Republika ng Pilipinas
Republic of the Philippines
Kagawaran ng Tanggulang Pambansa
Department of National Defense

26 October 2021

SUPPLEMENTAL BID BULLETIN NR. DND/PN-LD-21-02
(Acquisition of Landing Docks for the Philippine Navy)

This Supplemental Bid Bulletin is issued to inform prospective bidders on the following modifications, amendments, or additional requirements that shall form part of the bidding documents for the Philippine Navy Landing Docks Acquisition Project, as follows:

I. Answers to Queries of Proponents

1. Hyundai Heavy Industries (HHI) of Korea

Item No	Section/ Clause No	Question or Suggestions by Bidder	Response
1		We are writing this letter to formally request an extension for bid submission deadline of Landing Docks Acquisition Project (LDAP) **for a duration of four weeks.** The reason for our request is: 1. To incorporate the Committee's answers to Clarification Requests for LDAP, submitted by HHI to DND BAC 1 Secretariat. 2. To provide accurate bid incorporating up-to-date quotation prices by all equipment manufacturers.	SOBE is moved to November 11, 2021. SBB Nr DND/PN-LD-21-01
2	Section VII (Technical Specifications) 2. CAPABILITIES		The specification of AAV is as follows: Weight: 29.1 Tons

	Each vessel can able to quickly launch and recover the following: • a minimum of two (2) Rigid Hull Inflatable Boats (RHIB) from and to the cradle, • AAV from and to the well deck and side ramps, and • a minimum of two (2) Landing Craft Utility (LCU) from and to the well deck or two (2) MPAC MKIII from and to the cradle.	To confirm arrangement of AVV in well dock and size of sideramps, specification (type, weight, dimension …etc) of all AVVs to be clarified.	(64,000lbs) Length: 7.94m (321.3") Width: 3.27m (128.72") Height: 3.26m (130.5")
3	Section VII (Technical Specifications) 5. MPAC MKIII OPERATIONS/ SUPPORT a. The vessel shall have two (2) collapsible cradles on board that can accommodate two (2) Multi-purpose Attack Crafts MKIII. MPAC MKIII Specifications: • Length: 17.0 m • Beam: 4.76 m • Draft: 0.92 m • Depth (Keel to Mast): 5.0 m • Displacement: 32.0 T	1. Operating concept of collapsible cradles to be clarified 2. Bottom shape of 'Multi-purpose Attack Crafts MKIII' to be provided by Owner to design collapsible cradles	Concept of operation of Collapsible Cradle: The collapsible cradle of MPAC III will be assembled when securing MPAC III in the well dock and can be disassembled when securing LCU instead of MPAC III. The main frames of the cradle should be permanently installed in the well dock and supporting brackets can be assembled. The cradle should not protrude on the deck of dock well when not in use to allow other amphibious operations (i.e. AAV, LCU). To ease the assembly and disassembly of cradle, it should be made of light and robust materials, It should be provided with drainage to drain excess water and locking system to secure the cradle whether in use or not. Likewise, lashing gears should be provided to secure the MPAC III in the cradle. Stowage bin should be provided to store other parts when the cradle is not in use. Bottom hull shape of MPAC III is V- Bottom MPAC Hull design is confidential. It will be provided to the winning

			proponent only during the design phase
4	Section VII (Technical Specifications) 5. MPAC MKIII OPERATIONS/ SUPPORT f. Trolleys and Forklifts can be accommodated to carry and transport pallet loaded with missile containers.	1. The Q'ty of Trolleys and Forklifts. 2. The weight and size of missile containers to decide capacity. 3. If the forklifts are same as small battery-operated forklift (not included) in TS 9.b. If it is, forklifts are provided by owner, so forklift specification is needed	At least two (2) trolleys and two (2) forklifts The weight and dimension of Spike ER Missile is stated in para 5 (MPAC MKIII Operations/Support) item c of the Technical Specification. For Spike NLOS Missile in canister (crates): Length:165 cm Width: 23 cm Height: 31 cm Weight: 75 kg The contractor shall consider the specification of available forklift in the market that can safely transport said missiles
5	Section VII (Technical Specifications) 7. RHIB OPERATIONS a. Two (2) Rigid Hull Inflatable Boats (RHIBs) are for light load deployment without the use of the stern ramp. The vessel shall be capable of launching and retrieving simultaneously the two (2) Rigid Hull Inflatable Boats (RHIBs) in 10 minutes. The vessel, shall likewise be equipped with corresponding davits than can support at least 15-tons. c. RHIB Principal Dimensions and Characteristics The Rigid Hull Inflatable Boat (RHIB) shall be brand new and have the minimum principal dimensions and characteristic. • Overall Length – about 8.7 meters • Breadth – about 2.93 meters	The davit is utilized for launching and recovering of RHIB. So, the capacity of davit usually depends on RHIB's weight, not specific weight (15 tons). The Builder would like to know the reason for stating the specific weight, and if there is no specific reason for it, the requirement would be better to be changed from "~can support at least 15-tons" to "~can support the RHIBs." The speed requirement for RHIB is excessive compare to RHIB included in BRP Jose Rizal Class. The Builder suggest the speed condition is changed as below. (same as ROKN's RHIB) Cruising - at least 25 knots at light load condition Maximum - at least 40 knots at	The capacity of davit is the operational requirement of the Philippine Navy which is the same design with the existing PN LD. The purpose of 15 Tons davit is to accommodate other small crafts. The speed specification of the RHIB is the operational requirement of the Philippine Navy.

	(included tube) • Inboard Engine-Outboard Shaft – stern drive, diesel Speed • Accommodation – at least 12 passengers • Cruising – at least 30 knots at full load condition • Maximum – at least 45 knots at full load condition • Fuel Capacity – at least 500 liters (Diesel)	light load condition. (PN BRP Jose Rizal: Cruising - 20knots at light load condition, Maximum - 30knots at light load condition)	
6	Section VII (Technical Specifications) 14. HULL FORM, LAYOUT, AND FINISHING g. The vessel shall have additional physical spaces and electrical power requirements for the installation of the following future capabilities: 76mm gun, 30mm guns, decoy launching system, CIWS, Hull Mounted Sonar.	PN have to provide approximately power consumption for 76mm gun, 30mm guns, decoy launching system, CIWS, Hull Mounted Sonar.	The electrical power requirement for the future equipment such as 76mm SR MF Gun, 30mm Gun, Decoy launching system, and CIWS are as follows: 76mm Gun - 56kW 30mm Gun - 5.5kW Decoy Launching System - 92kW CIWS - 73 kW Hull-mounted SONAR will be omitted.
7	Section VII (Technical Specifications) 17. PROPULSION AND AUXILIARY MACHINERIES (Minimum) Ship Service Diesel Generators d. Emergency generator shall be capable of providing power to basic navigational lights, ship ventilation, fire and bilge pumps, fresh water pumps, sewage treatment plant, galley equipment, navigational systems, steering and propulsion system with 20% of the load capacity unused.	The purpose of emergency generator is to supply power to the minimum and essential equipment for ship evacuation when the main generator plants are failed. Such a point of view, the load for propulsion system, fresh water pumps, sewage treatment plant, galley equipment is not essential load and it is also not required as mandatory load for emergency generator according to Classification Society rules. If the non-essential loads are included, increased capacity of the emergency generator affects to the dimension, arrangement, maintenance and acquisition cost a lot. Thus, the Builder recommend to exclude non-essential equipment (propulsion system, fresh water pumps, sewage treatment plant, galley equipment) from emergency load list.	The load of the emergency generator is the operational requirement of the Philippine Navy. The galley equipment was added to the previous design the PN landing dock which is an improvement to the previous design. The requirement of the classification society is the minimum.

8	Section VII (Technical Specifications) 17. PROPULSION AND AUXILIARY MACHINERIES (Minimum) Distribution System a. The vessels power distribution shall be designed, constructed and fitted-out such that power is generated and distributed from the power generating plants at 440 VAC (nominal), non-earthed, 3-phase system with neutral conductor alternating current to meet the following requirements applicable to various units of equipment as follows; • 440V 3 phase 60 Hz for all electrical power equipment; • 220V single phase 60 Hz for the special lighting distribution e. The vessel shall have a casualty power system for use in the event of major damage to the normal and standby distribution system. These includes casualty power socket and power cables which enables the power to be provided to systems vital to ship survivability to include but not limited to the following: medical, steering gear, salvage pumps and fire pumps. Power to casualty power sockets shall be provided from designated load centers through permanent risers.	Jose Rizal class frigate and many proven ROK Navy/US Navy have ship power generating plants at 440VAC 3P3W (3phase 3wire) without a neutral conductor. All of the power required by Technical Specification can be supplied in 3P3W power generation without a neutral conductor. If a neutral conductor applied, it significantly affects to the dimension, arrangement, maintenance and acquisition cost for electrical equipment such as switchboards, panels and cables. The casualty power system is mainly applied to battleships, but not to support ships. We know that it was not installed in the LPD currently in operation in the Philippine Navy, as it affects to maintenance, unnecessary training and acquisition cost, please review whether the casualty power system is required.	The neutral wire will be removed in the technical specifications since the existing PN landing dock has no neutral wire The casualty power system is required. The existing PN LD has casualty power system.
9	Section VII (Technical Specifications) 18. AUXILIARY EQUIPMENT (Minimum) Fresh Water System The vessel shall have a fresh water production capacity adequate to provide feed water and other non-habitability requirements as follows:	The Builder would like to clarify the sentence same as BRP Jose Rizal class Frigate more clearly understanding as follows. "~~Water heaters~~ Hot water system shall be provided sufficient to ensure an adequate supply of hot water at all washbasins (galley, pantry, scullery, laundry, and medical and dental spaces) and showers considering the rate of	The specification is the same as the existing design of the PN LD. Two (2) calorifiers are installed

	• 182 liters per ship's company accommodation including passengers, per day, of fresh water of satisfactory quality to support habitability, domestic and personal hygiene purposes • 455 liters per day per helicopter for wash down. • 190 liters per day for cooling water system make-up. Two (2) reverse osmosis plants shall be provided; one shall be equal to required design capacity and the second shall be a full redundant plant. As an alternative, four plants of equal capacity may be provided, such that the combined capacity of two plants is equal to or greater that the required design capacity. Water heaters shall be provided sufficient to ensure an adequate supply of hot water at all washbasins (galley, pantry, scullery, laundry, and medical and dental spaces) and showers and shall include a system which ensures a hot water supply to showers and washbasins within 10 seconds. Water heaters supplying washbasins and showers shall not support work spaces that have higher water temperature requirements.	simultaneous use and shall include ~~a system~~ circulation pumps which ensures a hot water ~~supply~~ circulation to showers and washbasins ~~within 10 seconds. Water heaters supplying washbasins and showers shall not support work spaces that have higher water temperature requirements~~." ~~Water heaters shall be provided sufficient to ensure an adequate supply of hot water at all washbasins (galley, pantry, scullery, laundry, and medical and dental spaces) and showers and shall include a system which ensures a hot water supply to showers and washbasins within 10 seconds. Water heaters supplying washbasins and showers shall not support work spaces that have higher water temperature requirements.~~	
10	Section VII (Technical Specifications) 18. AUXILIARY EQUIPMENT (Minimum) Environmental Systems The vessel should be equipped with environmental protection system and shall include but not limited to the following: • Sewage Treatment system with capacity sufficient to treat the complements including passengers' wastes (black and grey water waste)	Incinerator: The provision of incinerator is not a mandatory item required by IMO. And this ship will have enough tanks and spaces for storage of dirty oil and solid garbage (treated by garbage compactor) during voyage. So, the incinerator is not necessary. In case of ROKN's ship, the incinerator is also not installed for these reasons. Please kindly confirm whether the incinerator should be installed on PN's previous ship. Despite above reasons, if PN would like to install incinerator for	One (1) incinerator is installed in the PN landing dock. The term "Incinerators" will be changed to "Incinerator".

	• Oily-water treatment system • Garbage compactors • Incinerators • Ballast water treatment All environmental protection equipment/system shall be compliant with applicable IMO/MARPOL Annexes.	this ship, the builder would like to suggest that one (1) set of incinerator is installed for backup purpose of garbage storage (not "Incinerators") Ballast water treatment: According to the BWM Convention, warships, naval auxiliary ships does not require the installation of ballast water treatment system. So, we would like to suggest not to install the ballast water treatment system same as BRP Jose Rizal class Frigate considering naval ship's nature and high operating/maintenance cost.	The ballast water treatment is operational requirement of the Philippine Navy and part of upgrade on this project so that the future LD can be deployed in countries with strict environmental rules
11	Section VII (Technical Specifications) 18. AUXILIARY EQUIPMENT (Minimum) Anchoring and Mooring System The vessel shall be provided with two (2) bow anchors and anchor chains corresponding to its displacement. The chains are to be stowed in chain lockers located at the forepeak. Anchors should be provided with a small floater and a 50m line. Chain stoppers shall likewise be provided to relieve the anchor winch from holding the chain when anchored. An anchor windlass, which is remotely operated at the forecastle, shall also be provided for each anchor as part of the vessel requirement. Capstans, shall be provided that shall have sufficient brake power for mooring the vessel. The following deck equipment shall also be included: Chain Bin, mooring winch, bollards, cleats, rope reels, rope bins, anchor roller and gangplank/brow. All hawsers, steel wires, mooring ropes, rat guards, and those required by naval operations shall be provided by the builder.	1. Definition of following terms to be specified. - Chain Bin: Stowage of anchor chain when anchor is in storage position. This term to be verified to 'Chain Locker' as specified in other requirement. - Anchor Roller: Structure which has roller to guide anchor chain that led anchor chain from windlass to hawse pipe and has dog to hold anchor chain. This term to be verified to 'Chain Compressor' or 'Chain Compressor' as specified in other requirement. 2. Duplicated purpose of following term to be specified. - Rope bin: Rope reels to be used for storage of mooring rope/towing rope. Rope bins to be deleted. 3. Purpose of following term to be specified. - Steel wires: Synthetic mooring ropes will be provided. Steel wires are not provided for mooring ropes. Steel wires to be deleted.	Chain bin – used for stowage of chains other than anchor chains. The anchor roller will be omitted/removed. Rope bins – used for stowage of ropes Steel wires – additional support used to secure anchor chain especially during rough seas

	The ship shall also be fitted with appropriate mooring bitts for smaller vessels coming alongside.		
12	Section VII (Technical Specifications) 20. DECK EQUIPMENT (Minimum) All hawsers, steel wires, rat guards, mooring ropes and those required by naval operations shall be provided by the builder.	2. Duplicated purpose of following term to be specified. - Rope bin: Rope reels to be used for storage of mooring rope/towing rope. Rope bins to be deleted. - Steel wires: Synthetic mooring ropes will be provided. Steel wires are not provided for mooring ropes.	Duplicated items will be deleted.
13	Section VII (Technical Specifications) 20. DECK EQUIPMENT (Minimum) Vehicle lift The vessel shall be fitted with a vehicle lift capable of lifting a vehicle of at least 10 tons (SWL) safely from the tank deck to the helideck. The vehicle lift should have a variable speed control: slow, medium, and fast.	Please let us know the purpose and operation concept of 10tons vehicle lift so that we can arrange the vehicle lift properly. For example, the Builder doesn't consider the personnel transportation using vehicle lift because of the safety	The purpose is to lift vehicle, personnel, and/or materials from tank/truck deck to other above decks and vice versa. Detachable handrails and other safety features should be provided if used as personnel and material lift
14	Section VII (Technical Specifications) 20. DECK EQUIPMENT (Minimum) Deck Crane The vessel shall be fitted with a Hydraulic Deck Crane at the Heli deck with an SWL of 5 tons.	Please let us know the purpose and required out-reach (or outboard reach) of Crane so that the Builder can select and arrange the Crane properly.	The purpose is to lift provisions. Required out-reach: Minimum - 5m Maximum - 10m
15	Section VII (Technical Specifications) 20. DECK EQUIPMENT (Minimum) Stern and side ramp The vessel shall have a stern ramp for well deck operations. The SWL of such should be of at least 40 tons. It shall have a	To decide the size of stern/side ramp, dimensions for AAVs and other vehicles are needed.	Specifications of AAV: Weight: 29.1 Tons (64,000lbs) Length: 7.94m (321.3") Width: 3.27m (128.72") Height: 3.26m (130.5") Side ramp Opening: Width: at least 5.20m Height: at least 5m

	clear headroom of at least 4.3 meters to allow safe and convenient passage of LCUs and AAVs or other vehicles. Likewise, it shall have two (2) side ramps (1 Port and 1 Starboard) with an SWL of at least 40 tons and should be positioned so as not to hamper the loading/unloading of vehicles. Also, both side ramps should be compliant to accommodate the 20-footer container vans. As far as practicable, it shall be designed to be able to adapt to any tide condition and pier height. It shall have a clear headroom of at least 4.3 meters.		Weight: at least 35 tons (tactical vehicle) The side ramp should be able to accommodate low bed trailers and prime movers.
16	Section VII (Technical Specifications) 20. DECK EQUIPMENT (Minimum) Other Deck Equipment (minimum) The following deck equipment shall also be included: • Chain bin, • Mooring winch, • Bollards, • Cleats, • Rope reels, • Rope bins, • Anchor roller and • Gangplank/brow.	1. Definition of following terms to be specified. - Chain Bin: Stowage of anchor chain when anchor is in storage position. This term to be verified to 'Chain Locker' as specified in other requirement. - Anchor Roller: Structure which has roller to guide anchor chain that led anchor chain from windlass to hawse pipe and has dog to hold anchor chain. This term to be verified to 'Chain stopper' or 'Chain compressor' as specified in other requirement. 2. Duplicated purpose of following term to be specified. - Rope bin: Rope reels to be used for storage of mooring rope/towing rope. Rope bins to be deleted.	Clarified in item 12
17	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Squawk box	Please confirm whether the squawk box is a gear for on-board (ship's internal) communication such as an intercom.	SQUAWK BOX is public address and internal communications system with speakers and microphones installed in determined areas of the ship per tech specs

	Squawk box should be available at the following stations: Station Number Bridge 1 Commanding Officer's Cabin 1 Ward Room 1 Damage Control Room 4 Sickbay (Male) 1 Sickbay (Female) 1 Engine Control Rooms 1 Engine Room 4 Task Force Operations Room 1 Radio Room 1 Officer's Wardroom 1 VVIP Wardroom 1 Crew's Mess Hall 1 Troop's Mess Hall 1 Officer's cabin 1		
18	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Internet Protocol private branch exchange (IP PBX) System The Internet Protocol private branch exchange (IP PBX) should allow a single access number to offer multiple lines to outside callers while providing a range of external lines to internal callers within the ship. It should also be VoIP ready and has Voice Messaging features. The IP PBX shall have the following minimum features: • Ports: 200 ports (min) • Phones (wired): 200 phones (min) • Maximum Cell Stations (Antennas): Up to 128 (min) •Maximum Voice Processing System: 8 units	1. Please confirm whether the external paging output is for interface with the ship's announcing system (Pipe in Music and Paging System). 2. Regarding the RS232C/SMDR Outputs, please inform what these outputs shall be interfaced with.	1. Proposal is accepted - but with selector switch for internal and external speakers. 2. RS232C/SMDR Outputs are needed to interface with PN equipment.
	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Video Teleconference System (VTS)	1. Regarding ICCS interface, only voice data is possible due to technical reason. 2. Video conference software license is furnished by Owner.	1. Proposal is accepted - this will be revised in the Tech Specs 2. Proposal not accepted - video conference software license should be provided by the shipbuilder in accordance with PN specific requirement.

	One (1) set Video teleconferencing System (VTS) to facilitate the communication and interaction of two or more users through a combination of high-quality audio and video over Internet Protocol (IP) networks and must possess the following minimum equipment: • Digital Video camera • Two (2) speakers • Six (6) microphones (1 master and 5 slaves) • Two (2) computer server -With 32 GB Memory(min) -With 2 TB or Higher Hard Disk Drive (HDD) -With latest Operating System and Microsoft Office 2016 -With Antivirus software (BitDefender) with 3 years license • Two (2) TV (as monitor) • Must be integrated with ICCS		
19	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Satellite Communications for VTC A mini-VSAT Broadband network to provide reliable global broadband connectivity for mission-critical work. It should feature seamless transitions between Ku- and C-band coverage while providing the very low latency that is required for messaging applications. It must provide a download/upload speed as fast as 4 Mbps/1 Mbps (min) and affordable service and airtime plans. With dual-mode C/Ku - band type antenna and have the antenna disk of 1.1 m (max). Must be integrated with ICCS.	VTC is able to communicate with ICCS via audio signal interface and VTC is capable of external conference via this dedicated SATCOM, thus it is considered that ICCS has connectivity to SATCOM for VTC without direct connection. Is it acceptable for PN?	Proposal is accepted - Separate connection between ICCS voice and VTC.
20	Section VII (Technical Specifications)	ICCS's data is based on audio communications, therefore, it is technically not feasible to interface with SATCOM based internet,	Proposal is accepted. - The tech specs will be updated to "Must be

	21. Communications, Electronics, and Information System Satellite Communications (Internet) A mini-VSAT Broadband Network to provide reliable, secure coverage for mission-critical work. It must provide a download/upload speeds as fast as 10 Mbps/3 Mbps and affordable service and airtime plans. KU-band type antenna and have the antenna disk of 60 cm (min). Must be integrated with ICCS. The winning proponent pays the initial one (1) year subscription that will start upon departure of the vessel from builder's premises to Manila Philippines. The system is capable of connecting to the internet using local SIM card.	however, this SATCOM shall be interfaced with shipboard LAN system to provide internet service ship's users. Please change the requirement from "Must be integrated with ICCS" to "Must be integrated with shipboard LAN system."	integrated with shipboard LAN system".
21	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Handheld Satellite with Satdock A handheld satellite phone of Inmarsat that is a reliable and robust handset to cope with searing heat and monsoon rain. It should have a battery life of at least 8 hours of talk time and up to 160 hours on standby. Must be integrated with ICCS.	Because handheld satellite phones are off-the-shelf and wireless communication, therefore, it is technically not feasible to interface with the ICCS. Please delete the requirement ("Must be integrated with ICCS")	Agree, the provision for Handheld Satellite with Satdock "Must be integrated with ICCS" will be omitted.
22	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Acoustic Hailing Device (AHD) The AHD should broadcast highly intelligible communications and warning	Regarding the intercom mode, this system is used for external communication, and ship's public address system will include the intercom speakers as internal communication system. If PN has other purpose against the intercom mode of AHD, please give a clarification.	AHD intercom mode is low power voice hailing and announcing for the immediate environment that will not cause auditory injury to individual audience.

	tones with focused acoustic output to clearly determine the intent of vessels not responding to radio calls, change threat behavior and enlarge vessel standoff zones. This should be remotely operated, with HD camera, searchlight and can also provide intelligible voice communication of 3,000meters (minimum). It should have two (2) units intercom speaker and with following specifications…		
23	Section VII (Technical Specifications) List of Equipment	Motion for Reconsideration to address our concern with regard to the Bidding Documents released for the Philippine Navy Landing Docks Acquisition Project. In Section VII. Technical Specifications of the Bidding Document, the Committee has provided **"List of Equipment," limiting the "Choices" of equipment makers for twenty (20) major onboard equipment to only 1 ~ 5 "Existing brands in the inventory of the PN." For Items Number 11, 14, 15, 18, and 19 of the list, the Committee has only provided one brand**, making the listed brand sole source of the said items. As an experienced shipbuilder with more than 2,000 completed ship deliveries in the past 50 years, we are deeply concerned with the Committee's decision to limit the "Choices" of equipment brands through the aforementioned list. We are concerned as this **limitation will cause oligopoly of few chosen equipment manufacturers, and may result in collusion between the handful of chosen equipment makers to fix prices**, resulting in the Committee paying unnecessarily high price for the onboard equipment.	Refer to Annex C: Amended Section VII (Technical Specifications) At least 2 or more brand names were listed except for two items (Downlink Receiver and Secure Radio Communications) that involves compatibility to the existing PN communication and security is non-negotiable.

