IMMEDIATE

Khulna Shipyard Limited (KSY)
Bangladesh Navy (BN)
Khulna-9201
Phone: 02-44110987, 02-477720003
Fax: 880-41-720404
E-mail: contact@khulnashipyard.gov.bd

Project-727/Part-6/1069

29 December 2024

CORRIGENDUM NOTICE

This is to inform all concerned that the following amendments are made under KSY Invitation for EOI letter No. Project-727/Part-6/1026 dated 18 December 2024 for renewal of the propulsion system of BNS TURAG and BNS KAROTOA, Qty: 02 Nos.

Invitation for EOI	Ser No of Invitation for EOI	For	To be Read
Project-727/Part-6/1026 dated 18 December 2024	Ser No 10	Interested Bidder/ Bidder's Principal/ Manufacturer will have to submit within the following deadline: a. Technical offer documents with seal and sign by **26 December 2024** @ 12.00 PM at email contact@khulnashipyard.gov.bd and plans@khulnashipyard.com.	Interested Bidder/ Bidder's Principal/ Manufacturer will have to submit within the following deadline: a. Technical offer documents with seal and sign by **08 January 2025** @ 12.00 PM at email contact@khulnashipyard.gov.bd and plans@khulnashipyard.com.
		b. Financial offer documents with seal and sign by **27 December 2024** @ 12.00 PM only at email ksygmdnp@gmail.com	c. Financial offer documents with seal and sign by **09 January 2025** @ 12.00 PM only at email ksygmdnp@gmail.com

Note: All other terms and conditions in Invitation for EOI will remain unchanged.

MD JULHASH UDDIN AHMED
Captain BN
For Managing Director

Khulna Shipyard Limited (KSY)
Bangladesh Navy (BN), Khulna-9201
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Project-727/Part-6/ 1026 18 December 2024

INVITATION FOR EXPRESSION OF INTEREST (EOI)

Reference:

A. Invitation for Tender Number 249.07.158.24 Dated 10 Nov 24.

1. Khulna Shipyard Ltd (KSY) invites expression of interest (EOI) from reputed supplier for renewal of the propulsion system of BNS TURAG and BNS KAROTOA, Qty: 02 Nos for the procuring entity as per Reference A. Brief description of the project is as follows:

a. **Name of the Equipment.** The propulsion system includes Main Engines (ME), Gearbox (GB), shafts, Controllable Pitch Propeller (CPP), Propulsion Control and Monitoring System (PCMS), and associated systems of both ships.

b. **Quantity.** 02 (Two) in Nos.

c. **Principal Parameters of the Ship.**

Ser	Description	As-Built Particulars	Present Particulars
a.	Length Overall	59.5 m	59.5 m
b.	Breadth Moulded	10.97 m	10.97 m
c.	Draught	3.6 m (fwd) 5.3 m (aft)	3.5 m (fwd) 5.5 m (aft)
d.	Displacement (Full Load)	1210.8 Ton	TURAG: 1215.10 ton KAROTOA: 1213.46 ton

2. **Shipments and Delivery.** The following requirements should be completed:

a. The supplier will arrange shipment of all items by sea/air to Chattogram sea/airport, Bangladesh, as per schedule from the date of the contract signed.
b. All items are to be delivered in proper packing to ensure safe transit by sea/air.
c. All packages are to have packing notes showing their contents in detail, and all packages shall be marked with the name and address of the consignee and gross weight.
d. The supplier will supply the item at NSD Chattogram. While delivering, the supplier will carry the items from Chattogram sea/airport (as applicable) to NSD Chattogram at the cost and risk of the supplier.

3. **Eligibility of the BIDDER.** The BIDDER must be capable of providing an integrated and complete solution for Marine Diesel Propulsion System onboard ships. Considering the unchangeable design parameters of the ship, the BIDEER will need to provide a solution which is compatible with the existing hull and structure. The renewal project will have the following (but not limited to) broad undertakings:

a. Detail survey analysis of the ship to design a compatible and integrated solution.
b. Based on the survey, delivery of necessary machinery/equipment/system.
c. Removal of the existing propulsion system and installation of new components.

d. Overall project management by appropriate representative providing new solutions.
e. Conduct test and trial.

The BIDDER, representing any complete and integrated solution provider, must have internationally accepted credentials with experience in carrying out a minimum of 3 (three) similar types of renewal projects comprising above-mentioned undertakings onboard ships (locally/internationally). A record of conducting such projects is to be submitted with the offer. The BIDDER is to submit an authorisation certificate from all the OEMs, in case of multiple origins for major components of the proposed solution, mentioning that the OEMs authorise the BIDDER for the project and will provide technicians, equipment, special tools, spares, documents, training, etc., as required by the tender documents as per the project schedule. Any offer without such eligibility shall be assessed as being non-responsive. Any internationally renowned propulsion system provider may submit their offer directly or through a local agent.

4. **Certificate/Document of Authentication.** The local supplier must provide the following original certificate(s)/ documents with the offer/quotation of items as regards to the genuineness of the source and items to establish a chain of links from the source to supply:

a. One certificate/ document from the manufacturer/OEM in favour of the supplier (in the case of the manufacturer as the direct source).
b. Two certificates/ documents, one from the manufacturer/OEM to the authorised agent and the other from the authorised agent to the supplier (in case the authorised agent is the immediate source).
c. Three certificates/ documents, first one by the manufacturer to the authorised agent, second one by the authorised agent to the sub-agent and third one by the sub-agent to the supplier (in case of the sub-agent as immediate source). If the supplier is unable to obtain the first certificate (by the manufacturer to an authorised agent), then relevant documents to prove the agency-ship of its claimed agent of the recognised manufacturer need to be produced.
d. Type Approval Certificate and Quality Assurance certificate from any of the Classification Societies (as mentioned in paragraph 9 of tender specification at Ref A) in respect of machinery/equipment/systems.

5. **Payment Terms.** Payment shall be made as per payment schedule mentioned in article 42 of tender specification at Ref A.

6. **Compliance Statement.** A compliance statement fulfilling all the tender requirements is to be submitted with the offer as per tender specification article 47 at Ref A.

7. **Scope of Supply of Supplier/ Principal/ Manufacturer.**

a. Maintain liaison with Procuring Entity.
b. Complete works for renewal of propulsion system of BNS TURAG and BNS KAROTOA as per special terms & conditions and tender specification at Ref A.
c. All expenses related to LC Charges, LC amendment Cost, LC Confirmation Cost (if any), Marine Insurance, Custom Duty, C&F agent Commission, Port charges, Transportation cost, etc.
d. All financial cost (Performance Guarantee, Bank Guarantee (if any), Bank guarantee for warranty, insurance for LC, etc.).

e. During implementation of the project, the amount of Liquidated Damage (LD) imposed on KSY from the procuring entity due to delay in delivery of the items (If imposed).

f. The amount of speed penalty imposed on KSY from the procuring entity due to less speed as mentioned in the technical specification (If imposed).

g. Cost of Fuel oil, Lub oil, Grease, Coolant, Crew Fooding on board etc. during test-trial and delivery.

h. All charges related to Boarding, Lodging, Fooding, Medical Support, and transportation etc. of OEM Engineers / Foreign Experts.

i. Warranty of the project as per technical specification at Ref A.

j. Any other expenses for successful completion, test trial and delivery of the project.

8. **KSY Scope of Supply.** KSY scope of supply will be as follows:

a. Maintain liaison with Procuring Entity.
b. Responsible for Bid bond as tender security.
c. Act as local agent to deliver the subject mentioned project.
d. Will not have any types of monetary involvement throughout the project.
e. Will receive a service charge from the Bidder/ Bidder's Principal/ Manufacturer.

9. Interested Bidder/ Bidder's Principal/ Manufacturer is hereby requested to contact following person:

Md. Hasanuzzaman Tarek
Deputy Chief Engineer
Design & Planning Department
Khulna Shipyard Ltd., Bangladesh Navy Khulna-9201
Cell: +8801670715428 (whatsapp)
Email: contact@khulnashipyard.gov.bd
plans@khulnashipyard.com

10. Interested Bidder/ Bidder's Principal/ Manufacturer will have to submit within the following deadline:

a. Technical offer documents with seal and sign by 26 December 2024 @ 12.00 PM at email contact@khulnashipyard.gov.bd and plans@khulnashipyard.com
b. Financial offer documents with seal and sign by 27 December 2024 @ 12.00 PM **only at email ksygmdnp@gmail.com**

11. **Offer validity.** The offer should remain valid until 30 June 2025.

