REQUEST FOR INFORMATION (RFI) FOR CONSTRUCTION OF SEVEN NEXT GENERATION CORVETTES (NGCs) FOR INDIAN NAVY

1. The Ministry of Defence, Government of India, intends to procure **Seven** Next Generation Corvettes (NGCs) class of ships from Indian Shipyards.

2. This Request for Information (RFI) consists of two parts as indicated below:-

(a) **Part I.** The first part of the RFI incorporates operational characteristics and features that should be met by the NGCs. A few important technical parameters of the proposed NGCs are also mentioned.

(b) **Part II.** The second part of the RFI states the methodology of seeking response of Indian Shipyards. Submission of incomplete response format will render the Shipyard liable for rejection.

PART- I

3. **The Intended Use of NGCs (Operational Requirements).** Next Generation Corvettesô are capable of Offensive SSM Attack, Anti Submarine Warfare Operations, Local Naval Defence, MIO and VBSS Operations. The details are specified in the Operational/Technical Requirements placed at **Appendix A** of this document.

4. **Quantity Required and Anticipated Delivery Timeframes**. Seven NGCs are required to be delivered commencing 2023.

5. **Important Technical Parameters**. Operational/Technical Requirements placed at **Appendix A** of this document. Further, following details are to be submitted:-

(a) Feasibility to build the Next Generation Corvettes (NGCs) with the enclosed Operational/Technical Requirements (**Appendix A**). Any modification to the specifications can be suggested by the shipyard with suitable justification.

(b) Budgetary quotes with breakup of cost including factors such as Annual Maintenance Contract (AMC), product support package, training etc.

(c) Build Period.

(d) Experience in building similar vessels along with client details.

(e) Memorandum of Understanding, if any, with respect to design aspects.

(f) Willingness for Option clause, including the duration for which the Option Clause would be valid.

(g) Whether the Shipyards would be able to comply with all provisions of DPP 2016 or not. If not, Para/Clause of DPP not agreed to with reasons need to be indicated.

(h) Shipyard may consider RFI as advance information to obtain requisite government clearances.

(j) The tentative delivery schedule for supply of the NGCs after conclusion of the contract.

(k) Acceptability to terms of payment as per DPP.

6. **Additional Specifications**. The aim of seeking this RFI is also to finalise the specifications for the said NGCs with inputs from Shipyards. Accordingly, a questionnaire is placed at **Appendix B**. The questionnaire at **Appendix B** also needs to be answered.

7. The Shipyards should confirm that the following conditions are acceptable:-

(a) Solicitation of offers will be as per ôSingle Stage-Two Bid Systemô It would imply that a ôRequest for Informationôwould be issued soliciting the technical and commercial offers together, but in two separate sealed envelopes. The validity of commercial offers would be at least 18 months from the date of submitting of offers.

(b) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP as per Para 55 of Chapter II of DPP 16.

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

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

(e) The Shipyards would be required to accept the general conditions of contract given in the Standard Contract Document at **Chapter VI of DPP 2016** placed on **www.mod.nic.in**.

(f) **Integrity Pact** . An Integrity Pact along with IPBG is a mandatory requirement in the instant case(refer Annexure I to Appendix M of Schedule I).

(g) **Performance-cum-Warranty Bond**. A Performance-cum-Warranty Bond both equal 5% of value of the contract is required to be submitted after signing of contract.

PART-II

8. **Procedure for Response**.

(a) The Shipyards must fill the form of response, as given in **Appendix B** to **Chapter II of DPP-16** and ***Appendix D of this document***. Apart from filling details about the Shipyards, details about the exact vessel meeting the mentioned operational / technical specifications (**Appendix A** and **Appendix B of this document**) should also be carefully filled. Additional literature on the vessel can also be attached with the form.

(b) The filled form should be dispatched to the under mentioned address: -

The Principal Director of Ship Production
Directorate of Ship Production
IHQ-MoD(N), D-II Wing, Sena Bhavan, New Delhi 110011.
India.
Tele: 0091-11-23010764
Fax : 0091-11-23010803
E-Mail: dsp-navy@nic.in

(c) Last date of acceptance of filled forms along with details sought is **18 Nov 16 (Six weeks from the date of uploading of RFI on MoD website)**. The Shipyards short listed for issuance of RFP would be intimated.

9. The Government of India invites responses to this request only from Indian Shipyards who qualify the criteria specified in **Appendix E**. The end user of the NGCs is the Indian Navy.

10. This information is being issued with no financial commitment and the Ministry of Defence reserves the right to change or vary any part thereof at any stage. The Government of India also reserves the right to withdraw it should it be so necessary at any stage. The acquisition process would be carried out under the provisions of **DPP 2016** available on **www.mod.nic.in**.