2. PT PAL (Persero)

Item No	Section/ Clause No	Question or Suggestions by Bidder	Response
1	Section I (Invitation to Bid) 1. The Department of National Defense/Armed Forces of the Philippines (DND/AFP), through the **PN Appropriations** intends to apply the sum of **FIVE BILLION FIVE HUNDRED SIXTY MILLION PESOS (Php 5,560,000,000.00)** being the ABC to payments under the contract for the ***Acquisition of Landing Docks for the Philippine Navy.*** Bids received in excess of the ABC shall be automatically rejected at bid opening.	Budget allocated is still the same with the bidding in 2019. With the condition that steel plate price has increased and addition of requirements, requesting that the budget can be increased or additional requirement can be withdrawn.	Proposal not accepted. Some requirements that were removed/reduced will off-set the items/requirements that were added.
2	Section I (Invitation to Bid) 12. Bids shall be prepared in **one (1) original copy** and **five (5) photocopies**. However, to facilitate the bidding process, those who are physically present shall also submit a soft/scanned copy (in a password-protected pdf file) of the bids and all attachments in a CD format and in USB. It shall be submitted using the appropriate Bid Forms provided in Section VIII of the Bidding Documents strictly in compliance to the requirements of RA 9184. Quotations submitted not in the official forms as issued by the DND Bids and Awards Committee 1 will not be accepted. To be responsive, all entries shall be filled out with appropriate information. Any erasure, correction, or changes shall be initialed by the bidder or his authorized representative. All pages must be signed on the space provided for. Any unsigned page of the bidder's tender shall be a ground for disqualification.	Number of Bid documents submitted in invitation to bidder point 12. Bids shall prepare 1 original and five copies in section II instruction to Bidder 15. Sealing and marking of bids: each bidder shall manually submit one 1 (original and three). Which is the correct number of copies to be submitted?	**One (1) original copy** and **five (5) photocopies** To facilitate the bidding process, those who are physically present shall also submit a soft/scanned copy (in a password-protected pdf file) of the bids and all attachments in a CD format and in USB.
3	Section II (Instruction to Bidders) 12. Bid Prices a. For Goods offered from abroad:	Condition delivery DDP but in Bid data Sheet DAP Which is correct delivery term?	DAP "delivered at place"

	Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.		
4	Section III (Bid Data Sheet) Post Qualification Documents TAB D: Non-Disclosure Agreement	Please provide NDA Form	Please see Annex "B"
5	Section III (Bid Data Sheet) ITB Clause 2 The name of the Project is: ***PN Landing Dock Acquisition Project***	Project Name. At Prebid Conference is stated Acquisition of Landing Docks for the Philippine Navy but at Bid Doc is stated PN Landing Dock Acquisition Project Which one is correct?	The name of the Project is: **Acquisition of Landing Docks for the Philippine Navy**
6	Section V (Special Condition of Contract) GCC Clause 1 **Warranty –** Warranty to be applied will be minimum of two (2) years unless the warranty as provided by the supplier is longer for all systems and equipment such as but not limited to: a) Ship's Hull b) Propulsion System c) Auxiliary Machineries d) Navigational Systems e) Weapons and Sensors Systems f) Electrical and Electronics System and Wirings g) Communications Systems h) Piping and Fittings If no warranty is prescribed by the supplier, the standard 2 years warranty period shall be applied.	Propose 2 year for Main Engines and DGs, other items shall be 1 year.	Proposal not accepted Retention Money or other forms of Warranty Security shall be valid/effective only for one (1) year
7	Section VII (Technical Specifications) 2. Capabilities Able to accommodate at least two (2) medium lift helicopters up to 12 tons/ helicopter.	The requirement is stated for AW109, AW159. Capacity 10 tons for Helideck and hangar is sufficient. PT PAL propose to keep 10 tons refer to previous LPD	Twelve (12) tons is the operational requirement of the Philippine Navy to be able to accommodate 12 tons helicopter of the other branch of

			service and future helicopter acquisition of the PN.
8	Section VII (Technical Specifications) 7. RHIB Operations a. RHIB Principal Dimensions and Characteristics The Rigid Hull Inflatable Boat (RHIB) shall be brand new and have the minimum principal dimensions and characteristic. • Overall Length – about 8.7 meters • Breadth – about 2.93 meters (included tube) • Inboard Engine-Outboard Shaft – stern drive, diesel Speed • Accommodation – at least 12 passengers • Cruising – at least 30 knots at full load condition • Maximum – at least 45 knots at full load condition Fuel Capacity – at least 500 liters (Diesel)	The use of inboard engine will significantly enlarge the dimension than specified at Bid Doc. Propose to use outboard diesel engine and 12 passenger include pilot & co-pilot.	Proposal not accepted. Inboard motor performs better in terms of propulsion power per unit of fuel used and will propel a boat through tough water conditions where an outboard motor will not.
9	Section VII (Technical Specifications) 8. Helicopter Operations/Support c. The vessel must be equipped with standard and proven flight deck and hangar facilities, navigational aid system compatible with NVG, refueling system, helicopter traversing system compatible for AW109, AW159 and other medium lift helicopters, aviation firefighting system, electrical supply system and fluid and gas supply systems such as compressed air nitrogen, Jet-A1 fuel, distilled and fresh water.	Whether helicopter traversing system compatible for AW139	The traversing system must also be compatible with AW139 since it is a medium lift helicopter.
10	Section VII (Technical Specifications) 13. AAV Operations b. The Tank/ Truck Deck shall be equipped with the following;	Propose to be sister ship with SSV 1 & 2	Proposal not accepted. The vertical distance from the deck to the overhead must be increased to address the problems

	• At least seven (7) meter-diameter, at least 40-ton load turn table, • At least 10-ton vehicle lift (from tank to Helideck), and • Refueling System. • Pressurized Fresh Water System. • **At least 5 meters clear vertical distance from deck to overhead.**		encountered on the existing PN Landing Docks
11	Section VII (Technical Specifications) 15. Tanks d. The vessel shall have separate fresh water tank for technical and potable water storage. At least two (2) potable fresh water tanks shall be constructed with a combined minimum capacity equal to 700, 000 Liters. On the other hand, bilge water/dirty oil/sludge collection tanks shall be integrated in the engine room double bottom construction for collection of bilge water, dirty oil and sludge.	700, 000 Liters is too much only for potable fresh water. Total Fresh water of SSV is only 650, 000 Liters. 700, 000 Liters for all Fresh water will be reasonable.	For the sake of clarity, paragraph d will be rephrased as follows: "The vessel shall have separate fresh water tanks for technical and potable water storage with a total minimum capacity of 700,000 liters. At least two (2) potable fresh water tanks shall be constructed with a combined minimum capacity equal to the peak consumption or three times the daily normal requirement. On the other hand, bilge water/dirty oil/sludge collection tanks shall be integrated in the engine room double bottom construction for collection of bilge water, dirty oil and sludge.
12	Section VII (Technical Specifications) 17. PROPULSION AND AUXILIARY MACHINERIES (Minimum) Propulsion System j. Main propulsion machineries should be placed in redundant and separate compartments to ensure survivability in case of battle damages, fire and/or flooding.	PT PAL proposes a redundant & separate compartment design by adding a longitudinal bulkhead (separating ME & AE parallel to the right and left). In order not to change the Tank & ER arrangement and not to differ from the SSV 1 & 2 deign.	The builder may propose a longitudinal bulkhead with access thru watertight doors.

13	Section VII (Technical Specifications) 17. PROPULSION AND AUXILIARY MACHINERIES (Minimum) Ship Service Diesel Generator a. The vessel shall have at least four (4) ship service diesel generators (SSDGs). Each main diesel generator by itself, shall be able to provide ship power requirements for all ship systems (excluding weapons, bow thruster and half of the fire main system) at 80 % of its load capacity used.	The use of single service diesel generator (SSDGs) to provide ship power requirement for all ship systems (excluding weapons, bow thruster and half of the fire main system) at 80% of its load capacity used is too big in the harbor condition and not efficient. Propose to remain as previous SSV 1 & 2.	Proposal not accepted. The provisions for the SSDGs are the operational requirement of the Philippine Navy
14	Section VII (Technical Specifications) 17. PROPULSION AND AUXILIARY MACHINERIES (Minimum) Ship Service Diesel Generator g. The SSDG should be arranged into at least two (2) power generating plants located in separate watertight compartment for redundancy to ensure survivability in case of battle damage, fire and/or flooding.	PT PAL proposes a redundant & separate compartment design by adding a longitudinal bulkhead (separating ME & AE parallel to the right and left). In order not to change the Tank & ER arrangement and not to differ from the SSV 1 & 2 deign.	Clarified in item 12
15	Section VII (Technical Specifications) 22. NAVIGATIONAL SENSORS Standards The vessel shall be class certified and have the following minimum class notation or equivalent: **+100A1, +LMC**	Class Notation off the vessel is +100A1, +LMC, but why Scantlings and structural members and some equipment such as Steering Gear, Main & Emergency Fire pump etc. must be in accordance to Naval Classification Society Standard. Propose remain as previous SSV 1 & 2 by deleting naval requirement.	Proposal not accepted. The SSV is a Navy Ship to be utilized in all sea conditions. Thus, the ship must be in accordance with Naval Classification Standard to ensure safety and quality.
16	Section VII (Technical Specifications) 19. SPACES AND STORAGE (Minimum) Ammunition and Missile Storage The vessel shall have a minimum of four (4) ammunition storage found near its weapon system or firing	Ammunition Storage will be located near the weapon system as required. Not below the main deck.	Proposal not accepted. The ammunition of the main gun usually stored below deck for safety reasons and the ammunition loading bay of 76mm

	battery. It should be able to carry simultaneously, in accordance with PN regulations and policies, at least one (1) basic load each for the primary gun, CIWS and HMG, MPAC Missile, Helo rockets and torpedoes, and chaffs and decoys. It shall be placed in a well-protected compartment usually carried below the main decks.		gun is below the deck where the gun is installed.
17	Section VII (Technical Specifications) 19. AUXILIARY EQUIPMENT (Minimum) Anchoring and Mooring System Capstans, shall be provided that shall have sufficient brake power for mooring the vessel.	For mooring PT PAL Design will use 2 (two) Mooring Winch located after part and 2 windlass with hawser drum and warping end (electro hydraulic motor driven) located fore part	The proposal accepted. The same equipment in the existing PN landing docks
18	Section VII (Technical Specifications) 19. AUXILIARY EQUIPMENT (Minimum) Replenishment at Sea It shall also be provided with a system for the delivery of POL, water and solid transfer to other PN vessels.	For Replenishment The Vessel will be provided with RAS Post to receive POL, water and solid transfer from supply vessel. To transfer POL & Water to other PN Vessel will use hose and for Solid will use crane.	Proposal not accepted. The use of crane and ordinary water hose during RAS while the vessel is underway is not possible.
19	Section VII (Technical Specifications) 22. NAVIGATIONAL SENSORS Master Gyro Compass System The ring laser Master Gyro compass must support the analog and digital repeaters and shall contain the following features:	Combat system is still not installed and the price is much different with Gyro Navigation. Proposes to change Gyro navigation and laser gyro will be part of future installation	Proposal not accepted. Provision will be retained for future integration with the Combat System.
20	Section VII (Technical Specifications) List of Equipment 14. All Radio Communications equipment - HARRIS	PT PAL proposes maker HARRIS is specifically used for military Radio such as - Secure Multiband VHF UHF Base radio - Secure Multiband VHF-UHF Handheld - Secure VHF-HF Radio	Proposal is accepted - Harris applies to Secure Radio Communications only per Tech Specs.
	Section VIII (Checklist of Technical and Financial Documents) *Other documentary requirements under RA No. 9184 (as applicable)*	We propose to submit the rules of Indonesia Government for procurement replace the Certification from the relevant government office	This requirement is required only "if applicable". Since the ITB specifically allows the participation of

	q. [For foreign bidders claiming by reason of their country's extension of reciprocal rights to Filipinos] Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.		foreign bidders. Statement of "NOT APPLICABLE" for this requirement would suffice.
21		Considering that many changes in Main Deck and Engine room and due to covid 19 Pandemic, we cannot prepare document in Manila, we will shipped document through DHL Request additional time to submit bid doc.	SOBE moved to November 11, 2021. SBB Nr DND/PN-LD-21-01

3. Joint Venture of Megaship Builders, Inc. and PT Batamec of Indonesia

Item No	Section/ Clause No	Question or Suggestions by Bidder	Response
1	Section III (Bid Data Sheet) ITB Clause 2 The name of the Project is: ***PN Landing Dock Acquisition Project***	Clarification on the contract project name: The Bid Documents state the project name with title as, "Philippine Navy Landing Docks Acquisition Project". The presentation conducted by the TWG during Pre-Bid, however, has shown the project name as, "Acquisition of Landing Docks for the Philippine Navy." Further, there seems to be no particular reference which distinguishes it separately from the previous failed-procurement of year 2019 for the same type of vessel, which was also titled as "Philippine Navy Landing Docks Acquisition Project." The previous procurement project is even more distinctively referred to with its nomenclature as "AFPMP-LDAP-2019-03."	The name of the Project is: **Acquisition of Landing Docks for the Philippine Navy**
2		Necessity of extending the SOBE date: The remaining time of 1 week or less would be insufficient for bidders to judiciously prepare their complying and responsive bids. And this limitation holds true for Joint	SOBE moved to November 11, 2021. SBB Nr DND/PN-LD-21-01

		Ventures which would need to finalize the documentary, technical and financial aspects of their tender. The Joint Venture thus requests to extend the SOBE to 30 November 2021.	
3	Section VIII (Checklist of Technical and Financial Documents)	Liberality to allow and receive unnotarized pertinent documents from the JV's co – venturers: The JV thus requests the kind consideration of the committee to allow and receive from both co-venturers the submission of unnotarized pertinent documents as mandated in Paragraph 6 of GPPB Resolution 09-2020, or altogether exempt the submission of all documents that require notarization/ consularization/ apostille and/or what is commonly called "red ribbon" on bid submission. ...The JV vows to submit the notarized documents on award.	The BAC will accept the following alternate documentary requirements*: i. Unnotarized Bid Securing Declaration; ii. Unnotarized Omnibus Sworn Statement; iii. Unnotarized PSD; iv. Unnotarized Secretary's Certificate; v. Unnotarized Statement that the bidder is the manufacturer of the Landing Dock; vi. Unnotarized Statement that the Landing Dock being offered is being used by the Armed Forces of the country of origin or at least two (2) other Armed Forces. *subject to compliance therewith before award of contract
4	Section VIII (Checklist of Technical and Financial Documents)	Liberality to allow and receive other possible and/or equivalent documents required to be submitted by the foreign co-venturer in lieu of its By-Laws, which would need legalization or red ribbon by the relevant embassy or consulate: The JV thus requests to allow the authority of the Director of PT Batamec to enter into a JV Agreement with Megaship Builders, Inc. for this project and for such other purposes **without the need of providing a board resolution or secretary's certificate or for the JV to submit alternate documents that would satisfy this Honorable Committee's requirement of proof of authority.**	Additional Instructions in Section III. Allows submission of "other appropriate forms of authority"

		The JV further requests to clarify the need to legalize (red ribbon/apostille) documents that are originally in Bahasa juxtaposed with its English translation. The JV finally requests that the By-Laws of its foreign co-venturer be allowed in the interim without need of legalization by the Philippine Embassy or consulate. This, considering that the earliest date available with the Department of Foreign Affairs (DFA) apostille appointment is on January 2022, or way beyond the date set for SOBE.	For the English translation (Refer to ITB Clause 10.3) If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
5	Section III (Bid Data Sheet) ITB Clause 5.3	For the purpose of fair competition, to allow and broaden the numbers of years within which the bidder should have completed a Single Largest Similar Contract (SLSC): With all due respect, this is very restrictive. In reality it allows the participation of only one (1) bidder and which is, the Indonesian shipbuilder which built for the Philippine Navy the two (2) landing docks in 2017… The JV thus requests, under the principles of equity and fair competition, to amend the phrase "within the last five (5) years," in clause 5.3 to **"within the last ten (10) years."** This would ensure the participation of more than one capable, compliant and responsible bidder.	Proposal accepted. Clause 5.3 is amended from five (5) years to ten (10) years.

6	Section III (Bid Data Sheet) ITB Clause 5.3	To make competitive the definition for a Similar Contract: It is restrictive and defeats competition because it disallows the participation of a shipbuilder who in the past may not have constructed yet a **"Naval Ship"** of the mentioned tonnage, but which is capable of building one to the satisfaction of the PN's wish for a Naval Vessel, if only it will be allow to participate in the bidding. The afore stated issues that the JV has enumerated herein as concerns E and F, both would lead us all to think that there is something very disturbing. It appears that these requirements in **clause 5.3 of the how Bid Data Sheet has been "adjusted" as to allow for an easy, if not the immediate, qualification, as an eligible bidder of the ship builder which built the first two (2) landing docks for the Philippine Navy**, with a single contract completed within the last five (5) years (that is 2017) and similar (Naval Ship) to the project now under procurement. The JV thus requests, with all due respect to the Committee, to amend **clause 5.3 back to its original tenor as what has been required in clause 5.4 of the previous Bid Documents of 2019.**	Proposal not accepted. The proponent must have constructed a naval ship since there is a provision for future installation of weapons and sensors. The proponent must be knowledgeable on the arrangement of weapons/sensors and the corresponding equipment rooms and foundations. Further, Replenishment at Sea is a peculiar operation of the Navy and the ship designer must also be familiar with the required equipment and corresponding arrangement.
7		Granting of preferential treatment to bidders with domestic participation for the purpose of attaining the Philippine Government's desire to attain a self-reliant defense posture in shipbuilding.	Proposal considered as long as the technical and financial eligibility requirements are met and compliant to the technical specifications of the project in the Bidding Documents and the provisions of the Revised IRR OF RA 9184; RULE XII, Section 43.1.2 and Section 43.1.3 Year 2016. 43.1.2. The Procuring Entity shall give preference to materials and supplies produced, made and manufactured in the

			Philippines, subject to the conditions herein below specified. The award shall be made to the lowest Domestic Bidder, provided his bid is not more than fifteen percent (15%) in excess of the lowest Foreign Bid. 43.1.3 A Domestic Bidder can only claim preference if it secures from the DTI a certification that the articles forming part of its bid are substantially composed of articles, materials, or supplies grown, produced, or manufactured in the Philippines.
8	Section VII (Technical Specifications) 5. MPAC MKIII OPERATIONS/ SUPPORT g. Gas Supply Unit (GSU) Storage Facility	Need further information about the gas used for Gas Supply Unit (GSU) Storage Facility such as Gas Compressor Unit, Gas Purify Tester, Gas Battery.	Size/dimension of storage facility and equipment are already included in the tech specs. Additional information will be provided to the winning proponent. 99.99% NITROGEN GAS
9	Section VII (Technical Specifications) 10. Helicopter Landing (Flight Deck) Able to accommodate two (2) medium lift helicopters with weight up to 12 tons/ each at flight deck and one (1) medium lift helicopter 12 tons at hangar. Section VII (Technical Specifications) 8. Helicopter Operations/Support c. The vessel must be equipped with standard and proven flight deck and hangar facilities, navigational aid system compatible with NVG, refueling system, helicopter traversing system compatible for AW109, AW159 and other medium	Helideck capability can accommodate 2 heli(s) with 10 ton per heli. On, document also mentioned about the heli traversing system compatible with AW 139 which weighted about 6 ton only. Please advise about the discrepancy of heli compatibility on deck. 10-ton heli and 6 ton heli requires different space onboard which affect the helideck load design.	Heli traversing should be designed to accommodate 12 tons helicopter.

	lift helicopters, aviation firefighting system, electrical supply system and fluid and gas supply systems such as compressed air nitrogen, Jet-A1 fuel, distilled and fresh water.		
10	Section VII (Technical Specifications) 10. Hangar	Is hangar onboard to store a heli with collapsible rotor? It will affect the design of the hangar dimension.	The helicopters that will operate with the ship are with collapsible main rotor blades.
12	18. AUXILIARY EQUIPMENT (Minimum) Environmental Systems The vessel should be equipped with environmental protection system and shall include but not limited to the following: • Sewage Treatment system with capacity sufficient to treat the complements including passengers' wastes (black and grey water waste) • Oily-water treatment system • Garbage compactors • Incinerators • Ballast water treatment All environmental protection equipment/system shall be compliant with applicable IMO/MARPOL Annexes.	Is there any Ballast Treatment requirement from the Philippine government?	The ballast water treatment is operational requirement of the Philippine Navy and part of upgrade on this project so that the future LD can be deployed in countries with strict environmental rules.
13	Section VII (Technical Specifications) List of Equipment	To avoid increasing price by vendor since they are on the maker list, we propose to give **at least two offers equality similar** on navigation equipment, Furuno and JRC.	Proposal accepted as indicated in the list of equipment except for two items (Downlink Receiver and Secure Radio Communications) that involves compatibility to the existing PN communication and security is not negotiable. Refer to Annex C: Amended Section VII (Technical Specifications)
14		Need advice for the weapon 0.5 inch that the ammunition to be supplied	Ammo, is not included in the requirements.

		by whom.	
15	Section VII (Technical Specifications) 23. Weapons and Sensor Fittings Weapons The vessel shall be fitted for (but not equipped) with the following weapons systems (owner furnished Equipment-OFE): • Primary / main gun fore mount (will at least accommodate a 76MM SR MF gun or a similar caliber/size weapon system); • Secondary guns Port / Stbd / Aft mounts (will at least accommodate a 30mm gun or similar caliber/size weapon system); • Closed-In-Weapon-System (CIWS); • Fire Control System, and • Decoy Launching System	Need further information for any main gun, decoy and launcher which is planned to be installed onboard.	Main Gun: 76mm Oto Melara Gun (Super Rapid 120 rpm) Secondary Guns: 30mm Gun Aselsan SMASH (RCWS with EO/IR) CIWS: Millennium Gun/Gokdeniz 35mm Gun with REOFCS Fire Control System: Leonardo NA25X Decoy Launching System: Terma C-Guard (24 tubes, 130mm)
16	Section VII (Technical Specifications) 23. Weapons and Sensor Fittings Perimeter Machine Guns The vessel shall be equipped with at least eight (8) 0.50 cal Quick Change Barrel Perimeter machine guns with naval soft gun mounts.	Also, what is the scope of work for CMS and all weapons during installation onboard and commissioning.	No scope of works for CMS and other weapons installation in this project except for the M2 .50 cal QCB machine gun system with PN soft standard mount.
17	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Integrated Communication and Control System (ICCS) The ICCS must be capable of integrating internal and external communication of any equipment	Need further information about Integrated Communication System. How many points are needed?	ICCS stations to be installed in spaces will be detailed by the TWG PN-LDAP during the design and layout review. Initially in spaces such as but not limited to: Bridge, Radio Room, CIC, Task Force Room, MCR, Sickbay, Damage Control Room, Mess halls, Galley, etc

	manufacturer and provide full integration of any type of equipment – including HF, VHF, UHF or SATCOM radios, modems and encryption devices. External and Internal Communications must have the following minimum features: • Voice recording • Centralized network management station • Digitalized communication switching units		
18	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Secure Multi-band VHF/UHF Base Radio At least (2) sets of VHF/UHF Base radio located at the Bridge and Radio room for shipboard configuration to be used in ship to shore communication with the following minimum specifications: • Frequency range: 30 - 512 MHz • RF output: 50 watts • Inter-operable with existing AFP radios in secure mode of communications for voice and data • Citadel encryption must be embedded in the radio • Must meet military standard specification • Must be integrated with ICCS	Needed detail about Secure Multi-band VHF/UHF Base Radio	Must be compatible and interoperable in secure mode with existing secure communication radios of the PN
19	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System	Need advice for Cellular Signal Repeater with network GSM/3G/4G to the existing Philippine network provider. We suggest that MBI provides this.	Proposal is accepted. - Shipbuilder will provide the equipment.