MOHAMMAD MONIRUZZAMAN
Captain BN
For Managing Director

Enclosure:

1. Special Terms & Conditions and Tender Specification (Ref A) - 32 (Thirty Two) Pages.

ANNEX C
TENDER NO 06.06.0000.249.07.158.2024
DATED 10 Nov 2024

SPECIAL TERMS AND CONDITIONS (DP-4)

Serial No	Terms and Condition as per requirement	Compliance by the Principal/Manufacturer
1	**General Condition**: a. All Offer in foreign currency should be submitted in foreign Principal's Original Proforma Invoice (Original Official Pad) duly signed by the Principal by giving name, designation and official seal of signatory. All pages of the Offer (Technical and Financial Offer), compliance sheet of tender specifications, terms and conditions as per Annexes must be in original official pad and must be numbered and signed by the Principal (same signatory). Enclosed brochures/catalogues/publications as applicable, must be sealed and signed on at least first and last pages by the Principal and local agent. Unsigned Offer will be rejected. Submitted Offer must be book binded. No loose leaf/stapled/spiral binding offer is accepted. Cover page of offers (Technical/Financial) should bear tender number, full nomenclature with model, quantity, principal name, manufacturer name, beneficiary name, local agent name and total pages of offer only. b. No change can be made in financial offer once submitted. c. No Bangladeshi Company/Local agent can be treated as principal for imported goods.	
2	**Address of Procuring Entity**: The Proforma Invoice should be addressed to "Directorate General Defence Purchase, Ministry of Defence, New Airport Road, Tejgaon, Dhaka-1215, BANGLADESH".	
3	**Manufacturer's Name and Address**: The Manufacturer's name and address must be mentioned in the Offer, if the Principal/firm is a Trading House/General Order Supplier.	
4	**Certificate of Assurance**: Certificate of Assurance from Original Manufacturer or Appointed Dealer of Manufacturer for supply of offered equipment/stores is to be provided, if the Principal is a Trading House or General Order Supplier. If any supplier fails to submit original certificate during opening the tender, then photocopy may be accepted. But original copy is to be submitted to DGDP within 10 days from tender opening, otherwise it will lead to cancellation of the offer. In this regard an undertaking is to be submitted with the offer.	
5	**Local Agent:** Certificate of Authority/ letter issued by the Principal/Manufacturer has to be signed by the **Executive** giving name, designation & official seal and to be submitted in original about appointment of local agent (who must be enlisted in DGDP for participation in relevant groups) to submit the bid/offer and sign the contract on his behalf. If any supplier fails to submit original certificate during opening the tender, then photocopy may be accepted. But original copy is to be submitted to DGDP within 10 days from tender opening, otherwise it will lead to cancellation of the offer. In this regard an undertaking is to be submitted with the offer.	
6	**Business Information To Be Mentioned:** (a) Principal/Beneficiary Banker's Name. (b) Account Number. (c) Address, Fax and Telephone Numbers. (d) Email and website address.	
7	**Make/Model/Brand of Equipment and Stores:** Make/Model/Brand of equipment and stores including ISO Code number, if any, are to be mentioned in the Offer.	
8	**Country of Origin**: Country of Origin of the offered equipment and stores are to be specifically mentioned in the Proforma Invoice. After floating tender, application for changing of country of origin and manufacturer will not be accepted.	

9	**Quotation of Price**: Price is to be quoted separately in the following manner: a. FOB value inclusive of all charges like packing, handling and documentation, etc. b. List of accessories, spares and optional item (if any) is to be provided quoting price of each item. c. Freight charges by sea up to Chattogram sea port or by air upto Hazrat Shahjalal International Airport, Dhaka, Bangladesh (as applicable) to be mentioned separately for each item offered. Freight charges shall always be paid at actual but not exceeding the freight charges mentioned in the offer. Freight charges must be clearly shown in the Bill of Lading (BL)/Airway Bill (AWB), Invoice and Freight Voucher issued by Carrier up to Chattogram/Dhaka. d. Total CFR/ CPT value (FOB and Freight) e. Installation charges (if charges are applicable). f. Cost of foreign training with details breakdown (if applicable). Cost should be include Internal Transportation, Accommodation, Food, Tution fees and other charges related to training arrangement only. Cost of local training with details breakdown (if applicable) should also be included. g. Only publications, catalogues, technical manuals and other documentations are to be provided/supplied free of cost. No other items/services are to be offered/provided free of cost by the supplier. If any item/service is mentioned/offered free of cost, the supplier has to show that price in the offer for future reference. Moreover, that price (except publications, catalogues, technical manuals and documentations) will be added with the FOB value while evaluating the comparative prices of the suppliers. h. For double envelope tender, all types of price need to be quoted and included in financial offer only. Disclosure of any price in the technical offer or during technical vetting will be subjected to cancellation of offer.	
10	**Agency Commission.** The FOB value submitted must be inclusive of "Agency Commission" for the local Agent and the amount of Agency Commission must be stated separately in the offer either as percentage of FOB value or as a fixed amount. As per DGDP rule maximum allowable Agency Commission is mentioned below: a. Upto 1 Lakh – 7%. b. 1 to 2.5 Lakh – 5%. c. 2.5 to 5 Lakh – 4%. d. 5 to 10 Lakh – 3%. e. 10 to 15 Lakh – 2.5%. f. 15 to 25 Lakh – 1.5%. g. 25 to 40 Lakh – 1%. h. 40 to 1 Crore – 0.5%. j. Above 1 Crore – 0.375%. The Local Agent shall receive Agency Commission in Local Currency on receipt of No Objection Certificate from consignee.	
11	**Offer Validity**: Offer must remain valid up to **30 June 2025.**	
12	**Delivery Period**: Delivery schedule as per **tender specification clause - 30.**	
13	**Grace Period**. Delay in the supply of stores upto 21 days will be regarded as "Grace Period" available to the supplier and the delivery date will be considered to have been automatically extended upto that limit without issuance of any formal amendment and payment without any liquidated damages. For delays beyond 21 days, LD (if imposed) will be calculated from the original date given in the contract.	

14	**Despatch/Shipment Instruction**. a. The SUPPLIER shall despatch the consignment to the consignee by any foreign vessel, preferably by Bangladeshi Vessel; if not, foreign vessel not belonging to Israeli company and not calling at any port of Israel to deliver the stores at Chattogram Sea Port. b. Part shipment : As Applicable. c. Trans-shipment : As Applicable. d. Shipment in chartered vessel over 15 years. : Not allowed. e. Shipment in liner vessel over 25 years : Not allowed. f. Shipment in vessel below 1500 GRT : Not allowed. g. Shipment on Deck without Container : Not allowed. h. All charges, including container/terminal handling, loading, unloading, carrying, equipment handling (if any), till the stores are loaded into the wagon (as applicable) and handed over to the respresentative of the purchaser will be borne by the supplier.	
15	**Payment Terms.** Payment will be made through an irrevocable Letter of Credit (L/C). LC amounting to 100% CFR/CPT value will be opened in favour of Supplier. Freight charges shall always be paid at actual but not more than the specified amount mentioned in the Contract. a. Payment will be made as per DP-5, (Tender Specification Clause-42) b. 10% PG will remain in vogue, which will be released on receipt of No Objection Certificate from the consignee.	
16	**LC Amendment Chagres**: All Bank charges in respect of LC outside Bangladesh is to be borne by the Supplier. Any amendment/add confirmation requested by the Supplier is also to be borne by the Supplier. Any Other amendment charge will be borne by the responsible party.	
17	**Insurance Chagres**: Insurance charges of contracted items will be borne by the Buyer/Purchaser.	
18	**Non Acceptance of Fax /E-mail offer**: Offer forwarder to local agent by principal via Fax or E-mail will be cancelled if supplier does not submit original offer within 07 days from the date of opening the tender.	
19	**Non Acceptance of Conditional offer**: Conditional Offer will not be accepted.	
20	**Compliance Instruction**: Offer must accompany compliance statement of tender conditions/ requirement giving reference to relevant page/para of tender/offer/ booklet/catalogue.	
21	**Submission of Alternative Offer**. If the Supplier desires to submit an alternative offer then it should be a separate offer complete in all aspects. Nothing should be referred to the main offer.	
22	**Liquidated Damage (LD).** The clause will be included in the contract as under: In case the Supplier fails to complete shipment delivery within dates stipulated in the contract, the Purchaser shall have the right to impose and recover Liquidated Damage (unless waived off) at the rate of 2% but not less than 1% of the value of unsupplied quantity of the item(s) per month for the period exceeding the original delivery period, subject to the provision that the total liquidated damages thus leviable will not exceed 10% of the total contract value. **Note: Decisions under this clause shall not be subject to arbitration.**	