Appendix A

OPERATIONAL / TECHNICAL SPECIFICATIONS FOR NEXT GENERATION CORVETTES (NGCs)

SECTION A – GENERAL		
1.	**Aim of RFI**	To finalise the specifications of Next Generation Corvettes (NGCs) to meet the Indian Navyôs requirements.
2.	**Functions of NGC**	1Next Generation Corvettesôcapable of Offensive SSM Attack, Anti Submarine Warfare Operations, Local Naval Defence, MIO and VBSS Operations. The ships should have Low Radar, Acoustic, Magnetic, Visual and Infra Red Signatures and adequate NCO and communication capabilities.
3.	**Dimensions**.	(a) Length -Ò120m. (b) Beam - Commensurate with the length, draught and displacement of the ship.
4.	**Displacement**	As per Design
5.	**Draught**	As per Design
6.	**Hull Form**	Single hull construction based on proven hull form or supported by adequate model testing for resistance, propulsions, manoeuvring and sea-keeping.
7.	**Complement**	The ship should have a complement of 21 officers and approx. 137 sailors.
8.	**Range & Speed**	(a) The ship should have a range of not less than 4000nm at sustained economical speed. (b) Max speed of the ships should not be less than 27kn. (c) The max sustained speed should not be less than 25kn. (d) The ship should also have the ability to operate economically at low speeds for sustained durations. Restriction in engine hours should not be an overbearing consideration, to enable flexibility in tasking.
9.	**Endurance**.	(a) 4000 NM at sustained economical speed, 1200 Nm at 25 Kn and sustain at sea for not less than 14 days (with 25% reserve fuel) without OTR at economical speed.

		(b) The ship should also have the ability to undertake astern and/or abeam fuelling from Tanker/ Capital ships to increase endurance.
10.	**Planned Ship Life**	Not less than 25 Years
11.	**Propulsion**	The propulsion system should be able to provide the requisite power to weight ratio required for the ship. The propulsion system would also cater for greater endurance and operations in low speed regimes during LIMO and EEZ patrols. The main engine should be capable for achieving the rated speed of 85% MCR of the engine. The propulsion system should be suitably designed to meet the stealth requirement of the ship. The ships MCR should have automated and remote monitoring indication and control capability for all machinery including PGD.
12.	**Auxiliaries**	Auxiliary systems like AC, refrigeration and ventilation, fire main, salvage, STP, ballast and other relevant auxiliary systems as per class requirements are considered necessary for meeting operational requirements to be provided. Conformity of equipment fit to latest IMO/MARPOL/MEPC regulations in force, wherever applicable.
13.	**IPMS**	The Integrated Platform Management System (IPMS) shall be dual redundant Gigabit Ethernet Network, distributed architecture system covering the ship machinery system. The purpose of the integrated system shall be to provide control and monitoring of the propulsion machinery and Damage control (NBCD) machinery and systems through corresponding sub-systems.
14.	**Power Generation and Distribution**	(a) An independent APMS system with switchboard should be provided to cater for 100% reserve power and redundancy vis-a-vis maximum electrical load envisaged at any operating regimes of the ship assuming an ideal loading of generators to 80% of the nominal ratings. Growth margin is to be catered as per IN policy, subject to a minimum of 10% of the estimate value. The APMS system is to be suitably interfaced with IPMS. (b) Generators should be suitable for unattended

<table>
<tr><td></td><td></td><td>parallel operation.

(c) The electrical system and machinery and associated equipment shall conform to Naval standards over and above classification rules.

(d) The following power supplies are to be made available onboard the ship:-

<table>
<tr><th>Ser</th><th>Voltage</th><th>Freq</th><th>Phase</th><th>Remarks</th></tr>
<tr><td>(i)</td><td>415V</td><td>50 Hz</td><td>3 Phase</td><td>Main Supply</td></tr>
<tr><td>(ii)</td><td>230V</td><td>50 Hz</td><td>1 Phase</td><td>From 415V 3ph 4 wire system</td></tr>
<tr><td>(iii)</td><td>24V</td><td>DC</td><td>-</td><td></td></tr>
<tr><td>(iv)</td><td>Converted Supplies</td><td colspan="3">As per the requirement.</td></tr>
</table>
</td></tr>
<tr><td>15.</td><td><u>Emergency DA</u></td><td>Emergency DA to be provided to cater for emergency power supply to communication and other equipment. Emergency Generator, conforming to specification EED-Q-242(R2) is to be provided.</td></tr>
<tr><td>16.</td><td><u>Conversion Machinery</u></td><td>Suitable conversion machinery/ equipment to provide requisite quality converted supplies to be provided as per IN policy.</td></tr>
<tr><td>17.</td><td><u>RO Plant</u></td><td>The ship should be fitted with RO plants of not less than 60 T/day capacity and water storage capacity of not less than 40 T to enables sustenance when the ship is employed in shallow waters (up to 20 m depth).</td></tr>
<tr><td>18.</td><td><u>Cold and Cool Rooms</u></td><td>Cold and Cool rooms to carry fresh victuals for at least 30 days and dry provision store to keep rations for at least 45 days should be provided.</td></tr>
<tr><td>19.</td><td><u>Weapons</u></td><td>(a) <u>SSM Complex</u>. The ship should carry a minimum of 08 SSMs.