	Cellular Signal Repeater The signal repeater must be used to provide a strong cellular signal inside the ship with the following minimum specifications: ... -Network: GSM /3G/ 4G or above and compatible to the existing Philippine network provider. ...		
20	Section VII (Technical Specifications) 19. AUXILIARY EQUIPMENT (Minimum) Replenishment at Sea The vessel shall be provided with appropriate fittings, tools and equipment that will allow the vessel to conduct replenishment at sea in accordance with PN regulations and/or NATO standards. (STANAG 1065 "Replenishment at Sea.ATP-16(B)"). It shall also be provided with a system for the delivery of POL, water and solid transfer to other PN vessels.	Need detail information for RAS receiver position.	Shipbuilder to submit design to be approved by the Philippine Navy during the Design Phase.
21	Section VII (Technical Specifications) 17. PROPULSION AND AUXILIARY MACHINERIES (Minimum) Propulsion System	Need detail information about Propulsion System.	Propulsion System refers to Main Engine, Reduction Gear, Propeller and shaft.
22	Section VII (Technical Specifications) 12. Helicopter Support Equipment b. Standard Navigational Aid System / Lighting and Visual Approach Equipment (NVG Compatible) equipment with but not limited to the following...	Please describe regarding the light capability on helideck compatible with night vision goggle.	The ship will launch and recover naval helicopter both day and night. Helicopter pilot and aircrew uses Night Vision Goggles to fly at night, hence, the ship lighting should be compatible with NVG. NVG compatible lighting is effectively invisible to NVGs but visibly bright enough to be seen unaided by aircrew. NVG incompatible lighting will

			produce halos that impact visibility and performance of pilots.
23	Section VII (Technical Specifications) 10. Helicopter Landing (Flight Deck) e. Provided with a deck locking grid or landing grid helicopter securing system on the flight deck. The landing grid must be flushed on deck, and have machined and calibrated holes. The landing grid must be made of stainless steel and capable of withstanding tension of at least 15MT. The center of the landing grid to be aligned with the center of the touchdown circle.	Need detail information about Landing Grid for Helicopter. It is required for 15 ton while the heli capacity onboard only for 6 ton or 10 ton?	The landing grid allows the helicopter to land on ship in higher sea states by latching a "harpoon" on the grid. The helicopter is then pulled towards the deck before being locked on to the helicopter deck. The helicopter will use power/lift more than its weight in order to keep the tension on the "harpoon".
24	Section VII (Technical Specifications) 12. Helicopter Support Equipment c. Tactical Air Navigation System (TACAN)	Need detail information or specs about TACAN.	Compatible with AN/ARN-153(V) KEY FEATURES: >Compatible with all standard TACAN digital and analog interfaces >X and Y mode channels for surface and air-to-air operations >252 channels >Echo protection >Mutual suppression interface with other equipment >High reliability: predicted MTBF is 11,000 hours >Growth option: Rho-Rho DME with DO-178B software certificate >> Design refresh 2010
25	Section VII (Technical Specifications) 12. Helicopter Support Equipment f. Helicopter deck fueling/defueling system for	Heli Avtur Tank with capacity 2 x 40.000 liter onboard is considered too much since the avtur has its lifetime when it is stored on tank facility. We propose to arrange the Heli Refueling System with 1 x 40.000 liter and Avtur Drum Station to maintain the genuine and quality of the avtur storage.	Proposal on one (1) JET-A1 fuel tank with 40, 0000 liters is accepted.

	Jet A-1 fuel with the following: 1. Two (2) AVCAT fuel tanks with at least 40,000 liters fuel capacity each		
26	Section VII (Technical Specifications) 12. Helicopter Support Equipment g. Helicopter External Power Unit (EPU)/Helicopter Starting System	Need detail information about Heli External Power Unit V/AC or V/DC.	28 VDC. Compatible with AW109 and AW159 helicopters.
27	Section VII (Technical Specifications) 12. Helicopter Support Equipment i. Flight deck crew's cranial helmets with ear muffs with hands free communication integrated with ICS. This is specifically to be used for Helicopter Operations as distinguished from other headset requirement.	Based on our experience, Heli Marshaller and Crew need 1-way communication helmet connected with ICS. Please advise.	Heli marshaller and crew should have a two-way hands-free communication integrated with the ICS
28	Section VII (Technical Specifications) 12. Helicopter Support Equipment k. Standard Aviation Admin Office, l. Standard Aviation Shop and m. m. Standard Aviation Storage Room.	Need further information about Aviation Standard from Philippine which may affect the design for cabin accommodation such as Standard Aviation Admin Office, Standard Aviation Shop and Standard Aviation Storage Room.	Refer to tech specs in the Bid Docs.
29	Section VII (Technical Specifications) 23. Weapons and Sensor Fittings Sensors The vessel shall be fitted for (but not equipped) with the following sensors (owner furnished Equipment-OFE): • Air / Surface Search (3D) Radar; • Electro-Optical Fire Control System;	What kind of Hull Mounted Sonar type to be installed?	Omission of Hull Mounted Sonar.

	• Combat Management System, and • Electronic Warfare System • Hull Mounted Sonar		
30	Section VII (Technical Specifications) 19. AUXILIARY EQUIPMENT (Minimum) Fire Fighting and Detection	Need further information regarding the Fire Fighting System.	Refer to tech specs in the Bid Docs.
31	Section VII (Technical Specifications) 19. AUXILIARY EQUIPMENT (Minimum) Replenishment at Sea The vessel shall be provided with appropriate fittings, tools and equipment that will allow the vessel to conduct replenishment at sea in accordance with PN regulations and/or NATO standards. (STANAG 1065 "Replenishment at Sea.ATP-16(B)"). It shall also be provided with a system for the delivery of POL, water and solid transfer to other PN vessels.	For SOLID RAS capability to be installed onboard.	Refer to tech specs in the Bid Docs.
32	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Squawk box	Need description of SQUAWK BOX. We don't really recognize that box or maybe different term in Indonesia.	SQUAWK BOX is public address and internal communications system with speakers and microphones installed in determined areas of the ship per tech specs
33	Section V (Special Condition of Contract) GCC Clause 1 **Warranty –** Warranty to be applied will be minimum of two (2) years unless the warranty as provided by the supplier is longer for all systems and	Requesting that the guarantee is 1 year only, not 2 years.	Proposal not accepted Retention Money or other forms of Warranty Security shall be valid/effective only for one (1) year

	equipment such as but not limited to: i) Ship's Hull j) Propulsion System k) Auxiliary Machineries l) Navigational Systems m) Weapons and Sensors Systems n) Electrical and Electronics System and Wirings o) Communications Systems p) Piping and Fittings If no warranty is prescribed by the supplier, the standard 2 years warranty period shall be applied.		
34	Section VII (Technical Specifications) 21. Communications, Electronics, and Information System Acoustic Hailing Device The AHD should broadcast highly intelligible communications and warning tones with focused acoustic output to clearly determine the intent of vessels not responding to radio calls, change threat behavior and enlarge vessel standoff zones. This should be remotely operated, with HD camera, searchlight and can also provide intelligible voice communication of 3,000meters (minimum). It should have two (2) units intercom speaker and with following specifications:	Need reference for Acoustic Hailing Device from previous vessel.	Check the LRAD 950 RXL or any similar capabilities per tech specs

4. Larsen & Toubro Limited, India

Item No	Section/ Clause No	Question or Suggestions by Bidder	Response
1	Section III (Bid Data Sheet) ITB Clause 2 The name of the Project is: ***PN Landing Dock Acquisition Project***	Clarification on the contract project name: The Bid Documents state the project name with title as, "Philippine Navy Landing Docks Acquisition Project". The presentation conducted by the TWG during Pre-Bid, however, has shown the project name as, "Acquisition of Landing Docks for the Philippine Navy." Further, there seems to be no particular reference which distinguishes it separately from the previous failed-procurement of year 2019 for the same type of vessel, which was also titled as "Philippine Navy Landing Docks Acquisition Project." The previous procurement project is even more distinctively referred to with its nomenclature as "AFPMP-LDAP-2019-03."	The name of the Project is: **Acquisition of Landing Docks for the Philippine Navy**
2	Section I (Invitation to Bid) Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below, on or before 26 October 2021 at 10:00 A.M. Late bids shall not be accepted.	L&T would like to submit the following for consideration: It may be appreciated that Landing Dock Ships are large complex Naval vessels and preparation of technical and commercial bid takes time and it is extremely challenging to prepare the bid in the short time given now. We, therefore request you to give us **at least Ten (10) weeks** of time for submission of Bid from the Pre-bid conference. This would help us to give PN, an optimal proposal of Landing Dock Ships and also offer a very competitive price for the Project.	SOBE is moved to November 11, 2021. SBB Nr DND/PN-LD-21-01
3	Section III (Bid Data Sheet) ITB Clause 5.3 The Bidder must have completed within the last five (5) years, a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.	Request the following may be clarified: (a) Does the "Single Contract" indicated here mean completion & delivery of single ship OR it could be multiple ships in Single Contract, the total of which equals at least fifty percent (50%) of the ABC.	SLCC is defined in the Bid Docs under Section III (Bid Data Sheet) ITB Clause 5.3. The Bidder must have completed within the last **ten (10) years**, a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.

	For this purpose, similar contract shall refer to the construction and delivery of Naval Ship with a minimum gross tonnage of 5,000 tons. GOODS being offered shall be used by the armed forces in the country of origin or used by the armed forces of at least two countries and that the suppliers are themselves the manufacturers.	L&T has designed in-house, built & **delivered** 185m long **Floating Dock** having more than **5000 tons displacement** which is a sophisticated vessel, to Indian Navy. The contract value of this Floating Dock is USD 58.57 million, which is more than 50% of the ABC. Is it acceptable as **similar contract**, as indicated in this Clause 5.3.	For this purpose, similar contract shall refer to the construction and delivery of Naval Ship with a minimum gross tonnage of 5,000 tons. Floating Dock is not a naval ship and will not qualify as a similar contract.
4	Section III (Bid Data Sheet) ITB Clause 14.1 The bid security shall be in the form of a Bid Securing Declaration **or** any of the following forms and amount: (a) The amount of not less than two percent (2%) of ABC, if bid security is in cash, cashier's/ check, bank draft/guarantee or irrevocable letter of credit; or (b) The amount of not less than five percent (5%) of ABC, if bid security is in Surety Bond.	Request clarify, if Bid Securing Declaration is sufficient to be submitted with Bid documents in lieu of Bank Guarantee and Surety bond as specified in the clause.	"The bid security shall be in the form of a Bid Securing Declaration **or** ....." Submission of Bid Securing Declaration will suffice.
5	Section I (Invitation to Bid) 2. The DND/AFP now invites bids for the construction and delivery of Two (2) units Landing Dock Vessels, Four (4) units Landing Craft Utility (LCU), and Four (4) units Rigid Hull Inflatable Boat (RHIB) all brand new with Mission-Essential Equipment and 2-year Integrated Logistics Support (ILS) for the Philippine Navy. Delivery of Goods or the contract	The delivery duration of 1st vessel in 730 days (2 years) is considered very short. It may be noted that the Hull form needs to be optimised and proven through model tests. The schedule of model tests depends on the slot availability for conduct of tests in the model test basin. The Model Testing and Design Stages of the Project correspond to 06 months of the Project lifecycle, post which detailed activities are undertaken. Considering the requirement for optimisation of ship configuration, lead time for procurement of propulsion system and integration	Proposal not accepted. The delivery of the vessels is aligned with the mode of payment as indicated in the MYCA published by DBM. The period provided is sufficient for the completion of the project.

	duration should not be later than 1,095 calendar days after Receipt of Notice to Proceed (NTP). Similar contract shall refer to the construction and delivery of Navy Ship with a minimum gross tonnage of 5,000 tons. The description of an eligible bidder is contained in Section II of the Bidding Documents, ITB.	on-board & trials, and to undertake an efficient design, propose delivery of first vessel by **1095 days (3 years)** after NTP in lieu of 730 days as indicated. Delivery of second vessel by **1460 days** after NTP (**3 ½ years)** after NTP in lieu of 1095 days as indicated.	
6	Section V (Special Conditions of the Contract) GCC Clause 2 Terms of Payment shall be as follows: On Contract Signature – Advance payment of 15% of Contract Price within 60 days from NTP On Delivery and Acceptance of 1st Vessel: 35% of Contract Price On Delivery and Acceptance of 2nd Vessel: 50% of Contract Price Post Warranty: 5%.	We would like to request the following terms of payment for consideration: (a) **Advance Payment**: - **15%** of Contract Price of both the vessels within 60 days from NTP, as indicated in Bid document. (b) **1st Instalment**: - **10%** of contract Price of both the vessels on completion of Critical Design Review & submission of Project plan. (c) **2nd Instalment: - 10%** of contract Price of each of the vessels on Keel Laying of each vessel. (d) **3rd Instalment: - 20%** of contract Price of both the vessels on production of proof of placement of purchase orders of major material/equipment. List of major material/ equipment for which orders have to be placed could be agreed upon at the time of signing of Contract. (e) 4th **Instalment**: - **10%** of Contract Price of each vessel, on completion of 25% of physical progress of construction & pressure testing of tanks/compartments as per QAP. (f) **5th Instalment**: - **10%** of Contract Price of each vessel, on installation of all major equipment on-board. List of major material/equipment to be installed could be agreed upon at the time of signing of Contract. (g) **6th Instalment**: - **10%** of Contract Price of each vessel, on launching of each vessel.	Proposal not accepted. - Mode of payment is based on the MYCA published by DBM.

		(h) **7th Instalment: - 10%** of Contract Price of each vessel, on Delivery and acceptance of each vessel. (i) **8th Instalment:- 5%** of Contract Price of each vessel, on completion of respective Warranty Period. Warranty amount of 5% could be released by customer for payment on submission of Bank Guarantee equivalent to 5%.	
7	Section VII (Statement of Compliance) ... as appropriate for the following major equipment and systems*: 1. Main engines and generators for landing docks and LCU. 2. Bow Thruster 3. Platform Management System 4. RHIB 5. Navigational System 6. Downlink Receiver System 7. Integrated Communication and Control System 8. Electronic Chart Display System 9. All Radio Communications equipment 10..50 Caliber Machine Gun 11. Helicopter Traversing System 12. Tactical Air Navigation (TACAN) * The bidders must make reference to only one / single brand	As per the clause ibid, the bidders have to finalise one single brand for the list of major equipment indicated in the tender document, prior submission of bid. L&T would like to submit that it may not to be feasible to complete the Techno-Commercial negotiations with vendors and freeze the offer for zeroing in on one vendor at the bid stage. It is therefore requested that multiple vendors may be permitted to be included at this stage, which will provide flexibility to offer optimum Design. Once the contract is signed, within 120 days of NTP, single brand name of the vendor for all the main equipment.	Refer to Annex C: Amended Section VII (Technical Specifications) At least 2 or more brand names were listed except for two items (Downlink Receiver and Secure Radio Communications) that involves compatibility to the existing PN communication and security is non-negotiable.

II. Amendments

1. Technical Specifications

Number	ORIGINAL	REVISED
	2. CAPABILITIES	2. CAPABILITIES
1	Each vessel can able to quickly launch and recover the following: • a minimum of two (2) Rigid Hull Inflatable Boats (RHIB) from and to the cradle, • AAV from and to the well deck and side ramps, and • a minimum of two (2) Landing Craft Utility (LCU) from and to the well deck or two (2) MPAC MKIII from and to the cradle.	Each vessel can able to quickly launch and recover the following: • a minimum of two (2) Rigid Hull Inflatable Boats (RHIB) from and to the cradle, • AAV from and to the well deck and side ramps, and • a minimum of two (2) Landing Craft Utility (LCU) from and to the well deck or two (2) MPAC MKIII from and to the cradle. **The specification of AAV is as follows:** **Weight: 29.1 Tons (64,000lbs)** **Length: 7.94m (321.3")** **Width: 3.27m (128.72")** **Height: 3.26m (130.5")**
	5. MPAC MKIII OPERATIONS/ SUPPORT	5. MPAC MKIII OPERATIONS/ SUPPORT
2	a. The vessel shall have two (2) collapsible cradles on board that can accommodate two (2) Multi-purpose Attack Crafts MKIII. MPAC MKIII Specifications: • Length: 17.0 m • Beam: 4.76 m • Draft: 0.92 m • Depth (Keel to Mast): 5.0 m • Displacement: 32.0 T	**a. The vessel shall have two (2) collapsible cradles on board that can accommodate two (2) Multi-purpose Attack Crafts MKIII.** **MPAC MKIII Specifications:** **• Length: 17.0 m** **• Beam: 4.76 m** **• Draft: 0.92 m** **• Depth (Keel to Mast): 5.0 m** **• Displacement: 32.0 T** **• Bottom hull shape of MPAC III is V- Bottom** **Concept of operation of Collapsible Cradle:** **The collapsible cradle of MPAC III will be assembled when securing MPAC III in the well dock and can be disassembled when securing LCU instead of MPAC III. The main frames of the cradle should be permanently installed in the well dock and supporting brackets can be assembled. The cradle should not protrude on the deck of dock well when not in use to allow other amphibious operations (i.e. AAV, LCU). To ease the assembly and disassembly of cradle, it should be made of light and robust materials, It should be provided with drainage to drain excess water and locking system to secure the cradle whether in use or not. Likewise, lashing gears should be provided to secure the MPAC III in the**

		cradle. Stowage bin should be provided to store other parts when the cradle is not in use.
3	f. Trolleys and Forklifts can be accommodated to carry and transport pallet loaded with missile containers.	f. **At least two (2)** trolleys and **two (2)** forklifts can be accommodated to carry and transport pallet loaded with missile containers. **The contractor shall consider the specification of available forklift in the market that can safely transport said missiles**
	8. Helicopter Operations/Support	8. Helicopter Operations/Support
4	c. The vessel must be equipped with standard and proven flight deck and hangar facilities, navigational aid system compatible with NVG, refueling system, helicopter traversing system compatible for AW109, AW159 and other medium lift helicopters, aviation firefighting system, electrical supply system and fluid and gas supply systems such as compressed air nitrogen, Jet-A1 fuel, distilled and fresh water.	c. The vessel must be equipped with standard and proven flight deck and hangar facilities, navigational aid system compatible with NVG, refueling system, helicopter traversing system compatible for AW109, AW159 and other medium lift helicopters, aviation firefighting system, electrical supply system and fluid and gas supply systems such as compressed air nitrogen, Jet-A1 fuel, distilled and fresh water. **Heli traversing should be designed to accommodate 12 tons helicopter.**
	12. Helicopter Support Equipment	12. Helicopter Support Equipment
5	c. Tactical Air Navigation System (TACAN)	c. Tactical Air Navigation System (TACAN) **Shall be compatible with AN/ARN-153(V).** **KEY FEATURES:** **>Compatible with all standard TACAN digital and analog interfaces** **>X and Y mode channels for surface and air-to-air operations** **>252 channels** **>Echo protection** **>Mutual suppression interface with other equipment** **>High reliability: predicted MTBF is 11,000 hours** **>Growth option: Rho-Rho DME with DO-178B software certificate** **>> Design refresh 2010**
6	f. Helicopter deck fueling/defueling system for Jet A-1 fuel with the following: 1. Two (2) AVCAT fuel tanks with at least 40,000 liters fuel capacity each	f. Helicopter deck fueling/defueling system for Jet A-1 fuel with the following: 1. **One (1) JET-A1** fuel tank with at least 40,000 liters fuel capacity.
7	g. Helicopter External Power Unit (EPU)/Helicopter Starting System	g. Helicopter External Power Unit (EPU)/Helicopter Starting System