Serial No	Terms and Condition as per requirement	Compliance by the Principal/Manufacturer
23	**Arbitration.** The arbitration clause of the Contract will be as under: All legal disputes of whatever kind arising out of the contract except (Delay in Dispatch of Documents, Insurance, Grace Period and PG) of the contract between the parties including disputes regarding validity of Contract shall be settled wherever possible amicably. Should these disputes fail to be settled on a friendly basis, they shall become subject to ultimate settlement in accordance with Rules of Bangladesh Arbitration Act 2001 (1 of 2001). The Court of Arbitration having jurisdiction and being exclusively competent to decide overall legal disputes arising from or concerning this Contract. The court of Arbitration shall conduct Arbitration in accordance with the Rules of Bangladesh Arbitration Act 2001. However, it shall grant both the parties full opportunity to present their cases and their proofs in writing and by words of mouth in the course of the proceedings. The conducting Language of Arbitration should be in English and the place will be the city of Dhaka, Bangladesh.	
24	**Force Majeure and War Risk.** This clause will be included in the contract as under: a. **Force Majeure**. Should circumstances arise which prevent the parties from completion of partial fulfillment of their obligation of any nature of blockages or other fulfillment of their obligation shall be postponed for the time during which such circumstances prevail. The party which has been deprived of the possibilities of fulfillment of their obligations of the contract, should notify the other party of the beginning and cessation of the circumstances, which prevent the fulfillment of their agreement. The Certificate issued respectively by the **Chamber of Commerce** in the country of the Supplier or the Purchaser shall be accepted as proper evidence of the existence of the above-mentioned circumstances and time of their duration. Non-availability of raw materials for the manufacturing of stores, or an export permit for the export of the contracted stores from the country of this origin/country of supplier, shall not constitute force majeure.	
	b. **War Risks**. In this clause "War Risks" means any blockage or any other actions which are announced as a blockage by any Government or any belligerent or by any organization, sabotage, piracy or any actual or threatened war, hostilities, war like operations, civil war, civil commotion or revelation. If at any time before the vessel commences loading or during the voyage or during unloading it appears that performance of the contract will subject the vessel or her master and crew or her cargo to war risk at any stage of the voyage, the Supplier has the right to stop the voyage. In all the rest not stipulated in this clause is related to "War Risks", the parties shall be guided by the clause "War Risks" of "Uniform General "(as revised 1922 and 1976). Code name "GENCON" recommended by "The Baltic and International Maritime Conference". **Note: Decisions under this clause (clause-24) shall not be subject to arbitration.**	

25.	**Termination of Contract**. The following clauses regarding termination of Contract will be incorporated in the contract: a. At any time during the execution of this contract, the Purchaser shall have the right to cancel Contract under followings reasons: (1) If the Supplier fails to supply the contracted item as per specification given in the contract or the contracted item being rejected by the competent technical authority or the contracted items being rejected under Contract Clause of Post shipment Inspection/Final Inspection. (2) If the Supplier fails to deliver the contracted item within the date specified in the Contract or any extensions thereof. (3) In the event of breach of any contractual obligations given in the Terms and Conditions of the Contract. b. Moreover, in case of termination of Contract, as under this clause the Purchaser shall have the right to decide to take appropriate punitive disciplinary action against the Supplier as per the existing rules of DGDP. **Note: Decisions under this clause shall not be subject to arbitration.**	
26	**Effectiveness of Contract**. The contract will be effective from the date of signing the Contract.	
27	**Letter of Credit (LC)**. Irrevocable Letter of Credit (LC) will be opened with a designated Schedule Bank of Bangladesh determined by Public Accounts Department (PAD) of Bangladesh Bank (Central Bank of Bangladesh).	
28	**End User Certificate (EUC)**. a. End User Certificate (EUC), if needed, may be issued as per format attached. If any bidder needs any change in the EUC, then they have to mention about such requirement of change clearly in the Technical Offer **and also Submit the required format with the technical offer. After signing of contract new format and condition will not be acceptable**. b. The Supplier is to apply for EUC within 14 days of signing the contract. The Purchaser will provide the Supplier with an End User Certificate, if requested by the foreign supplier through letter (In original letter Head Pad) duly signed by the owner/executive on the date of signing the contract or before. The Purchaser shall issue EUC as per the policy within 21 days if LC is operative. If the supplier provides EUC requirement on the date of signing the contract or before, the supplier will not be responsible for onward delay. In case of delay for other reason(s), the Purchaser shall not remain responsible and this will not fall in the condition of Force Majeure. After handing over the EUC to Local Agent/Principal, if it is lost or misplaced then the Local Agent and Principal will be liable for punitive actions as per existing DGDP rules. A Specimen of EUC is attached herewith as Annex.	

29	**Recoveries**: "Whenever any sum of money is recoverable from the supplier under a given contract, the Purchaser (DGDP) shall be entitled to deduct the amount involved from the bills of the supplier. Whether due in respect of the contract under which the said amount is recoverable or in respect of any other contract payment against which may be outstanding then or subsequently, through the paying authority of the Purchaser (DGDP). The Purchaser (DGDP) shall also be entitled to recover such amounts by appropriating in full or in part, as may be necessary, the security (PG/BG/PO) amount deposited during enlistment by the supplier." "Should the recovery in the manner described above be insufficient to cover the full amount recoverable, the supplier shall pay to the Purchaser (DGDP), on demand, the remaining or amount due, as the case may be."	
30	**Performance Guarantee (PG)**: a. The supplier shall furnish a Performance Guarantee (PG), (as mentioned at the specimen format) with a validity of 03-12 months (as applicable) from the date of expiry of the delivery schedule (as per DGDP format in foreign currency) in the shape of Bank Guarantee as security. The PG is of @ 10% on the CFR value amounting to Euro/USD.....(In Words.....)/not less than USD 5,000.00 in favour of Senior Finance Controller (Defence Purchase/Navy) as security money through any schedule bank located in Bangladesh (except Standard Chartered Bank Ltd) with a view to opening LC. In all the cases PG should be summitted before signing the contract. The PG will be released by the SFC (DP)/SFC (Navy) on receipt of a certificate from DGDP to the effect that the supply has been completed satisfactorily and No Objection Certificate (NOC) has been received from the consignee. If the contractual obligation warrants the extension of validity of PG, the Supplier shall remain liable to do so at his own cost. If however, the Supplier, despite being requested by DGDP, decides not to extend PG; DGDP shall deserve the right to encash the PG, which shall later, on completion of contractual obligations be handed over to the Supplier. In this connection the LC open by DGDP will remain IN-OPERATIVE till receipt of PG from the Principal/Manufacturer. On getting the valid PG the LC will be made OPERATIVE. All expenditures involved in making the LC operative will be borne by the supplier. In case of failure of the Supplier to fulfill the contractual obligation as per terms and conditions of the contract, PG in full or part thereof may be forfeited at the discretion of the purchaser and necessary punitive action will be taken against Manufacturer/Principal and Local Agent as per DGDP rules. If any case either PG validity expires or contractual obligations is not completed, local Agent of foreign manufacturer/principal must ensure the PG issuing bank takes written clearance from DGDP before releasing PG to the principal. b. While singing the contract without PG (with undertaking), if supplier fails to submit the PG as per given date, the Purchaser may cancel the contract and impose embargo on Foreign Manufacturer/Principal and Local Agent.	

31	**Signing Authority**: Contract should be signed by the owner or competent representative of the foreign manufacturer/principal. or Contract should be signed by the proprietor of the Local Agent or someone on his behalf with power of attorney, if so allowed by the principal. and Accordingly on behalf of the firm necessary evidence is to be submitted by the registered person in DGDP.	
32.	**Contract information of the following has to be given along with the offer.** **a. Manufacturer** Name: Description: Company Name: Full Postal Address: E-Mail: Mobile No, Fax No and Web Address: **b. Principal (if any)** Name: Description: Company Name: Full Postal address: E-Mail: Mobile No, Fax No and Web Address: **c. Local Agent** Name: Description: Company Name: Full Postal address:	

Serial No	Terms and Condition as per requirement	Compliance by the Principal/Manufacturer
33	**<u>Double Envelope System</u>**. The tender is invited in Double Envelope System. Suppliers will act as under: a. The 1st envelope will contain the Financial Offer which will include quoted rate & Agency Commission (if applicable) in original Proforma Invoice. b. The 2nd Envelope will contain the Technical Offer, which will include all documents/ papers including Proforma Invoice. (showing nomenclature of the items and quantity only) Less the Financial Offer. c. The Envelop bearing Financial Offer will be marked as "FINANCIAL OFFER" in Block Capital letter. Likewise, the envelop bearing Technical Offer will be marked as "TECHNICAL OFFER". However, catalogues/brochures/ pamphlets/ technical publications will not be inside the envelope of Technical Offer but should be submitted separately with the Offer. d. Both the envelopes will be put inside a 3rd envelope which will be clearly marked with tender no. date and the office seal of the Supplier. e. All the envelopes must be properly closed and sealed. f. Frontal view of the envelopes will be as follows: **FINANCIAL OFFFER** Tender No ..... Dated ..... To: Office Seal of DGDP Ministry of Defence New Airport Road Tejgaon, Dhaka-1215 1st Envelope	
	↓ **TECHNICAL OFFFER** Tender No ..... Dated ..... To: Office Seal of DGDP Ministry of Defence New Airport Road Tejgaon, Dhaka-1215 2nd Envelope Tender No ..... Dated ..... Office Seal of To: DGDP Ministry of Defence New Airport Road Tejgaon, Dhaka-1215 3rd Envelope	

34	**Special Instruction**: a. If any Principal submits more than one Offer for the same item through more than one local agent then all the Offers of that particular Principal for that item will be treated as cancelled. b. Lowest bidder will be selected considering the following: Main Equipment Price+ Essential Item Price + Optional Item Price + Fast & Slow Moving Spares Price+ SST/SSM/Installation Cost Price+ Training + Freight+ Agency Commission+ Reference Price of Free of Cost (FOC) Item (except publications, catalogues, technical manuals and documentations). c. Shipment can't be done without shipment clearance from DGDP.	