(b) <u>SAM System</u>. The ship should be fitted with a SAM for providing credible near 360 degree AMD coverage to the ship. It should be able to engage the sea skimming missiles, flying 3-5 m</td></tr>
</table>

		above sea level, upto max speed of 3 Mach. (c) **MR Gun System**. A gun with a stealth feature having range not less than 15 km and capability to carry out SU, AA and AMD engagements should be fitted. It should have the facility to be remotely operated using FCRs as well as EO (Electrical-Optical) sight. (d) **CIWS**. The CIWS should both radar and EO (Electro-Optically) guided to double up as LIMO weapons. The placement of CIWS should be such that it provides near 360 degree AMD protection without requirement of course alteration. (e) **Chaff**. The ship should be fitted with suitable chaff system to provide credible passive ECM capability against incoming missiles. It should be capable of firing chaff in all round direction in distraction, seduction, and centroid modes. (f) **LIMO Weapons**. The ship should be fitted with the following weapons for LIMO:- (i) Two SRCG with suitable system. (ii) Acoustic Warning Device. (iii) High Power search lights with remote activation and Control. (g) **ASW Weapons/ Sensors**. The following should be fitted onboard:- (i) Active Towed Array Sonar. (ii) Underwater Telephone. (iii) 2 X Light Weight Torpedo Launcher (03 Tubes per launcher) with FCS. (iv) Torpedo Decoy with FCS. (v) Torpedo for Helo. The shall be capable for storing light weight torpedoes for fitment on Helicopter. (vi) Conductivity Temperature and Depth (CTD). The ship shall be fitted with CTD to measure bathy profile. (vii) Bow Mounted Sonar - One

20.	**Sensors**.	(a) Passive Detection System. An Infra Red Search and Track (IRST) system should be fitted onboard. The system should be integrated with all gun mounting and should have the facility for interfacing with CMS. (b) Radars. The ship should be fitted with combination of one surface and air surveillance radar each for early warning and FCRs for target indication **or one Multi-Function Surveillance and Threat Alert Radar** for early warning and target indication. (c) Combat Management System. The ship is to be fitted with the Combat Management System (CMS) for network centric operations and quick response for operations at sea. The ship should also have a Ship Data Network (SDN), which should form the backbone for networking all weapons, sensors, SHHD equipment and integrating the CMS to enable the exchange of data between the ship borne systems. Networks like IPMS, IBS and ACCS are to be interfaced to SDN via suitable gateways, if required. (i) **Voice Communication System**. The VCS for internal communication system is to be analog and thus not interfaced with SDN. (ii) **Administrative LAN (ALAN)**. The ship is to be fitted with an integrated ALAN system for networking all officers and accommodations spaces. The ALAN to be independent of SDN. (d) Navigation System. All the latest navigational aids should be available onboard the ship, viz. Integrated Bridge System (IBS), ECDIS, AIS, LRIT, DGPS, COTS radar with good ARPA display etc. The system fitted should comply with the latest IMO regulations. Standard Naval IFF system would also be part of the fit. (e) CCTV. CCTV cameras are to be provided as follows:- (i) **Forward Section**. One Pan Tilt Zoom (PTZ) camera each on port and starboard side, at a suitable location near the Bridge wings/ Bridge Top. (ii) **Amidship Section**. One Pan Tilt Zoom (PTZ) camera each on port and starboard side,