		28 VDC. Compatible with AW109 and AW159 helicopters.
8	i. Flight deck crew's cranial helmets with ear muffs with hands free communication integrated with ICS. This is specifically to be used for Helicopter Operations as distinguished from other headset requirement.	i. Flight deck crew's cranial helmets with ear muffs with **two-way** hands-free communication integrated with ICS. This is specifically to be used for Helicopter Operations as distinguished from other headset requirement.
	14. HULL FORM, LAYOUT, AND FINISHING	14. HULL FORM, LAYOUT, AND FINISHING
9	g. The vessel shall have additional physical spaces and electrical power requirements for the installation of the following future capabilities: 76mm gun, 30mm guns, decoy launching system, CIWS, Hull Mounted Sonar.	g. The vessel shall have additional physical spaces and electrical power requirements for the installation of the following future capabilities: 76mm gun, 30mm guns, decoy launching system, CIWS. **The electrical power requirement are as follows:** **76mm Gun - 56kW** **30mm Gun - 5.5kW** **Decoy Launching System - 92kW** **CIWS - 73 kW**
	15 Tanks	15 Tanks
10	d. The vessel shall have separate fresh water tank for technical and potable water storage. At least two (2) potable fresh water tanks shall be constructed with a combined minimum capacity equal to 700,000 liters. On the other hand, bilge water/dirty oil/sludge collection tanks shall be integrated in the engine room double bottom construction for collection of bilge water, dirty oil and sludge.	d. The vessel shall have separate fresh water tanks for technical and potable water storage **with a total minimum capacity of 700,000 liters**. At least two (2) potable fresh water tanks shall be constructed with a combined minimum capacity equal to the peak consumption or three times the daily normal requirement. On the other hand, bilge water/dirty oil/sludge collection tanks shall be integrated in the engine room double bottom construction for collection of bilge water, dirty oil and sludge.
	17 Propulsion and Auxiliary Machineries (Minimum)	17 Propulsion and Auxiliary Machineries (Minimum)
	Distribution System	Distribution System
11	a. The vessels power distribution shall be designed, constructed and fitted-out such that power is generated and distributed from the power generating plants at 440 VAC (nominal), non-earthed, 3-phase system **with neutral conductor** alternating current to meet the following requirements applicable to various units of equipment as follows; • 440V 3 phase 60 Hz for all electrical power equipment; • 220V single phase 60 Hz for the special lighting distribution system; • 440/220V 3 phase 400 Hz for electronics, weapons control and other equipment; • 220V single phase 60 Hz for normal lighting system, medical equipment, 220 V amenity sockets in living spaces, electronic	a. The vessels power distribution shall be designed, constructed and fitted-out such that power is generated and distributed from the power generating plants at 440 VAC (nominal), non-earthed, 3-phase system alternating current to meet the following requirements applicable to various units of equipment as follows; • 440V 3 phase 60 Hz for all electrical power equipment; • 220V single phase 60 Hz for the special lighting distribution system; • 440/220V 3 phase 400 Hz for electronics, weapons control and other equipment; • 220V single phase 60 Hz for normal lighting system, medical equipment, 220 V amenity sockets in living spaces, electronic

	maintenance areas and offices complete with protection from electric shock; • 24VDC for some escape lighting, engine control and other important control, monitoring, navigation and emergency radio; • 115/200V 400 Hz for helicopter servicing; and • 28VDC for helicopter maintenance and starting.	maintenance areas and offices complete with protection from electric shock; • 24VDC for some escape lighting, engine control and other important control, monitoring, navigation and emergency radio; • 115/200V 400 Hz for helicopter servicing; and • 28VDC for helicopter maintenance and starting.
	18 Auxiliary Equipment (Minimum)	18 Auxiliary Equipment (Minimum)
12	Environmental Systems	Environmental Systems
	The vessel should be equipped with environmental protection system and shall include but not limited to the following: • Sewage Treatment system with capacity sufficient to treat the complements including passengers wastes (black and grey water waste) • Oily-water treatment system • Garbage compactors • **Incinerators** • Ballast water treatment All environmental protection equipment/system shall be compliant with applicable IMO/MARPOL Annexes.	The vessel should be equipped with environmental protection system and shall include but not limited to the following: • Sewage Treatment system with capacity sufficient to treat the complements including passengers wastes (black and grey water waste) • Oily-water treatment system • Garbage compactors • **Incinerator** • Ballast water treatment All environmental protection equipment/system shall be compliant with applicable IMO/MARPOL Annexes.
13	Anchoring and Mooring System	Anchoring and Mooring System
	The vessel shall be provided with two (2) bow anchors and anchor chains corresponding to its displacement. The chains are to be stowed in chain lockers located at the forepeak. Anchors should be provided with a small floater and a 50m line. Chain stoppers shall likewise be provided to relieve the anchor winch from holding the chain when anchored. An anchor windlass, which is remotely operated at the forecastle, shall also be provided for each anchor as part of the vessel requirement. Capstans, shall be provided that shall have sufficient brake power for mooring the vessel. **The following deck equipment shall also be included: Chain Bin, mooring winch, bollards, cleats, rope reels, rope bins, anchor roller and gangplank/brow.**	The vessel shall be provided with two (2) bow anchors and anchor chains corresponding to its displacement. The chains are to be stowed in chain lockers located at the forepeak. Anchors should be provided with a small floater and a 50m line. Chain stoppers shall likewise be provided to relieve the anchor winch from holding the chain when anchored. An anchor windlass, which is remotely operated at the forecastle, shall also be provided for each anchor as part of the vessel requirement. Capstans, shall be provided that shall have sufficient brake power for mooring the vessel. The following deck equipment shall also be included: Chain Bin, mooring winch, bollards, cleats, rope reels, rope bins and gangplank/brow. All hawsers, steel wires, mooring ropes, rat guards, and those required by naval operations shall be provided by the builder. The ship shall also be fitted with appropriate mooring bitts for smaller vessels coming alongside.
14	20. Deck Equipment (Minimum)	20 Deck Equipment (Minimum)

	All hawsers, steel wires, rat guards, mooring ropes and those required by naval operations shall be provided by the builder.	**Deleted**
15	Other Deck Equipment (Minimum)	Other Deck Equipment (Minimum)
	The following deck equipment shall also be included: • Chain bin, • Mooring winch, • Bollards, • Cleats, • Rope reels, • Rope bins, • **Anchor roller** and • Gangplank/brow.	**Deleted**
16	Deck crane	Deck Crane
	The vessel shall be fitted with a Hydraulic Deck Crane at the Heli deck with an SWL of 5 tons.	The vessel shall be fitted with a Hydraulic Deck Crane at the Heli deck with an SWL of 5 tons. **The minimum outreach is 5 meters and maximum is 10 meters.**
17	Stern and side ramp	Stern and side ramp
	The vessel shall have a stern ramp for well deck operations. The SWL of such should be of at least 40 tons. It shall have a clear headroom of at least 4.3 meters to allow safe and convenient passage of LCUs and AAVs or other vehicles. Likewise, it shall have two (2) side ramps (1 Port and 1 Starboard) with an SWL of at least 40 tons and should be positioned so as not to hamper the loading/unloading of vehicles. Also, both side ramps should be compliant to accommodate the 20-footer container vans. As far as practicable, it shall be designed to be able to adapt to any tide condition and pier height. It shall have a clear headroom of at least 4.3 meters.	The vessel shall have a stern ramp for well deck operations. The SWL of such should be of at least 40 tons. It shall have a clear headroom of at least 4.3 meters to allow safe and convenient passage of LCUs and AAVs or other vehicles. Likewise, it shall have two (2) side ramps (1 Port and 1 Starboard) with an SWL of at least 40 tons and should be positioned so as not to hamper the loading/unloading of vehicles. Also, both side ramps should be compliant to accommodate the 20-footer container vans. As far as practicable, it shall be designed to be able to adapt to any tide condition and pier height. It shall have a clear headroom of at least 4.3 meters. **Specifications of AAV:** **Weight: 29.1 Tons (64,000lbs)** **Length: 7.94m (321.3")** **Width: 3.27m (128.72")** **Height: 3.26m (130.5")** **Sideramp Opening:** **Width: at least 5.20m** **Height: at least 5m** **Weight: at least 35 tons (tactical vehicle)** **The side ramp should be able to accommodate low bed trailers and prime movers.**
	21. Communications, Electronics, and Information System	21. Communications, Electronics, and Information System
18	Squawk box	Squawk box

	Squawk box should be available at the following stations: Station Number Bridge 1 Commanding Officer's Cabin 1 Ward Room 1 Damage Control Room 4 Sickbay (Male) 1 Sickbay (Female) 1 Engine Control Rooms 1 Engine Room 4 Task Force Operations Room 1 Radio Room 1 Officer's Wardroom 1 VVIP Wardroom 1 Crew's Mess Hall 1 Troop's Mess Hall 1 Officer's cabin 1	**SQUAWK BOX is public address and internal communications system with speakers and microphones installed in determined areas of the ship per tech specs.** Squawk box should be available at the following stations: Station Number Bridge 1 Commanding Officer's Cabin 1 Ward Room 1 Damage Control Room 4 Sickbay (Male) 1 Sickbay (Female) 1 Engine Control Rooms 1 Engine Room 4 Task Force Operations Room 1 Radio Room 1 Officer's Wardroom 1 VVIP Wardroom 1 Crew's Mess Hall 1 Troop's Mess Hall 1 Officer's cabin 1
19	Video Teleconference System (VTS)	Video Teleconference System (VTS)
	One (1) set Video teleconferencing System (VTS) to facilitate the communication and interaction of two or more users through a combination of high-quality audio and video over Internet Protocol (IP) networks and must possess the following minimum equipment: • Digital Video camera • Two (2) speakers • Six (6) microphones (1 master and 5 slaves) • Two (2) computer server -With 32 GB Memory(min) -With 2 TB or Higher Hard Disk Drive (HDD) -With latest Operating System and Microsoft Office 2016 -With Antivirus software (BitDefender) with 3 years license • Two (2) TV (as monitor) • Must be integrated with ICCS	One (1) set Video teleconferencing System (VTS) to facilitate the communication and interaction of two or more users through a combination of high-quality audio and video over Internet Protocol (IP) networks and must possess the following minimum equipment: • Digital Video camera • Two (2) speakers • Six (6) microphones (1 master and 5 slaves) • Two (2) computer server -With 32 GB Memory(min) -With 2 TB or Higher Hard Disk Drive (HDD) -With latest Operating System and Microsoft Office 2016 -With Antivirus software (BitDefender) with 3 years license • Two (2) TV (as monitor) • Must be integrated with ICCS **(only voice data is possible due to technical reason).**
20	Satellite Communications for VTC	Satellite Communications for VTC
	A mini-VSAT Broadband network to provide reliable global broadband connectivity for mission-critical work. It should feature seamless transitions between Ku- and C-band coverage while providing the very low latency that is required for messaging applications. It must provide a download/upload speed as fast as 4 Mbps/1 Mbps (min) and affordable service and airtime plans. With dual-mode C/Ku -band type	A mini-VSAT Broadband network to provide reliable global broadband connectivity for mission-critical work. It should feature seamless transitions between Ku- and C-band coverage while providing the very low latency that is required for messaging applications. It must provide a download/upload speed as fast as 4 Mbps/1 Mbps (min) and affordable service and airtime plans. With dual-mode C/Ku -band

	antenna and have the antenna disk of 1.1 m (max). Must be integrated with ICCS.	type antenna and have the antenna disk of 1.1 m (max). Must be integrated with ICCS. **Separate connection between ICCS voice and VTC.**
21	Satellite Communications (Internet)	Satellite Communications (Internet)
	A mini-VSAT Broadband Network to provide reliable, secure coverage for mission-critical work. It must provide a download/upload speeds as fast as 10 Mbps/3 Mbps and affordable service and airtime plans. KU-band type antenna and have the antenna disk of 60 cm (min). Must be integrated with **ICCS**. The winning proponent pays the initial one (1) year subscription that will start upon departure of the vessel from builder's premises to Manila Philippines. The system is capable of connecting to the internet using local SIM card.	A mini-VSAT Broadband Network to provide reliable, secure coverage for mission-critical work. It must provide a download/upload speeds as fast as 10 Mbps/3 Mbps and affordable service and airtime plans. KU-band type antenna and have the antenna disk of 60 cm (min). Must be integrated with **shipboard LAN system.** The winning proponent pays the initial one (1) year subscription that will start upon departure of the vessel from builder's premises to Manila Philippines. The system is capable of connecting to the internet using local SIM card.
22	Handheld Satellite with Satdock	Handheld Satellite with Satdock
	A handheld satellite phone of Inmarsat that is a reliable and robust handset to cope with searing heat and monsoon rain. It should have a battery life of at least 8 hours of talk time and up to 160 hours on standby. **Must be integrated with ICCS.**	A handheld satellite phone of Inmarsat that is a reliable and robust handset to cope with searing heat and monsoon rain. It should have a battery life of at least 8 hours of talk time and up to 160 hours on standby.
	23. Weapons and Sensor Fittings	23. Weapons and Sensor Fittings
23	The vessel shall be fitted for (but not equipped) with the following sensors (owner furnished Equipment-OFE): • Air / Surface Search (3D) Radar; • Electro-Optical Fire Control System; • Combat Management System, and • Electronic Warfare System • Hull Mounted Sonar	The vessel shall be fitted for (but not equipped) with the following sensors (owner furnished Equipment-OFE): • Air / Surface Search (3D) Radar; • Electro-Optical Fire Control System; • Combat Management System, and • Electronic Warfare System
24	List of Equipment	List of Equipment
	11. Downlink Receiver	ECS **(For the purpose of commonality and interoperability)**
	13. Harris	Harris **(For the purpose of commonality and interoperability)**
	15. .50 Caliber Quick Change Barrel Machine Gun 1. S&T Dynamics	15. .50 Caliber Quick Change Barrel Machine Gun 1. S&T Dynamics **2. FN Herstal**
	18. Helicopter vertical landing 1. Calzoni	18. Helicopter vertical landing 1. Calzoni **2. AGI** **3. LinkSrechts**
	19. Ring laser gyro 1. Raytheon Anschutz	19. Rig laser gyro 1. Raytheon Anschutz **2. Safran Sagem**

2. Instructions to Bidders

Number	ORIGINAL	REVISED
	10. Documents comprising the Bid: Eligibility and Technical Components	10. Documents comprising the Bid: Eligibility and Technical Components
	10. 2 The Bidder's SLCC as indicated in ITB Clause 5.3 should have been completed within ***Five (5) Years*** prior to the deadline for the submission and receipt of bids.	10. 2 The Bidder's SLCC as indicated in ITB Clause 5.3 should have been completed within **Ten *(10) Years*** prior to the deadline for the submission and receipt of bids.
	15. Sealing and Marking of Bids	15. Sealing and Marking of Bids
	Each Bidder shall manually submit **one (1) original** and **three (3) sets of photocopies** of the Eligibility & Technical Components and Financial Components. Each Bidder will submit two (2) sealed envelopes. In the first (1st) sealed envelope, marked as Eligibility & Technical Components, are one (1) original copy and three (3) duplicate copies. In the 2nd sealed envelope, marked as Financial Components, are one (1) original copy and three (3) duplicate copies.	Each Bidder shall manually submit **one (1) original** and **five (5) sets of photocopies** of the Eligibility & Technical Components and Financial Components. Each Bidder will submit two (2) sealed envelopes. In the first (1st) sealed envelope, marked as Eligibility & Technical Components, are one (1) original copy and five (5) duplicate copies. In the 2nd sealed envelope, marked as Financial Components, are one (1) original copy and five (5) duplicate copies. Further, bidders shall **also submit a soft/scanned copy (in a password-protected pdf file) of the bids and all attachments in a CD format and/or in USB.**

3. Bid Data Sheet

Number	ORIGINAL	REVISED
	ITB Clause 2	
	The name of the Project is: ***PN Landing Dock Acquisition Project***	The name of the Project is: **Acquisition of Landing Docks for the Philippine Navy**
	ITB Clause 5.3	ITB Clause 5.3
	The Bidder must have completed within the last **five (5) years**, a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC. For this purpose, similar contract shall refer to the construction and delivery of Naval Ship with a minimum gross tonnage of 5,000 tons.	The Bidder must have completed within the last **ten (10) years**, a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC. For this purpose, similar contract shall refer to the construction and delivery of Naval Ship with a minimum gross tonnage of 5,000 tons.

Please be guided accordingly.

(Sgd.) **ASEC ANGELITO M. DE LEON**
Chairperson, DND Bids & Awards Committee 1

Annex A: Amended Section VII (Technical Specifications)
Annex B: Non-Disclosure Agreement Form

Section VII. Technical Specifications

Statement of Compliance

The bidder must state in the last column **"Comply"** or **"Not Comply"** against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of **"Comply"** or **"Not Comply"** must be supported by evidence in a Bidders Bid and cross-reference to that evidence. Evidence shall be in the form of manufacturer's brochures, un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, sample, independent test data etc., as appropriate for the following major equipment and systems*:

1. Main engines and generators for landing docks and LCU.
2. Bow Thruster
3. Platform Management System
4. RHIB
5. Navigational System
6. Downlink Receiver System
7. Integrated Communication and Control System
8. Electronic Chart Display System
9. All Radio Communications equipment
10. .50 Caliber Machine Gun
11. Helicopter Traversing System
12. Tactical Air Navigation (TACAN)

*** The bidders must make reference to only one / single brand**

A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented for the above listed major equipment and systems will render the Bid under evaluation liable for rejection. A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the provisions of **ITB** Clause 3.1(a)(ii) and/or **GCC** Clause 2.1(a)(ii).

CLARIFICATION AND SETTLEMENT OF CONFLICTING INTERPRETATION OF THE TECHNICAL SPECIFICATIONS

All clarifications regarding the technical specifications stipulated in this section will be clarified by the members of the Project Management Team/Technical Working Group. In cases of conflicting interpretations, the nature and purpose of the equipment will be the basis of interpretation. The main basis for technical specifications and requirements is the nature and purpose of the equipment and its intended use as determined by the doctrinal application of the end-users, represented herein by the **Project Management Team/Technical Working Group.**

ITEM	SPECIFICATIONS		STATEMENT OF COMPLIANCE
1	**Landing Dock Vessels**	**Two (2) units**	
		New Construction	
2	**CAPABILITIES**		
	Able to operate from the territorial sea to the Exclusive Economic Zone (EEZ) and up to the continental shelf. International Engagements will also be part of its mandate. As such, the LDs must be able to operate in foreign waters (tropical and temperate climate).		
	To provide amphibious capability, sealift and sea basing of one PMC battalion conducting amphibious operations and for additional helicopters and AAVs.		
	Able to cover a radius of at least 300 NM within 24 hours and could also provide a long- range deployment at least 9,000 NM at a cruising speed of 13 knots.		
	Can sustain operational presence at sea for a minimum of 30 days in tropical conditions.		
	Able to operate up to Sea State 6 (wave height maximum of 6 meters) in accordance with the World Meteorological Organization (WMO) Sea State Code.		

	Each vessel can able to quickly launch and recover the following: • a minimum of two (2) Rigid Hull Inflatable Boats (RHIB) from and to the cradle, • AAV from and to the well deck and side ramps, and • a minimum of two (2) Landing Craft Utility (LCU) from and to the well deck or two (2) MPAC MKIII from and to the cradle.		
	Able to accommodate at least two (2) medium lift helicopters up to 12 tons/ helicopter The specification of AAV is as follows: Weight: 29.1 Tons (64,000lbs) Length: 7.94m (321.3") Width: 3.27m (128.72") Height: 3.26m (130.5")		
	Able to accommodate in an onboard hangar at least a medium lift helicopter up to 12 tons		
3	**PRINCIPAL DIMENSIONS AND CHARACTERISTICS**		
	Length Overall	at least 120 meters	
	Breadth	at least 21 meters	
	Displacement	at least 7,200 tons (payload compliant)	
	Draft	Function of design	
	Operating Environment	➢Able to operate at Sea State 6 ➢Well deck operations while underway ➢Helicopter Operations while underway and at Sea State 4 ➢LCU Operations while underway and at Sea State 4 ➢RHIB Operations while underway and at Sea State 3	

		➢MPAC MKIII Operations while underway and at Sea State 3 ➢AAV Operations while underway and at Sea State 4	
	Complement	Crew: 18 Officers (6 females), and 120 EP (10 females) Non-organic: 42 (1 VVIP, 8 VIP, 4 Task Force Personnel, 8 Air Crew, 5 Medical Crew, 8 SPECOPS, 8 MPAC Crew).	
4	**PERFORMANCE**		
	Speed	Cruising speed should not be less than 13 knots and maximum speed should not be less than16 knots at full load and capable of operating safely at Sea State 6 (4-6 meters wave height by World Meteorological Organization Sea State Scale).	
	Range	Minimum operating range should be not less than 9,000 Nautical Miles at a cruising speed of 13 knots without refueling.	
	Maneuverability	The vessel is to be fitted with twin rudders of suitable size and shape sufficient to effect a complete turn five times the length of the ship as the maximum tactical diameter. The Landing Dock shall be designed, constructed, and fitted out with a steering arrangement compliant with IMO conventions and with Naval Classification Society Rules (refer to Lloyd's/ABS/BV/DNV-GL) to ensure the safety of the crew.	
		The ship should be controllable and capable of performing maneuvers essential to its safe operation up to critical design conditions within the safety limits.	
		Turning circle: The Landing Dock shall have a tactical diameter not longer than five (5) ship lengths in either direction at maximum speed.	
	Sustainability	Provision for organic crew of 138 for at least thirty (30) days.	

		Provision for 42 embarked passengers (VVIP, VIP, Task Force Personnel, Air Crew, Medical Crew, SPECOPS, MPAC Crew) for at least thirty (30) days Provision for an additional 500 troops for at least fifteen (15) days. Messing spaces for 200 troops at a time (100 crew, 100 troops/embarked passengers) and wardroom	
	Environmental Conditions	The ship shall be able to operate satisfactorily under the following conditions: <u>Performance Requirement Ambient Conditions</u> Air Temperature -10°C to 45°C Sea Water Temperature -2.2°C to 32°C Relative Humidity -10% to 100%	
5	**MPAC MKIII OPERATIONS/SUPPORT**		
	a. The vessel shall have two (2) collapsible cradles on board that can accommodate two (2) Multi-purpose Attack Crafts MKIII. MPAC MKIII Specifications: • Length: 17.0 m • Beam: 4.76 m • Draft: 0.92 m • Depth (Keel to Mast): 5.0 m • Displacement: 32.0 T • Bottom hull shape of MPAC III is V- Bottom Concept of operation of Collapsible Cradle: The collapsible cradle of MPAC III will be assembled when securing MPAC III in the well dock and can be disassembled when securing LCU instead of MPAC III. The main frames of the cradle should be permanently installed in the well dock and supporting brackets can be assembled. The cradle should not protrude on the deck of dock well when not in use to allow other amphibious operations (i.e. AAV, LCU). To ease the assembly and disassembly of cradle, it should be made of light and robust materials, It should be provided with drainage to drain excess water and locking system to secure the cradle whether in use or not. Likewise, lashing gears should be	

	provided to secure the MPAC III in the cradle. Stowage bin should be provided to store other parts when	
	b. The vessel shall be capable of conducting MPAC MKIII deployment and retrieval operations up to Sea State 3	
	c. The vessel shall also come with: • Missile Storage Facility Provision for storage of at least twenty-four (24) Spike ER rounds with container. Each wooden container has the following technical data: Container weight: 41kg Container + round: 76 kg Length: 181 cm Width: 39 cm Height: 52 cm Round environmental conditions for Logistic Storage: Mean Temperature: 5° to 25°C Extreme Temperature: 0°C to 35°C Mean Humidity: 50 to 70% Extreme Humidity: 20 to 95% Facility: Ventilated, Sun and Rain protected Storage period: Not limited by Safety reasons	
	d. Indoor Dehumidifier shall be required with appropriate Air Conditioning Unit.	
	e. As much as possible, the storage facility is near the location of the MPAC with the same deck level for accessibility purposes.	
	f. At least two (2) trolleys and two (2) forklifts can be accommodated to carry and transport pallet loaded with missile containers. The contractor shall consider the specification of available forklift in the market that can safely transport said missiles	
	f. Gas Supply Unit (GSU) Storage Facility • Provision for Gas Supply Unit (GSU) • Each equipment requires a fix rack with a safety harness	

	• There should be enough space surrounding the equipment and personnel passage • Room Environmental Conditions for Gas Supply Unit (GSU): Mean Temperature: 10° to 40°C Mean Humidity: Less than 80% RH Facility: Free of oil and chemical vapors, well ventilated room Room dimension: at least 3x3 meters • The Gas Supply Unit (GSU) storage facility must be able to accommodate the following equipment and be provided with separate power sources of 220V: One (1) Gas Compressor Unit (GCU) Weight: 260 kg Length: 150 cm Width: 80 cm Height: 90 cm One (1) Air Compressor Unit (ACU) Weight: 280 kg Length: 160 cm Width: 70 cm Height: 110 cm One (1) Gas Purity Tester (GPT) One (1) Gas Battery Composed of Eight (8) Nitrogen each Tank Weight: 63 kg Length: 140 cm Width: 24 cm Height: 6 ft	
6	**LCU OPERATIONS**	
	a. The vessel shall have a well deck with provisions to accommodate two (2) Landing Craft Utility (LCU).	
	b. The vessel shall be capable of conducting LCU deployment and retrieval operations up to Sea State 4.	