TENDER SPECIFICATION FOR RENEWAL OF PROPULSION SYSTEMS OF BNS TURAG AND KAROTOA

1. **Name of the Equipment.** The propulsion systems include main engines (ME), Gearbox (GB), shafts, Controllable Pitch Propeller (CPP), Propulsion Control and Monitoring System (PCMS), and associated systems of both ships.

2. **Preamble.** BNS TURAG AND KAROTOA are two Offshore Patrol Vessels (OPV) of Bangladesh Navy (BN). They were commissioned in the Royal Navy in 1977 and 1979, respectively. Later the ships were inducted into BN inventory in 2004. As the ships are more than 45 years old, the performance of their propulsion system has degraded significantly. Moreover, some components of the propulsion system have already become obsolete, thereby rendering no possible support for their maintenance. To regain its optimum capability, the ship needs to be repowered. It is intended that the present main propulsion engines, reduction gearboxes, shafting arrangement, CPP and associated auxiliary systems/equipment/fittings, etc., will be replaced with a complete and compatible new Marine Diesel Propulsion System where each component will be brand new and proven part of the Integrated Solution. However, no major changes in the ship's hull and structure need to be considered. New engines, gearboxes, shafts, CPP, PCMS and associated equipment must be accommodated in the existing spaces of the ship (i.e., Engine room, Gland spaces, Plummer block, Brackets, etc.).

3. **Principal Parameters of the Ships.** The principal dimensions of the ships are as follows:

Ser	Description	As Built Particulars	Present Particulars
a.	Length overall	59.5 m	59.5 m
b.	Breadth moulded	10.97 m	10.97 m
c.	Draught	3.6 m (fwd) 5.3 m (aft)	3.5 m (fwd) 5.5 m (aft)
d.	Displacement (Full Load)	1210.8 Ton	TURAG: 1215.10 Ton KAROTOA: 1219.46 Ton

4. **Details of Existing Machinery (Each Ship).**

Ser	Component	Details
a.	2 x Main Engine	Brand: Ruston Diesel Ltd, Newton-le-willows, England Model: 12 RK3CM Max Continuous Rating (per engine): 2190 BHP @ 750RPM
b.	1 x Gearbox	Brand: Barclays. Curle & Co Ltd, England Type: Twin Input Single output Gear Ratio: 3.325:1 Weight: 17.45 Tons Dimension: 4060 X 2741mm (L X B)
c.	1 x Shaft	Material: Tensile Steel (intermediate) Overall Length: 12.014 m Diameter Tail Shaft: 322 mm (outer), 126 mm (inner) Intermediate: 243 mm

Directorate General of Defence Purchase
Date
Ministry of Defence

Ser	Component	Details
d.	1 x Controllable Pitch Propeller	Brand: Sulzer Bros (UK) Ltd No of Blades per Propeller: 4 Blade Diameter: 3000 mm Material: Nickel Aluminium Bronze Weight: 5.526 Tons with Hub
e.	Other Auxiliary Fittings	Stern Tube and Brackets, Plummer Block, Thrust Blocks and Watertight Bulkhead Glands

5. **Ambient Condition.** The general ambient conditions in the operating areas are mentioned below:

Ser	Description	Remarks
a.	Temperature	5°C to 50°C.
b.	Relative humidity	Up to 99 %
c.	Climate	Subtropical
d.	Operating Environment	Will be operated at sea and in coastal areas of the Bay of Bengal

6. **Stability Characteristics.** The ships' stability characteristics in different loading conditions (details are given in Annex C) are as follows:

Particulars	*Loading Condition*	
	Deep	*Light Harbour*
Actual Trim Between Perpendicular	1.738 m	2.099 m
Metacentric Height	0.846 m	0.611 m
The angle at which the ship reaches her maximum righting moment and beyond which the righting moment diminishes	65.0°	44.1°

7. **Desired Parameters of the Ships.** There should not be any significant change in the ships' principal parameters and stability criteria (as mentioned in paragraphs 3 and 6). The newly installed propulsion systems must achieve the speed mentioned below:

Parameters	Condition	Description
Speed	a. Economical Speed (min)	10 knots
	b. Cruising Speed (min)	12 knots
	c. Maximum Continuous Speed (min)	14 knots
	d. Maximum Speed (min)	16 knots

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8. **Scope of Work/ Supply**. The scope of supply will be as follows:

a. Conduct a complete survey/analysis of the ships and prepare a detailed survey/assessment report on their power requirement to achieve the desired parameters (paragraph 7). Provide a detailed plan for complete and integrated solution.

b. Remove components of the existing propulsion system (ME, GB, CPP, shafts, and associated fittings).

c. Supply an adequate number of compatible ME, GB, Shaft, CPP, and all associated auxiliary components as per the survey/analysis report to provide an integrated solution. The supplier is to certify that the propulsion machinery, i.e., ME, GB, shafting, CPP, PCMS and other associated equipment are compatible. The supplier is also to certify that the arrangements are suitable for the ship from the ship's stability, structural strength, alignment, vibration, and noise signature point of view. The components should be ideal for operating in the ambient conditions mentioned in paragraph 5.

d. Installation of ME, GB, Shaft, CPP, and all associated auxiliary components.

e. Supply and installation of the PCMS and integrate it with all the components.

f. Overall management of the entire repowering process.

g. Standard accessories must be provided and installed as per paragraph 15.

h. Standard tools must be provided as per paragraph 16.

j. Spare parts must be provided as per paragraph 17.

k. Special tools are to be provided as per paragraph 18.

m. Operators/ Technical Training as per paragraph 20.

n. Pre-Shipment Inspection (PSI) and Factory Acceptance Test (FAT) as per paragraph 21.

p. The propulsion system's Installation, supervision and commissioning as per paragraph 26.

q. Carrying out Setting to Work as mentioned in paragraph 27. All necessary accessories, fittings, and consumables are to be provided.

r. Supply of manuals, drawings, documents, and certificates as per paragraphs 14 and 45.

s. Any other works deemed necessary to restore design parameters.

9. **Classification/ Standard.** Type Approval Certificate and Quality Assurance Certificate by any of the following Classification Societies are to be provided with the offer:

a. Lloyds Register of Shipping (LRS).
b. American Bureau of Shipping (ABS).
c. Bureau Veritas (BV).
d. Det Norske Veritas (DNV).
e. Class NK.

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10. **Original Equipment Manufacturer (OEM).** The Standardised Original Equipment Manufacturers (OEM) of major components of the propulsion system are as follows:

Component	Brand	Country of Origin
a. Main Engine	Caterpillar	EU Countries/ USA/ UK/ Canada/ Japan
	SEMT Pielstick	
	MAN Diesel	
	MTU	
	Wartsila	
b. Gearbox	Reintjis	
	ZF AG	
	MTU	
	Masson Marine	
c. CPP	Not specified. From the OEM of the other main components/ systems is preferable. Country of Origin should be strictly maintained.	
d. PCMS		
e. Associated Auxiliaries and Accessories		

11. **Technical Specification.**

Ser	Description		Remarks
a.	**Main Engine (for Each Ship)**		
	(1)	Brand	As per BN standardised OEM mentioned in paragraph 10
	(2)	Model	To be mentioned
	(3)	Engine Rating	Heavy Duty (for nearly continuous use in variable load applications where full power is limited to 8 hours out of every 10 hours of operation and Load Factor ranging from 40% to 80%) is preferred. However, considering the hull form, typical applications and annual operation, if the integrated system requires a different rating, the BIDDER may propose with justification.
	(4)	Quantity (not more than 2)	To be mentioned
	(5)	Year of Manufacture	2024 or later
	(6)	Country of Origin	As per paragraph 10
	(7)	Manufacturer	As per BN standardised OEM mentioned in paragraph 10. All the ME components should be brand new and manufactured in the Country of Origin.

