as per finalised QA plan in the contract. For technical trials by QA agencies, the Bidder will arrange for requisite test facilities at OEM premises/accredited laboratories for establishing conformance. The successful Bidder would also be required to provide those test facilities at OEM premises/accredited laboratories for quality assurance, which are not available with QA agencies. Details of the same will be intimated to the Bidder during finalisation of ATP in Technical trials.	Are the QA facilities expected at Bidder's premises or it can be co located at other third-party premises too?	To be complied as per RFP



Ser	RFP reference	RFP Clause	Query	Reply
6	Para 28 of RFP	<p>28. Technical Offer. The Technical Offer must enable detailed understanding of the functioning and characteristics of the equipment GSCSS as a whole and each sub-system independently. It must include the performance parameters as listed at Appendix A and any other information pertaining to the technical specifications of the GSCSS considered important/ relevant by the vendor. The technical proposal should also include maintenance schedules to achieve maximum life and expected life of each assembly/subassembly {or Line Replaceable Unit (LRU)/Shop Replaceable Unit (SRU)} of each equipment of the GSCSS, storage conditions/environment condition recommended and the resultant guaranteed in-service/shelf life. The range and depth of spares included in the proposal should be supported by necessary reliability and prediction model or authenticated by past data on similar equipment in use. The Technical Offer should clearly indicate and elaborate the following: -</p> <p>(a) Provide detailed plan for development of all the pages of the three classes of Submarine Fire Control System.  (b) The offer should clearly indicate the details of the algorithm, methodology for calculation of the Target Motion Analysis (TMA) and methodology for solution generation.  (c) Detailed description on the algorithm being deployed in the GSCSS and how the algorithm would cater to meet the diverse requirements of the FCS for all three classes of the submarine.  (d) The offer should step wise/ flow chart based describe the process for data flow for the GSCSS including sensor data transfer to the Operator Consoles / DMFCs and to instructor station.  (e) The Technical offer should bring out the detailed timelines for development of pages for the submarine Fire control system and integration and interfacing of the data with the Operator Consoles / DMFCs.  (f) The Technical offer should indicate the following with respect to the algorithm: -</p> <p>(i) IPR for the algorithm.  (ii) License and its validity.</p> <p>(g) The algorithm being utilised for the GSCSS should have a lifetime License validity.</p>	<p>Given the typical complexity of TMA algorithms, how specific does the TMA emulation need to be? Particularly, if the requirement is for generic TMA, would it be possible for the solution to be generic in a way that improves the solution as a factor of the submarine movement in relation to the target, and basing the solution of what the simulation "knows" the target performs?</p>	<p>To be complied as per RFP</p>
7	Para 52 (b) of RFP	<p>(a) <b>Evaluation of Commercial Bid.</b> The Commercial bids of only those bidders will be opened, whose technical bids have been cleared by TEC. Comparison of bids would be done on the basis of Evaluation criteria given in <b>Appendix H</b> to this RFP. The bidders are required to quote their price in Price bid format given in <b>Appendix H</b> to this RFP. The L-1 bidder would be determined by Contract Negotiation Committee (CNC) on the basis of <b>Appendix H</b> to this RFP. The bidder would be invited for negotiations by CNC.</p>	<p>No further negotiations with the L1 vendor -Bid Price of the L1 vendor should not be negotiated in PNC</p>	<p>To be complied as per RFP</p>
8	Para 4 of Appendix A of RFP	<p>The Generic Submarine Combat System Simulator (GSCSS) and associated requirements shall comprise the following: -</p> <p>(a) The IN operates three Classes of conventional submarines viz. Sindhughosh, Shishumar and Kalvari Class submarines. The Generic Combat System Simulator (GSCSS) would provide the MMIs of CMS onboard each class of submarine and would be used for conducting training for personnel. The GSCSS software should be configured so as to provide selection of the required Combat Management System (CMS) from the three Classes of the submarine by click of a button. The software should configure itself and the Graphic User Interface (GUI) for the display panels of the selected CMS. The MMI of the simulator should have the same look, feel and man-machine interface of the selected CMS.</p> <p>(b) The GSCSS software would include target and weapon simulator; and the combat management system processes like Sensor Management, Track Motion Analysis going up to firing and controlling wire guided torpedo and missiles.</p> <p>(c) Adaptors and connections for Ventilation and Air Conditioning (VAC) of the simulator from an external VAC System.</p> <p>(d) An Instructor Station.</p> <p>(e) A Briefing and Debriefing facility with capability to record and replay simulation sessions.</p> <p>(f) A Technical facility which will accommodate all electrical and electronic components not required to be located at the operator, trainer, trainee stations, and components of the VAC system, storage facility for documentation and spares, fault detection, fault localization and fault analysis components and a maintainer station. Separate stowage of server and power supply backup.</p>	<p>The requirement stated is not clear. The same may be elaborated please</p>	<p>The details are self explanatory &amp; complete. To be complied as per App A of RFP</p>

Ser	RFP reference	RFP Clause	Query	Reply
9	Para 4(a) of Appendix A of RFP	(a)The IN operates three Classes of conventional submarines viz. Sindhughosh, Shishumar and Kalvari Class submarines. The Generic Combat System Simulator (GSCSS) would provide the MMIs of CMS onboard each class of submarine and would be used for conducting training for personnel. The GSCSS software should be configured so as to provide selection of the required Combat Management System (CMS) from the three Classes of the submarine by click of a button. The software should configure itself and the Graphic User Interface (GUI) for the display panels of the selected CMS. The MMI of the simulator should have the same look, feel and man-machine interface of the selected CMS.	It is understood that at any point of time, only one operator (from the three types of submarine) would sit on the simulator for training and there would be no overlaps on number of operators too. Please confirm	Confirmed. To be complied as per RFP
10	Para 4 (a) of Appendix A of RFP	(a) The IN operates three Classes of conventional submarines viz. Sindhughosh, Shishumar and Kalvari Class submarines. The Generic Combat System Simulator (GSCSS) would provide the MMIs of CMS onboard each class of submarine and would be used for conducting training for personnel. The GSCSS software should be configured so as to provide selection of the required Combat Management System (CMS) from the three Classes of the submarine by click of a button. The software should configure itself and the Graphic User Interface (GUI) for the display panels of the selected CMS. The MMI of the simulator should have the same look, feel and man-machine interface of the selected CMS.	The simulator to be developed for three class of submarine would entail detailed know how about the existing combat system in these submarines. Who will provide the know how, requirement and design document about these existing combat systems?	Indian Navy
11	Para 4 (a) of Appendix A of RFP	(a)The IN operates three Classes of conventional submarines viz. Sindhughosh, Shishumar and Kalvari Class submarines. The Generic Combat System Simulator (GSCSS) would provide the MMIs of CMS onboard each class of submarine and would be used for conducting training for personnel. The GSCSS software should be configured so as to provide selection of the required Combat Management System (CMS) from the three Classes of the submarine by click of a button. The software should configure itself and the Graphic User Interface (GUI) for the display panels of the selected CMS. The MMI of the simulator should have the same look, feel and man-machine interface of the selected CMS	We would like to the know the similarities and differences between the Operator Display Manuel (ODMs) of the three submarines, so that correct ergonomics can be factored in the design to develop a generic simulator.	To be complied as per Para 8(a) (i) (aa) of App A of RFP
12	Para 4 (b) of Appendix A of RFP	(b)The GSCSS software would include target and weapon simulator; and the combat management system processes like Sensor Management, Track Motion Analysis going up to firing and controlling wire guided torpedo and missiles.	Would the Operator's Data Manual (ODMs) of the various platforms, weapons and sensor systems to be simulated be provided for modelling the physical behaviour of the entities. Also are the performance characteristics of the various entities available in digitized form or is it in the form of Graphs.	To be complied as per RFP
13	Para 4 (c) of Appendix A of RFP	(c)Adaptors and connections for Ventilation and Air Conditioning (VAC) of the simulator from an external VAC System.	Kindly clarify what is meant by external VAC.	The external VAC refers to providing suitable air conditioning to the sub units of the simulator for internal cooling.
14	Para 4 (c) of Appendix A of RFP	(c) Adaptors and connections for Ventilation and Air Conditioning (VAC) of the simulator from an external VAC System.	The requirement may please be elaborated further please	To be complied as per RFP. Requirement elaborated in App A of RFP
15	Para 4(d) and (e) of Appendix A of RFP	An Instructor Station A Briefing and Debriefing facility with capability to record and replay simulation sessions.	The requirement may please be elaborated further please	To be complied as per RFP
16	Para 4 (e) of Appendix A of RFP	(e)A Briefing and Debriefing facility with capability to record and replay simulation sessions	Do you require video recording (external camera or screen grab) or event-based recording for replaying the simulation sessions.	To be complied as per RFP
17	Appendix A Para 5 of RFP	5.The scope of supply for the GSCSS Simulator would enable functioning as per desired characteristics and safety of operation is to include the facilities as follows:- (a)The simulator complex should have suitable Ventilation and Air Conditioning (VAC) facilities 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, high temperature and fire safety. (d)The simulator should have a courseware and trainee evaluation package for assessment of the performance of the trainees along with facility to maintain and view the log for every trainee with details of tasks undertaken by the trainee.	What is the scope of supply with respect to infrastructure? Is this only limited to Training Systems, IT infrastructure, Power infrastructure, Fire detection, portable fire extinguishers.	Yes, for the GSCSS Simulator. To be complied as per RFP.