	c. The well-deck shall be equipped with the following: • Water-tight stern opening access ramp capable of supporting at least three tons per square meter (3 ton/m^2), • At least two (2) ton capacity well-deck hoist (electric), • LCU refueling system.	
	d. Principal Dimension and characteristics The Landing Craft Utility (LCU) shall be brand new and have the minimum principal dimensions and characteristics. • Overall Length- 23 meters • Breadth – 5.9 meters • Draft (D.L.W.L)(MLD) – 1.2 meters • Speed – at least 20 knots • Payload capacity ▪ Cargo – at least 18 tons, or ▪ Personnel – at least 80 personnel with equipment and full battle gear • Cruising range – at least 180 nautical miles • With at least two diesel generators each capable of supplying LCU power requirement	
	e. General Outfitting Equipment The Landing Craft Utility (LCU) shall at least have the following general outfitting equipment; • At least two (2) units diesel generators each with capacity sufficient to provide electric power requirements of all systems onboard, • Standard navigation and communication equipment, but not limited to the following: *2.2 kW Marine Radar, GPS navigator, Magnetic Compass, Wind Speed & Direction System, Military Communications Suite* • Hydraulic/ electric 20- ton watertight bow ramp, • Bow ramp winch and motor, • Cargo deck lashing lugs, • Portable frame canvass awning cargo deck aft, • Ten (10) Portable ball PVC Fenders, and	

	• Two (2) .50 cal Quick Change Barrel HMG with basic issue items including spare barrels for Port/Starboard with mount (including Ready Store Lockers (RSL).	
7	**RHIB OPERATIONS**	
	a. Two (2) Rigid Hull Inflatable Boats (RHIBs) are for light load deployment without the use of the stern ramp. The vessel shall be capable of launching and retrieving simultaneously the two (2) Rigid Hull Inflatable Boats (RHIBs) in 10 minutes. The vessel, shall likewise be equipped with corresponding davits than can support at least 15-tons.	
	b. The vessel shall be capable of conducting RHIB deployment and retrieval operations up to sea state 3.	
	c. RHIB Principal Dimensions and Characteristics The Rigid Hull Inflatable Boat (RHIB) shall be brand new and have the minimum principal dimensions and characteristic. • Overall Length – about 8.7 meters • Breadth – about 2.93 meters (included tube) • Inboard Engine-Outboard Shaft – stern drive, diesel Speed • Accommodation – at least 12 passengers • Cruising – at least 30 knots at full load condition • Maximum – at least 45 knots at full load condition • Fuel Capacity – at least 500 liters (Diesel)	
	d. General Outfitting Equipment The Rigid Hull Inflatable Boat (RHIB) shall at least have the following general outfitting equipment. • Console for helmsman and two (2) crew, • Navigation radar, • Global Positioning System (GPS), • 2X3- men Jockey seats, • Foldable radar Frame • Manual Bilge Pump • Heavy duty Inflatable collar, • Navigational Lights, • Inflation Bellows, • Non – slip deck Finish, • Watertight under – deck locker, • Four (4) Lifting slings,	

	• Anchor and anchor warp, • Water resistant switch panel and electric system, • VHF Marine Band Radio (Base) and • One (1) .50 Cal Quick Change Barrel HMG with basic issue items including spare barrel mid/fore mount (including mounting plate and Ready Service Locker [RSL]). • Provided but not limited to following board and search equipment a. 10 each Ballistic helmet Level IIIA b. Pole, ladder and hook c. 10 each H Gear vest d. Breaching tool set	
8	**HELICOPTER OPERATIONS/SUPPORT**	
	a. The vessel must have a flight deck at the aft for helicopter operation of two (2) medium lift helicopters (not included) capable of operating night and day. There shall be a hangar and embossed control room, facing and directly in front of the flight deck.	
	b. The vessel must be capable of conducting Helicopter launching and recovery operations up to Sea State 4.	
	c. The vessel must be equipped with standard and proven flight deck and hangar facilities, navigational aid system compatible with NVG, refueling system, helicopter traversing system compatible for AW109, AW159 and other medium lift helicopters, aviation firefighting system, electrical supply system and fluid and gas supply systems such as compressed air nitrogen, Jet-A1 fuel, distilled and fresh water. Heli traversing should be designed to accommodate 12 tons helicopter.	
9	**SPIKE NLOS TORPEDO ROUNDS AND 2.75 INCH AERIAL ROCKETS STORAGE ROOM**	
	a. The vessel shall have a room able to accommodate at least three (3) basic load (24 all in all) for SPIKE NLOS rounds and pallets for long term storage. In the same manner, it shall also be able to accommodate twice (2x) the basic load (48 all in all) for 2.75-inch Aerial Rockets. It shall be of adequate space, ammunition racks and support utilities, in order to perform related rounds and long-term storage activities.	
	b. Storage room dimensions should comply with *US DOD Contractor's Safety Manual for Ammunition and Explosives dated March 13, 2008*	

	(DOD 4145.26-M). Entrance shall have enough clearance to carry in a pallet using a small battery-operated forklift (not included).	
	c. The room shall be sun and rain protected and shall have the following Environmental Conditions: • Temperature: 18-26 deg Celsius • Relative Humidity: 30-80% • Air Pressure: 860-1080 mbar • Illumination: 300-500 Lux	
10	**HELICOPTER LANDING (FLIGHT DECK)**	
	a. Able to accommodate two (2) medium lift helicopters with weight up to 12 tons/ each at flight deck and one (1) medium lift helicopter 12 tons at hangar.	
	b. Flight deck dimension should safely accommodate at least two (2) AW159 and similar type helicopters at any one time.	
	c. The flight deck should be provided with suitable helicopter tie-down points, lights, helideck markings and safety nets. The deck shall be fitted with flush locking cups to secure netting or lashing. The deck surface shall be coated with anti-skid covering and the free sides of the landing deck shall have hinged guardrails with safety nets.	
	d. Flight deck markings in accordance with Philippine Navy standard (PNM 3-02.12 Shipboard Helicopter Operations Manual).	
	e. Provided with a deck locking grid or landing grid helicopter securing system on the flight deck. The landing grid must be flushed on deck, and have machined and calibrated holes. The landing grid must be made of stainless steel and capable of withstanding tension of at least 15MT. The center of the landing grid to be aligned with the center of the touchdown circle.	

	f. Provided with a rail-less traversing system to safely secure the helicopter from the flight deck to the hangar. Provided with OEM approved axle bars attached to AW159 helicopter wheels.	
	g. Must be equipped with standard naval aviation firefighting facilities.	
11	**HANGAR**	
	a. Hangar dimension must be standard for an AW159 and similar type Helicopter.	
	b. Hangar must have a roller curtain type door (can be operated by electric or manual) able to safely accommodate an AW159 and similar type and an access door for personnel to traverse from flight deck to hangar and vice versa.	
	c. Hangar must be also equipped with: • Standard firefighting facilities • Standard AC/DC power supply • Standard fluid and gas supply • Standard deck link plates (deck pockets) capable of taking a load of at least an AW159 and similar type Helicopter in any direction as lashing points to secure the helicopter inside the hangar.	
12	**HELICOPTER SUPPORT EQUIPMENT**	
	The following support facilities and equipment must be installed for safe helicopter operations:	
	a. Standard Helicopter control station (day and night capable) equipped with but not limited to the following instruments/equipment: 1. Repeater for heading, speed, relative wind direction 2. Anemometer 3. Inclinometer 4. Controls for helicopter lighting systems and communications equipment.	
	b. Standard Navigational Aid System / Lighting and Visual Approach Equipment (NVG Compatible) equipment with but not limited to the following:	

	1. Utility lighting (white lighting) 2. Homing beacon (flashing white light) 3. Hangar wash floodlights 4. Maintenance floodlights 5. Stabilized Glideslope Indicator 6. Wave off light lighting system 7. Obstruction lights 8. Deck edge lights 9. Deck line-up lights 10. Extended line-up lights 11. Overhead floodlights 12. Deck Surface floodlights 13. Deck status light system 14. Stop/ Go light 15. Horizon reference bar 16. Heli Inflight Fueling Reference (HIFR) light	
	c. Tactical Air Navigation System (TACAN) Shall be compatible with AN/ARN-153(V). KEY FEATURES: >Compatible with all standard TACAN digital and analog interfaces >X and Y mode channels for surface and air-to-air operations >252 channels >Echo protection >Mutual suppression interface with other equipment >High reliability: predicted MTBF is 11,000 hours >Growth option: Rho-Rho DME with DO-178B software certificate >Design refresh 2010	
	d. Flight deck fittings for helicopter tie down	
	e. Helicopter deck firefighting system capable of automatically detecting and extinguishing fire using fixed and mobile foams that includes as practicable: 1. Smoke and heat detectors	

	2. Hose reels 3. Foam injector controls 4. Portable fire extinguishers and 5. Other safety equipment	
	f. Helicopter deck fueling/defueling system for Jet A-1 fuel with the following: 2. One (1) JET-A1 fuel tank with at least 40,000 liters fuel capacity 3. Hose reels 4. Pump controls 5. Filling, transfer and service system 6. Control and monitoring system 7. Local control panel 8. Pump and filter module 9. Necessary accessories The fueling/defueling system for Jet A-1 shall passed the soak test standard of Petron. *Contractor to include flushing of Jet A-1 Fueling and Defueling System	
	g. Helicopter External Power Unit (EPU)/Helicopter Starting System *28 VDC. Compatible with AW109 and AW159 helicopters.	
	h. Helicopter spare parts stowage locker and stowage of spares including spare rotor blades, etc.	
	i. Flight deck crew's cranial helmets with ear muffs with two-way hands-free communication integrated with ICS. This is specifically to be used for Helicopter Operations as distinguished from other headset requirement.	
	j. Berthing spaces for at least 8 members of the Helicopter Crew	
	k. Standard Aviation Admin Office	
	l. Standard Aviation Shop	
	m. Standard Aviation Storage Room	

13	**AAV OPERATIONS**	
	a. The vessel shall have a Tank/ Truck Deck capable of loading and unloading Amphibious Assault (AAV) and other vehicles (*Not included).*	
	b. The Tank/ Truck Deck shall be equipped with the following; • At least seven (7) meter-diameter, at least 40-ton load turn table, • At least 10-ton vehicle lift (from tank to Helideck), and • Refueling System. • Pressurized Fresh Water System. • At least 5 meters clear vertical distance from deck to overhead.	
	c. The Tank/ Truck Deck shall likewise be fitted to accommodate (not included) Eight (8) Amphibious Assault Vehicles (AAV) with a total area of at least 800 square meters.	
14	**HULL FORM, LAYOUT, AND FINISHING**	
	a. The Hull form shall be generated from a proven design by a previously built similar vessel that passed extensive model tests in a renowned model basin. The vessel shall meet the intact stability and stability after damage requirements of Classification Society.	
	b. The hull, deck and superstructure shall be of mild steel. Likewise, high tensile steel shall be used for the tank / truck and heli decks. Scantlings and other structural members shall be in accordance with the Naval Classification Society Standards (refer to Lloyd's/ABS/BV/DNV-GL).	
	c. The hull shall be subdivided into transverse watertight bulkheads that could withstand damage and flooding in any two (2) adjacent watertight compartments, and would remain floating at its floodable length.	
	d. The hull structure shall have particular emphasis on survivability, structural integrity, logical general arrangement, optimized speed-length ratio, beam-draft ratio, and improved structural continuity to minimize vibration.	
	e. Thermal insulation shall be placed in compartments characterized by high temperature. Underwater radiated noise shall also be minimized through the use of resilient mountings, low noise producing equipment, and innovative design of hull, propellers and appendages.	

	f. The height of the mast shall be a function of the ranges of sensors, safety, and stability. The vessel should have at least one navigation mast with sufficient space and strength to accommodate navigation radar scanners, halyards and riggings, navigation lights, aerials, air search radar, weapon sensors and communication antennas in accordance with Naval Classification Society standards (refer to Lloyd's/ABS/BV/DNV-GL).	
	g. The vessel shall have additional physical spaces and electrical power requirements for the installation of the following future capabilities: 76mm gun, 30mm guns, decoy launching system, and CIWS. The electrical power requirement are as follows: 76mm Gun - 56kW 30mm Gun - 5.5kW Decoy Launching System - 92kW CIWS - 73 kW	
	h. Painting scheme of the vessel's hull and structure shall satisfy Philippine Navy standards with appropriate corrosion protective measures and bio-fouling protection (ICCP and MGPS).	
	i. The underwater hull plate and structures shall be applied with epoxy paint top-coated with fluoropolymer foul release coating anti-fouling paint or any similar paint that is designed to last for at least five (5) years. Internal floorings, ceilings bulkheads and pipe work paint and markings shall be in accordance with existing Philippine Navy standards.	
	j. Non-skid finish shall also be made on all-weather decks to include truck deck adjacent to the well deck using anti-skid paint.	
15	**TANKS**	
	a. The fuel oil (FO), freshwater (FW) and ballast tanks shall be provided with bolted manhole covers, filling pipe, and de-aeration pipe and sounding pipe.	
	b. Tank capacities (FO, FW, Ballast and Lube Oil) shall be able to meet the required endurance, range and stability of the vessel.	
	c. Separate fuel oil daily service tanks may be fitted in the engine room with the necessary fittings and overflow pipes to the main storage tanks.	

	d. The vessel shall have separate fresh water tanks for technical and potable water storage with a total minimum capacity of 700,000 liters. At least two (2) potable fresh water tanks shall be constructed with a combined minimum capacity equal to the peak consumption or three times the daily normal requirement. On the other hand, bilge water/dirty oil/sludge collection tanks shall be integrated in the engine room double bottom construction for collection of bilge water, dirty oil and sludge.		
16	**ACCOMMODATION**		
	a. The vessel shall have adequate accommodations for the crew. It shall also provide accommodations for an additional 42 embarked passengers (VVIP, VIP, Task Force Personnel, Air Crew, Medical Crew, SPECOPS, and MPAC Crew).		
	b. An additional troop accommodation standard shall be provided for one (1) embarked marine battalion (500 troops).		
	c. A VVIP Suite for one VVIP shall be provided, likewise the Commanding Officer, Executive Officer, embarked Senior Officer shall be provided each with a private cabin, with separate bedroom and private toilet and bathing facilities. The accommodation for the VVIP and the Commanding Officer shall be provided each with a receiving area. The embarked and organic Junior Officers will be provided with cabins preferably with private or shared toilet and bathing facilities.		
	d. Petty Officers shall be provided with cabins with shared toilet and bathing facilities, while the other enlisted personnel will be berthed in common billeting areas with a shared toilet and bathing facilities but segregated by gender.		
	e. Crew (to include embarked personnel) accommodations shall be provided with spaces for the storage of clothing and other personal items of both officers and enlisted personnel. All cabins shall be provided with a minimum of one (1) desk and one (1) chair that can be secured and fastened to the deck. All fixtures, as far as practicable, should be permanently secured to the deck.		
17	**PROPULSION AND AUXILIARY MACHINERIES (Minimum)**		
	Propulsion System	a. The propulsion system shall be designed and installed in accordance with OEM and supervised by Classification Society Rules.	

		b. The vessel shall be fitted with two Main Propulsion Diesel Engines with two (2) counter-rotating Controllable-Pitch propellers each driven by a reduction gear box.	
		c. The propulsion system to be fitted shall be able to power the vessel to a cruising speed of not less than 13 knots and can attain a speed of at least 16 knots at full displacement (7,200 tons).	
		d. All propulsion machineries can be operated using commercially available diesel fuel. The engines shall be fitted with adequate safety monitoring and controlling devices for speed, temperature, pressure and other operational functions.	
		e. The machinery installation should be suitable for operations as an unmanned machinery space, including fire detection, bilge alarm, and remote machinery instrumentation.	
		f. The engines should be protected against over-speed, loss of lubricating oil pressure, loss of cooling in medium to high temperature, malfunction of moving parts, and overload. Safety devices should not cause complete engine shutdown without prior warning, except in cases where there is a risk of complete breakdown or explosion.	
		g. The major components of the engines should have adequate strength to withstand the thermal and dynamic conditions of normal operation. The engines should not be damaged by a limited operation at a speed or temperature exceeding the normal limits but within the range of protective devices.	
		h. The propulsion system shall have provision for local operating panel control, Machinery Control Room (MCR) control and bridge control.	
		i. A bow thruster shall also be provided and shall have provision for control and monitoring at the bridge, MCR and local.	
		j. Main propulsion machineries should be placed in redundant and separate compartments to ensure	

		survivability in case of battle damages, fire and/or flooding.	
		k. Provisions should be made to drain all excess fuel and lube oil to a safe place as to avoid hazards.	
	Ship Service Diesel Generators	a. The vessel shall have at least four (4) ship service diesel generators (SSDGs). Each main diesel generator by itself, shall be able to provide ship power requirements for all ship systems (excluding weapons, bow thruster and half of the fire main system) at 80 % of its load capacity used.	
		b. SSDGs shall be capable of parallel operation such that the two (2) generators in parallel operation must be able to satisfy the power requirements of all ship system to include future capability upgrade (76mm gun, 30mm guns, CIWS, Decoy Launching System, and Air Search Radar, etc.) at any one time.	
		c. The main switchboard shall consist of the vessel's mains supply section with: • Diesel Generators • Shore Connection • Interconnection to Emergency Switchboard • Distribution (subdivided over two sections)	
		d. Emergency generator shall be capable of providing power to basic navigational lights, ship ventilation, fire and bilge pumps, fresh water pumps, sewage treatment plant, galley equipment, navigational systems, steering and propulsion system with 20% of the load capacity unused.	
		e. A load shedding/load sharing system or power management system shall be installed to prevent an SSDG being overloaded before another SSDG is available for loading and ensures the continued availability of power to vital services within the ship.	
		f. All diesel generators can be operated using commercially available diesel fuel.	
		g. The SSDG should be arranged into at least two (2) power generating plants located in separate	

		watertight compartment for redundancy to ensure survivability in case of battle damage, fire and/or flooding.	
	Electrical System	The electric power generation, distribution and utilization system shall be designed to provide maximum reliability and continuity of power to all service essential to vessel's major function, and shall be installed in accordance with Naval Classification Society Standards (refer to Lloyd's/ABS/BV/DNV-GL).	
	Distribution System	a. The vessels power distribution shall be designed, constructed and fitted-out such that power is generated and distributed from the power generating plants at 440 VAC (nominal), non-earthed, 3-phase system alternating current to meet the following requirements applicable to various units of equipment as follows; • 440V 3 phase 60 Hz for all electrical power equipment; • 220V single phase 60 Hz for the special lighting distribution system; • 440/220V 3 phase 400 Hz for electronics, weapons control and other equipment; • 220V single phase 60 Hz for normal lighting system, medical equipment, 220 V amenity sockets in living spaces, electronic maintenance areas and offices complete with protection from electric shock; • 24VDC for some escape lighting, engine control and other important control, monitoring, navigation and emergency radio; • 115/200V 400 Hz for helicopter servicing; and • 28VDC for helicopter maintenance and starting.	
		b. The vessel shall have at least two shore connection boxes (one portside, one starboard side) designed to relay 440V 3 phase 60 Hz, 1200 A, to shore, or from shore. The vessel shall be equipped with at least a 150-meter length 3-phase wires for the vessel to shore/shore to vessel AC System power connection, properly installed with Ground Fault Circuit Interrupters (GFCI). The vessel to shore plug	

		connector should have a locking cover and is insulated from the hull with a rubber gasket.	
		c. Onboard electrical cables shall be constructed, selected and installed according to applicable International Electro technical Commission (IEC) standards. Cables shall be of the flame retardant type, as required by regulations. Distribution cables shall be of the standard marine and halogen free type. Cables on sub-supplier equipment shall be of manufacturers' standard. However, it shall comply with IEC standards. Special (not standard available) cables for Government Furnished Equipment shall be supplied by the Owner. Cable bundles shall be fixed onto the trays by means of standard cable bundle strips (tie-wrap or equivalent). Cable type shall be in accordance with the specifications of system manufacturer(s) of the connected equipment and at least to be in accordance with the marine type cable requirements specified above.	
		d. Cable markings shall be according to Naval Classification Society standards (refer to Lloyd's/ABS/BV/DNV-GL). Cables of delivered equipment (skid mounted) shall be coded and marked according to equipment supplier's standard. Distribution panels shall have information plates adjacent to the handle of each circuit breaker or switch with the circuit number, name of controlled circuit or apparatus and the location of the apparatus.	
		e. The vessel shall have a casualty power system for use in the event of major damage to the normal and standby distribution system. These includes casualty power socket and power cables which enables the power to be provided to systems vital to ship survivability to include but not limited to the following: medical, steering gear, salvage pumps and fire pumps. Power to casualty power sockets shall be provided from designated load centers through permanent risers.	
	Lighting System	a. The ship lighting system shall be comprised of the following: • General main lighting - covering all lighting fitted for all normal lighting operations. The arrangements for changeover to red lighting for night vision, as well as door	

		switches for 'Darken Ship' operations shall be installed on the bridge, interior passageways and operations area in accordance to Naval Classification Society Rules • Standby lighting – shall include both red and white 24VDC fittings, which shall be fed from a 24VDC uninterruptible power supply (UPS). Standby lighting is illuminated at all times. This lighting provides the necessary illumination for work in some compartments and provides illumination of escape routes to the upper decks. • Exterior lighting shall be provided with tube lighting fixtures and floodlights. The vessel shall also be provided with a control system that will allow control of all exterior lightings, passageways, corridors and staircases in accordance with Class Rules. • Special lighting – shall include but not limited to navigation lighting, weather deck lighting, replenishment at sea (RAS) lighting, power outlets for underwater lighting (anti-sabotage), ceremonial lighting, boat station and gangway lighting, port and starboard and flight deck and helo visual landing aids.	
		b. Lighting fixtures illumination level shall be in accordance with NAVSEA Habitability Criteria.	
		c. General lighting fittings in accommodation spaces, passageways, working spaces, and other regularly used compartments shall use CFL tubes or bulbs.	
18	**AUXILIARY EQUIPMENT (Minimum)**		
		The vessel shall have appropriate auxiliary machineries and systems to comply with the requirements of the Classification Society Rules, International Maritime Organization (IMO) safety and environmental regulations, and other pertinent regulations that will impact on commercial port and harbor operations and activities.	