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Ser	Description		Remarks
	(8)	Max Continuous Power	To be mentioned. This should be sufficient to achieve the desired speed mentioned in paragraph 7. However, the total engine power output per shaft should not be less than 2200 BHP and more than 2400 BHP. Any deviation should be justified with detailed calculations and justifications, as mentioned in paragraph 34.
	(9)	Maximum Power Output	To be mentioned
	(10)	RPM	To be mentioned
	(11)	Dry Weight	To be mentioned
	(12)	Dimension	To be mentioned
	(13)	Fuel	Diesel
	(14)	Lub oil to be used	To be mentioned. The mentioned lub oil should be widely available in Bangladesh.
	(15)	Specific Fuel Consumption	To be mentioned
	(16)	Starting System	To be mentioned
	(17)	Cooling System	To be mentioned
	(18)	Fuel System	To be mentioned
	(19)	Control Panel	The engine control panel should be available locally in the Engine Room and remotely in MCR
	(20)	Associated Systems/Equipment/Fittings	To be mentioned. All the auxiliary systems/ equipment/ fittings are to be provided. All the associated auxiliary systems/ equipment/ fittings are to be manufactured in the Country of Origin.
b.	**Gearbox (for Each Ship)**		
	(1)	General	The gearbox should be fully compatible with the proposed Main Engines and CPP system
	(2)	Brand	As per BN standardised OEM mentioned in paragraph 10
	(3)	Model	To be mentioned
	(4)	Quantity	1 (one)
	(5)	Year of Manufacture	2024 or later. All the components should be brand new and manufactured in the Country of Origin
	(6)	Country of Origin	As per paragraph 10
	(7)	Maker/Manufacturer	As per BN standardised OEM mentioned in paragraph 10. However, for an integrated solution, OEM of other major equipment like ME/CPP is acceptable
	(8)	Type	Reduction

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Ser	Description		Remarks
	(9)	Reduction Ratio	To be mentioned. It should be suitable to reduce the engine RPM to the desired shaft RPM
	(10)	Lub oil to be used	To be mentioned. The mentioned lub oil should be widely available in Bangladesh.
	(11)	Gear output shaft rotation	To be mentioned
	(12)	Cooling System	To be mentioned
	(13)	Dimension	To be mentioned. As per inspection on board ship and co-relating to engines dimension
	(14)	Weight	To be mentioned
	(15)	Associated Systems/Equipment/Fittings	To be mentioned. All the auxiliary systems/ equipment/ fittings are to be provided. All the associated auxiliary systems/ equipment/ fittings are to be manufactured in the Country of Origin.
c.	**Shaft & CPP (for Each Ship)**		
	(1)	General	The CPP should be fully compatible with the proposed gearbox
	(2)	Brand	As per BN standardised OEM mentioned in paragraph 10
	(3)	Model	To be mentioned
	(4)	Quantity of Propeller and Shafts	1 (one)
	(5)	Year of Manufacture	2024 or later. All the components should be brand new and manufactured in the Country of Origin.
	(6)	Country of Origin	As per paragraph 10
	(7)	Maker/Manufacturer	As per BN standardised OEM mentioned in paragraph 10.
	(8)	Number of Blades per Propeller	To be mentioned. It should be designed to produce sufficient thrust for gaining the desired speed at minimum cavitation.
	(9)	Material of Blades	To be mentioned
	(10)	Propeller Diameter	To be mentioned
	(11)	Weight of the Propeller	To be mentioned
	(11)	CPP Hydraulic Oil	To be mentioned. The mentioned oil should be widely available in Bangladesh.
	(12)	Shaft Length	It should be compatible with the proposed gearbox
		(a) Tail Shaft	To be mentioned
		(b) Intermediate Shaft	To be mentioned
		(c) Stern Shaft	To be mentioned
		(d) Overall	To be mentioned
	(13)	Shaft Diameter	To be mentioned
	(14)	Shaft Material	To be mentioned

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Ser	Description		Remarks
	(15)	Shaft Weight	To be mentioned
	(16)	Shaft Turning Mechanism	To be mentioned
	(17)	Stern Tube & Brackets	To be mentioned
	(18)	Plummer Block	To be mentioned
	(19)	Thrust Block	To be mentioned
	(20)	Watertight Bulkhead Gland	To be mentioned
	(21)	Associated Systems/Equipment/Fittings	To be mentioned. All the auxiliary systems/ equipment/ fittings are to be provided. All the associated auxiliary systems/ equipment/ fittings are to be manufactured in the Country of Origin.
d.	**Propulsion Control and Monitoring System (for Each Ship)**		
	(1)	General	The Propulsion Control System should be fully compatible with the proposed ME/GB/CPP
	(2)	Brand	To be mentioned
	(3)	Model	To be mentioned
	(4)	Year of Manufacture	2024 or later
	(5)	Maker/Manufacturer	As per paragraph 10
	(6)	Control Panels	To be mentioned. The panels should provide all the desired functionalities mentioned in Annex A
	(7)	Control Locations	Engine Room, MCR, Bridge and Bridge wings
e.	**Others** The accessories/items/components/systems essential for completion of the project, which will be supplied/replaced/installed by the BIDDER with brand new and compatible ones. Based on the initial survey/assessment report, the names of following auxiliary machinery/equipment/system that need to be replaced by new components are to be submitted with the offer:		
	(1)	Associated Auxiliary Systems/Equipment/Fittings	All the auxiliary systems (fuel system, lub-oil system, cooling system, air intake and exhaust systems etc.) / equipment (various pumps and compressors) / fittings (pipes, sensors, accessories etc.) are to be provided as necessary. All the auxiliary systems/ equipment/ fittings are to be manufactured as per paragraph 10. Details are to be mentioned in the offer.
	(2)	Mountings	Suitable mountings are to be provided with each major equipment
	(3)	Ventilation	Sufficient ventilation in the machinery room is to be planned and necessary equipment is to be provided
	(4)	Cables & Wiring	Cables and wires are to be replaced as necessary

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Ser	Description		Remarks
	(5)	Consumables	All necessary consumables (i.e., hydraulic oil, gear oil, coolants, additives, lub-oil etc.) required for installation and 'Setting to Work' are to be provided

12. **Noise Reduction.** Sufficient vibration and noise reduction are to be planned for each component, provided that the vibration and noise levels do not exceed the existing level of the components. The Initial Survey Report (paragraph 34) should contain the existing vibration and noise analysis (basics) to compare the same on completion of the project.

13. **Painting.** The manufacturer is to apply paint to the main engine, other machinery, and pipes as per standard practice. International painting schemes should be used according to classification rules.

14. **Deliverables.**

a. 2 (two) copies of Operating Manuals for the main engine, gearbox, and CPP.
b. 2 (two) copies of Maintenance Manuals for the main engine, gearbox, and CPP.
c. 2 (two) copies of Drawing for each of the components.
d. 2 (two) copies of the wiring diagram for each component.
e. 2 (two) copies of the Parts Catalogue/ Parts Identification List for the main engine, gearbox, and CPP.
f. All other certificates mentioned in Annex B.

15. **Standard Accessories.** The list of standard accessories must include all items and accessories that are essential to operate the propulsion system (ME, GB, CPP, PCMS, etc.), including chemicals and consumables (including different filters) required for 24 months of trouble-free operation whether those are mentioned in the specification or not are also to be submitted. The price should be quoted for both ships. The price of standard accessories is to be included in the FOB value. However, an itemised price list of standard accessories is to be provided with the offer for reference value only.

16. **Standard Tools.** Standard tools must include all tools and accessories which are essential for the routine maintenance of the propulsion system (ME, GB, CPP, PCMS, etc.), whether those are mentioned in the specification or not. The price of standard tools is to be included in the FOB value. However, an itemised price list of standard tools is to be provided with the offer for reference value only.

17. **Spares Parts.** A list of essential spares required for routine maintenance of the propulsion system (ME, GB, CPP, PCMS, etc.) of both ships for 2 (two) years following the installation is to be provided. The price of these essential spares is to be included in the FOB value. However, an itemised price list is to be provided with the offer for reference value only.

18. **Special Tools.** A recommended list of special tools required by both ships for carrying out maintenance of the propulsion system (ME, GB, CPP, PCMS, etc.) is to be submitted with the quotation indicating the itemised price. That price will be added to the total price while evaluating the comparative price of the suppliers.

19. **Optional Items.** A list of optional items (if any) that may be required for the propulsion system (ME, GB, CPP, and PCMS) of both ships is to be provided, indicating the itemised price. The

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prices will not be added to the total price while evaluating the comparative prices of the suppliers. However, the PURCHASER may opt for any item(s) from the list, the price of which will be considered for evaluation and comparison.

20. Training.

a. A group of 20 operators/ technicians are to be trained locally in Bangladesh by OEM engineers/ technicians after complete installation, i.e. after HAT and SAT. Training should be completed within 1 (one) month of completing the SAT. The cost of airfare (to and from Bangladesh), accommodation, food, and internal transportation (to and from the worksite and hotel) for the manufacturer's/engineer technicians are to be borne by BIDDER. The BIDDER is to submit an outline and the duration of the training with the offer. Training handouts are to be provided to each trainee during the training.

b. OEM shall provide necessary software, training material and genuine full version backup software on completion of training.