<u>Ser</u>	<u>RFP reference</u>	<u>RFP Clause</u>	<u>Query</u>	<u>Reply</u>
18	Appendix A Para 5	<p>5.The scope of supply for the GSCSS Simulator would enable functioning as per desired characteristics and safety of operation is to include the facilities as follows:-</p> <p>(a)The simulator complex should have suitable Ventilation and Air Conditioning (VAC) facilities 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.</p> <p>(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.</p> <p>(c)Suitable safety arrangements to cater for electrical safety, high temperature and fire safety.</p> <p>(d)The simulator should have a courseware and trainee evaluation package for assessment of the performance of the trainees along with facility to maintain and view the log for every trainee with details of tasks undertaken by the trainee</p>	<p>Is the vendor required to provide the following? (a) Ventilation and Airconditioning system. (b) Furniture for the trainees/ instructors/ de-briefing room.</p> <p>(c) Provide UPS/ Generator for stable electrical supply.</p>	To be complied as per RFP
19	Para 5 of Appendix A of RFP	<p>(a)The simulator complex should have suitable Ventilation and Air Conditioning (VAC) facilities 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.</p>	<p>It may be confirmed that the requirements listed are required to be undertaken ab-inito or would need modification to the existing facilities? The understanding presently is that a Simulator complex in totality would need to be brought up too in addition to the actual simulator itself. Please confirm</p>	To be complied as per App A of RFP
20	Para 5 of Appendix A of RFP	<p>5.The scope of supply for the GSCSS Simulator would enable functioning as per desired characteristics and safety of operation is to include the facilities as follows:-</p> <p>(a)The simulator complex should have suitable Ventilation and Air Conditioning (VAC) facilities 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.</p> <p>(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.</p> <p>(c)Suitable safety arrangements to cater for electrical safety, high temperature and fire safety.</p> <p>(d)The simulator should have a courseware and trainee evaluation package for assessment of the performance of the trainees along with facility to maintain and view the log for every trainee with details of tasks undertaken by the trainee.</p>	<p>In addition algorithm for the domain specific concepts like TMA ETC shall be required. Who will provide these algorithm and in which form?</p>	To be developed by Vendor as per RFP conditions
21	Para 6 (a) of Appendix A of RFP	<p>The GSCSS software would be configured so as to provide selection of the required Combat Management System (CMS) from the three Classes of submarines Sindhughosh, Shishumar and Kalvari Class submarines by click of a button. The software should configure itself and the GUI for the display panels of the selected CMS</p>	<p>Can a visit to the three submarines be organized to get a better appreciation of the similarities and differences of various OWSs.</p>	<p>Visit was conducted on 29 Jan 24 at Mumbai for the firms who had requested for system familiarization visit during pre-bid meeting.</p>
22	Para 6(a) of Appendix A of RFP	<p>The GSCSS software would be configured so as to provide selection of the required Combat Management System (CMS) from the three Classes of submarines Sindhughosh, Shishumar and Kalvari Class submarines by click of a button. The software should configure itself and the GUI for the display panels of the selected CMS</p>	<p>It may be elaborated as to how many training stations are required as part of GSCSS?</p>	To be complied as per Para 8(a) of App A of RFP

Ser	RFP reference	RFP Clause	Query	Reply
23	Para 6(b) of Appendix A of RFP	<p>(i)The GSCSS software should include target and weapon simulator; and the combat management system processes like Sensor Management, Track Motion Analysis, firing and controlling wire guided torpedo of the selected CMS from the three Classes of submarines Sindhughosh, Shishumar and Kalvari Class submarines.</p> <p>(ii)The Simulator should enable training of the complete Command team, limited crew or for an individual.</p> <p>(iii)The GSCSS should replicate the control desk for each type of CMS as a detachable and attachable panel. By physically attaching the concerned panel to the DMFC and connecting through rugged electronic connector. The control desk can also be configured or provided in the form of touch key panels.</p> <p>(iv)The GSCSS should also include the following sub-systems:-</p> <p>(aa) Auto plotter</p> <p>(ab) Periscope Emulator</p> <p>(ac) Steering Control Emulator</p> <p>(ad) Mast Status Panel, PNP table, Bearing Boards</p>	The details given do not clearly bring out the functionality. The same may be amplified and explained.	To be complied as per Para 6 of App A of RFP
24	Para 6 (b) of Appendix A of RFP	<p>(i)The GSCSS software should include target and weapon simulator; and the combat management system processes like Sensor Management, Track Motion Analysis, firing and controlling wire guided torpedo of the selected CMS from the three Classes of submarines Sindhughosh, Shishumar and Kalvari Class submarines.</p> <p>(ii)The Simulator should enable training of the complete Command team, limited crew or for an individual.</p> <p>(iii)The GSCSS should replicate the control desk for each type of CMS as a detachable and attachable panel. By physically attaching the concerned panel to the DMFC and connecting through rugged electronic connector. The control desk can also be configured or provided in the form of touch key panels.</p> <p>(iv)The GSCSS should also include the following sub-systems:-</p> <p>(aa) Auto plotter</p> <p>(ab) Periscope Emulator</p> <p>(ac) Steering Control Emulator</p> <p>(ad) Mast Status Panel, PNP table, Bearing Boards</p>	We would like to the know the similarities and differences between the OWSs of the three submarines, so that correct ergonomics can also be factored in the design to develop a generic simulator	To be complied as per App A of RFP
25	Appendix-A, Para 6 (b), page 21 of RFP	(i)The GSCSS software should include target and weapon simulator; and the combat management system processes like Sensor Management, Track Motion Analysis, firing and controlling wire guided torpedo of the selected CMS from the three Classes of submarines Sindhughosh, Shishumar and Kalvari Class submarines.	Auto Plotter: Is this hardware same for all three class of submarines? -- Details may be provided by IN to design Auto plotter.	To be complied as per RFP
26	Appendix-A, Para 6 (b), page 21 of RFP	<p>(ii)The Simulator should enable training of the complete Command team, limited crew or for an individual.</p> <p>(iii)The GSCSS should replicate the control desk for each type of CMS as a detachable and attachable panel. By physically attaching the concerned panel to the DMFC and connecting through rugged electronic connector. The control desk can also be configured or provided in the form of touch key panels.</p> <p>(iv)The GSCSS should also include the following subsystems:(aa) Auto plotter</p> <p>(ab) Periscope Emulator</p> <p>(ac) Steering Control Emulator</p> <p>(ad) Mast Status Panel, PNP table, Bearing Boards</p>	Mast Status Panel: Different in all classes of SMs -- Details shall be provided by IN to design Mast Status Panel.	To be complied as per RFP
27	Para 6 (b) (iii) Of Part-B, page 21 of RFP	(iii)The GSCSS should replicate the control desk for each type of CMS as a detachable and attachable panel. By physically attaching the concerned panel to the DMFC and connecting through rugged electronic connector. The control desk can also be configured or provided in the form of touch key panels.	Can be acceptable as alternative solution a design based on touchscreens with replica interactive software panels? Or Hardware replica panel shall be considered a mandatory and not modifiable requirement?	To be complied as per RFP
28	Para 6 Sr (b)(iii) of Appendix A of RFP	(iii)The GSCSS should replicate the control desk for each type of CMS as a detachable and attachable panel. By physically attaching the concerned panel to the DMFC and connecting through rugged electronic connector. The control desk can also be configured or provided in the form of touch key panels	Will a GUI page simulating hardware panels suffice, especially in case of development of a particular system/ panel so as to minimise on number of attachment/ detachment panels.	To be complied as per RFP



Ser	RFP reference	RFP Clause	Query	Reply
29	Appendix A Para 6(b)(iii) of RFP	(iii)The GSCSS should replicate the control desk for each type of CMS as a detachable and attachable panel. By physically attaching the concerned panel to the DMFC and connecting through rugged electronic connector. The control desk can also be configured or provided in the form of touch key panels.	What is control desk that is specific to CMS type and attachable/detachable panel?	To be complied as per RFP
30	Appendix A Para 6(b)(iv) of RFP	(iv)The GSCSS should also include the following sub-systems:- (aa) Auto plotter (ab) Periscope Emulator (ac) Steering Control Emulator (ad) Mast Status Panel, PNP table, Bearing Boards	What is PNP Table?	Plotting Table
31	Appendix A Para 6(b)(iv) of RFP		What is Bearing Board?	Board for noting down bearing
32	Para 6(b)(iv) of Appendix A of RFP	(iv)The GSCSS should also include the following sub-systems:- (aa) Auto plotter	(a) Auto Plotter - what type? Can it be entirely touch screen based?	No. To be complied as per RFP
33	Para 6(b)(iv) of Appendix A of RFP	(ab) Periscope Emulator	(b) Periscope Emulator - what type? Can it be entirely touch screen based?	No. To be complied as per RFP
34	Para 6(b)(iv) of Appendix A of RFP	(ac) Steering Control Emulator (ad) Mast Status Panel, PNP table, Bearing Boards	(c) Steering Console Emulator - what type? Can it be entirely touch screen based?	No. To be complied as per RFP
35	Para 6(b)(iv) of Appendix A of RFP		(d) Mast Status Panel - what type? Can it be entirely touch screen based?	To be complied as per RFP
36	Para 6(b)(iv) of Appendix A of RFP	(iv)The GSCSS should also include the following sub-systems:- (aa) Auto plotter	(f) PNP Table, what type? Can it be entirely touch screen based?	No. To be complied as per RFP
37	Para 6(b)(iv) of Appendix A of RFP	(ab) Periscope Emulator (ac) Steering Control Emulator (ad) Mast Status Panel, PNP table, Bearing Boards	(g) Bearing Board What Type / Material?	Drawing Board
38	Para 6(b) (iv) of Appendix A of RFP	(iv)The GSCSS should also include the following sub-systems:- (aa) Auto plotter (ab) Periscope Emulator (ac) Steering Control Emulator (ad) Mast Status Panel, PNP table, Bearing Boards	It may be confirmed if the Simulators are required for Auto Plotter, Periscope and Steering Control or Emulators are required for these systems? The hardware functionality expected out of these Emulators may please be explained.	To be complied as per RFP
39	Para 6 (b) (iv), Section I, page 21 of RFP	(iv)The GSCSS should also include the following sub-systems:- (aa) Auto plotter (ab) Periscope Emulator (ac) Steering Control Emulator (ad) Mast Status Panel, PNP table, Bearing Boards	Bearing boards, it is intended the 'Classic' bearing manoeuvring/board transparent with reference grids to draw over it, or it is required an interactive screen for such functions (or bearing board it is another device, if so pls specify) PNP table is the same device as Auto plotter, of it intended a different device? Please specify.	To be complied as per RFP
40	Para 6 Sr (b)(iv) (aa) of Appendix A of RFP	Auto plotter	(a)Can the Auto Plotter be generic or would it be required to be class-specific? (b)Some Auto Plotters have ECDIS features, if the same are required, will IN provide the electronic charts of areas of interest?	Auto plotter to be generic in nature iaw with RFP. Electronic charts of Mumbai and Vishakapatnam harbor areas are to be provided by the bidder
41	Para 6 Sr (b)(iv) (ad) of Appendix A of RFP	Mast Status Panel, PNP table, Bearing Boards	(a) Can the Mast Status panel be a GUI-based soft panel with all required functionalities as desired? The same is the case with the development of PNP Table.	To be complied as per RFP
42	Appendix A Para 6(c) of RFP	The GSCSS would 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).	Please list expected Training Course?	To be complied as per RFP

Ser	RFP reference	RFP Clause	Query	Reply
43	Para 6 (d) of Appendix A of RFP	The GSCSS Simulator should be able to simulate CMS functions on IN conventional submarines in both normal and emergency conditions. (ii) It shall simulate the functionalities, MMI and performance in terms of response time as the CMS currently fitted onboard the IN conventional submarines. (iii)The Simulator shall include an environment and target behaviour data generator allowing preparation and running of realistic tactical situation. (iv)The platform behaviour including maneuverability and dynamics shall be faithfully simulated providing feedback of own ship parameters. However, the platform motion is not needed to be simulated. (v) 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	(i)SOPs for normal and emergency operations of various systems / subsystems may be provided. Also, a brief on the fail-safe modes and graceful degradation of various systems may be provided. (ii)Total no of MMI pages and page transition for each Operator Workstation (OWS) may be provided. The approx. number of pages be classified in terms of GIS pages, Data visualization pages, 2D/3D plots etc.	To be complied as per RFP
44	Appendix A Para 6(d) of RFP	The GSCSS Simulator should be able to simulate CMS functions on IN conventional submarines in both normal and emergency conditions. (ii) It shall simulate the functionalities, MMI and performance in terms of response time as the CMS currently fitted onboard the IN conventional submarines. (iii)The Simulator shall include an environment and target behaviour data generator allowing preparation and running of realistic tactical situation. (iv)The platform behaviour including maneuverability and dynamics shall be faithfully simulated providing feedback of own ship parameters. However, the platform motion is not needed to be simulated. (v) 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	How is the FCS and CMS affected by emergency status? Please provide examples of "failures, accidental events" that can influence the training exercise.	To be complied as per RFP
45	Para 6 Sr (d)(ii) of Appendix A of RFP	It shall simulate the functionalities, MMI and performance in terms of response time as the CMS currently fitted onboard the IN conventional submarines	(a) Will IN define the MMI and performance in terms of response time as currently fitted onboard the submarines?	Yes MMI performance and response time will be defined by IN and will be provided to successful bidder. To be complied as per RFP
46	Appendix A Para 6(d)(ii) of RFP	(ii) It shall simulate the functionalities, MMI and performance in terms of response time as the CMS currently fitted onboard the IN conventional submarines.	Will the navy provide all operational systems documentation necessary for correct simulation of HMI?	Yes. To be complied as per RFP
47	Appendix A Para 6(d)(ii) of RFP	It shall simulate the functionalities, MMI and performance in terms of response time as the CMS currently fitted onboard the IN conventional submarines.	What is the CMS type in the 3 classes of submarines? Does the navy own the IP of the MMI of the systems or would we have to buy the IP from the different OEMs? As an alternative, will the MMI be provided as input specification from the Navy?	The inputs for MMI development for simulation in GSCSS will be shared with the successful bidder.
48	Appendix A Para 6(d)(iv) of RFP	(iv)The platform behaviour including maneuverability and dynamics shall be faithfully simulated providing feedback of own ship parameters. However, the platform motion is not needed to be simulated	Please confirm that the listed systems under p.22 para 6(d)(v), are meant to be emulators that enable inputs to the trainee systems and are not meant to be operated or trained on by trainees.	Yes. Emulator for Periscope and Steering console. To be complied as per RFP (Part B of App A)
49	Appendix A Para 6(d)(v) of RFP	(v) 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.	How many types of torpedoes and missiles must be emulated in each of the CMS type?	To be complied as per RFP
50	Appendix A Para 6(d)(v) of RFP		How many types of weapon handling systems must be emulated? Can we assume that the weapon handling system is the tube control system (TCS) of the submarine?	Weapon handling system for the three classes of submarines to be simulated. Yes weapon handling system is similar to tube control system. To be complied as per RFP



Ser	RFP reference	RFP Clause	Query	Reply
51	Para 6 Sr (f) of Appendix A of RFP	<p>(i)The Simulator would simulate air, surface and sub-surface entities and targets including their sensors and weapons. Sample generic capabilities of the targets and their sensors and weapons must be provided.</p> <p>(ii)The Instructor must have data fields to feed in target data in respect of a minimum of 300 entities and targets of various types. Programming of entity and target parameters (motion and weapons) must be possible by the Instructor.</p> <p>(iii)The simulator would display in detail the parameters in respect of aircraft, helicopters, ships and submarines, such as altitude, depth, speed, weapons types and parameters, sensor parameters and search patterns. In addition, provision for simulating the radiated target characteristics relevant for sonar processing (radiated noise levels and tonals) is to be provided. The echo characteristics for simulating active sonar modes are also to be simulated.</p> <p>(iv)The instructor console should be capable of providing the following data: -</p> <p>(aa) Target Class</p> <p>(ab) Target manoeuvre plan</p> <p>(ac) Target machinery</p> <p>(ad) Target sensors</p> <p>(ae) Target weapons</p>	<p>Will IN provide the following information with regard to own, target</p> <p>(a)Target/ own particulars like length/ breadth/ height draught and other physical characteristics.</p> <p>(b)Target/ own noise levels and Frequency Tonal at various speed and machinery regimes for development.</p> <p>(c)RCS parameters of own and targets.</p> <p>(d)Radar frequencies particulars for development of ESM pages.</p>	Yes on as required basis.
52	Appendix A Para 6(f) of RFP	<p>(i)The Simulator would simulate air, surface and sub-surface entities and targets including their sensors and weapons. Sample generic capabilities of the targets and their sensors and weapons must be provided.</p> <p>(ii)The Instructor must have data fields to feed in target data in respect of a minimum of 300 entities and targets of various types. Programming of entity and target parameters (motion and weapons) must be possible by the Instructor.</p> <p>(iii)The simulator would display in detail the parameters in respect of aircraft, helicopters, ships and submarines, such as altitude, depth, speed, weapons types and parameters, sensor parameters and search patterns. In addition, provision for simulating the radiated target characteristics relevant for sonar processing (radiated noise levels and tonals) is to be provided. The echo characteristics for simulating active sonar modes are also to be simulated.</p> <p>(iv)The instructor console should be capable of providing the following data: -</p> <p>(aa) Target Class</p> <p>(ab) Target manoeuvre plan</p> <p>(ac) Target machinery</p> <p>(ad) Target sensors</p> <p>(ae) Target weapons</p>	Is it correct to assume that the number of virtual entities in an exercise should not exceed 100 entities?	To be complied as per RFP
53	Appendix-A, Para 6 (f), page 22 of RFP	<p>(i)The Simulator would simulate air, surface and sub-surface entities and targets including their sensors and weapons. Sample generic capabilities of the targets and their sensors and weapons must be provided.</p> <p>(ii)The Instructor must have data fields to feed in target data in respect of a minimum of 300 entities and targets of various types. Programming of entity and target parameters (motion and weapons) must be possible by the Instructor.</p> <p>(iii)The simulator would display in detail the parameters in respect of aircraft, helicopters, ships and submarines, such as altitude, depth, speed, weapons types and parameters, sensor parameters and search patterns. In addition, provision for simulating the radiated target characteristics relevant for sonar processing (radiated noise levels and tonals) is to be provided. The echo characteristics for simulating active sonar modes are also to be simulated.</p> <p>(iv)The instructor console should be capable of providing the following data: -</p> <p>(aa) Target Class</p> <p>(ab) Target manoeuvre plan</p> <p>(ac) Target machinery</p> <p>(ad) Target sensors</p> <p>(ae) Target weapons</p>	For Simulation of Entities/targets -- All required technical literature shall be provided by IN.	Will be provided during the development to successful bidder.
54	Para 6 (b) (iv), Section I, page 21 of RFP	<p>(iv)The GSCSS should also include the following sub-systems:-</p> <p>(aa) Auto plotter</p> <p>(ab) Periscope Emulator</p> <p>(ac) Steering Control Emulator</p> <p>(ad) Mast Status Panel, PNP table, Bearing Boards</p>	<p>(i) It is mentioned on page 28 that the system shall be composed by n3 dual monitor MFC, but it is also mentioned in page 21 and page 24 that the system shall be equipped with plotting table, steering console, periscope mock-up, sonar.</p> <p>(ii) It is correct to assume that the 3 mentioned MFC are dedicated for the combat system and other console shall be supplied to simulate the other operator stations?</p> <p>(iii) Or the sonar, steering, periscope, and combat system and any other subsystem shall be hosted in the 3 MFC console mentioned above.</p> <p>(iv) What is the requested number of MFC dedicated to the combat system?</p>	To be complied as per Part B/ App A of RFP
55	Para 6(h) of Appendix A of RFP	Capability for preparing, pre-setting and launching of torpedoes and missiles, as would be done from an operational CMS of IN conventional submarine, is to be simulated. However, physical replica of torpedo room equipment is not envisaged.		

Ser	RFP reference	RFP Clause	Query	Reply
56	Para 6(l) of Appendix A of RFP	The Simulator shall provide capability to operate Attack Periscope and Optronic Mast, Navigation Radar and ESM by a behavioural simulator at MMI level		
57	Para 6 Sr (h) of Appendix A of RFP	Capability for preparing, pre-setting and launching of torpedoes and missiles, as would be done from an operational CMS of IN conventional submarine, is to be simulated. However, physical replica of torpedo room equipment is not envisaged	Characteristics of torpedoes and missiles to be simulated need to be provided by IN	Data will be provided to successful bidder
58	Appendix-A, Para 6 (h), page 23 of RFP	Capability for preparing, pre-setting and launching of torpedoes and missiles, as would be done from an operational CMS of IN conventional submarine, is to be simulated. However, physical replica of torpedo room equipment is not envisaged.	Simulation of Weapons Control System: Details to be provided by IN for preparing, pre-setting and launching of torpedo's and missiles to prepare simulated software.	Data will be provided to successful bidder
59	Appendix A Para 6(h) of RFP	Capability for preparing, pre-setting and launching of torpedoes and missiles, as would be done from an operational CMS of IN conventional submarine, is to be simulated. However, physical replica of torpedo room equipment is not envisaged	Should the torpedo post-launch logic have to be precisely emulated and be high-fidelity in nature or a generic wire-guided torpedo suffices?	Generic Combat System Simulator to be developed as per App A of RFP. Torpedo post launch logic to be generic in nature
60	Appendix-A, Para 6 (j), page 23 of RFP	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 and 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.	Simulation of Weapons handling and Launching System: Is Weapons handling and Launching System a software part of CMS or is a Hardware unit? -- Details to be provided by IN to prepare MMI for behaviour of weapon launching tubes as a well as handling system.	Weapon handling system for the three classes of submarines is only to be simulated as per RFP. Details to facilitate MMI development will be provided to successful bidder.
61	Para 6 Sr (k) of Appendix A of RFP	The simulator will consider all these aspects and allow the user to specify the following:- (i) Detection levels at various relative bearings. (ii) Blind Zone. (iii) The instructor will specify the detection levels at the relative bearings keeping in mind the condition of Sonar, planned speeds and environment. The instructor should be able to manipulate the detection levels. The Blind Zone could be treated as more-or-less-fixed, but the instructor has the option 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.	For development of sonar simulator to emulate own and target, IN needs to target/ own noise levels, frequencies and tonal of machinery noise levels at various machinery regimes.	Data will be provided to successful bidder
62	Appendix A Para 6(k) of RFP	The simulator will consider all these aspects and allow the user to specify the following:- (i) Detection levels at various relative bearings. (ii) Blind Zone. (iii) The instructor will specify the detection levels at the relative bearings keeping in mind the condition of Sonar, planned speeds and environment. The instructor should be able to manipulate the detection levels. The Blind Zone could be treated as more-or-less-fixed, but the instructor has the option 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	What types of Sonar systems must be emulated, and in what fidelity?	Sonar system for the three classes of submarines. Details will be provided to successful bidder. To be complied as per RFP
63	Appendix-A, Para 6 (k), page 23 of RFP	The simulator will consider all these aspects and allow the user to specify the following:- (i) Detection levels at various relative bearings. (ii) Blind Zone. (iii) The instructor will specify the detection levels at the relative bearings keeping in mind the condition of Sonar, planned speeds and environment. The instructor should be able to manipulate the detection levels. The Blind Zone could be treated as more-or-less-fixed, but the instructor has the option 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.	Simulation of Sonar Detection System and Air & Surface Detection System, Navigation System -- Details to be provided by IN to prepare MMI. Do we need to consider any hardware for Sonar detection System?	To be complied as per RFP. Details to enable MMI development will be provided to successful bidder.
64	Appendix A Para 6(l) of RFP	The Simulator shall provide capability to operate Attack Periscope and Optronic Mast, Navigation Radar and ESM by a behavioural simulator at MMI level.	What type of navigation Radar must be emulated, and in what fidelity?	Behavioural radar simulator at MMI level is to be emulated . To be complied as per RFP



<u>Ser</u>	<u>RFP reference</u>	<u>RFP Clause</u>	<u>Query</u>	<u>Reply</u>
65	Appendix A Para 6(l) of RFP	The Simulator shall provide capability to operate Attack Periscope and Optronic Mast, Navigation Radar and ESM by a behavioural simulator at MMI level.	What type of ESM system must be emulated, and in what fidelity?	Behavioural ESM simulator at MMI level is to be emulated .To be complied as per RFP
66	Para 6 Sr (m) of Appendix A of RFP	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. The navigation simulation should also prohibit and allow weapon launch as per the Normal Launch conditions of various weapons	Provision of target/ own navigational data like turning circles/ accelerating decelerating speeds and other essential data.	Data will be provided to successful bidder
67	Appendix-A, Para 6 (n), page 23 of RFP	Communication system would not be fully simulated. Limited capability for external communication through dedicated interphones simulating Transmission and Reception with connection to Instructor desk.	Simulation of Communication System: Details to be provided by Navy -- Details to be provided by Navy	Data will be provided to successful bidder
68	Para (n) of Appendix A of RFP	Communication system would not be fully simulated. Limited capability for external communication through dedicated interphones simulating Transmission and Reception with connection to Instructor desk.	Is this communication a part of recording for synchronous playback.	Yes. Physical interphone
69	Para 6(n) of Appendix A of RFP	Communication system would not be fully simulated. Limited capability for external communication through dedicated interphones simulating Transmission and Reception with connection to Instructor desk.	Do we have to provided interphone system? Can it be VoIP?	Yes. To be complied as per RFP
70	Para 6 Sr (p) of Appendix A of RFP	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. The periscope emulator will provide following features: - (i) Generic periscope with raise and lower control emulation. (ii) View to provide target picture corresponding to the target class through the view-finder. (iii) Processor card, HDD and Ethernet connectivity. (iv) 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.	1.Is the vendor required to provide a physical mock-up of a periscope, if so, it should be replicating which submarine to be indicated. 2. For development of periscope emulator and to provide target picture/ motion for targets in field of view with respect to target speed, sea state and time of day, following would be required: - (a)Pictures/ videos of necessary target ships under various environmental and sea conditions needs to be provided. (b)CAD 3D models of target ships to be provided for undertaking simulation. (c)Physical dimensional details of targets that needs to be provided for incorporating target picture corresponding to particular target class.	1. Yes a periscope emulator is required as per RFP. The emulator to be generic as per Para 6(p)/ Part b of App A of RFP. 2. Data will be provided to successful bidder. 3. 3D model not envisaged for targets.
71	Appendix A Para 6(p) of RFP	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. The periscope emulator will provide following features: - (i) Generic periscope with raise and lower control emulation. (ii) View to provide target picture corresponding to the target class through the view-finder. (iii) Processor card, HDD and Ethernet connectivity. (iv) 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	How many different types of ships are expected to be visualized in the periscope?	To be complied as per RFP. Warship, Merchant Ship and Fishing Boat are to be simulated for visualization in the periscope.
72	Appendix-A, Para 6 (p), page 23 of RFP	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. The periscope emulator will provide following features: - (i) Generic periscope with raise and lower control emulation. (ii) View to provide target picture corresponding to the target class through the view-finder. (iii) Processor card, HDD and Ethernet connectivity. (iv) 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	Periscope Emulator -- Details are required to understand Periscope emulator. Do we need to consider any hardware for this?	Yes. To be complied as per RFP

Ser	RFP reference	RFP Clause	Query	Reply
73	Para 6 (p), Section I, page 24 of RFP.	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. The periscope emulator will provide following features: -  (i) Generic periscope with raise and lower control emulation. (ii) View to provide target picture corresponding to the target class through the view-finder. (iii) Processor card, HDD and Ethernet connectivity. (iv) 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.	(i) It is mentioned on page 28 that the system shall be composed by n3 dual monitor MFC, but it is also mentioned in page 21 and page 24 that the system shall be equipped with plotting table, steering console, periscope mock-up, sonar. (ii) It is correct to assume that the 3 mentioned MFC are dedicated for the combat system and other console shall be supplied to simulate the other operator stations? (iii) Or the sonar, steering, periscope, and combat system and any other subsystem shall be hosted in the 3 MFC console mentioned above. (iv) What is the requested number of MFC dedicated to the combat system?	To be complied as per Part B of App A of RFP
74	Para 6(p) of Appendix A of RFP	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. The periscope emulator will provide following features: -  (i) Generic periscope with raise and lower control emulation.  (ii) View to provide target picture corresponding to the target class through the view-finder.  (iii) Processor card, HDD and Ethernet connectivity. (iv) 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.		
75	Para 6(p) of Appendix A of RFP	The periscope emulator will provide following features: -  (i) Generic periscope with raise and lower control emulation.  (ii) View to provide target picture corresponding to the target class through the view-finder.  (iii) Processor card, HDD and Ethernet connectivity. (iv) 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.		
76	Para 6(p)(iv) of Appendix A of RFP	(iv) 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.		
77	Para 6(q) of Appendix A of RFP	Steering Control will provide following features:- (i) Generic steering control with plane and rudder control handles, control panels and display panel. (ii) Processor card with Ethernet connectivity. (iii) The Simulator must include simulation of all safety procedures and drills conducted from the selected operational CMS		
78	Para 6 Sr(q) of Appendix A of RFP	The Steering Control will provide following features:- (i) Generic steering control with plane and rudder control handles, control panels and display panel. (ii) Processor card with Ethernet connectivity. (iii) The Simulator must include simulation of all safety procedures and drills conducted from the selected operational CMS.	Does the Steering Control console required to have physical control handles for rudder and planes? Will soft panel with software control of the same would suffice?	Yes. To be complied as per RFP
79	Appendix-A, Para 6 (q), page 23 of RFP	The Steering Control will provide following features:- (i) Generic steering control with plane and rudder control handles, control panels and display panel. (ii) Processor card with Ethernet connectivity. (iii) The Simulator must include simulation of all safety procedures and drills conducted from the selected operational CMS	Steering Control /Console Emulator -- Will this be a separate hardware console or just a software-based system? Details shall be provided by IN to prepare MMI.	Separate hardware for emulator with features as per Para 6(q)/ Part B of App A of RFP. To be complied as per RFP. Data will be provided to successful bidder.
80	Appendix A Para 6(q) of RFP	The Steering Control will provide following features:- (i) Generic steering control with plane and rudder control handles, control panels and display panel. (ii) Processor card with Ethernet connectivity. (iii) The Simulator must include simulation of all safety procedures and drills conducted from the selected operational CMS	Is the steering control operated by one of the trainees or by the trainer?	Trainee



Ser	RFP reference	RFP Clause	Query	Reply
81	Para 7 (a) of Appendix A of RFP	(i) Simulators are to be powered from a main supply with an emergency and back-up supply for safety and redundancy reasons. (ii) Automatic glitch-free switchover from main to emergency supply and back. (iii) Operate on 440V or 220V, 50Hz, 01 Phase or 03 Phase power supply. (iv) UPS unit to provide reliable and filtered power supply throughout. (v) UPS is to provide back-up for a duration of one (01) hour for operation of the simulator equipment in the event of power failure. (vi) All power convertor, stabilisation and shaping hardware from mains are to be provided and shall be based on static power circuitry	Is one hour backup required for VAC also.	No
82	Appendix A Para 7(a) of RFP	(i) Simulators are to be powered from a main supply with an emergency and back-up supply for safety and redundancy reasons. (ii) Automatic glitch-free switchover from main to emergency supply and back. (iii) Operate on 440V or 220V, 50Hz, 01 Phase or 03 Phase power supply. (iv) UPS unit to provide reliable and filtered power supply throughout. (v) UPS is to provide back-up for a duration of one (01) hour for operation of the simulator equipment in the event of power failure. (vi) All power convertor, stabilisation and shaping hardware from mains are to be provided and shall be based on static power circuitry	UPS for one hour? Does the navy expect to train without power, or just allow for graceful shutdown of the training system?	To be complied as per RFP
83	Para 7(a) of Appendix A of RFP	(i) Simulators are to be powered from a main supply with an emergency and back-up supply for safety and redundancy reasons. (ii) Automatic glitch-free switchover from main to emergency supply and back. (iii) Operate on 440V or 220V, 50Hz, 01 Phase or 03 Phase power supply. (iv) UPS unit to provide reliable and filtered power supply throughout. (v) UPS is to provide back-up for a duration of one (01) hour for operation of the simulator equipment in the event of power failure. (vi) All power convertor, stabilisation and shaping hardware from mains are to be provided and shall be based on static power circuitry	Is laying of electrical cables and procurement of power supply cables within the scope?	Yes within the scope. To be complied as per RFP
84	Para 7 Sr (a) of Appendix A of RFP	(i) Simulators are to be powered from a main supply with an emergency and back-up supply for safety and redundancy reasons. (ii) Automatic glitch-free switchover from main to emergency supply and back. (iii) Operate on 440V or 220V, 50Hz, 01 Phase or 03 Phase power supply. (iv) UPS unit to provide reliable and filtered power supply throughout. (v) UPS is to provide back-up for a duration of one (01) hour for operation of the simulator equipment in the event of power failure. (vi) All power convertor, stabilisation and shaping hardware from mains are to be provided and shall be based on static power circuitry	Will IN Provide emergency and backup supplies or vendor needs to provide the same?	Back up to be catered by Bidder iaw RFP
85	Para 7(a)(v) of Appendix A of RFP	(v) UPS is to provide back-up for a duration of one (01) hour for operation of the simulator equipment in the event of power failure	What does emergency supply mean? Do we need to cater for a generator?	Emergency supply refers to backup supply to simulator in event of mains power failure. No generator is required. To be complied as per RFP
86	Para 7 Sr (b) of Appendix A of RFP	(i) Automated fire detection system for the simulator complex as also for the spaces housing the associated systems. (ii) Adequate portable fire extinguishers suitably placed for simulator complex (Extinguishers used should be commercially available in India and being used in Indian Navy). (iii) Suitable arrangements need to be provided in the Simulators to ensure that electrical hazards to personnel are prevented in accordance with OSHA General Industry Standards, Electrical.	Will IN provide safety arrangements as brought out in RFP or vendor is required to provide the same?	Safety Arrangements are to be provided by the Bidder iaw RFP
87	Para 7(b) of Appendix A of RFP	(i) Automated fire detection system for the simulator complex as also for the spaces housing the associated systems. (ii) Adequate portable fire extinguishers suitably placed for simulator complex (Extinguishers used should be commercially available in India and being used in Indian Navy). (iii) Suitable arrangements need to be provided in the Simulators to ensure that electrical hazards to personnel are prevented in accordance with OSHA General Industry Standards, Electrical.	It is expected to set up complete Auto Fire Detection System for the GSCSS complex. Is the understanding correct? What are the types of fixed/ portable Firefighting infrastructure required to be set up? Please clarify	Yes. To be complied as per RFP.

Ser	RFP reference	RFP Clause	Query	Reply
88	Para 7 Sr (c) of Appendix A of RFP	<p>The software should have the following attributes:-</p> <ul style="list-style-type: none"> <li>(i)Open-architecture and should be compatible with future versions of the OS.</li> <li>(ii)Simulation of all operational capabilities of selected CMS of the submarine and associated equipment.</li> <li>(iii)Simulation of realistic environment, own ship (submarine) behaviour, target (air, surface and sub-surface) behaviour and weapon and projectile (torpedo, missile) behaviour.</li> <li>(iv)Editing, Modification, Generation of Training Scenario.</li> <li>(v)Recording, replay and Briefing and Debriefing features.</li> <li>(vi)On-line and Off-line processing of training sessions.</li> <li>(vii)Generation of Training Session reports.</li> <li>(viii)Online and Offline BITE.</li> <li>(ix)Identify defects and failures in the GSCSS.</li> <li>(x)Facility for addition and modification of Class wise CMS and weapon characteristics to include future modifications and inductions</li> </ul>	Can the vendor use commercially available software for providing certain features of the simulator?	Yes. To be complied as per RFP
89	Para 7(c) of Appendix A of RFP	<p>The software should have the following attributes:-</p> <ul style="list-style-type: none"> <li>(i)Open-architecture and should be compatible with future versions of the OS.</li> <li>(ii)Simulation of all operational capabilities of selected CMS of the submarine and associated equipment.</li> <li>(iii)Simulation of realistic environment, own ship (submarine) behaviour, target (air, surface and sub-surface) behaviour and weapon and projectile (torpedo, missile) behaviour.</li> <li>(iv)Editing, Modification, Generation of Training Scenario.</li> <li>(v)Recording, replay and Briefing and Debriefing features.</li> <li>(vi)On-line and Off-line processing of training sessions.</li> <li>(vii)Generation of Training Session reports.</li> <li>(viii)Online and Offline BITE.</li> <li>(ix)Identify defects and failures in the GSCSS.</li> <li>(x)Facility for addition and modification of Class wise CMS and weapon characteristics to include future modifications and inductions</li> </ul>	Are the details given in this para, the only set of functionalities the Application Software is required to meet? Please elaborate/ clarify ?	Yes. To be complied as per RFP



Ser	RFP reference	RFP Clause	Query	Reply
90	Para 7(d) of Appendix A of RFP	<p>(i)The software development and software documentation is to be in accordance with IEEE 12207 or equivalent standard.</p> <p>(ii)The firm would be required to undertake Software Verification and Validation, Software Quality Assurance (SQA).</p> <p>(iii)Two set of documentation for Training Simulator in hard copy and soft copy in IETM IV format upgradable to V and hard copies as per JSS-0251:2001. The hard copies The applicable specification shall be equivalent or superior to the following standards:-</p> <p>(aa)JSS-0251-2001 for documentation of simulators or latest.</p> <p>(ab)IEEE 12207: 2008 on Software Life Cycle processes or latest.</p> <p>(ac)IEEE 730: 2002 on Software Quality Assurance Plan or latest.</p> <p>(ad)IEEE 830: 1993 on Software Requirement Specifications or latest.</p> <p>(ae)IEEE 828: 1998 on Software Configuration Management Plans or latest.</p> <p>(af)IEEE 1012: 1998 on Software Verification and Validation or latest.</p> <p>(ag)IEEE 1028: 1998 on Software Reviews and Audits or latest.</p> <p>(ah)IEC 15288: 2015 on System Life Cycle Processes or latest.</p> <p>(aj)OSHA General Industry Standards, Electrical or latest.</p>	<p>What are Software Quality Assurance stages envisaged/expected? This aspect needs to be amplified. Will all the associated standards and IEEE specs which have been mentioned in the Para be made available? Please clarify</p>	<p>Software Quality Assurance as per internal/external QA. All IEEE standards can be referred online view availability in open domain.</p>
91	Appendix-A, Para 8 (a), page 28 of RFP	<p>(i) Operator Consoles/DMFC. The system will have three Dual Multi-Function Consoles with following specifications:-</p> <p>(aa) Number of display panels in each DMFC – Two LED panels 24" with HD 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) Instructor Station.The Instructor Station should have following specifications:-</p> <p>(aa) Two side-by-side mounted 24" LED display panels with HD resolution.</p> <p>(ab) Keyboard, touch-panel, mouse.</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) Auto Plotter. Tactical Plotting Table with W-ECDIS feature, interfaced with the CMS over Ethernet.</p> <p>(iv) Mast Status Panel. The Mast Status emulator will provide following features:-</p> <p>(aa) Emulator to show the status of masts raised and lowered with indication.</p> <p>(ab) Communication with CMS</p>	<p>Hardware Requirements, Trainees will operate the GSCSS only through MMI, is this correct. -- Only software based MMI for Weapon control station, Weapon Handling and Launching System, Sonar Detection System, Air and Surface Detection Systems, Navigation System, Communication System, Hoisting system, Torpedo Counter Measure.</p>	<p>To be complied as per RFP</p>

Ser	RFP reference	RFP Clause	Query	Reply
92	Para 8(a) of Appendix A of RFP	<p>(i) Operator Consoles/DMFC. The system will have three Dual Multi-Function Consoles with following specifications:-</p> <p>(aa) Number of display panels in each DMFC – Two LED panels 24" with HD 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) Instructor Station. The Instructor Station should have following specifications:-</p> <p>(aa) Two side-by-side mounted 24" LED display panels with HD resolution.</p> <p>(ab) Keyboard, touch-panel, mouse.</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) Auto Plotter. Tactical Plotting Table with W-ECDIS feature, interfaced with the CMS over Ethernet.</p> <p>(iv) Mast Status Panel. The Mast Status emulator will provide following features:-</p> <p>(aa) Emulator to show the status of masts raised and lowered with indication.</p> <p>(ab) Communication with CMS</p>	How many instructor consoles are to be supplied? Two?	02 Instructor consoles as per RFP.
93	Para 8 of Appendix A of the RFP	8.General Characteristics.	There are multiple ways and configurations of a GSCSS -- It is recommended that Navy may provide a draft System hardware and interface layout / scheme showing all connected devices / MMI.	To be complied as per RFP. Details will be provided to successful bidder.
94	Para 8 (a) (i) of Part-B, Section III, page 28 of RFP	<p>Operator Consoles/DMFC. The system will have three Dual Multi-Function Consoles with following specifications:-</p> <p>(aa) Number of display panels in each DMFC – Two LED panels 24" with HD 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>(i) It is mentioned on page 28 that the system shall be composed by n3 dual monitor MFC, but it is also mentioned in page 21 and page 24 that the system shall be equipped with plotting table, steering console, periscope mock-up, sonar.</p> <p>(ii) It is correct to assume that the 3 mentioned MFC are dedicated for the combat system and other console shall be supplied to simulate the other operator stations?</p> <p>(iii) Or the sonar, steering, periscope, and combat system and any other subsystem shall be hosted in the 3 MFC console mentioned above.</p> <p>(iv) What is the requested number of MFC dedicated to the combat system?</p>	To be complied as per RFP
95	Para 8(a)(ii) of Appendix A of RFP	<p>Instructor Station. The Instructor Station should have following specifications:-</p> <p>(aa) Two side-by-side mounted 24" LED display panels with HD resolution.</p> <p>(ab) Keyboard, touch-panel, mouse.</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>	Please specify if the 'Instructor station' is required to have normal Ethernet connectivity or High-Speed Ethernet connectivity? What is the minimum processor specs required for 'Instructor Station'?	Ethernet Connectivity as per RFP
96	Para 8(a)(iii) of Appendix A of RFP	(iii) Auto Plotter. Tactical Plotting Table with W-ECDIS feature, interfaced with the CMS over Ethernet.	(e) What kind of ECDIS charts are needed? Will IN provide S57 charts	No. To be complied as per RFP
97	Para 8(a)(iii) of Appendix A of RFP	(iii) Auto Plotter. Tactical Plotting Table with W-ECDIS feature, interfaced with the CMS over Ethernet.	What are the WECDIS features are expected to be provided on GSCSS? Please amplify	Information available on open source
98	Para 8 (a), (iii), page 29 of RFP	Tactical Plotting Table with W-ECDIS feature, interfaced with the CMS over Ethernet.	Please clarify that a type approved WECDIS of the same type installed onboard, or a generic chart display with WECDIS like	To be complied as per RFP



Ser	RFP reference	RFP Clause	Query	Reply
			feature is acceptable? If the real WECDIS is required, pls specify brand/model and further details (example connection protocol to be used by the simulator to stimulate the WECDIS, of if protocol is not available or cannot be disclosed, pls confirm the protocol is available and not proprietary.)	
99	Para 10(e) of Appendix A of RFP	The GSCSS complex should have an exclusive Briefing and Debriefing Station. The essential facilities for the briefing and de-briefing station is as follows:- (i) Seating Capacity of twenty (20) personnel for briefing and de-briefing about training session to be played. (ii) Replay the concluded training session, including earlier recorded sessions. (iii) Pause, rewind, fast forward the elapsed training sessions at various speeds. An inline printer for printing of Snapshots of the training session. (iv) 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. (v) Data analysis tools may be to be included 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). (vi) 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	Technical Parameters Page 30, Para 10(b) (iii). How many briefing and debriefing rooms should be there?	One briefing and One Debriefing station each. To be complied as per RFP
100	Para11 of Appendix A of the RFP	(i)Distributed architecture systems shall be used for all electronics and computer resources with provisions for upgrade of software and hardware.  (ii)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. (iii)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 and standardisation are given due importance. (iv)The Ethernet network should have dual redundancy for various consoles of the Training console, Instructor Station, Technical facility and Briefing and Debriefing facility to operate.	System Architecture - It is mentioned in RFP that proposed solution should be based on already been used technologies in similar submarine motion control and platform machinery simulator. -- Does this imply that we need to procure software from OEMs of the SM fit equipment	Software from OEM is not required to be procured. System architecture to be based on standard SDLC technologies been used. System Architecture to be complied as per RFP
101	Para (p) of Appendix A of RFP	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. The periscope emulator will provide following features: -  (i) Generic periscope with raise and lower control emulation. (ii) View to provide target picture corresponding to the target class through the view-finder. (iii) Processor card, HDD and Ethernet connectivity. (iv) 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	Is 3D visualization of the sea states using an image generator required or is it just the physical effects of the sea states on the platform, Weapon, Sensor that needs to be simulated.	Visualization only
102	Para (q) of Appendix A of RFP	The Steering Control will provide following features:- (i)Generic steering control with plane and rudder control handles, control panels and display panel. (ii)Processor card with Ethernet connectivity. (iii)The Simulator must include simulation of all safety procedures and drills conducted from the selected operational CMS	It is presumed that other physical controls like switches, Pot meters, relays etc would be simulated using soft panels.	Yes
103	Para (p) of Appendix A of RFP	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. The periscope emulator will provide following features: - (i) Generic periscope with raise and lower control emulation. (ii) View to provide target picture corresponding to the target class through the view-finder. (iii) Processor card, HDD and Ethernet connectivity. (iv) 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	Are the two instructor stations identical in nature in terms of functionalities. Will there be hand off from one instructor station to the other in the course of an exercise, necessitating appropriate system state management. Are instructor sessions to be also recorded as part of the exercise.	Instructor station characteristics as per RFP. No recording for instructor session
104	Appendix-B, Para 2 (b), page 38 of RFP	Min 02 Yrs. experience in broad areas like manufacturing/ engineering/ electronics/ explosives etc. as applicable in the instant case. If not, then cumulative experience of at least 03 years in above areas, resulting in gaining of competence for manufacturing the proposed product	Whose experience would be counted, either OEM or authorized bidder?	Bidder
105	Appendix-B, Para 2 (a), Page 38 of RFP	Manufacturing entity or System Integrator of defence equipment and not a trading company, except in cases where OEM participates only through its authorised Bidders.	Authorized bidder could be Start-Up with Engineering/ Integration experience?	To be complied as per RFP

<u>Ser</u>	<u>RFP reference</u>	<u>RFP Clause</u>	<u>Query</u>	<u>Reply</u>
106	Para 2 (b) and 3 (b) of Appendix D of RFP	2 (b) Min 02 Yrs. experience in broad areas like manufacturing/ engineering/ electronics/ explosives etc. as applicable in the instant case. If not, then cumulative experience of at least 03 years in above areas, resulting in gaining of competence for manufacturing the proposed product.  3 (b) Registered for Min 02 Years, atleast 01 years for as MSMEs. Min no of years not applicable for JVs constituted specifically for a project.	Is 1 yr MSME enough? Or 3 years experience is needed?	To be complied as per RFP
107	Appendix F of RFP	To sustain and support equipment through its operational life-cycle, CMC requirements for 08 years beyond the warranty period will be concluded along with the main equipment. Repair and Maintenance of GSCSS will be undertaken by a Comprehensive Maintenance Contract (CMC) to be provided by the Seller, which will include, but not limited to all preventive and corrective maintenance of the systems, equipment and machinery in satisfactory working order and will include 'Planned Preventive Maintenance' (PPM), repairs, servicing, calibration and replacement of defective parts, sub-assemblies, equipment; preservation and de-preservation as applicable. The CMC concept is elaborated at Annexure I.	Repair and maintenance philosophy would be determined based on the equipment and hardware sourced after the contract has been finalised. For the purpose of RFP. The repair and maintenance philosophy provided would be based on similar systems available. The final repair and maintenance philosophy provided may differ from the one given in RFP, would IN be acceptable to this methodology.	To be complied as per RFP
108	Para 2 of Appendix F of RFP	The CMC would commence post completion of two years of warranty period. The duration of CMC would be Eight (08) years.	It may be confirmed that there are no test equipment required as part of the ESP to undertake the first line of maintenance by the maintainers?	Maintenance is to be undertaken by the Bidder during the CAMC period of 8 years as per RFP. IAW RFP clause Para 11 (d)/ Pg 33 of RFP
109	Para 4, Appendix-F, page 41 of RFP	4. Technical Documentation. The Bidder will be required to provide the technical literature. The details of technical literature to be supplied with the system should be listed as per the suggested format at Annexure III to this Appendix. This should be provided with both Technical and Commercial Proposals. The cost column may be left blank in the Technical Proposal. An illustrated list of documents which may be submitted by the Seller is as under:- (a) User Handbook/ Operators Manual in English. (b) Technical Manuals. (as per governing JSG/Guide for other technologies) (i) Part I. Tech description, specifications, functioning of various systems. (ii) Part II. Inspection/Maintenance tasks repair procedures, materials used, fault diagnosis and use of Special Maintenance Tools (SMTs)/Special Test Equipment (STEs), Laptops etc. (iii) Part III. Procedure for assembly/disassembly, repair up to component level, safety precautions. (iv) Part IV. Part list with drawing reference and List of SMTs/STEs Test Bench. (v) Software tools and Documents. (c) Table of Tools & Equipment (TOTE) & carried spares. (d) Complete Equipment Schedule. (e) Repair and Servicing schedule. (f) Design Specifications. (g) Technical Manual on STE with drawing references. (h) Condemnation limits. (j) Packing specifications /instructions	It is enlisted that the manuals shall be provide with the offer. The proposed system will be a customized system to replicate the Indian Navy Submarine Combat system and to match the RFP requirements. It is assumed that many of the manuals will be produced during the development, while already available SW modules (for which a manual could be available at the moment) may be prone to modifications accordingly the final system (example electrical schemes, list of components including part serial number, etc.). Also, the manual set of a Submarine simulator is quite large, it includes a large number of documents of confidential nature, usually the whole set of documentation is provided after contract awards. It is acceptable that, for RFP purposes, included in the offer, a sample of such manuals will be provided and not the complete set?	To be complied as per RFP. Data will be provided to successful bidder
110	Para 8 of Annexure I to Appendix F of RFP	8. Payment for CMC. The payment for CMC would be made on yearly basis post submission of the following documents: - (a) Ink signed invoice by the Seller. (b) Satisfactory Performance Certificate signed by the Seller and the Buyer reps	Payment during CMC is defined annual. We request you to make this quarterly.	To be complied as per RFP
111	Para 3 of Appendix G of RFP	1. <b>Performance Bank Guarantee for CMC.</b> The SELLER will be required to furnish a Performance Guarantee by the way of a Bank Guarantee of a sum equal to 3% of the Annual Drawl of CMC value 30 days prior to commencement of CMC. Performance Bank Guarantee should be valid for one year and will be renewed every year till completion of CMC. In case, the annual CMC cost is different for the different years of CMC, average annual CMC cost will be considered for the purpose of determination of value of Performance Guarantee. Additionally, the last Performance Bank Guarantee shall be valid for a period of 90 days after completion of the CMC. The format of the Performance Bank Guarantee is to be as per <b>Annexure III to Appendix G.</b>	Return of Previous Stage BG - Suggest BGs of previous stage are returned to the vendor on completion of the stage. Vendor to submit new BG for the next stage.	To be complied as per RFP
112	Para 3 of Appendix H of RFP	Evaluation of Bids by DCF Technique  3.1 Net Present Value (NPV) is a variant of DCF method, which will be used by the Buyer for evaluation of Bids. The Net Present Value of a Bid will be equal to the sum of the present values of all the cash flows associated with it.	DCF method in Page 67 needs clarification.	Details on DCF method are available in open domain and may be referred. To be complied as per RFP



<u>Ser</u>	<u>RFP reference</u>	<u>RFP Clause</u>	<u>Query</u>	<u>Reply</u>
113	Page 19 & 20 "Generic Submarine Combat System Simulator (GSCSS) Part A — Introduction" Clause 4 (C)  Clause 5 (a)	4(c) Adaptors and connections for Ventilation and Air Conditioning (VAC) of the simulator from an external VAC System  5 (a) The simulator complex should have suitable Ventilation and Air Conditioning (VAC) facilities 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	Please advise room size where the Simulator will be installed.  Is it possible to arrange a site visit to take the dimension of the rooms in order to prepare a suitable drawings and VAC requirement.  Please confirm necessary civil work, electrical work, carpentry work will be done by Indian Navy.	Room Size- Approx- 10m(L) X 10m (B) 05m (H)  Site visit will be conducted for the successful bidder.  No civil works required for the simulator complex. Electrical and carpentry works to be undertaken as per the RFP requirement by the bidder.
114	Page 19 "Generic Submarine Combat System Simulator (GSCSS) Part A —Introduction"  Clause 4(a)	(a)The IN operates three Classes of conventional submarines viz. Sindhughosh, Shishumar and Kalvari Class submarines. The Generic Combat System Simulator (GSCSS) would provide the MMIs of CMS onboard each class of submarine and would be used for conducting training for personnel. The GSCSS software should be configured so as to provide selection of the required Combat Management System (CMS) from the three Classes of the submarine by click of a button. The software should configure itself and the Graphic User Interface (GUI) for the display panels of the selected CMS. The MMI of the simulator should have the same look, feel and man-machine interface of the selected CMS	Please confirm Indian Navy will provide required data and information to develop the CMS of the three submarine types Sindhughosh, Shishumar and Kalvari class submarine.	Yes only to successful bidder
115	Page 21 Part B — Para 4 (a)(iv)	(iv)The GSCSS should also include the following sub-systems:-  (aa) Auto plotter  (ab) Periscope Emulator  (ac) Steering Control Emulator  (ad) Mast Status Panel, PNP table, Bearing Boards	Can all the consoles for GSCSS be provides in the form of the Touch key panels including following sub systems: * Auto plotter * Periscope Emulator * Steering Control Emulator * Mast Status Panel, PNP table, Bearing Boards	To be complied as per RFP
116	Page 21 Part B — Essential Parameters A Section I — Operational Parameters  Clause 6 (c)	The GSCSS would 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).	Please confirm Indian Navy will provide required information for Training course ware.  Expected number of exercises and details regarding the same	The simulator should have the capability to display courseware and trainee evaluation package. Both will be defined by IN in consultation with the successful bidder.
117	Page 27 Part B — Para 7 (c) (iv)	(iv)Editing, Modification, Generation of Training Scenario.	* Please specify and explain the expected modifications in detail.	To be complied as per RFP

Ser	RFP reference	RFP Clause	Query	Reply
118	Page 28 Part B — Essential Parameters A Section III, Maintainability and ergonomics parameters  Para 8 (a)	<p>(i) Operator Consoles/DMFC. The system will have three Dual Multi-Function Consoles with following specifications:-</p> <p>(aa) Number of display panels in each DMFC – Two LED panels 24" with HD 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) Instructor Station. The Instructor Station should have following specifications:-</p> <p>(aa) Two side-by-side mounted 24" LED display panels with HD resolution.</p> <p>(ab) Keyboard, touch-panel, mouse.</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) Auto Plotter. Tactical Plotting Table with W-ECDIS feature, interfaced with the CMS over Ethernet.</p> <p>(iv) Mast Status Panel. The Mast Status emulator will provide following features:-</p> <p>(aa) Emulator to show the status of masts raised and lowered with indication.</p> <p>(ab) Communication with CMS</p>	<p>* Which all sub systems are expected to be running on the three Operator Consoles/DMFC</p> <p>* Auto plotter — Please share the details of auto plotter including display size, Type &amp; specification.</p> <p>* Auto Plotter — please specific the area's for which ENC's will be required?</p> <p>* Mast Status Panel - Please share the details including display size, Type &amp; specification.</p> <p>* How many total number of consoles are expected to be delivered?</p>	<p>The sub-systems as per App A of RFP. Generic Auto plotter is required to be provided. Mast status panel to be in accordance with the RFP. Total 03 DFMC consoles for trainee and 02 Instructor Stations as per RFP.</p>
119	Page 30 Part B — Essential Parameters A Section III, Maintainability and ergonomics parameters Para 10.(b)	<p>The minimum hardware for the Briefing and Debriefing facility for the Simulators is as follows:-</p> <p>(i) Furniture for seating Twenty (20) personnel</p> <p>(ii) Visualisation of a training session and replay on latest projection system such as Smart Boards including all accessories required for the projection.</p> <p>(iii) Two contemporary networked PC stations at each facility to control the briefing and debriefing along with accessories.</p> <p>(iv) Suitable ventilation and Air conditioning units to cater for the room</p>	<p>What is the expected size of the smart board? Please share the room dimension and calculation of the VAC requirements.</p>	<p>To be developed by the Bidder as per requirements in RFP. Standard Size available in market.</p>
120	Page 31 Part B — Essential Parameters A Section III, Maintainability and ergonomics parameters Para 10(c)	<p>The Simulator should have exclusive Technical facilities comprising of following :-</p> <p>(i) Accommodate all the electronic and electrical devices located outside training, trainer and instructor station (COTS computers, storage disks, audio and video distribution matrix.).</p> <p>(ii) Provision for storing the following:-</p> <p>(aa) Documentation (both hard copies and in digital format) and back-up software.</p> <p>(ab) Onsite spares and tools.</p> <p>(ac) Main and emergency power supply distribution boards.</p> <p>(iii) A maintainer post should have appropriate jigs and test benches for onsite fault analysis and repair.</p> <p>(iv) The facility should accommodate the requisite support arrangements that would ensure seamless operation and maintenance of the simulator</p>	<p>Please confirm if the power available will be regulated and uninterrupted.</p>	<p>Available</p>
121	Page 33 Part B — Essential Parameters A Section III, Maintainability and ergonomics parameters  10. Maintainability and Reliability (e) System Architecture	<p>(i) Distributed architecture systems shall be used for all electronics and computer resources with provisions for upgrade of software and hardware.</p> <p>(ii) 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.</p> <p>(iii) 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 and standardisation are given due importance.</p> <p>(iv) The Ethernet network should have dual redundancy for various consoles of the Training console, Instructor Station, Technical facility and Briefing and Debriefing facility to operate.</p>	<p>Can we provide redundant PCs with the processor?</p>	<p>To be complied as per RFP</p>
122	Nil	Nil	<p>Is there any civil work that will be part of scope of work / supply?</p>	<p>No civil work required.</p>