	Fire Fighting and Detection	Fire Detection System shall include sufficient number of heat and smoke detectors. The Fire Fighting System shall be capable of extinguishing all class of fire including A, B, C, D, and K fires. The system shall include the following minimum equipment/accessories: • Water (water mist) sprays (fixed) • Sea water hydrants (fixed) • AFFF extinguishers (fixed and portable) • CO2 extinguishers (fixed and portable) • Potassium Bicarbonate (PKP) (portable) • Aqueous Potassium Carbonate (APC) (fixed) • Fire stations and hydrants • Heat detectors (fixed and portable) • Smoke detectors Automatic fire extinguishing system shall be installed for vital spaces (engine rooms, ammo rooms, control spaces, heli hangar, steering gear room, auxiliary room and shaft room). The vessel shall also be provided with fireman's equipment such as air breathing apparatus sets with fire suits (three (3) fire teams, two (2) sets per fire team), safety lamp, safety rope, fire axe with pouch and CABA charger. The vessel shall be provided with appropriate number of Emergency Escape Breathing Device (with storage box), fire blankets, portable fire extinguishers (with mounting bracket), foam fire extinguishers (with spare cartridge and foam liquid) and thermal imaging camera. Main and emergency Fire Pumps shall be provided in accordance with Naval Classification Society Rules	
	HVAC	A centralized HVAC appropriate for tropical environment and temperate conditions (see environmental condition) shall be provided. The system shall include a redundant chilled water plants and sufficient air handling units. Air-conditioned areas include all living spaces, command and control, and vessel control areas.	

		The climate control systems shall be provided to control the air temperature and relative humidity within satisfactory limits. Machinery Space Ventilation Systems shall be provided wherein air-conditioning units are impractical. Ventilation system of the machinery room spaces shall be independent.	
	Steering Gear System	The vessel shall be equipped with an electro-hydraulic or similar type steering gear system (with a redundant system) with appropriate rudder angle indicators. Steering shall be possible through remote or local automatic control as well as local manual control. The steering gear system shall be provided in compliance with Naval Classification Society Rules.	
	Compressed Air System	Function of conduct of operations and in compliance with Classification Society Rules	
	Lube Oil and Fuel Oil Purifiers	Function of conduct of operations and in compliance with Naval Classification Society Rules	
	Fresh Water System	The vessel shall have a fresh water production capacity adequate to provide feed water and other non-habitability requirements as follows: • 182 liters per ship's company accommodation including passengers, per day, of fresh water of satisfactory quality to support habitability, domestic and personal hygiene purposes • 455 liters per day per helicopter for wash down. • 190 liters per day for cooling water system make-up. Two (2) reverse osmosis plants shall be provided; one shall be equal to required design capacity and the second shall be a full redundant plant. As an alternative, four plants of equal capacity may be provided, such that the combined capacity of two plants is equal to or greater that the required design capacity. Water heaters shall be provided sufficient to ensure an adequate supply of hot water at all washbasins (galley, pantry, scullery, laundry, and medical and dental spaces) and showers and shall include a system which ensures a hot water supply to showers and washbasins within 10 seconds. Water heaters supplying	

		washbasins and showers shall not support work spaces that have higher water temperature requirements. A Water purifier system with dedicated tank for drinking water, completely independent from freshwater hydrophore that supplies all other freshwater needs shall also be provided.	
	Bilge and Ballast System	Function of conduct of operations and in compliance with Naval Classification Society Rules	
	Environmental Systems	The vessel should be equipped with environmental protection system and shall include but not limited to the following: • Sewage Treatment system with capacity sufficient to treat the complements including passengers wastes (black and grey water waste) • Oily-water treatment system • Garbage compactors • Incinerator • Ballast water treatment All environmental protection equipment/system shall be compliant with applicable IMO/MARPOL Annexes.	
	Platform Management System	The vessel shall have a centralized monitoring and controlling systems for main and auxiliary engines, Petroleum, Oil and Lubricants (POL), ballast water, and fresh water with a remote station preferably at the bridge and MCR. There shall likewise be a control switchboard for manual/ local control of all machineries. As part of this centralized monitoring system, the builder shall provide both hardware and a commercial and/or proprietary software platform management system. The intent of this platform management system (PMS) is to integrate the different systems that belong to the platform and allows their control and monitoring in order to provide a high level of automation in order to reduce the number of crew. The PMS shall control and monitor the following: • Battle Damage Control (with event kill cards) • Propulsion Plant • Steering and Bow Thruster Systems	

		• Electrical Plant • Fire Detection and Extinguishing System • Bilge, Ballast, and Fresh Water System • Fuel, Hydraulic and Lube Oil Control System • Alarm System • Climate Control System (Ammo Storage, CIC, MCR etc.) • Loading computer and stability calculation, CCTV and OBTS PMS work stations shall be located on the MCR with repeater stations at each DC Stations and Bridge.	
	Anchoring and Mooring System	The vessel shall be provided with two (2) bow anchors and anchor chains corresponding to its displacement. The chains are to be stowed in chain lockers located at the forepeak. Anchors should be provided with a small floater and a 50m line. Chain stoppers shall likewise be provided to relieve the anchor winch from holding the chain when anchored. An anchor windlass, which is remotely operated at the forecastle, shall also be provided for each anchor as part of the vessel requirement. Capstans, shall be provided that shall have sufficient brake power for mooring the vessel. The following deck equipment shall also be included: Chain Bin, mooring winch, bollards, cleats, rope reels, rope bins and gangplank/brow. All hawsers, steel wires, mooring ropes, rat guards, and those required by naval operations shall be provided by the builder. The ship shall also be fitted with appropriate mooring bitts for smaller vessels coming alongside.	
	Replenishment at Sea	The vessel shall be provided with appropriate fittings, tools and equipment that will allow the vessel to conduct replenishment at sea in accordance with PN regulations and/or NATO standards. (STANAG 1065 "Replenishment at Sea.ATP-16(B)"). It shall also be provided with a system for the delivery of POL, water and solid transfer to other PN vessels.	

19	**SPACES AND STORAGE (Minimum)**		
	The vessel shall be arranged for safe and efficient movement of crew and stores. It shall have the following minimum spaces for crew operations and storage. As far as practicable, all furnishings provided in the spaces mentioned shall be permanently secured and, if not possible, provided with fittings that shall allow it to be secured. Internal deck coverings or floorings, ceilings bulkheads and pipe work paint and markings shall be in accordance with Philippine Navy standards. All spaces and storage shall be fitted with type approved insulation (glass wool) and wall paneling (as appropriate). Asbestos insulation is not allowed.		
	Combat Information Center (CIC)	The vessel shall have a CIC to accommodate weapons, navigation, combat and fire control system consoles. It shall have adequate storage for publications, charts and other similar items. False floor shall be considered in the design of overhead height (distance from false floor to overhead).	
	Task Force Operations Room	The vessel shall have a Task Force Operations Room which can accommodate a minimum of eight (8) persons. This room shall be primarily employed as a planning and combat area. The room shall be furnished with tables, seats and LED monitors for embarked Task Group personnel. It shall have access to voice, data, live video functionalities and tactical communications systems installed in the ship.	
	Radio Room	The vessel shall have a radio room that could comfortably accommodate radio transmitters, receivers and other equipment identified in the **Communications, Electronics, and Information System Provision** and the crew manning them. It shall likewise be provided with adequate equipment racks, furniture, power protection equipment, and with an uninterrupted power supply.	
	Medical Treatment Spaces	The vessel shall be provided with a medical space with bed for at least 6 persons and shipboard medical/dental equipment for and with the following use: • Role 1 Medical Care	

		• Type 2 Dental operations • Routine medical care for the crew • Medical cabinet for the safe stowage of controlled and basic medicines, a treatment bed and six (6) hospital beds.	
	Small Arms Stowage	The vessel shall have sufficient and secured small arms storage (at least 500 M16 Rifles, 25 Cal .45, 25 9mm, and other firearms) placed in racks horizontally or vertically. It shall have a separate steel cabinet for small arms ammunitions storage. It shall also have blast-resistant airlocks and a controlled room temperature of minimum of 24 degrees Celsius. It shall have a sprinkling system including provisions to flood with seawater in an emergency. In addition, there shall be ready-use stowage (made of steel) on the bridge for rifles, signal pistol, ammunition and pyrotechnics.	
	Ammunition and Missile Storage	The vessel shall have a minimum of four (4) ammunition storage found near its weapon system or firing battery. It should be able to carry simultaneously, in accordance with PN regulations and policies, at least one (1) basic load each for the primary gun, CIWS and HMG, MPAC Missile, Helo rockets and torpedoes, and chaffs and decoys. It shall be placed in a well-protected compartment usually carried below the main decks. It shall have a sprinkling system including provisions to flood with seawater in an emergency. It shall have a lift or elevator for easy withdrawals and replenishment from the below deck to its firing battery. It shall also have blast-resistant airlocks and a controlled room temperature within 18-26 deg Celsius and 30-80% humidity. It shall have a sprinkling system including provisions to flood with seawater in an emergency. Similarly, it shall have a separate stowage space for pyrotechnics and demolition equipment made of steel casing. (For Missiles and Torpedoes specific requirements, refer to MPAC/Helicopter support requirements)	

	Deck, Engineering and Other Storage	Storerooms with ample space and fitted with shelves (lockers and bins) will be provided. The following minimum stowage spaces shall be provided: • Spare Parts Store, • POL Store, • Linen stores, • General material stores, • Deck stores, • Paint and boatswains mate store, • Diving Gears • Rigid Hull Inflatable Boat (RHIB) spare store, and • Ship's Store.	
	Aviation Shop	The vessel shall have an aviation shop located adjacent to the hangar. It shall have an adequate space with adequate lighting and is provided with the following: • working table, • workbench with vise, • composite tool kit (CTK), • lockers for flight deck fittings and tie downs, • spare parts stowage locker, • special and common tools cabinet, • and flight deck crew clothing locker.	
	Ship Administration Office	The vessel shall be provided with a ship administration office outfitted with secure storage space for classified materials. It shall have an adequate working space as well as storage space for unclassified documents and other administrative supplies. It shall likewise have an adequate space provided with administrative equipment such as but not limited to; • 5 set desktop (latest version of intel processor) computers with licensed OS, applications, antivirus software, • 4 *Heavy Duty Workgroup* printers (3 in 1 with continuous ink system) *with network connectivity*,	

		• 1 heavy duty photocopier with automatic paper feeder and scanner (colored), • 4 *heavy duty Office Paper* shredders, • 3 binder, • 4 bulletin board • desk and other office furniture and • file cabinet/storage.	
	Brig	The vessel shall be provided with a brig that can accommodate at least two (2) persons at any one time. It shall have a separate sanitary facility consisting of a toilet facility and a wash basin.	
	Mess and Lounge Facilities	The vessel shall have a VVIP wardroom, Officers' wardroom and lounge with pantry, a cafeteria style crew's mess hall with pantry and a separate troop's mess hall with pantry. The mess facilities shall be located, as much as possible, near galley services and respective cabins. The vessel shall have a Senior Petty Officer's lounge and a Seaman/Fireman's Lounge. Each of these lounges shall be provided by the builder with entertainment systems such as 55 inches smart television sets, multi-media players, and capable of mirroring/duplicating video/presentation output from 1 pc/source to all TV sets aboard the ship. TV sets are connected to Omni-directional FM/TV antenna and satellite TV system.	
	Fitness Facility	The vessel shall have a fitness facility with basic fitness equipment.	
	Library	The vessel shall have a library for equipment manuals and other references to include publications needed onboard.	
	Galley Facility	The vessel shall have a galley facility that is comprised of a main cooking area, preparation area, meat preparation area, and scullery (in a separate room). It shall have the following minimum equipment: • Sink table (stainless steel), • electric range,	

		• convection oven, • microwave, • equipment table, • dishwashing machine, • mixer, • deep fat fryer, • bread toaster, • food-waste disposer, • refrigerator, • coffee maker, • hand-wash basins, • ice maker and • steam kettle. These equipment, as far as practicable, shall be securely fastened to the deck or other permanent fixture. A full complement of crockery and stainless-steel cutlery shall be provided. To be provided by the builder are five (5) sets of quality stainless steel pots and lids of appropriate sizes.	
	Workshop Areas	The vessel shall have workshop areas for the basic repair and rehabilitation of equipment carried onboard the vessel. The engine room workshop shall at a minimum be equipped with the following: • Pedestal drilling machine, • grinding machine, • arc welding, • gas welding with two (2) complete sets of cutting outfit, Personal Protective Equipment (PPE) and accessories, • welding bay, • workbench with vise, • universal tool assortments, • lathe machine and • cabinet for tools. The electronic workshop area, on the other hand, shall at a minimum consist of:	

		• a standard test panel/console, • steel workbench with vise, • standard set of tools, tools cabinet, PPE and locker for spares.	
	Garbage Disposal Area	The vessel shall be provided with a garbage disposal area for the compacting, packing and temporary storage of domestic garbage including food waste in accordance with Naval Classification Society/IMO Standards. Stowage racks shall be provided for both processed and unprocessed solid waste.	
	Damage Control Stations	The vessel must have a Damage Control Central and three (3) damage control stations and four (4) damage control lockers Each DCC/DCS shall be located as far apart as practicable and shall be connected to the builder-provided Platform Management System (PMS) to assist the crew in minimizing the damage sustained. Each PMS can be operated independently for redundancy.	
	Laundry and Ironing Facility	The vessel shall be provided with an appropriate number and type of laundry equipment/facility that shall allow for the washing and drying of clothing and bedding of its crew and embarked passengers. Sufficient ironing facilities shall also be provided for the crew and embarked troops.	
	Food Storage Spaces	The vessel shall be provided with refrigeration and food storage spaces appropriate for the required endurance days that shall meet pertinent NAVSEA standards ("Weights and Stability" Chapter 096). The following shall be the minimum spaces provided: • Dry store, • daily store, • fruit/vegetable store, • dairy store and • cold stores. All stores shall be fitted with stowage racks, the material of which is appropriate for the minimum and maximum temperature per store.	

20	**DECK EQUIPMENT (Minimum)**		
	Anchors and Anchor Chains	The vessel shall be provided with two (2) bow anchors and anchor chains corresponding to its displacement in accordance to Naval Classification Society rules. The chains are to be stowed in chain lockers located at the forepeak. Anchors should be provided with a small floater and a 50m line. Chain stoppers shall likewise be provided to relieve the anchor winch from holding the chain when anchored. An anchor windlass, which is remotely operated at the forecastle, shall also be provided for each anchor as part of the vessel requirement.	
	Capstans	Capstans located aft and forward, shall be provided that shall have sufficient brake power for mooring the vessel.	
	Vehicle lift	The vessel shall be fitted with a vehicle lift capable of lifting a vehicle of at least 10 tons (SWL) safely from the tank deck to the helideck. The vehicle lift should have a variable speed control: slow, medium, and fast.	
	Deck Crane	The vessel shall be fitted with a Hydraulic Deck Crane at the Heli deck with an SWL of 5 tons. The minimum outreach is 5 meters and maximum is 10 meters.	
	Stern and side ramp	The vessel shall have a stern ramp for well deck operations. The SWL of such should be of at least 40 tons. It shall have a clear headroom of at least 4.3 meters to allow safe and convenient passage of LCUs and AAVs or other vehicles. Likewise, it shall have two (2) side ramps (1 Port and 1 Starboard) with an SWL of at least 40 tons and should be positioned so as not to hamper the loading/unloading of vehicles. Also, both side ramps should be compliant to accommodate the 20-footer container vans. As far as practicable, it shall be designed to be able to adapt to any tide condition and pier height. It shall have a clear headroom of at least 4.3 meters. Specifications of AAV:	

		Weight: 29.1 Tons (64,000lbs) Length: 7.94m (321.3") Width: 3.27m (128.72") Height: 3.26m (130.5") Side Ramp Opening: Width: at least 5.20m Height: at least 5m Weight: at least 35 tons (tactical vehicle) The side ramp should be able to accommodate low bed trailers and prime movers.	
	Halyards	The vessel shall be equipped with at least two (2) halyards per side. It shall also have a center halyard for the National Ensign for use while underway.	
21	*Communications, Electronics, and Information System*		
	Command and Control (C2) Room	The vessel shall have a C2 room for their situational awareness and real time communication and must have the following at a minimum: • Two (2) 55" Smart LED TV, • four (4) 32" Smart LED TV, • conference system with one (1) master and six (6) slave mics with desk stand mic with 2 speakers and • VTC digital camera. ***It shall have an adequate space for conference table with six (6) chairs.***	
	Electronic Room with equipment rack	The vessel shall have an Electronic Room equipped with the following: • Network Servers, • CCTV equipment, • Downlink receiver and • other electronic equipment and devices of the ship It must have an adequate space for at least four (4) Data Cabinet and two (2) tables with six (6) chairs.	

	Sound Power Telephone (SPT)	The Sound Powered Telephone must be integrated with the internal communication system. The thirty-one (31) stations listed below must be allocated with SPTs with two (2) SPT extension of at least 30 meters for fantail and forecastle: Billet/ station — Number Bridge — 1 CIC Room — 1 Heli Control Room — 1 Secondary Gun (Port) — 4 Secondary Gun (Starboard) — 4 Emergency Generator Room — 1 Damage Control Room — 1 Heli Hangar — 1 Primary Gun — 1 Middle Deck (Port) — 1 Middle Deck (Starboard) — 1 After Deck — 1 Fore Deck — 1 Well Deck — 1 Tank/Trunk Deck — 1 Damage Control Station 1,2 &3 — 3 Steering Gear Room — 1 Engine Room — 4 Task Force Operation Room — 1 Main Switch — 1 **TOTAL** — **31**	

		SPT terminal shall also be installed/wired near the future equipment	
	Squawk box	SQUAWK BOX is public address and internal communications system with speakers and microphones installed in determined areas of the ship per tech specs. Squawk box should be available at the following stations: Station — Number Bridge — 1 Commanding Officer's Cabin — 1 Ward Room — 1 Damage Control Room — 4 Sickbay (Male) — 1 Sickbay (Female) — 1 Engine Control Rooms — 1 Engine Room — 4 Task Force Operations Room — 1 Radio Room — 1 Officer's Wardroom — 1 VVIP Wardroom — 1 Crew's Mess Hall — 1 Troop's Mess Hall — 1 Officer's cabin	
	Internet Protocol private branch	*The Internet Protocol private branch exchange (IP PBX)* should allow a single access number to offer multiple lines to outside callers while providing a range of external lines to internal callers within the	

	*exchange **(IP PBX) System***	ship. *It should also be VoIP ready and has Voice Messaging features. The IP PBX* shall have the following minimum features: • Ports: 200 ports (min) • Phones (wired): 200 phones (min) • Maximum Cell Stations (Antennas): Up to 128 (min) • Maximum Voice Processing System: 8 units • External Paging Outputs: 2 • RS232C/SMDR Outputs: 1 • Ethernet (10 Base) for CTI/Programming: 1 port • Conferencing each shelf: 3 to 8 parties per conference • Call Forwarding • Caller ID/Call Logging • Caller ID Routing • Caller ID Name Announce • Caller ID Personal Greeting • ISDN Primary Rate Service • Absent Message Capability • Automated Attendant	
	Pipe In Music and Paging System	The Pipe In Music and Paging System must be capable of broadcasting announcements, orders, and four (4) different alarm tones to cover all vessel compartments. It must have consoles for announcements and alarm tones in different designated areas with Integrated Communications Control System (ICCS). The vessel must have portable paging system that can be connected remotely where the gangway is located.	
	Navigational Telex (NAVTEX)	The Navigational Telex (NAVTEX) must be capable to display and generate/print data on weather forecast information in compliance with Global Maritime Distress and Safety Systems (GMDSS)	
	VHF/FM Marine band Base Radio	Two (2) sets radio transceiver for use during communications to Civilian Vessel located at the	

		bridge and radio room and must have the following minimum specifications: • Frequency range: 156 – 162 MHz • Pre-programmed marine band channels • At least 25W RF output • Marine type whip antenna • With power supply • Must be integrated with ICCS	
	VHF /FM Marine Band Radio (Handheld)	Eight (8) sets portable radio transceiver with battery for use during communications to civilian vessel that will be utilized during RHIB operation that is water proof and can float with a minimum RF output of five (5) Watts.	
	VHF/AM Air Band Radio **(Base)**	Two (2) sets of air band radio transceiver located at the Radio Room for use in communicating with aircrafts, the following are the minimum specifications: • Frequency range: 118- 136 MHz • At least 25W RF output • Marine type Whip Antenna • Must be integrated with ICCS • With remote control sets at the bridge and Helicopter Control Room	
	VHF/AM Air Band Radio **(Handheld)**	Four (4) sets of Airband portable radio transceiver with battery for use in communicating with aircrafts. The handheld radio must have a minimum of five (5) W RF output and 2300mAh Li-ion battery.	
	UHF/FM Radio (Base)	Two (2) sets of UHF radio transceiver located at the Bridge and Radio room for use as internal communication of the ship with the following minimum specifications: • Frequency range: 403 - 470 MHz • Marine type UHF antenna • With power supply • Must be integrated to the ICCS • Must have AES 256 Encryption	

	UHF Hand Held Radio	Minimum of fifteen (15) sets of portable UHF radio transceiver with *complete set, unit, battery, charger, strap, headset* for use as internal communications with the following minimum specifications: • Frequency range: 403 MHz – 470 MHz • At least 4 W RF output • Must have AES 256 Encryption • Water proof and hands-free capability	
	Secure Multiband VHF/UHF Base Radio	At least (2) sets of VHF/UHF Base radio located at the Bridge and Radio room for shipboard configuration to be used in ship to shore communication with the following minimum specifications: • Frequency range: 30 - 512 MHz • RF output: 50 watts • Inter-operable with existing AFP radios in secure mode of communications for voice and data • Citadel encryption must be embedded in the radio • Must meet military standard specification • Must be integrated with ICCS	
	Secure Multiband VHF/UHF Handheld Radio	Five (5) sets of VHF/UHF Handheld radio with *complete set, unit, battery, charger, strap, headset* for use in Line-of-Sight communications for VBSS Team with the following minimum specifications: • Frequency range: 30 - 512 MHz • RF output: 5 watts • Inter-operable with existing AFP radios in secure mode of communications for voice and data • Citadel encryption must be embedded in the radio • Must meet military standard specification • Must be integrated with ICCS	

	Secure VHF/HF Radio	Two (2) HF/VHF radio at the radio room for shipboard configuration to support high-speed communications with data rates up to 120 kbps with minimum configuration: • Frequency range: 1.5 – 59.99 MHz • RF output: 150 watts – 220 watts • Inter-operable with existing AFP radios in secure mode of communications for voice and data • Citadel encryption must be embedded in the radio • Must meet military standard specification • Must be integrated with ICCS • With Rugged Laptop with Microsoft Application (lifetime license), Antivirus Software (At least 3 yrs license) • With remote control set at the bridge	
	HF/SSB Data Communications System	At least one (1) set of HF/SSB radio for use as long-haul ship communication with the following minimum specifications: • Frequency range: 0.5 – 29.99 MHz • RF output: 150W minimum • Marine type antenna • Automatic Antenna Tuner • Power Supply: 13.8 VDC, 30A • HF Modem, Pactor 4 • With Rugged Laptop with License Operating System, Application and Antivirus Software (at least 3 yrs license)	
	Video Teleconference System (VTS)	One (1) set Video teleconferencing System (VTS) to facilitate the communication and interaction of two or more users through a combination of high-quality audio and video over Internet Protocol (IP) networks and must possess the following minimum equipment: • Digital Video camera • Two (2) speakers	