21. Pre-Shipment Inspection (PSI) and Factory Acceptance Test (FAT). PSIs shall be carried out separately before shipments of ME, GB, and CPPs at the respective OEM's factory premises. PSI shall be carried out by nominated personnel at the PURCHASER's expense. The PURCHASER shall bear both-way airfare, accommodation and food for BN PSI members. All internal transportation and administrative support for BN members in the PSI area will be provided by the BIDDER. The BIDDER shall inform the PURCHASER about the date, schedule and procedure of PSI at least 10 (ten) weeks prior to the date of said inspection. The PSIs will be conducted based on mutually agreed PSI procedures. After PSI, a joint report shall be prepared and signed by both PURCHASER and BIDDER's representatives. The PSI report shall be sent to the BIDDER within two weeks of the PSI. Upon successful PSI, the inspected components or systems will be shipped. FAT and PSI team composition will be as follows:

Name of the Component	Remarks
Main Engine	3 (three) BN officers for 4 (four) days
Gearbox	2 (two) BN officers for 4 (four) days
CPP	2 (two) BN officers for 4 (four) days

22. Eligibility of the BIDDER. The BIDDER must be capable of providing an integrated and complete solution for Marine Diesel Propulsion System onboard ships. Considering the unchangeable design parameters of the ship, the BIDEER will need to provide a solution which is compatible with the existing hull and structure. The renewal project will have the following (but not limited to) broad undertakings:

a. Detail survey analysis of the ship to design a compatible and integrated solution.

b. Based on the survey, delivery of necessary machinery/equipment/system.

c. Removal of the existing propulsion system and installation of new components.

d. Overall project management by appropriate representative providing new solutions.

e. Conduct test and trial

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The BIDDER, representing any complete and integrated solution provider, must have internationally accepted credentials with an experience of carrying out a minimum of 3 (three) similar types of renewal project comprising above mentioned undertakings onboard ships (locally/internationally). A record of conducting such projects is to be submitted with the offer. The BIDDER is to submit an authorisation certificate from all the OEMs, in case of multiple origins for major components of the proposed solution, mentioning that the OEMs authorise the BIDDER for the project and will provide technicians, equipment, special tools, spares, documents, training, etc., as required by the tender documents as per the project schedule. Any offer without such eligibility shall be assessed as being non-responsive. Any internationally renowned propulsion system provider may submit their offer directly or through a local agent.

23. **Certificate/Document of Authentication.** The local supplier must provide the following original certificate(s)/ document(s) with the offer/quotation of items as regards to the genuineness of the source and item(s) to establish a chain of links from the original source to supply:

a. One certificate/ document from the manufacturer/OEM in favour of the supplier (in the case of the manufacturer as the direct source).

b. Two certificates/ documents, one from the manufacturer/OEM to the authorised agent and the other from the authorised agent to the supplier (in case the authorised agent is the immediate source).

c. Three certificates/ documents, first one by the manufacturer to the authorised agent, second one by the authorised agent to the sub-agent and third one by the sub-agent to the supplier (in case of the sub-agent as immediate source). If the supplier is unable to obtain the first certificate (by the manufacturer to an authorised agent), then relevant documents to prove the agency-ship of its claimed agent of the recognised manufacturer need to be produced.

d. Type approval Certificate and Quality Assurance certificate from any of the Classification Societies (as mentioned in paragraph 9) in respect of machinery/ equipment/systems.

24. **Eligibility of the Technicians.** Technicians involved in the project should be from and authorised by OEM having proven technical expertise. The BIDDER should submit authorisation of technicians involved from respective OEMs with full credentials of their qualification. The credentials, travel itinerary, passport, biodata, and other relevant documents, including the technician's visa, are to be submitted 1 (one) month before the commencement of the actual work for approval of the PURCHASER. After vetting necessary credentials and security clearance from the concerned authority, the PURCHASER will notify the BIDDER about the clearance of the technician's visit.

25. **Coordination among the OEMs.** If multiple OEMs are involved in the project, the necessity of overall coordination is paramount. The individual scope of work will be unique and different. Despite the differences, the OEMs need to work in tandem and cooperate fully. This cooperation, coordination, information sharing, resource sharing, etc. (where applicable) is imperative among the OEMs. So, it is to be outlined in clear terms (in the offer) how the bidder will ensure the successful completion of work within the given time frame. The name of the overall coordinator is to be mentioned in the offer. A mutually agreed protocol, in this regard, among the OEMs is to be submitted while signing the final contract.

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26. **Installation, Supervision and Commissioning.**

a. All removal and installation of the propulsion system/its components as mentioned in the scope of work (paragraph 8) shall be done by the OEM-authorised technicians in the presence of Ships and BN Dockyard Personnel. The BIDDER shall deploy the required number of OEM-authorised technicians to successfully complete the project.

b. The BIDDER is to appoint a suitable **'Project Manager/Supervisor'** to supervise and coordinate the project works on-site time to time (as needed basis) at BIDDER's arrangement. The 'Project Manager/Supervisor' should have relevant academic qualifications with sufficient proven experience in managing such projects. He/she should have experience of working with the suggested OEMs. He/she should be authorised by all the OEMs for installation and managing the project. The BIDDER is to submit a full 'Curriculum Vitae' of the 'Project Manager/Supervisor' before the contract is signed. He/she shall carry out a survey of the Ship and Dockyard facilities within 1 (one) month of signing the contract. The Project Manager/Supervisor shall be on-site before the commencement of actual work. After initiation of works, he will visit and monitor time to time as required. All administrative and transport facilities to the Project Manager/Supervisor on-site are to be provided by the BIDDER.

c. All installation materials, cablings, etc., are to be provided by the BIDDER. BN will provide available Dockyard (CDDL/DEW/KSY) and other work-related facilities. Required necessary support from Dockyard is to be mentioned in the offer.

d. All necessary tools, including special tools required for the installation process, are to be provided by the BIDDER.

e. The OEM/ the supplier will be responsible for the complete supervision, installation and commissioning of the propulsion system.

27. **Setting to Work.** The offer will mention a detailed protocol for Setting to Work (STW). STW shall mean the following:

a. **ME.** All the engines should be operated at different rpm at the harbour as per OEM test protocol. The engine should be ready for an on-load test/trial (HAT/SAT).

b. **GB.** Fully functional and ready for on-load test/trial.

c. **CPP.** Functional test at different pitches in no load condition is to be carried out as per OEM test protocol and ready for on-load test/trial.

d. **PCMS.** The system should be ready to operate the propulsion system satisfactorily after necessary installation. The necessary functional tests shall be carried out, and the system shall be made fully operational.

28. **Test/Trial and Acceptance.**

a. On completion of the installation of supplied machinery and equipment onboard the ship, trials are to be carried out by the ships in the harbour and at sea, during which the manufacturer's representatives are to be present. The propulsion plant is to be tested at

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various operating conditions to ascertain performance and achievement of ships' speed as mentioned below:

(1) All main engines shall be tested for correct running parameters at the harbour on completion of installation.

(2) All main engines shall be clutched individually, in pairs, in different combinations and simultaneously all together for the correctness of various operational parameters, load distribution and calibration.

(3) All main engines shall be operated at sea with maximum output to measure running parameters in full load condition. Necessary instruments/ equipment/devices for measuring engine power are to be carried by OEM during the trial.

(4) CPP performance shall be monitored and recorded to ensure the proper functioning of each component.

(5) GB performance shall be checked, monitored and recorded for correct functioning.

(6) The Propulsion Control and Monitoring System shall be checked for correct functioning at each of the locations fitted.

b. Operating tests and performance checks for the propulsion system should also include:

(1) Progressive Speed Trial (Ahead, Astern).

(2) One shaft Speed Test.

(3) ME starting and control air system check.

(4) Operating Test for propulsion shaft bearing seal.

(5) Integrated Operating Test for the propulsion system.

(6) Operating Test for CPP at sea.

(7) Zero Pitch Test for CPP at sea.

(8) Ship's Endurance Test (indicative test only).

(9) Fuel Oil Consumption Test (indicative test only).

c. Within two weeks of satisfactory test and trial (HAT/SAT), the PURCHASER shall provide an Acceptance Certificate.

d. OEM/BIDDER is to provide the services of the required number of engineers for the supervision of test, trial and commissioning at the harbour and sea. The manufacturer's engineers are to be responsible for demonstrating that the components and all accessories are in good working condition as per the contract requirements.

e. **Desired Performance**. Considering the existing operational conditions of the ships, following desired parameter is to be fulfilled after completion of the project:

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Criteria	Desired Value
Speed (at maximum continuous rating)	14 knots at Full Load displacement

29. **Software Backup.** All software related to the operation of the propulsion system and backup software shall be provided by OEM without any added cost to each ship. The OEM will support the smooth functioning of installed software for the next 12 years from the date of acceptance. The operator should be able to analyse the defects when and as necessary by using a software-based troubleshooting system supplied by OEM.

30. **Project Schedule/ Delivery Time.**

a. The Project will start on the date of signing the contract. The schedule will end on the date of signing the acceptance certificate of the Sea Acceptance Trial (SAT). The estimated schedule for the overall project is 18 Months. However, for the purpose of this project, the ship should not remain non-operational for more than 8 (eight) months in any case, including a maximum of 2 (two) to 3 (three) months of docking period.

b. In case of any delay due to BN's inability to provide a docking facility, workshop facility, access to the workplace and customs clearance as per the project schedule, the delivery schedule will be extended by the delayed duration.

c. The sequence of repair work should be planned as listed in the scope of work/supply mentioned in Paragraph 8. Applicable logical and technical sequence should also be followed in consultation with the PURCHASER. The actual onboard work period shall be coordinated between the OEMs and BN DOCKYARD so that the ship remains non-operational for a short period only. This schedule will be proposed by the OEM and be shared with the PURCHASER's ***Project Implementation Team***, who will be assigned to follow up on the work plan submitted by the OEM.

d. The project shall be managed in such a way by the service provider that other ongoing repair/upgrade projects of the ship will not be interrupted. BN will make efforts to arrange an encumbered-free environment so that the continuity of OEM technical works is not interrupted. BN will manage the co-activities.

31. **Warranty.** Warranty for repair/ replacement in Bangladesh at the manufacturer's cost of all the supplied machinery/ equipment for a minimum period of 24 (twenty-four) months from the date of acceptance by the PURCHASER. The manufacturer/ BIDDER shall undertake the full responsibility to rectify/ replace the defect free of charge within this period. Any defect in the supplied propulsion and other machinery/ equipment which is due to defective material, construction, miscalculation or improper workmanship on the part of the manufacturer/ BIDDER is to be replaced and rectified during 24 (twenty-four) months after satisfactory acceptance by BN. Warranty repair/replacement shall be done within 03 (three) months of notification of the relevant defect. The warranty is to be extended by the non-operational period of the equipment.

32. **Guarantee.** The OEM shall provide a Guarantee Certificate for the availability of service and spare support for all newly installed components of the propulsion system from respective OEMs. The OEM is also to give a guarantee of continued supply of spare or suitable solutions for at least 15 years.

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33. **Insufficient Speed.**

a. The BIDDER shall have to give a guarantee that the ships will be able to achieve the desired maximum continuous speed.

b. In case any ship fails to achieve the maximum continuous speed as stated in **paragraph 28.e** of the specification, then penalties shall be imposed on the BIDDER for non-compliance with the contract as per the following:

Serial	Deficiency from the Desired Speed	Penalty in % of LC value
1.	Up to 0.1 knot	1%
2.	0.11-0.20 knot	2%
3.	0.21-0.30 knot	3%
4.	0.31-0.40 knot	4%
5.	0.41-0.50 knot	5%
6.	0.51-0.60 knot	6%
7.	0.61-0.70 knot	7%
8.	0.71-0.80 knot	8%
9.	0.81-0.90 knot	9%
10.	0.91-1.00 knot	10%
11.	Beyond 1.00 knot	Not acceptable

c. If the deficiency in the actual Maximum Continuous Speed of the ship(s) is/are more than 1 (one) knot below the speed guaranteed in the Contract, the PURCHASER, at its option, may subject to the BIDDER's right to effect alterations or corrections, cancel the Contract.

34. **Initial Survey Report.** An initial survey report based on an on-site visit/study of the ships' existing parameters is to be submitted with the offer. The report should contain all, but not be limited to, the detailed calculation of the proposed machinery package and its impact on the ships' performance (i.e., projected power output, projected thrust with a new propeller at redesigned shaft rpm, projected speed vs. power curve, likely change in ship's hydrostatic data, etc.). This will be used to compare during the technical evaluation process.

35. **Pre-Bid Inspection.** All BIDDER(s) may inspect the ships to assess their existing operational state before submitting the offer at their own cost. However, necessary coordination must be done well in time to obtain security clearance in this regard.

36. **Pre-Bid Meeting.** All BIDDER(s) who have purchased tender documents from DGDP are encouraged to participate in a Pre-Bid Meeting to be held at the Naval Headquarters (NHQ) in Dhaka on a suitable date, preferably 3 (three) weeks prior to the submission of the tender. The date and time of the pre-bid meeting will be announced in advance through DGDP.

37. **Shipments and Delivery.** The following requirements should be completed:

a. The supplier will arrange shipment of all items by sea/air to Chattogram sea/airport, Bangladesh, as per schedule from the date of the contract signed.

b. All items are to be delivered in proper packing to ensure safe transit by sea/air.

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c. All packages are to have packing notes showing their contents in detail, and all packages shall be marked with the name and address of the consignee and gross weight.

d. The supplier will supply the item at NSD Chattogram. While delivering, the supplier will carry the items from Chattogram sea/airport (as applicable) to NSD Chattogram at the cost and risk of the supplier.

38. **Source of Supply.** The BIDDER is to mention the name, address and contact details of the source from where the Main Engine, Gearbox, Propeller Shaft, Controllable Pitch Propeller (CPP), and associated accessories consisting of the control system will be imported.

39. **Port of Shipment.** Any seaport/airport in the country of manufacture of the respective components to Chattogram seaport/ Dhaka airport.

40. **Consignee.**

The Commanding Officer, Naval Store Depot, New Mooring, Chattogram.

41. **Price and Other Cost.** The price of each item of the total offer is to be shown separately (e.g., price of the main items, auxiliaries, additional and optional accessories, Installation, FAT, PSI, local training, warranty/guarantee, etc.) and then the grand total of the foreign currency to be shown on the original offer submitted by the BIDDER.

42. **Terms of Payment.** In terms of payment, the total LC value is 100% of the goods' value and 100% of the service's value. Letter of Credit (LC) shall be opened for the full amount of the contract price in favour of the OEM/Principal for the complete scope of supply with the following terms of payment:

a. 80% of CFR value will be paid on delivery of the items described under the scope of supply and on production of necessary shipping documents.

b. The remaining 20% of CFR value will be paid after satisfactory acceptance by BN.

c. 100% of the cost of installation, test/trial, and training amount will be paid after completion of installation, HAT/SAT, training, and satisfactory acceptance by BN.

43. **Fast Track Support by OEM.** To facilitate any fault diagnosis/defect isolation/ rectification work by the Ship's staff during the warranty period and beyond, the ship will communicate directly with the Points of Contact (POC) of the OEM, keeping the **'Project Manager/Supervisor'** informed. For fast-track support during the warranty period, contact details should be provided at the commencement of the project.

44. **Non-disclosure of Information.** The present operational state of the propulsion system shall be provided to the OEM after a necessary non-disclosure agreement is reached.

45. **Certificates.** The OEM is to furnish the following certificates:

a. Authorization Certificate from the respective OEMs as mentioned in paragraph 23.
b. Warranty Certificate as mentioned in paragraph 31.
c. Guarantee Certificate as mentioned in paragraph 32.

46. **Condition for Acceptance of Quotation.** The quotation has to have supporting documents (booklets, leaflets, catalogues, brochures, etc.) with details of each component of the propulsion system. If detailed information regarding specifications, maker's books and catalogue for the

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quoted model, spare parts, accessories, scope of supply, etc, are not provided, the quotation will not be accepted.

47. **Compliance Statement**. A compliance statement fulfilling all the requirements of the tender is to be submitted with the offer for evaluation of the quotations. Merely stating 'Yes' or 'No' will not suffice; rather, detailed descriptions/information as required are to be provided. An incomplete compliance statement may contribute to the cancellation of the offer. If any clause of this specification is not commensurate with the offered propulsion system, the deviation must be spelt out clearly.

Annexes:

A. Propulsion Control and Monitoring System.
B. List of Documents.
C. Loading Conditions.

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ANNEX A TO
TENDER SPECIFICATION

PROPULSION CONTROL AND MONITORING SYSTEM

1. **Control System.** The propulsion Control and Monitoring Systems (PCMS) need to be integrated with three systems which are controlling, monitoring and safety of the main engines, gearboxes and CPPs in each ship. PLC (Programmable Logic Control) based engine control systems compatible with the new engines need to be provided as mentioned below:

Propulsion Control System		
Control Equipment	**Location**	**Brand/Model/ Origin of Country**
Local Control Panel integrated with the monitoring system and other accessories for each Main Engine	Engine Room or near to the Engine	To be Mentioned
02 x MCR Control Panel 02 x Monitoring panel 01 x Operating station and other accessories	MCR	
02 x Bridge control panel and other accessories	Bridge	

a. **Local Control Panel.** The following features need to be integrated into the control system.

(1) Each engine can be started and stopped from the local control panel.

(2) Operating and indicating panels for each engine. It should be interfaced with the MCR and Bridge control system.

(3) The indicator will show a flashing light during operation or any kind of fault in the engine.

(4) Engine auxiliary parameters (temperature, pressure, etc.) and engine parameters (temperature, pressure, RPM, etc.) with safety threshold must be visible from the local control panel by numerous analogue gauges.

(5) Multifunctional displays will show the parameters digitally.

(6) Change over Switch for shifting control from local control panel to MCR.

(7) Engine running hours must be visible from the local control panel

(8) Provision should be kept to operate engines (Start, Stop) and gearboxes (ahead, neutral. astern) locally in the engine room for emergency operation in case of failure of the remote-control system in the bridge and MCR.

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(9) All required auxiliaries need to be integrated with individual control panels with standby options. In case of one system failure, an alternative system can be operated.

(10) Other features for maintaining standard propulsion control and monitoring systems need to be provided with accessories.

(11) A detailed arrangement of the system with a diagram is to be specified.

b. **MCR Control Panel**. The following features need to be integrated in the control system:

(1) Each engine can start and stop from the MCR control panel.

(2) Two monitoring panels (port and stbd) will show all engine parameters. There should be diagnostic facilities for any fault in the engine. Port engines need to be interfaced with the port monitoring panels, and stbd engines interfaced with the stbd monitoring panels.

(3) The indicator will show a flashing light during operation or any kind of fault in the engine. If includes alarm system in control panel by buzzer.

(4) Engine auxiliaries parameters (temp, pressure etc.) and engine parameters (temp, pressure, RPM etc.) with safety threshold must be visible from MCR control panel by digital Multifunctional display.

(5) Switch for shifting control from MCR to Bridge.

(6) Engaging/ disengaging with gearbox will be controlled from MCR control panel.

(7) Shaft brake lock and unlock function must be available in MCR control panel.

(8) Throttle lever position (ahead, astern) will be in MCR depending on the selected control mode. It will calculate the desired commands to engine speed and propeller pitch.

(9) Additional monitoring and diagnostic facilities are to be provided in the operating station which enables the operator to browse the fault list and reset fault indications. It also includes more monitoring functions and also facilities to manipulate parameter settings in the propulsion control system.

(10) A remote auxiliary control console for operating all auxiliaries from MCR is to be integrated with the propulsion control console.

(11) Provision should be kept for stopping the engine in case of emergency from MCR.

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(12) Other features for maintaining standby propulsion control and monitoring systems need to be integrated with the control system.

(13) A detailed arrangement of the system with a diagram is to be specified.

c. Bridge Control Panel. The following features need to be integrated into the control system.

(1) Each engine can start and stop from the bridge control panel.

(2) Two monitoring panels (port and stbd) will show all the engine parameters. It includes an alarm system in the control system panel by the buzzer.

(3) The indicator will show a flashing light during operation or any kind of fault in the engine.

(4) Engine parameters (temp, pressure, RPM) with safety threshold must be visible from the bridge control panel by digital Multifunctional display.

(5) Switch for shifting control from Bridge to MCR. The alarm system needs to be integrated into the control system.

(6) Engaging/ disengaging can be controlled from the bridge control panel.

(7) The shaft brake lock and unlock function must be available in the bridge control panel.

(8) Throttle lever position (ahead, astern) will be in the bridge depending on the selected control mode. It will calculate the desired commands for engine speed and propeller pitch.

(9) Both analogue and digital indicators are to be provided on this panel to inform the operator about the engine conditions.

(10) Provision should be kept for stopping the engines in case of emergency from bridge.

(11) Other features for maintaining standard propulsion control and monitoring system need to be integrated with the control system.

(12) A detailed arrangement of the system with a diagram is to be specified.

2. Monitoring and Alarm Indication System.

a. **Remote Monitoring and Alarm Indication System for Bridge and MCR.** The monitoring and alarm indication system should comprise the required visual parameters for the propulsion and auxiliary machinery. It is to be integrated with the remote-control

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console of MCR and bridge. LCD/LED display monitor type monitoring system is preferable. Each alarm is to be presented with a visual signal, an alarm acceptance and a reset system/ push button (A detailed arrangement of the system with a diagram is to be specified). Monitoring provisions for all the parameters required for propulsion and auxiliary control are to be in the engine room. Required temperature, pressure and speed measuring devices (sensors, indicators, gauges) and any other instruments/ devices recommended by the respective manufacturer is to be suitably positioned on/ near each of the machineries. These devices/ instruments are to be as simple as possible and easily replaceable. Each remote-control console is to be equipped with at least the following.

(1) <u>Monitoring Parameters</u>.

(a) Telegraph transmitters for both engines.
(b) Engine RPM indicator (Tachometer).
(c) Shaft brake on/off indicator.
(d) Shaft RPM indicator.
(e) Gearbox position indicator (for ahead, neutral and astern operation).
(f) Engine's running meter (Hour counter).
(g) Sea water inlet and outlet temperature, pressure gauge for both engine and gear box.
(h) Fresh water inlet and outlet temperature, pressure gauge for engine.
(j) Fuel delivery pressure gauge.
(k) Lub oil inlet and outlet temperature, pressure gauge for both engine and gear box.
(l) Low lub oil level indicator for both engine and gear box.
(m) Exhaust temperature gauge for combined/ individual cylinder.
(n) Engine starting air pressure gauge.
(p) All auxiliary machineries running indication.
(q) Bilge level indication.
(r) Steering motor running indication.
(s) Turning motor engaged indication.
(t) Lub oil cooler inlet and outlet temperature, pressure gauge for both engine and gear box.
(u) Fresh water cooler inlet and outlet temperature, pressure gauge for engines.
(v) Pitch angle indicator for port and stbd CPP.
(w) Required standard monitoring parameters need to be integrated with the control system if necessary.

(2) <u>Alarm Indication</u>.

(a) Engine over speed alarm.
(b) Engine overloads alarm.
(c) Shaft brake on/ off alarm.
(d) Low sea water pressure alarm for engine and gearbox.

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(e) Low freshwater pressure alarm for engine.
(f) Low fuel oil pressure alarm.
(g) Low lub oil pressure alarm for engine and gearbox.
(h) Low lub oil level alarm for engine and gearbox.
(j) High lub oil temperature alarm for engine and gearbox
(k) High sea water temperature alarm for engine and gearbox.
(l) High freshwater temperature alarm for engine.
(m) High exhaust temp alarm for combined /individual cylinder.
(n) Low fuel level alarm in the supply tank.
(p) Low freshwater level alarm in the expansion tank.
(q) Fuel oil filter failure alarm.
(r) Lub oil filter failure alarm.
(s) High bilge level alarm.
(t) Steering motor failure alarm.
(u) Turning motor engaged alarm.
(v) Control system failure alarm.
(w) Stern tube high temperature alarm.
(x) Pitch angle error alarm.
(y) Required standard safety parameters need to be integrated with the control system if necessary.

3. **Automatic Protection/ Safety Devices.** Engine and gearbox are to be provided with protection devices for automatic shutdown. This feature should operate in situations like overspeed, overheating, overload and other major parameter failures. A detailed arrangement of the system with a diagram is to be specified. The safety systems are comprised of the following individual components:

a. Bridge safety indication panel.

b. MCR safety indication panel.

c. MCR mounting plate safety system.

d. Engine safety control unit with indications.

4. **Others.** The following standard is to be maintained in the propulsion control system:

a. All electrical equipment, PLC, sensors, display unit, cable, etc, need to be provided with an ISO certificate and IEC standard.

b. Systems are ready for long uses in marine environments and high temperatures.

c. Engine control system needs to operate for at least 30 minutes in case of total power failure. The necessary arrangements should be made with the control system.

d. Adequate switch/button and other equipment not mentioned above are to be installed in the system if necessary.

e. Adequate wire cable needs to be provided during installation.

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ANNEX B TO
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LIST OF DOCUMENTS

1. 2 (two) sets of the following documents shall be submitted by the OEM for each ship:

a. **Prior to Installation.**

(1) An evaluation report based on inspection will be provided at the beginning of the contract.

(2) Overall Repair schedule will be provided at the beginning of the project.

b. **During/After Installation.**

(1) A complete report of repair works (On-site work quality plan) is to be provided on completion of the project. A work completion certificate will be provided by the OEM.

(2) Complete wiring diagram, installation diagram, maintenance and operating manual of the upgraded LCP of ME.

(3) Complete wiring diagram, installation diagram and operating manual of the new Propulsion Control System.

(4) HAT & SAT procedure document (before 2 months of test/trial).

(5) Parts Catalogue for newly installed components of Main Engine, Gearbox and CPP.

(6) Certificates mentioned in different parts of this document.

(7) Electronic circuits' details, including embedded system and memory devices, system assembly drawings, control logic diagram, micrologic details, and interface specification documents as and where appropriate.

(8) Documents related to the existing system with integration of upgraded system as a complete operation manual for easy operation.

(9) Up to date stability information and hydrostatic particulars based on inclining experiment.

(10) Certificate of alignment of newly installed machinery to avoid undesired noise and vibration.

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ANNEX C TO
TENDER SPECIFICATION

LOADING CONDITIONS

The Loading Conditions of the Ship are defined as the following conditions:

Item	Deep Condition		Light Harbour Condition	
	%	Tonnes	%	Tonnes
Main Fuel Tank	95	189.6	0	0.00
Service Fuel Tank	WL	18.88	WL	18.88
Fresh Water Tank	95	86.66	0	0.00
Ballast Water Tank	100	78.29	100	78.29
Lub Oil Storage Tank	95	8.41	95	8.41
Detergent Tanks	0	0.00	0	0.00
Minor Tanks	WL	3.21	WL	3.21
Stores/Spares	100	9.14	50	4.57
Crew and Effect	100	6.15	100	6.15
Provisions	100	6.16	10	0.62
Ammunition	100	2.5	4	0.1

Notes:

1. *WL: Working Level.*
2. *The ship is assumed to be undamaged.*
3. *An allowance for growth has not been included.*

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