		in the midship section. (iii) **Ganway Monitoring**. Two fixed cameras each on port and stbd side, near the gangways. (iv) **Aft Section**. One Pan Tilt Zoom (PTZ) camera at a suitable location in the aft section of the ship for surveillance in the rear section (v) One fixed camera on the centre line of helo deck. (vi) One fixed camera inside helo hangar for surveillance of helo hangar.
21.	**Aviation Facilities**.	The ship should be fully capable to carry, stow and operate ALH/NUH and alternately a rotary UAV.
SECTION C – NAVIGATION		
22.	**Communication and EW Outfit**.	The ship should have an Advance Composite Communication Suite (ACCS) integrating all communication equipments in all modes (Voice, Video and IP based data) to the communication data bus. The number of aerial should be limited by using the concept of ñcommon aerial workingò or similar concept. The ACCS should be fully compatible with the data link equipment. The communication and EW equipment outfit is to be as follows:- (a) Sufficient V/UHF sets. (b) SATCOM (Fixed and portable) equipment on indigenous satellite as well as INMARSAT. (c) VLF (for reception of VLF broadcast and plot transfer) equipment. (d) HF sets for long distance to way communication i.e receive HF digital broadcast and transmitting high speed digital messages and plots. (e) Equipment which are part of IMO regulations. (f) An EW suite consisting of an ESM system capable of detaching emitters in the frequency range of 0.175 GHz 240 GHZ and ECM system which can be used independently or in conjunction with chaff. (g) COMINT System with direction finding in the frequency range of 30 MHz to 3 GHz, capable of detecting various types of modern radar and

		communication equipments waveforms. (h) Cryptographic equipment (j) Speech secrecy and data security equipment. (k) Portable (HF and V/UHF). (l) DAT Recorder
23.	**Network Centric Tools**.	All the latest NCW tools and equipments should be available in the ship, ergonomically designed and fitted to save on space.
24.	**Op Cycle**.	The operational duration of the ship between two consecutive refits is to be minimum 24 months.
25.	**Degaussing**.	The ship should have computerised tri-axial DG system catering for automatic compensation with RLG. Automatic compensation for Ship's heading, manual latitude correction upto 70 deg N/S latitude.
26.	**Sea Worthiness**.	(a) The ship should be capable of the following:- (i) Operational seaworthiness upto 4. (ii) Survivability upto Sea State 9. (ii) Helo Ops upto Sea State 4. (iv) Transit on all headings upto Sea State 7. (b) The vessels should be built as per class 1 shock grading classification.
27.	**Stability**	(a) The vessel should satisfy the stability requirements for both intact and damaged condition, including growth margins as per NES 109 – 2000 for Naval vessels in military role. (b) Should be fitted with stabilizers.
28.	**Habitability**	Latest ship design concept with respect to Ergonomics / functional aspects and crew comfort are to be adopted. Equipment is to be sited so as to cause least disturbance to crew in operational compartments and messes. Modular and ergonomically designed furniture should be fitted onboard the ship. Light weight composite materials may also be used. The bunks are to be provided for 110 % (137 sailors + 21 officers) of ships complements.

29.	**Boats**	The following are to be provided:- (a) One Rigid Hull Inflatable Boats (**RIB)** (7 m). (b) **RIB** to be re-configurable for LIMO role with provision for fitting LMG/MMG. (c) RIB is to be provided with monsoon gear covers, which can be used even when the boats are onboard.

Appendix B

QUESTIONNAIRE FOR NEXT GENERATION CORVETTES (NGCs)

1. What will be the displacement / dimensions of the ships?

2. What are the comments on proposed Delivery Schedule of the vessel?

3. What is the capacity/ infrastructure of the shipyard to meet the delivery schedule?

4. What would be the approximate cost of the vessel and shipyards financial capability to undertake the project?

5. What is the past experience of shipyard in similar projects?

6. What are your order book status?

7. Details to be submitted for generating/ refining/ rationalizing the SQRs prior issuance of RFP (Appendix A).

8. Furnish details that go into determining the cost of the scheme, including factors such as Annual maintenance Contract (AMC), product support package, training, etc.

9. Furnish details of capability clearance certificate to indigenously design and develop the required equipment/ platform.

10. What are the applicable key technologies and materials required for manufacturing of the equipment/ system/ platform and the extent of their availability or accessibility in case they are not available in India?

11. What is the approximate cost estimation and suggestions for alternatives to meet the same objective as mentioned in RFI?

12. What are the capabilities of Indian Shipyards to Indigenously Design, Develop and Manufacture (IDDM) the required equipment?

13. Availability of the equipment/system/platform in the Indian market, level of indigenization, delivery capability, maintenance support, life time support etc.

Appendix C

INFORMATION PROFORMA
(INDIAN SHIPYARDS)

1. **Name of the Shipyards/Company/Firm/Shipyard**

_____
_____
_____
(Company profile, in brief, to be attached).

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

Original Equipment Manufacturer (OEM) - Yes/No
Authorised Shipyards of foreign Firm/ - Yes/No
(attach Shipyards details, if yes)
Others (give specific details)_____
_____
_____

3. **Contact Details**

Postal Address : _____
_____
_____
City :_____ State :_____
Pin Code: _____ Tele :_____
Fax : _____ URL/Web Site:_____

4. **Local Branch/Liaison Office in Delhi (if any)**

Name & Address _____
_____
Pin Code:_____ Tele:_____ Fax:_____

5. **Financial Details**

(a) Category of Industry (Large/medium/small Scale):_____
(b) Annual turn over:_____(in INR)
(c) Number of employees in firm:_____
(d) Details of manufacturing infrastructure :_____
_____
(e) Earlier contracts with Indian Ministry of Defence/Government agencies:-

Contract Number	Equipment	Quantity	Cost

6. **Certification by Quality Assurance Organisation**

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

7. **Details of Registration**

Agency	Registration No.	Validity (Date)	Equipment
DGS&D			

DGQA/DGAQA/ DGNAI			
OFB			
DRDO			
Any other Government Agency			

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

Name of Organisation	Membership Number

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

(a) Name of Product :_____
(IDDM Capability be indicated against the product)
(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature) : _____
_____

(c) Whether OEM or Integrator :_____

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

(e) Industrial Licence Number : _____

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

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

(h) Production capacity per annum : _____

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

(k) Estimated price of the equipment.

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

11. Any other relevant information : _____
_____

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

(Authorised Signatory)

Appendix D

ADDITIONAL INFORMATION PROFORMA (INDIAN SHIPYARDS)

1	YEAR ESTABLISHED							
2	TYPE OF ORGANISATION SIZE/CLASSIFICATION OF YARD							
3	ORGANISATION SETUP AND AVAILABILITY OF SKILLED MANPOWER							
4	DETAILS OF DESIGN, PLANNING AND PRODUCTION FACILITIES/ INFRASTRUCTURE INCLUDING SLIPWAYS/DRYDOCKS AND WET BASIN/WATER FRONT (ATTACH BROCHURES ETC)							
5	ANNUAL BUILD CAPACITY (IN TONNAGE)							
6	DETAILS OF FUTURE EXPANSION AND BUSINESS DEVELOPMENT PLANNED							
7	VESSELS DELIVERED IN LAST 05 YEARS. (ATTACH PREVIOUS ORDER COPIES FOR FLOTSAM RECOVERY BARGES / SIMILAR VESSELS ONLY)							
	YARD NO	CUSTOMER	TYPE OF VESSEL	DWT, GRT	ORDER DATE	START PROD-UCTION	CONTRA-CTUAL DELIVERY	ACTUAL DELIVERY
8	ORDERS IN HAND (ATTACH ORDER COPIES FOR SIMILAR VESSEL ONLY)							
	YARD NO	CUSTOMER	TYPE OF VESSEL	DWT, GRT	ORDER DATE	START PROD-UCTION	% COMPLE-TED	EXPECTED DELIVERY
9	FINANCIAL INFORMATION (IN INR FOR INDIAN SHIPYARDSS AND IN US DOLLARS FOR FOREIGN SHIPYARDSS)							
	(A)	ANNUAL TURNOVER IN THE LAST THREE FINANCIAL YEARS (YEAR WISE)						
	(B)	PROFITS MADE						
	(C)	NET WORTH =EQUITY+RESERVES						
	(D)	DEBT/EQUITY RATIO						

	(E)	QUICK RATIO=(CURRENT ASSETS LONG TERM DEBTS)/CURRENT LIABILITIES	
	(F)	ATTACH COPIES OF CERTIFIED PUBLISHED ANNUAL REPORT SHOWING TURNOVER AND FINANCIAL STATUS IN SUPPORT OF ABOVE INFORMATION.	
10	DETAILED SPECIFICATIONS OF MPV OFFERED TO MEET THE SPECIFIED REQUIREMENTS AND BUILD PERIOD FROM DATE OF ORDER		
11	DETAILED SPECIFICATIONS OF COMMERCIALLY OFF THE SHELF (COTS) MPV IF AVAILABLE FOR OUTRIGHT PURCHASE, IF ANY.		

Appendix E

MINIMUM QUALIFYING CRITERIA FOR ISSUE OF RFP TO SHIPYARDS FOR PROCUREMENT OF NEXT GENERATION CORVETTES (NGCs)

1. Should be a shipyard who has built vessel(s) of similar specifications in the past.

2. Financial status should meet the delivery period

3. Possess infrastructure and capacity (considering the existing and future work load) for undertaking the construction of the Vessels.

4. Is the shipyard in possession of Warship Production License, details be provided.