		• Six (6) microphones (1 master and 5 slaves) • Two (2) computer server -With 32 GB Memory(min) -With 2 TB or Higher Hard Disk Drive (HDD) -With latest Operating System and Microsoft Office 2016 -With Antivirus software (BitDefender) with 3 years license • Two (2) TV (as monitor) • Must be integrated with ICCS (only voice data is possible due to technical reason)	
	Satellite Communications for VTC	A mini-VSAT Broadband network to provide reliable global broadband connectivity for mission-critical work. It should feature seamless transitions between Ku- and C-band coverage while providing the very low latency that is required for messaging applications. It must provide a download/upload speed as fast as 4 Mbps/1 Mbps (min) and affordable service and airtime plans. With dual-mode C/Ku -band type antenna and have the antenna disk of 1.1 m (max). Must be integrated with ICCS. Separate connection between ICCS voice and VTC.	
	Satellite Communications (Internet)	A mini-VSAT Broadband Network to provide reliable, secure coverage for mission-critical work. It must provide a download/upload speeds as fast as 10 Mbps/3 Mbps and affordable service and airtime plans. KU-band type antenna and have the antenna disk of 60 cm (min). Must be integrated with shipboard LAN system. The winning proponent pays the initial one (1) year subscription that will start upon departure of the vessel from builder's premises to Manila Philippines. The system is capable of connecting to the internet using local SIM card	
	Cellular signal repeater	The signal repeater must be used to provide a strong cellular signal inside the ship with the following minimum specifications: • Antenna	

		○ Antenna connectors: N/SMA Female ○ Must have an indoor antenna and outdoor omni antenna • Indoor antenna ○ Power rating: 50W ○ Impedance: 50 ohms ○ Polarization: Vertical ○ Working Temperature: -40°C to +65°C • Outdoor omni antenna ○ Power rating: 100W ○ Impedance: 50 ohms ○ Polarization: Vertical ○ Working Temperature: -40°C to +65°C • Network: GSM /3G/ 4G or above and compatible to the existing Philippine network provider. • Frequency: 800/900/2100/2600 MHz • Power supply ○ AC: 100-240V/50-60 Hz ○ DC :12V/3.6A • It must have a complete operator network protection within 3 yrs warranty • Must be installed in CO's Cabin, VVIP Cabin, Wardroom, Crews Mess Hall and Troops Mess Hall	
	Handheld Satellite with Satdock	A handheld satellite phone of Inmarsat that is a reliable and robust handset to cope with searing heat and monsoon rain. It should have a battery life of at least 8 hours of talk time and up to 160 hours on standby.	
	Downlink Receiver System	To provide real-time video from PN Helicopter. The Downlink Receiver System shall have the following features: • Soft Case Receiver Unit • Power Supply: 90 - 264 VAC, • COFDM Video Link Diversity Receiver specification • Channels: Pre-selectable frequency channels (16 max)	

		• Decryption: Advanced Encryption System 256-bit • Said equipment must be compatible with the existing Downlink Receiver of PN	
	Integrated Communication and Control System (ICCS)	The ICCS must be capable of integrating internal and external communication of any equipment manufacturer and provide full integration of any type of equipment – including HF, VHF, UHF or SATCOM radios, modems and encryption devices. External and Internal Communications must have the following minimum features: • Voice recording • Centralized network management station • Digitalized communication switching units	
	Local Area Network (LAN)	The vessel shall be equipped with a Local Area Network (LAN) to exchange data between computers through fiber-optic. It must have a minimum of one (1) computer server with firewall (FortiGate 60e) at the Electronic Room, and laptop computers (latest intel processor) for the following workstations; • CO's cabin, • CIC room, • C2 room, • TF Operations room, • Wardroom, • Ship's Administration office, • Ship's Other Department offices (6 Connection), • DC Central and • Aviation Office Each *laptop* computer (*(at least Intel Core i7 CPU Processor, 4GB RAM, 1 TB SSD Hard drive Storage)* shall have a Licensed *Microsoft* Operating System, *MS Office* Application and Antivirus Software (3 yrs licenses).	

	Acoustic Hailing Device (AHD)	The AHD should broadcast highly intelligible communications and warning tones with focused acoustic output to clearly determine the intent of vessels not responding to radio calls, change threat behavior and enlarge vessel standoff zones. This should be remotely operated, with HD camera, searchlight and can also provide intelligible voice communication of 3,000meters (minimum). It should have two (2) units intercom speaker and with following specifications: Amplifier • Output power: 30 Watts • Hail Mode: less than 10%(1KHz 30W) • Intercom Mode: less than 10% (1KHz 4W) • Internal Speaker: 2.0W,8Ω(min) • External Speaker:4W, 8Ω(min) • Operating temperature: -15° to + 55°C (min) • 13.8 VDC,11A(max) Microphone • Microphone impedance: 60 ohms(min) • Auxiliary impedance:10 Kilo ohms	
22	**NAVIGATIONAL SENSORS**		
	Master Gyro Compass System	The ring laser Master Gyro compass must support the analog and digital repeaters and shall contain the following features: • Will drive at least a minimum of twelve (12) repeaters • Integrated monitoring of the supply powers, gyroscope current and follow up system • High speed follow-up system 100 % per second	

		• Automatic power changeover from AC mains to DC emergency supply and status alarm • Self-synchronizing repeater compasses • Must be integrated with the IBS It must have the following specifications: • Linear mean settle point error (RMS): ≤0.1° Secant Latitude • Static error(RMS): ≤0.1° Secant Latitude • Heading resolution: 0.1 • Roll and pitch ± 60°C • Settling time: 1hr (max) • Power supply o DC:2 x 24VDC main and back up o AC:20W • Ambient Temperature : -15°C to + 55°C/ 5°F to 131°F • Storage Temperature: -25°C to + 75°C/ -31°F to 158°F • Power consumption: 20W	
	Gyro repeaters	Analog gyro repeaters with azimuth takers and stand will be installed at the port and starboard wing. Further, digital repeaters will be installed at the Commanding Officer's (CO's) cabin, bridge, CIC, Heli Control Room and emergency steering room. The Gyro repeaters shall have a console version and in watertight housing with bracket attachment.	
	Magnetic Compass	The binnacle type magnetic compass (including magnetic fluxgate coil that provide digital data output for bearing repeaters) shall be installed and capable of providing data of vessel's own magnetic heading at conning stations and digital gyro repeaters at emergency steering room and other stations. It must have the following specifications:	

		• Aluminum Alloy Binnacles • Accuracy is better than 0.5 degrees • Top lighting: 220/230 VAC or 12-24 VDC	
	Satellite Compass	It shall provide a high system accuracy for the heading of the ship with the following minimum specifications: Display/receiver unit: • 4.3-inch color LCD • 480 x 272 dots (WQVGA) • Display mode: Heading, Navigational data, Rate of return and speed • Pitch/roll: 0.4 RMS • Settling time: 90s approx (typical) • Position accuracy: WAAS 3m (min) • Temperature Antenna Unit : -25°C to +55°C • Waterproofing Antenna Unit : IP56 • Power Supply: 12-24 VDC: 2.1-1.1 A • Must be integrated with the IBS	
	Navigational Radar	Two (2) navigational radars: One (1) X-band and one (1) S-band solid state transceiver (200 watts min) shall be provided. Both radars shall provide information on the vessel's motion, position, and environmental data required for the vessel's safe navigation. Both radars must be integrated with the IBMS. Likewise, both radars must be integrated with the ECDIS. Must have OEM trackball/mouse and keyboard. **S-Band Radars Specifications** • Output power: 200W (min) • Daylight-bright raster scan 21-inch multi-color, high-resolution display • New micro processing technology with high-speed, high-density gate array and sophisticated software • Easy operation by combination of discrete keys, rotary controls, and menu operation, all logically arranged	

		Display Unit • At least 26" colored LCD • Multifunction display capability with chart radar (using AVCS chart) • Operating temperature:-15°C to +55°C Processor Unit • Automatic Radar Plotting Aid for 40 targets Data Presentation • Own ship • Target tracking by ARPA and AIS • Electronic Plotting Aid (EPA) fitted standard • Position calculation • Navigational planning • Route monitoring • Notes data • MOB Control Unit • Radar control unit • Trackball control unit Antenna Unit • Slotted waveguide array • Length:12 ft • Rotation:42rpm • Frequency: 3050 MHz Transceiver Unit: • Solid state • Frequency: 3050 +/- 30MHz Power Supply Unit • Input voltage:100-230VAC,1 phase 50/60Hz • Input current: 5-6A **X-Band Radars (25KW) Specifications**	

		• High resolution LCD display providing crisp echo images • Low spurious magnetrons meeting ITU-R unwanted emission standards • Standard ARPA functions displaying 100 ARPA targets acquisition • Display up to 1000 AIS symbols • Improved detection capability by new MIC and I/F amplifier • Complies with the following IMO and IEC regulation • Two independent X- and S-band radars can be inter-switched to meet SOLAS requirements on ships 3,000 - 10,000 GT Display Unit • Minimum of 19" Sunlight viewable color TFT LCD with anti-reflective film • Display windows: Radar, chart plotter, weather fax, AIS, depth sounder and data bar display • Minimum of 256 display colors and 1600x1200 pixels VGA resolution • 12-24 VDC voltage range • With system and navigation alarms • Operating temperature: -15°C to +55°C Processor Unit • ARPA capabilities • ECDIS: AVCS • Radar, chart plotter, weather fax, depth sounder and data bar capabilities • Four (4) data interfaces/ports, radar signal port and optional VGA connection Control Unit • At least 20 Inches with Trackball Antenna Unit • Antenna scanner unit:8 ft(min)	

		• Motor antenna rotation must have at least 24-36 RPM Transceiver • Frequency: 940 +/-30MHz • Output power: 12KW Power Supply Unit • Input voltage:100-230 VAC,1 phase, 50/60 MHz • Input current: 3.7A (min) • integrated in the ECDIS – charts will overlay	
	Electronic Chart Display and Information System (ECDIS)	The electronic chart display using Admiralty Vector Chart System (AVCS) with server shall provide the user the ability to plan routes and set waypoints, and display vessel position. The ECDIS must be integrated with the navigation radar, AIS and provided depth sounding set. Initial one year subscription of charts needed, from the builder's premises to Manila and sailing and navigational charts of the Philippines to include all harbor and approaches. The ECDIS must have OEM trackball/mouse and keyboard. Must be integrated with the IBS and can overlay data from RADARs and AIS.	
	Chart table	A chart table shall be provided as ECDIS backup arrangement in order to meet the functional requirements of SOLAS V/19 regulation. One (1) complete set of sailing and navigational paper charts of the Philippines must be provided.	
	Navigation Software with rugged laptop	The Navigational Software shall have the following features: • Pass the IMO Standard • Supported by the latest Windows Operating Systems • Can connect to NMEA0183 and NMEA2000 and can interface other navigational equipment • Unlimited Marks, Waypoints and Routes	

		• Boundaries, Circles, Lines and Annotations • Layers and Marks Management • Advance events Management • Worldwide 3D Database (Base Map) • Depth Shading (Color according to depth overlaid on the chart) • Worldwide Tide Database • Track Recording (with tract recall feature) • Advance Route Planning Wizard (Route Departure Time Optimization according to Tidal Current • Search and Rescue (SAR) Patterns	
	Differential Global Positioning Systems (DGPS) with Chart plotter	Two (2) sets of DGPS with chart plotter which is an electronic navigation system that combines a GPS receiver with the capability to display electronic charts/maps, enabling the watches to continuously monitor the position and movement of vessel in relation to the surrounding physical environment. Must be integrated with IBS and with the following specifications: Display Unit • 7" LCD(min) with 800x480 pixels • Operating temp:-15°C to 55° C Plotter Characteristics • Display mode: Course plot, navigation data, compass display(min) • Tracking point: 80,000(min) • Mark point: 3,500(min) Power supply unit • Input: 115/230 VAC • Output:12-24 VDC, 30W	

		GPS Antenna Unit • Frequency:1575.42 MHz • Impedance of 50 ohms • Supply voltage: 4 to 5.5 VDC • With right hand circular polarization	
	Fathometer	One (1) kW transducer fathometer to provide distance from the vessel to the ocean floor and provide a real time graphical representation or profile of the floor terrain with repeaters. and following minimum specifications: Display Unit • Minimum of 10.4" color (SVG: 800 x600) min • Range: 5,000 to 3,000m • Operating temp:-15 to =55°C • English language Power supply • Input 22/230 VDC • Output: 12 to 24 VDC,3.3A (max) Transducer Unit: • Output power: 1 kW • Beam angle: 28 deg (max) • Frequency: 200KHz(max) • Weight: 9lbs(max) • With 15-meter cable with connectors. At least two (2) transducers will be installed for redundancy.	

	Automatic Identification System	The vessel shall be equipped with one (1) Automatic Identification System (AIS), which is a Class "A" standard AIS compliant with the international standards. Its main function is to aid in monitoring the maritime traffic and to improve the navigational security. Must be integrated with IBS and shall have the following specifications: Transponder unit • Tx/Rx Frequency: 156.025 to 162.025 MHz • Bandwidth: 25 KHz • Output power:1/12.5W • Operating power: -15 to +55 deg C Antenna unit • VHF:50Ω • GPS Standard antenna Power Supply unit • Input: 100/220/230 VAC Output: 12-24VDC,6.3A	
	Marine Ultrasonic Anemometer	It shall be able to provide measurements of wind speed and direction and other meteorological data such as air temperature, relative humidity, barometric pressure. Must be integrated with IBS. This device must have the following specifications: Display Unit • LED/LCD • Operating temp: -15 degrees to + 55 degrees • Power supply: 12-24 VDC, less than 0.1 mA Wind sensor • No moving parts • Wind direction:0 to 360 degrees • wind speed range: 0 to 168 mph(min) • Power supply: 10 to 30 VDC	

		• Cable: 50m with connectors • NMEA inputs/outputs: Standard RS232 Power Supply Unit • Input: 220/230 VAC • Output: 12/15 VDC, 0.25 mA (max)	
	Weather Facsimile	It will provide weather charts and satellite images in nine gray levels on 8" thermal paper. Electronic scanning and thermal head printing in nine shades of gray produce high quality facsimile images, while minimal mechanical components allows for an incredibly quiet operation.	
	Search and Rescue Radar Transponder (SART)	This device is a self-contained, waterproof transponder intended for emergency use at sea. It can locate a survival craft or distressed vessel by creating a series of dots on a rescuing ship's radar display. This shall also be installed at each of the Landing Craft Utility (LCU) and Rigid Hull Inflatable Boat (RHIB).	
	Emergency Position Indicating Radio Beacon (EPIRB)	The vessel shall be equipped with a minimum of two (2) EPIRB which is to provide the vessels location during emergency situation. It shall be installed at the bridge wing of the ship and must have the following minimum specification: • Effective sensitivity: better than -50dBM • Operation: 96 hrs in standby condition • Battery life: 5 yrs • Frequency: 9.2-9.5 GHz	
	Closed Circuit Television System (CCTV)	The CCTV system to provide situational awareness in the ship and video monitoring at designated areas. This system must have two (2) NVRs, thirty-four (34) cameras and a minimum of four (4) heat, and moist resistant cameras with the following features. Network Video Recording (NVR) • It must be compatible to all CCTV camera with minimum 1080P	

		• It must have available port to every watertight door • Two (2) Thirty-two (32) channels in terms of video • Two (2) channels for audio input Twenty-nine (29) ea bullet type CCTV camera • 1080P(min) Bullet camera • Horizontal Resolution: 2.0 Megapixel • 3.6mm Megapixel Lens • 25/30fps at 960P, Built-in IR Cut • High speed, long distance real-time transmission over 500m via coaxial cable • Day/Night (ICR), AWB, AGC, BLC, 2D-DNR • Smart IR, IP66, DC12V • 3pcs Led Array, *25-30m IR distance Four (4) each CCTV Camera for engine room • with unobtrusive dome design • plug and play with compatible multifunction displays • ceiling or wall mount • manually adjustable pan and tilt • composite video output • heat and moist resistant Three (3) ea- Pan Tilt Zoom (PTZ) CCTV camera for tank deck, helideck and bridge deck • Image Resolution: 1920 x 1080 • Effective pixels: 1920 x 1080 • Lens focus length: 4.7 mm -94mm • Close focus distance 100mm-1000mm Should be distributed to the following stations: • Bridge • CIC • Passageway 04 Deck Port	

		• Passageway 04 Deck Starboard • Wardroom • Passageway 03 Deck Port • Passageway 03 Deck Starboard • DC Central • Female ward • Male ward • Passageway 02 Deck Laundry • Truck Deck 1 • Engine Room • Aft Steering • Top Deck • Starboard Top Deck Gun mount • Port Top Deck Gun mount • Forward/Forecastle • Helideck • Forecastle • Port RHIB Deck • Starboard RHIB Deck • Port Accommodation Ladder • Starboard Accommodation Ladder • Dock Well • Movable Side Helipad • Engine Control Room (ECR) • Hangar (movable)	

		• Crew's Mess Hall (movable) • Galley • Starboard Side Ramp (movable) • Port Side Ramp (movable) • Additional Cameras at: o Troop's Mess Hall o Troop's Laundry o Utility Lift o Officer's Laundry Designated areas with monitors and PTZ controllers: CO's cabin, Bridge, MCR and all Damage control central /Damage control stations	
	Forward Looking Infrared (FLIR)	The device can provide the short and ultra-long range target detection and identification, stabilized thermal camera system can help you observe suspicious activity or react quickly to emergency situations. It must have a 14X continuous optical thermal zoom, a color HD camera with 30x zoom, a LED spot-beam, video tracking and radar integration.	
	Night Vision Device (NVD)	It shall have a minimum of six (6) night vision devices (binocular type) with high-resolution Image Intensifier Tube and five times (5x) magnification lens with following specifications: • Generation 3 • Resolution: 57-64 • Operating temp: -40 to +55 deg C • Long range infrared illuminator • Water, dust and fog resistance	
	Voyage Data Recorder (VDR)	The equipment will collect data from various sensors on board the vessel. It digitalizes compresses and stores information in an externally mounted protective storage unit and tamper-proof. It must be designed to	

		withstand extreme shock, impact, pressure and heat, which could be associated with a marine incident. Must be integrated with IBS.	
	Vessel Tracking System	The vessel shall be equipped with a vessel tracking system compatible with the PN standard requirement with one year service subscription rendering position report every four hours	
	Navigation Auto-Pilot System	The Navigation Auto Pilot System shall have the following features: • Heading keeping with minimum rudder motion • Course control • Track control • Course change control by setting either turn rate or turn radius • Rudder limit setting (available as an alternative to setting rate or radius) • Direct RS 422 connection for heading reference or navigation system • Full alarm complements via the display unit and the alarm contacts • Must be integrated with IBS.	
	Integrated Bridge Management System (IBS)	The vessel must have navigation management system which links other systems to provide all the details pertaining to ship's navigation at one place. The IBS must have the minimum: • Autopilot • Dual Radar/ARPA • Gyro compass. • Position fixing systems • Dual ECDIS setup (Master + Backup) • Conning Display • Platform Management System • GMDSS • CCTV	

		• Bridge Navigational Watch Alarm System (BNWAS) • Comms console	
	STANDARDS	The vessel shall be designed and built-in accordance to the standards set by SOLAS, IMO and any of the following Naval International Classification Society: • Lloyd's Register (LR) • American Bureau of Shipping (ABS) • Bureau Veritas (BV) • Det Norske Veritas – Germanischer Lloyd (DNV-GL) The vessel shall be class certified and have the following minimum class notation or equivalent: **+100A1, +LMC**	
23	**WEAPONS AND SENSORS FITTINGS**		
	Perimeter Machine Guns	The vessel shall be equipped with at least eight (8) 0.50 cal Quick Change Barrel Perimeter machine guns with naval soft gun mounts.	
	Weapons	The vessel shall be fitted for (but not equipped) with the following weapons systems (owner furnished Equipment-OFE): • Primary / main gun fore mount (will at least accommodate a 76MM SR MF gun or a similar caliber/size weapon system); • Secondary guns Port / Stbd / Aft mounts (will at least accommodate a 30mm gun or similar caliber/size weapon system); • Closed-In-Weapon-System (CIWS); • Fire Control System, and • Decoy Launching System	
	Sensors	The vessel shall be fitted for (but not equipped) with the following sensors (owner furnished Equipment-OFE): • Air / Surface Search (3D) Radar; • Electro-Optical Fire Control System; • Combat Management System, and	

		• Electronic Warfare System	
24	**A. SHIP'S CREW AND MAINTAINERS TRAINING, ACCOMODATION AND DEPARTURE EXPENSES**		
	Training	The builder shall shoulder all expenses in accordance with the training plan such as plane tickets, place of training, training materials, board and lodging and other incidental expenses related to training. The trainings to be provided must be relevant to the vessel especially for specific equipment, machineries, and systems installed in the vessel. The builder will include operators and maintainers training courses for Platform and systems at the organizational, intermediate and depot levels. The builder will present to the owner for their concurrence and approval a training plan that defines process, framework, schedule and requirements of the training to be provided to the crew. Training shall be at the builder's, OEM's or allied Navy's premises. Training materials, documents and other references related to training shall be made available for the trainees in English both in hard and electronic copy. The builder in as far as practicable shall provide a training/bridge simulator for use of the Philippine Navy. The intent of this simulator is to train projected crew onboard the vessel. Trainings to be provided but not limited to the following: 1) Navigation Systems Training a) Navigational and Sensors equipment b) Intermediate Level of Maintenance training c) Integrated Bridge Navigation System 2) Communication Systems Training a) Internal Communication System Training b) Integrated Communication System Operations Training	

		c) Basic Telephone Installer & Outside Plant Engineering Course d) Internetworking Essentials & LAN Technology Course e) Harris Radio Operations and Maintenance Course f) VSAT Maintenance Training 3) Hull, Machinery, and Equipment a) Shipboard operation and organizational maintenance training b) Intermediate Level of Maintenance and Repair Training c) Depot Level Training 4) Helicopter Deck Operations Training a) Flight quarters operations b) Helicopter Traversing and securing training c) Helo crash drill and deck firefighting d) Helo inflight refueling system e) Day and night launching and recovery f) Helicopter facility Training 5) Operational Training a) The shipbuilder shall provide appropriate unit training at sea for the crew for different evolutions but not limited to sea trial, anchoring/mooring, general quarters, fire at sea/in port, LCU launching/recovery, towing/ being towed, RHIB launching and recovery, well deck operation, replenishment at sea, ship maneuvers and man overboard. b) After the industrial training, the builder shall liaison, coordinate, obtain and provide the PN with a mutually agreed upon operational training package that can be carried out at designated facilities and infrastructures to be determined later. c) Included in this Operational Training is an Operational Readiness Evaluation (ORE) of the crew to ascertain that the vessel is ready to perform its primary employment purpose.	

		d) The purpose of the training is to finalize from the operative point of view the crew and the officers on the operationalization of the capabilities of the vessel.	
		Technical Publications and Manuals: • Appropriate and sufficient documents shall be provided for training, operations and maintenance. These documents shall be in English Language and include; Technical Publications and Manuals, Information Bulletins, Training or Course Manuals, Instructor's Guide, Handbook for Specialists, and Media Support. Media Support shall include CDs, DVDs, and others. The following technical manuals or equivalent must be provided: • List of Applicable Publications • Maintenance Manuals which include the following: - General Equipment Description - General System - Set of Pocket Volumes - Wiring Data - System Detailed Schematic and Circuit Diagram - Structural Repair Manual - Illustrated Parts Breakdown - Basic Weight Checklist and Loading Data - Inspection Requirements Handbook - Corrosion Control Manual - PMS Schedules as recommended by OEM • Armaments Operation and Maintenance Manual • Non-Destructive Inspection Manual and	