<u>Ser</u>	<u>RFP reference</u>	<u>RFP Clause</u>	<u>Query</u>	<u>Reply</u>
123	Nil	Nil	A complete layout/ planned sketch of the Simulator Complex may please be provided to get the a appreciation of the overall layout	Layout proposal to be provided by the bidder based on the RFP hardware requirements for a room size of 10m(L) x 10m(B) x 5m(H) - (approx)
124	Nil	Nil	Please amplify whether the hardware required for set up required for simulator complex would be ab-initio.Can the expected layout of the Simulator Complex be provided?	Not an ab-initio development. GSCSS to be set up in the existing space available.
125	Nil	Nil	Would a visit to the class os submarine be facilitated to see the system functionalities physically, if required?	Visit was conducted on 29 Jan 24 at Mumbai for the firms who had requested for system familiarization visit during pre-bid meeting.
126	Nil	Nil	What would be the list of documents which would be made available to understand the existing CMS systems of the three class of submarines which IN operate?	Will be provided during the development
127	Nil	Nil	What would be the constituent of teams (in term of expertise) for JRI and Acceptance trials?	As per extant IN policy at the time of acceptatnce trials.
128	Nil	Nil	Is a requirement of Interface Control Document envisaged (specially incase if there is a requirement to interact with foreign OEM) or all the technical clarification would be handled by IN reps?	By IN reps
129	Nil	Nil	Does the Scope also includes civil works?	No
130	Nil	Nil	(a) It is not mentioned in the RFP that the area and platforms database for what concerning the 3D virtual view, and also the required gaming areas. Are requested Indian local areas? (b) If local area are requested, is requested a detailed 3D modelling of harbours and approach, or a generic topographic and relevant manmade features modelling is sufficient? or, in other words, it is foreseen to use the simulator also in coastal and harbour area where is required a detailed 3D view for periscope, or it is supposed to use the system offshore so a detailed scenarios is not relevant to the training purpose)? (c) Is there a specific type of 3D platform requested (example Indian Navy assets and/or foreign navy assets, such as ships, submarines, etc)? Please clarify. (d) Is there a specific type of civil 3D platform requested or a selection from existing database is acceptable? If generic models (tankers, containers, etc.) are acceptable, please mention the requested number.	The GSCSS is required to undertake simulation of combact system onboard the submarines. The broad simulation requirement is to be in accordance with App A of RFP
131	Nil	Nil	(a) It is requested that Indian Navy will provide all the required	Will be provided during the



<u>Ser</u>	<u>RFP reference</u>	<u>RFP Clause</u>	<u>Query</u>	<u>Reply</u>
			<p>information in order to be able to replicate the requested combat system. Information are intended operator manual, onsite visit to submarines, support from end-user in terms of electing a point of contact for any question may arise, etc.</p> <p>(b) It is requested that the development of replica systems be based on provided documentation, and the quality of the information provided may reflect the final product.</p> <p>(c) If some features cannot be disclosed as sensible items, such features will not be present in the replicated device.</p> <p>(d) It is possible to have some preliminary general information, in the form pictures of the HMI/GUI, pictures of the consoles and a list of functionalities of 3 different classed of the combat system requested.</p>	development
132	Nil	Nil	As we understand that GSCSS does not have any motion platform. -- We strongly recommend that the Submarine Control Room module must be on a Motion Control Platform which simulates the motion and environment of SM Control Room	Motion simulation not envisaged in GSCSS
133	Nil	Nil	The CMS control desk, Auto plotter, periscope Steering Control Console hardware in all three class of submarines are different. -- Since the Consoles Hardware is different in all three classes of submarines, do we need to consider three different types of Console hardware in Scope of Supply.	Autoplotter is generic. Periscope, Steering Console are generic Emulators.
134	Nil	Nil	We understand that IN will provide the technical literature like drawings of CMS consoles fitted inside the submarines, MMI screens, functions of all control buttons, soft buttons, all inputs and outputs signals etc to design the similar consoles. -- All documents and technical details, operation of CMS and other sensors to be shared by the navy in a Time bound manner -- Suggest within 30 days post contract signing	Data will be provided to the successful bidder
135		Nil	Audio files for typical ship machinery and noise for various operations those needs to be simulated. -- IN requested to provide the same	To be developed by the bidder for simulation only
136	Nil	Nil	To Prepare Software Screens -- IN to provide the complete list of parameters, alerts, warnings etc. and its behaviour based on external inputs and outputs.	Data will be provided to the successful bidder.
137	Nil	Nil	Scope of civil works / draft layout to be shared by the Navy -- This would allow clear understanding of scope of work and ensure accurate costing of Project cost	No civil works
138	Nil	Nil	Payments should be credited in the vendor's account within 30 days of submission of the stage completion documents to IN	iaw RFP Timelines (given in para 1.4.2 of payment terms)
139	Nil	Nil	Hinderance Register to be opened for calculation of time lost by the vendors due to reasons beyond control of the vendor - This may be time lost due to Naval restrictions, pandemic, weather.	Any extension given by the Buyer for delay attributable to Buyer or Force Majeure Clause will be factored in delivery period. (iaw Para 5 of App G of RFP)



<u>Ser</u>	<u>RFP reference</u>	<u>RFP Clause</u>	<u>Query</u>	<u>Reply</u>
140	Nil	Nil	Would it be possible to conduct surveys on the operational systems to ensure correct understanding of operational system logics and behaviours for correct emulation?	Visit was conducted on 29 Jan 24 at Mumbai for the firms who had requested for system familiarization visit during pre-bid meeting.
141	Nil	Nil	Will the navy provide the weapons pre-launch logic as HMI?	Yes . Only to the successful bidder during development phase on as required basis.
142	Nil	Nil	As this is Design & Development project, we expect procurement agency to add few more payment milestones between initiation and acceptance.	Payment milestones to be as per RFP.
143	Nil	Nil	Will our technology partner be able to participate in meetings with the customer?	No.
144	Nil	Nil	Will IN provide system documents like TD/OI/ MMI documents of the systems for the development of the simulator?	Data will be provided to successful bidder
145	Nil	Nil	Will IN facilitate visits to various submarines for understanding the systems, further will the vendor be provided with various photographs/ screenshots and videos of the systems for development?	Visits will be facilitated and data will be provided only for the successful bidder.
146	Nil	Nil	Will IN provide list of all the pages of each system to be developed?	Data will be provided to successful bidder
147	Nil	Nil	For providing a detailed plan for the development of all the pages of the three classes of Submarine Fire Control System, IN is requested to provide list and details of all pages for each class of submarine that need to be developed as the same are classified/ confidential in nature and not held by vendors.	Data will be provided to successful bidder
148	Nil	Nil	(a) As this system is being developed "ab-initio" based on three different OEMs from three different countries and for ensuring the product supplied would be available and maintained for 15 years, the components/ sub-assemblies procured or developed would be frozen after the contract has been finalised. Hence, the spares indicated in the RFP may differ from the final list at the time of completion. Would IN be acceptable to this suggestion? (b) Target audience for this simulator training. Will the simulator be used for training Basic courses or for advanced courses like EXO/ Commanding Officer or for training the entire Command structure of a particular class of submarine? (c) Does GUI pages of various system pages like SONAR, Periscope, Navigation, Tactical pages, Weapon launch and control pages need to be simulated incorporating every aspect, details, functionalities like selection, deletion cross-correlation with other GUI pages should be indicated if the simulator needs to undertake training for advanced courses.	(a) No (b) Simulator will be used to train all submarine personnel. (c) Simulation to be complied as per RFP.
149	Nil	Nil	It is requested that responsibilities of buyer should include; provisioning of required input data and also to facilitate visit/ interaction with IN personnel for detailed development of system.	Data will be provided to successful bidder