		• Other Technical Orders and System Equipment Manuals • Blue print of Electronic wiring diagram • Plan Maintenance System • Technical Allowance List • Consolidated Shipboard Allowance List • List of Changes / Modifications/Maintenance Records The following Construction plans of the hull, structural, machineries, auxiliaries, etc. shall include the following: • General specifications • Lines and offsets • Amidships section • Scantlings profile and decks • Bottom construction, floors, girders, etc. • Framing • Inboard profile • Outboard profile Deck Plan • Inner bottom plating • Shell expansion plan • Pillars and girders • Watertight and deep tank bulkheads • Miscellaneous watertight bulkheads which are structural • Supports • Shaft tunnels • Machinery casings, engine and main artillery foundations • Bow framing	

		• Stem • Stem framing • Stem frame and rudder • Steering gear • Shaft struts • Structural frames and bossing details • Superstructure and deckhouses • Hull penetrations and shell connections • Ventilation system on weather deck • Capacity plan and/or loading plan • Hydrostatic curves of form • Cross curves of stability • Bonjeans, curves and stability calculations for damaged conditions • Floodable length curves and calculations • Tank sounding tables • Draft mark locations • Specification and description of the hull riveting and welding and/or fastening • Trim and Stability Calculation • Piping System • Electrical Plan • Shell Expansion Plan • Steering System • Air System • Lube Oil System • Salt Water/Fire Flushing System • Pneumatic System • Hydraulic System • Sewage System • Fuel System	

		• Fresh Water System • Dry docking Plan • Propulsion System • Propeller Blade Design • Bonjeans Curves • Ventilation System • Airconditioning System • Cooling System • Fixed Fire Extinguishing System • Fire Control System	
		As part of the product support information, publications and technical bulletins shall also be provided. It shall include among others: • Information Bulletins for applicability of new equipment and accessories, and information related to the operational use of the machineries, weapons and navigational equipment. • Service Bulletins for notice of requirements for special inspections, advance instructions for performance of repair and special actions, advance instructions for maintenance of the vessel accessories.	
	Accommodation	Board and Lodging for the Ship's Crew (at least 138 personnel): lodging in designated facilities near or in the shipyard, meals in designated shipyard canteen or equivalent, pick-up airport/hotel and back, daily transportation from training/project venue and lodging area and health insurance. An office with communications equipment and other office equipment will be provided to the team.	
	Departure Expenses	The builder shall likewise shoulder all expenses related to the departure of the crew to the builder's premises, such as visa fee, pre-departure expenses and the likes, as is applicable.	
	B. OWNER'S REPRESENTATIVE ACCOMODATION AND DEPARTURE EXPENSES		

	Accommodation	Board and Lodging for the Owner's representatives (at least 5 members): lodging in designated facilities near or in the shipyard, meals in designated shipyard canteen or equivalent, pick-up airport/hotel and back, daily transportation from training/project venue and lodging area and health insurance. An office with communications equipment and other office equipment will be provided to the team.	
	Departure Expenses	The builder shall likewise shoulder all expenses related to the departure of the Owner's Representatives to the builder's premises, such as visa fee, pre-departure expenses and the likes, as is applicable.	
25	**INTEGRATED LOGISTICS SUPPORT**		
		There shall be standard Carry – on Board spares based on PN Utilization Profile (3,650 hrs.) for the Landing Docks (LDs), four (4) Landing Craft Utility (LCUs) and four (4) Rigid Hull inflatable Boats (RHIBs) as provided from the systems OEM. Likewise, 2 years PMS spare parts stored in a galvanized container van with appropriate storage, lifting and handling equipment for forward logistics support for each vessel. Correspondingly, needed tools, diagnostic devices, and special tools shall be provided to undertake Organizational, Intermediate and Depot Levels of maintenance. There shall likewise, be training for Philippine Navy personnel for the three (3) levels of maintenance of major equipment, including but not limited to, main propulsion machinery, bow thrusters, hydraulic system, and auxiliary equipment. Operational and maintenance manuals, parts manual, drawings, diagrams and other publications of each system shall be provided. Consolidated shipboard allowance list of logistics shall be provided for supply management system. The builder will identify required spare parts and Special Tools and Testing Equipment (STTE) for all the equipment onboard the vessel. They shall include but not limited to the following:	

		• Carry on spares necessary to perform organizational preventive and corrective maintenance, • Spare parts necessary to perform intermediate base preventive maintenance for two (2) years, • Spare parts to perform intermediate corrective maintenance tasks, • STTEs to perform organizational maintenance tasks for platform, weapon systems and ammunition and • STTEs to perform intermediate maintenance tasks for platform, weapon systems and ammunition.	
	Initial Provisioning	As part of the initial provisioning, the builder shall identify and provide ~~lists and~~ supplies that are relevant to: Boatswain and Seamanship; Propulsion mechanical workshop, Hull and auxiliaries mechanical workshop, electrical workshop, electro-mechanical workshop, flags and signaling, sickbay, galley and berthing and accommodations. Similarly, spares sufficient for two (2) years of operation shall be provided based on Original Equipment Manufacturer (OEM) recommended scheduled maintenance inspection. The builder shall similarly provide two (2) sets of common tools and two (2) sets of special tools and test equipment per vessel for organizational level maintenance as part of the initial provisioning.	
	SPARES	The vessel shall have carry on-board spares for: • Landing Platform Dock (LPD) • Two (2) Landing Craft Utility (LCU), • Two (2) Rigid Hull Inflatable boats (RHIBs). These spare parts shall cover at least two (2) years after final TIAC acceptance of each unit by the Philippine Navy. The builder will identify spare parts for all the equipment on board the vessel based from OEM, and to be concurred by the PN-OR. They shall include the following:	

		• Carry on board spares necessary to perform organizational preventive and corrective maintenance and • Spare parts necessary to perform intermediate corrective maintenance tasks.	
	DOCUMENTATIONS	Documents to show that engine manufacturer/dealer is providing 3 years ESC (Extended Service Coverage) warranty on main engines if contract is awarded to them.	
		Builder must show proof that propulsion system & service support are locally or at least regionally available for the next twenty (20) years.	
		Builder must show proof that main engine has sufficient (at least 5) factory trained and certified CMA (Certified Marine Analysts) in its employ.	
		Planned Maintenance System, Calibration Tools and Basic Tools Requirements for 3 levels maintenance program (Organization, Intermediate and Depot Levels).	
		Consolidated Shipboard Allowance List (COSAL)	
		Operation, Maintenance and Illustrated Parts Manual	
		Ships Engineering, Scantling calculation, Speed and Power	
		Stability Booklet	
	STANDARD WARRANTIES	The vessel shall be free from ship and equipment defects in materials and workmanship on the date of delivery. The vessel shall only be accepted by the Philippine Navy upon completion of inspection and tests. Each part/component shall be manufactured from new parts. Warranties for performance and material defects shall apply for at least one (1) year from final TIAC or normal equipment manufacturer's warranty, whichever is longer. Implied warranties shall apply. The Philippine Navy Shall implement a ''Fixed Price'' contract. The following tests and trials shall be conducted in the following stages:	

		1.1. Stage 1 – Material Receipt Inspection and Shop test 1.2. Stage 2 – Shipboard Installation Inspection and test 1.3. Stage 3 – Equipment Level Operation Tests 1.4. Stage 4 – Intra- system Test 1.5. Stage 5 – Inter- system Test 1.6. Stage 6 – Special Test 1.7. Stage 7 – Dock Trial 1.8. Stage 8 – Sea Trials 1.9. Stage 9 – Endurance Trial 1.10. Stage 10 – Final Acceptance Trial	
26	**TRANSFER OF TECHNOLOGY**		
	Warranty Claim	The proponent shall establish a front office that shall serve as the single point of contact of the Philippine Navy. Single point of contact shall be responsible in dealing with all other companies/suppliers for the project. Furthermore, the proponent shall identify and designate at least two (2) local repair/maintenance facilities capable of conducting repair and maintenance of the following systems onboard the vessel within the warranty period: • Main Propulsion Diesel Engine (MPDE) • Ship's Service Diesel Generator (SSDG) • Controllable Pitch Propeller (CPP) and shafting • Reduction gear • Bow Thruster • Water Purifier System	
	Design Ownership	The shipbuilder shall either grant the ownership of the Landing Dock design to the Philippine Navy or grant a license to the Philippine Navy to manufacture/build using the design.	
	Proven Design	That the proposed LD shall be based or similar to the design of the existing LD of the PN or based from the design of a LD being used by the Armed Forces of the country of origin or at least two (2) other Armed Forces. A later modified version of such equipment or weapons system, or subsystems thereof, provided such	

		modified version is not a prototype, shall be deemed to be the same as the original one. Derivatives of existing Landing Dock designs are considered as long as it meets the PN capability requirements.	
	Brand New	That the contractor will deliver brand new LDs, wherein, brand new shall be defined as new construction or newly assembled vessel using newly manufactured materials and equipment. This goes the same to the supply of RHIBs and LCUs.	
27	**CLASSIFICATION SOCIETY**		
		Vessel construction should be certified by a classification society chosen, approved or had previous project with the Philippine Navy (PN). Said Society shall report to the PN on the certification work being done. The vessel shall be designed and built-in accordance to the Naval standards set by any of the following International Classification Society: a) Lloyd's Register b) American Bureau of Shipping (ABS) c) Bureau Veritas (BV) d) Det Norske Veritas- Germanischer Lloyd (DNV-GL) The builder shall ensure that all design criteria, material type approval, equipment arrangement and installation and workmanship shall be in accordance to the standards set by any of the listed International Classification Society. The vessel shall be class certified and have the following minimum class notation, or equivalent: +100A1, +LMC.	
28	**STANDARDS**		
	The hull structure shall pass the standards set by an International Classification Society (ICS) or accredited Register of Shipping selected by the PN.		
	The following rules and regulations will be met and certified, at the expense of the builder. Certificates will be final according to the standard from the appropriate bodies:		

	➢SOLAS 2012 including all recent amendments (as far as applicable) Chapter I, Chapter II-1 except stability, Chapter II-2 and Chapter III ➢International Maritime Organization (IMO) where applicable ➢IMO/MARPOL 73/78 regulations ➢International Load Line Regulation 1966 ➢International Regulation for Preventing Collisions at Sea. ➢IMO emission regulations. ➢IMO A468 XII (Noise levels) ➢MEPC.5/CIRC 9 IMO Resolution – Pollution Prevention Equipment Required ➢IEC regulations, Code IEC 60533: "Electrical and Electronic Installations in Ships ➢Electromagnetic Compatibility ➢ Global Maritime Distress Signal System (GMDSS) up to sea area A-3	
	All relevant certificates required by class and/or authorities shall be delivered comprising of, but not limited to: ➢Hull construction certificate (class) ➢Safety construction certificate (class) ➢Safety equipment certificate (class) ➢Batch and line approval certificates, machinery (manufacturer) ➢Trial test reports (two specimen copies) (builder) ➢Stability booklet (four specimen copies) (builder) ➢Anchor and cable certificates (builder) (manufacturer) ➢Navigation Equipment (manufacturer) ➢Lifesaving appliances (manufacturer) ➢IOPP certificate (class) ➢Engine room log-book (builder) ➢ Inventory list (builder)	
	Statutory documents will be obtained by the PN, while the builder will provide the relevant data.	
29	**NON-DISCLOSURE AGREEMENT**	

	The Builder shall execute a Non-Disclosure Agreement in favor of the Philippine Government wherein the supplier shall warrant that all information and communication, whether oral or written, secured in the course of negotiation with the Department of National Defense/Armed Forces of the Philippines (DND/AFP) shall not be divulged or disclosed to any other person or entity, without the express written consent of the DND/AFP. It includes non-disclosure of, but not limited, to the following: a) Terms of Reference, b) Technical Specification of the Project, c) Annual Procurement Plan and related Project Procurement Management Plan and d) Proposals.		
30	**SHIPYARD CAPABILITY AND CAPACITY REQUIREMENTS**		
	The contractor (or any of the JV) **shall own** a licensed shipyard capable of accommodating the construction of the vessel as required by the specifications. The shipyard must have MARINA License for Shipbuilding and Ship Repair (SBSR) Class B (minimum) for local bidder or equivalent for foreign bidder.		
	Organizational Structure	Company should have a distinct and well-organized structure of different departments including planning and design, quality assurance, production shops, logistics and warehousing, support facility, human resources, business/finance and research development.	
		Company personnel are employed based on the organizational set-up with their appropriate qualifications	
	Capability	Must have capability for planning, design, fabrication, installation, inspection and testing.	
		Must have dedicated ILS Team, systems and procedures, capable to provide equipment operation & maintenance training and capable to provide common tools, special tools & depot level tools & equipment	
		Must have drydocking facility with lifting capacity of at least 10,000 Tons, at least three (3) lifting equipment of	

		at least 50 tons capacity each and at least two (2) sets of CNC cutting machines (plasma and/or equivalent)	
		Must have a safe quay/pier/wharf or equivalent mooring facility for the afloat works, sandblasting facility and airless spray equipment and sufficient area for fabrication, sandblasting, painting and assembly.	
		Must have at least two (2) each licensed technical personnel: Naval Architect/Marine Engineer, Mechanical Engineer, Electrical Engineer, Electronics Engineer, Safety Officer and Draftsman (or equivalent)	
	Quality Control	Must have a well-established Quality Control Program with corresponding quality standards and procedures	
		All works performed undergo a quality control procedure, have certification for all services rendered for repair, overhaul, warranty claim and modifications and have material stress/strength testing facility/equipment	
	Tools, Equipment & Calibration	Must have sufficient worker tools & test equipment to facilitate completion of works, have calibration program for tools and test equipment and calibration program for tools and test equipment properly observed	
	Data Controls & Manuals	Must be maintaining operating manuals for equipment being provided to customers, maintaining related service bulletins for the equipment being provided to customers and have an electronic & hard copy monitoring system	
	Procurement & Receiving	Must have well established procurement system, have proper procedure on ordering, stocking & releasing of supplies and materials and with technical manuals being provided to the customers	
	Materials/ Stores	Secured, well ventilated warehouses for equipment, supplies, materials and special storage spaces for items which require controlled humidity and temperature are available.	

	Records	Should have a product recording system and computer-based information system for its product monitoring including production history, after sales, warranty and training among others	
	Shops	Shops are secured, well-illuminated, well-ventilated and in proper order, equipped with proper tooling & equipment for each workstation with safety devices, walkways and signage available.	
		Proper segregation of serviceable from unserviceable components and use of safety equipment (PPE) is observed	
		Production and Safety supervisors available at production shops	
	Safety & Security	Company has safety program, identification & segregation of flammable materials observed, fire safety/evacuation plan posted and Fire protection/fighting equipment readily available	
	Research and Development	Have a continuous program on research & development	
	Certifications (Minimum)	ISO 9001:2015	
		ISO 45001:2018	
31	**QUALITY ASSURANCE**		
	The contractor shall have a quality assurance team to supervise production and perform test and trial. The quality assurance shall be certified by an International Classification Society (ICS) chosen or approved by the PN which shall report regularly to the Philippine Navy.		

_____

(Signature of Authorized Representative)

_____

(Name of Authorized Representative)

_____

(Bidder)

List of Equipment

The Statement of Compliance must be supported by evidence in a Bidders Bid and cross-reference to that evidence. Evidence shall be in the form of manufacturer's brochures, un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, sample, independent test data etc., as appropriate for the following major equipment and systems wherein, the bidder must make reference to only one / single brand.

Item Nr	Particular	Choices (Existing brands in the inventory of the PN)	Brand Name
1	Main engines for Landing Docks	1. MAN 2. MTU 3. Detroit	
2	Main engines for LCU	1. CAT 2. MTU 3. Detroit	
3	Generators for Landing Docks	1. CAT 2. MTU 3. Detroit 4. MAN 5. Cummins	
4	Generators for LCU	1. CAT 2. MTU 3. Detroit	
5	Propeller	1. MAN 2. Wartsila	
6	Reduction gear	1. Renk 2. Reintjes 3. ZF	
7	Bow Thruster	1. Omega 2. Wartsila	
8	Platform Management System	1. Servo Watch 2. Sans Engineering 3. L3 Mapps	
9	Rigid Hull Inflatable Boat (RHIB) (Inboard Motor-Outboard Shaft) Diesel Fed	1. Volvo Penta 2. Mercury Marine	
10	Integrated Bridge Management System (IBS)	1. Raytheon Anschutz 2. Sans Engineering	
11	Downlink Receiver System	ECS (For the purpose of commonality, interoperability and security of operations)	
12	Integrated Communication and Control System	1. Daeyang Electric 2. EID/ Harris	
13	Electronic Chart Display System	1. Raytheon Anschutz 2. Furuno	

14	All Radio Communications equipment	Harris (For the purpose of commonality, interoperability and security of operations)	
15	.50 Caliber Quick Change Barrel Machine Gun	1. S&T Dynamics 2. FN Herstal	
16	Helicopter Traversing System	1. Tech Flower 2. Badahi	
17	Tactical Air Navigation (TACAN)	1. MOOG 2. L3 Harris	
18.	Helicopter Vertical Landing Aid (HVLA) Lights	1. Calzoni 2. AGI 3. LinkSrechts	
19.	Ring Laser Gyro	1. Raytheon Anschutz 2. Safran Sagem	
20.	Navigational RADARS	1. Furuno 2. Raytheon	

_____

(Signature of Authorized Representative)

_____

(Name of Authorized Representative)

_____

(Bidder)

Annex B: Sample Non-Disclosure Agreement

Non-Disclosure Agreement

This Non-Disclosure Agreement (the "**NDA**") signed this _____ (the "**Effective Date**") is jointly made and executed by:

_____, with address at _____.

-and-

_____, with address at _____.

Either Party may disclose certain confidential and proprietary information to the Other Party for the purpose of/in connection with the Landing Dock Acquisition Project (the "**Project**").

Both Parties agree to strictly abide by the following terms and conditions of this NDA which shall govern the confidentiality of all information received by Either Party from the Other Party.

1. Definition of Confidential Information

"**Confidential Information**" for the purpose of this Agreement shall mean any information in any form, whether oral, documentary, magnetic, electronic, graphic or any data offered by or acquired from Either Party and including but not limited to:

a) Business information including but not limited to personnel, company organization, financial information, production and sales status and marketing methods, know-how, trade secrets, customer roster, detailed information of any contracts, pricing policy, business plan strategies, business development technology, business development plans, business transfer plans, work progress, details on construction or construction proposals or any other business information.

b) Technical information including but not limited to designs, drawings, processes, production facilities, equipment, methods, techniques, systems, inventions, machines, computer programs or any other scientific and technological information.

c) Information regarding research and development ("R&D") information including but not limited to R&D plans, R&D reports, R&D data on any kind of experiment or any analysis or material on any kind of research performance.

d) Any other information that may cause damage or create a loss to Either Party or may give competitors a competitive advantage in time, cost and effort, when being disclosed.

2. Confidentiality

The following restrictions and procedures shall be followed by Both Parties:

(a) The Confidential Information may be used only for executing work as stated in the Contract.

(b) Any Confidential Information shall not be used for personal gain and shall not carry out any action that may damage or create a loss for Either Party.

(c) Either Party shall limit access to the Confidential Information, in whole or in part, to its officers or employees who have a bona fide need to access the Confidential Information in order for Both Parties to fulfill its obligations under the Contract. When necessary, individuals with access to the Confidential Information shall sign a separate non-disclosure undertaking and Both Parties shall be responsible for keeping such Individuals aware of, and in compliance with, the terms of this NDA and any other non-disclosure undertaking executed in relation to the Contract.

(d) Either Party shall not disclose any Confidential Information to any other third party without the Other Party's prior written consent.

(e) Both Parties shall strictly follow all of the Parties security and confidentiality methods and procedures.

3. Exceptions

Confidential Information shall not include any information which:

(a) was lawfully in the possession of Either Party prior to its disclosure by the Other Party hereunder; or

(b) is disclosed to Either Party by a third party who can lawfully do so and who is not under any obligation of secrecy or confidentiality to the Other Party before its disclosure hereunder; or

(c) at the time of disclosure to Either Party is in the public domain; or

(d) was approved for release by written authorization by the Other Party; or

(e) subject to Clause 4 below, Either Party is compelled to disclose by law or by the requirements of any relevant regulatory with which Either Party is required to comply. Either Party shall disclose only the portion(s) of the Confidential Information which has been specifically requested.

4. Compliance with Legal Requirements

In the event that Either Party is compelled by any court, statute, legislative, administrative or regulatory body to disclose any Confidential Information, Either Party shall inform the

Other Party promptly and shall provide such assistance and co-operation in any reasonable action which the Other Party may decide to take.

5. Standard of Protection

Either Party shall protect the Confidential Information it receives from the Other Party with efforts at least equal to those Either Party would use to protect its own corresponding confidential information. In no case shall Either Party's standard of protection be less than what a careful business in Either Party's industry would use to protect its confidential information.

6. Ownership of Information

Either Party recognizes that no patent, trademark or any other type of intellectual property right is either created, granted or implied through the use of the Other Party's Confidential Information under the Contract. Either Party also agrees to co-operate with the Other Party if Either Party decides to register such information with the relevant authorities during or after the contractual term of the NDA.

7. Duration

This NDA shall be effective as of the date of signing and shall automatically terminate 5 years from its Effective Date. The rights and obligations accruing prior to termination shall, however, survive the termination of this NDA for an indefinite period.

8. Remedies

Either Party recognizes that money damages alone would not be a sufficient remedy for a breach of this NDA and that Either Party shall be entitled to seek injunctive or other equitable relief for a breach or a threat of breach of this NDA. Such remedies shall be in addition to all other rights and remedies available to Either Party in law and equity.

9. No Waiver

No failure or delay by Either Party in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any further exercise thereof or the exercise of any other right, power or privilege.

10. Liability

If Either Party violates any part of this NDA and causes damage or loss to the Other Party, said Party shall compensate the Other Party for any direct and indirect damages arising out of such a breach.

Either Party shall also be held responsible for any actions of its employees or any third party to whom Either Party provided the Other Party's Confidential Information. If such persons or parties fail to abide by this Agreement, Company shall be jointly and severally liable for such violations under criminal and civil laws.

11. Governing Law and Jurisdiction

This Agreement and any non-contractual obligations arising out of or in connection with it shall be governed by the laws of the Republic of the Philippines.

If both Parties cannot reach an amicable settlement, any disputes which may arise out of or in connection with this Agreement shall be submitted to any Courts in the Philippines or to any other jurisdiction that the Other Party deems necessary or convenient.

IN WITNESS THEREOF, _____ and _____ have executed and signed this NDA as of the date first written above.

_____	_____
_____	_____
_____	_____
_____	_____
By: _____	By: _____
Name:	Name:
Title:	Title: