

**TENDER SPECIFICATION OF MARINE RADAR WITH ARPA FACILITIES - BNS BIJOY**

**INTRODUCTION**

1. For better understanding and to evaluate all the prospective BIDDERS on same platform, the tender specification has been divided into three parts:
  - a. **Part-1:** General Information and BIDDER'S Responsibility.
  - b. **Part-2:** Operational and Technical Specification.
  - c. **Part-3:** General Terms and Conditions.
2. Prospective BIDDERS are to comply with the requirements and terms & conditions mentioned in Part-1, Part-2, and Part-3 of the tender specification. BIDDERS are also to provide performance/ technical data, brochure, specific figures, and information as asked against each condition.
3. Prospective BIDDERS are to submit their offer in two envelopes:
  - a. Technical Offer.
  - b. Financial Offer.
4. BIDDER shall comply all the terms and conditions of the tender documents as compliance statement by the Bidder under the following tabular format:

Tender Article No	Description of Terms and Conditions (as mentioned in Part-1, Part-2 and Part-3 of the Tender)	Compliance/ Remarks by Principal/ manufacturer (To be agreed/To be mentioned with detail explanations)

The financial quote is to be submitted separately in foreign currency on FOB basis, but compliance/remarks are to be indicated in the technical offer.

**PART I : GENERAL INFORMATION AND BIDDER'S RESPONSIBILITY**

5. Bangladesh Navy (BN) plans to procure one complete set of **Marine Radar with ARPA Facilities**.
6. **Installation Site.** The Radar system shall be installed onboard **BNS BIJOY** at Mongla Naval Area replacing the existing navigation radar with helo control facility systems.
7. **Site Visit Prior Tender Submission.** Prospective bidder may visit the installation site to estimate installation materials, cables requirement, interfacing/ integration issues, docking requirement and works (including requirement of any supporting structure to install the radar, relevant drawing etc) involved in installation (but not limited to) works before submission of offer to avoid any difficulties/ confusion after placing order. Site survey report has to be submitted by the bidder with offer in this regard. Bidder may send application to BN through DGDP for security clearance 04 (Four) weeks prior to said site survey.
8. **Qualification for Bidder.** Manufacturers of Radar, System integrator or their authorized distributor/ agent can submit quotations through their authorized local agent enlisted in DGDP. In case of offer from distributor/ agent, certificate of dealership/ agencyship from OEM is to be submitted with the offer. In this regard the following certificates are to be submitted with the offer (if not OEM):
  - a. Authorization Certificate from OEM.

b. Supply Assurance Certificate from OEM.

9. **Compliance Statement.** A compliance statement fulfilling all the requirement of the tender is to be submitted for evaluation of the quotations. Stating mere 'Yes or No' will not suffice and detailed evidences with description/ information, brochures/ booklet, drawing and diagram as required is to be given. An incomplete compliance statement may attribute to cancellation of the offer. If any clause of this specification does not commensurate with the offered Radar system, the deviation has to be spelt out clearly.

10. **Equipment Manufacturer and Reliability/ Requirement.** The items should be brand new, unused and of recent model, proven reliability in the field of operation. The supplier shall ensure the continuity of the operation and availability of necessary spares for at least 15 years each in case of obsolete model over time.

11. **User List.** List of users of the offered Radar(s) is to be mentioned with full address. The list shall provide the name of various navies/coastguards with respective model and brand of Radar. The offered Radar should be widely used by various navies/coastguards. The user list will be used for the assessment of the offer.

12. **Condition for Acceptance of Quotation.** The quotation has to have supporting documents (booklets, leaflets, catalogues, brochures etc) with details about offered Radar. If detailed information regarding specifications, manufacturer's manuals and catalogue for the quoted model of the Radar, spare parts, accessories, scope of supply, etc are not provided the quotation will not be accepted.

13. **Acceptance/ Rejection of Bid.** DGDP/ BN reserves the right to accept or reject any bid or to terminate the bidding process and reject all bids at any time prior to the contract award (without thereby incurring any liability to the BIDDER).

14. **Validity.** The offer should remain valid up to 30 June 2025.

## **PART- II: OPERATIONAL AND TECHNICAL SPECIFICATION**

15. **Name of Equipment.** Marine Radar with ARPA Facilities.

16. **Purpose.** The Radar system shall be used onboard for navigation purpose.

17. **Quantity.** 01 (One) Complete set.

18. **Type.** Marine type, Navigation Radar (Solid State).

19. **Brand.** HENSOLDT (UK) / GEM Elettronica (Italy) / Sperry Marine (Northrop Grumman, UK) / Terma (Denmark)/ Aselsan (Turkey) (To be mentioned).

20. **Model.** To be mentioned.

21. **Country of Origin.** UK, Italy, Denmark and Turkey (To be mentioned).

22. **Manufacturing Country.** UK, Italy, Denmark and Turkey (To be mentioned).

23. **Original Equipment Manufacturer (OEM).** Name & Full address with telephone number and e-mail of OEM to be mentioned.

24. **Principal/Supplier/ Bidder.** Name & Full Address with telephone number and e-mail of Principal supplier is to be mentioned.

RESTRICTED

25. **Local Agent.** Name & Full Address with telephone number and e-mail of Local agent is to be mentioned.

26. **Year of Manufacturing.** 2024 or later.

27. **Classification Standard.** The Marine Radar with ARPA Facilities along with associated accessories offered/supplied under the scope of the supply are to be designed, constructed/ manufactured and tested up to the requirement of IEEE/ IEC, IALA, IMO/ MIL-Standard and it shall comply other referenced international standards. The applicable classification standard(s) of the offered item is to be mentioned and should be well supported by the brochures/ certificates.

28. **Environmental Condition and Other Standard.**

- a. Temperature : +5°C to 55°C.
- b. Relative Humidity : Up to 95% (non condensing).
- c. For Shock : MIL-STD-810F or equivalent (To be mentioned).
- d. For Vibration : MIL-STD-810F or equivalent (To be mentioned).
- e. Sea Keeping : To comply with the ship's movement as follows:
  - (1) Roll :  $\pm 30^\circ$ .
  - (2) Pitch :  $\pm 10^\circ$ .
  - (3) Yaw Rate :  $\pm 8^\circ$ .
- f. EMI/EMC : MIL-STD-461 or equivalent (To be mentioned).

29. **General Features.** The Radar system should be suitable for operating in maritime environment and must have following features (but not limited to):

- a. Suitable for all kind of naval ships.
- b. Automatic Radar Plotting Aid (ARPA).
- c. Integrated route planning and trail maneuver for safe navigation.
- d. Navigating own vessel with regard to collision avoidance.
- e. Fixing the ship's position using terrestrial objects such as lighthouses, buoys, etc.
- f. Target tracking of radar targets and AIS targets.
- g. Advance rain and sea clutter suppression for small target detection.
- h. Differentiating capability between targets in high traffic density areas.
- j. Sector transmission.
- k. Blanking signal to other system and ESM system.
- l. Built-in test (BIT) facilities for fault detection and diagnosis.
- m. Suitable for inclement weather.
- n. High resolution and HD screen.
- p. Frequency agility and jamming detection feature.
- q. Chart Radar facility.

r. Facility to integrate with ship's ECDIS.

30. **Ship's Power Supply.** The ship's available Power Supply is as follows:

Ser	Description	BN Ship	Remarks
1.	Ship's Power Supply	a. <u>Primary.</u> 440V AC, 60Hz, 3 Phase b. <u>Secondary.</u> 220V AC, 50 Hz, 1 Phase	Necessary converter/transformer is to be provided (If needed).
2.	Power Consumption	The total power consumption of the offered Radar system is to be mentioned.	-

31. **Scope of Supply.** The scope of supply of the complete system include as followings but not limited to:

- a. 01 X Complete set of Marine Radar with ARPA Facilities with associated accessories (as per article 33a).
- b. Standard Accessories, Software and Cables (as per article 33b).
- c. Certification and Reports (as per article 33c).
- d. Drawing and Manual/ Documentation (as per article 33d).
- e. Interface Control Document (ICD), Electronic Navigational Chart (ENC) (Optional) (as per article 34).
- f. Spares (optional) (as per article 35).
- g. Factory Acceptance Test (FAT) (as per article 36).
- h. Foreign Training (as per article 37).
- j. Local Training (as per article 38).
- k. Installation, Supervision and Setting to Work (STW) (as per article 39).
- l. Test/ Trial and Acceptance (as per article 40).

32. **Additional Feature Offered by Bidder.** The bidders may suggest and offer additional features for the Radar. In this case, Bidders have to explain the detailed advantage of that/ those features of the Radar and provide necessary document to support those advantages.

33. **Technical Specification.** The technical specification of the system is given below:

a. **Marine Radar with ARPA Facilities Including Associated Accessories.**

Ser	Description	Remarks
1.	Type	Solid State.
2.	Brand	As per paragraph 19 (To be mentioned).
3.	Model	To be mentioned.

RESTRICTED

4.	Country of Origin	As per paragraph 21 (To be mentioned).
5.	Country of Manufacturer	As per paragraph 22 (To be mentioned).
6.	Year of Manufacturing	2024 or later.
7.	Classification Standard	To be mentioned.
8.	Major Features	Details to be mentioned.
9.	Ingress Protection (IP)	Outdoor: IP 65 or better (To be mentioned). Indoor : To be mentioned
10.	BIT (Built In Test)	To be mentioned.
<b>General Characteristics</b>		
11.	Frequency Band	X Band (To be mentioned).
12.	Instrumental Range	96 NM or more (To be mentioned).
13.	Minimum Detectable Range	50 m or less (To be mentioned).
14.	Surface Detection Range: a. Large Target. b. Small Target (RCS 3m <sup>2</sup> )	a. 96 NM or more/ Radar Horizon (To be mentioned). b. 6 NM or more (To be mentioned).
15.	MTI Feature	To be mentioned.
16.	Resolution	
	1. Range	25 m or less (To be mentioned).
	2. Azimuth	1.5° or less (To be mentioned).
17.	Polarization	To be mentioned.
18.	Beam Width	a. Horizontal 2° or less (To be mentioned). b. Vertical 25° or less (To be mentioned).
19.	Radar Technology	To be mentioned.
20.	MTBF	To be mentioned.
21.	Power Supply and Consumption	To be mentioned.
<b>Transmitter/ Receiver Characteristics</b>		
22.	Brand	As per paragraph 19 (To be mentioned).
23.	Model	To be mentioned.
24.	Country of Origin	As per paragraph 21 (To be mentioned).
25.	Country of Manufacturer	As per paragraph 22 (To be mentioned).
26.	Year of Manufacturing	2024 or later.
27.	Modulator Type	To be mentioned.
28.	Oscillator Life time	To be mentioned.
29.	Wave Form	To be mentioned.
30.	Interference & Sea Clutter Rejection facility	To be mentioned.
31.	Power Amplification type	To be mentioned.
32.	Peak Power	(To be mentioned).
33.	Average Power	To be mentioned.
34.	Number Track Processing	100 tracks or more (To be mentioned)
35.	Sector Transmission	Intercom probated
36.	SART Detection	To be incorporated.
37.	Dimension of Tx/Rx Unit	To be mentioned (Height not more than 2 ft).
38.	Weight of Tx/Rx Unit	To be mentioned.
39.	Power Supply	To be mentioned.
<b>Antenna Features</b>		
40.	Brand	As per paragraph 6 (To be mentioned).

RESTRICTED

41.	Model	To be mentioned.
42.	Country of Origin	As per paragraph 8 (To be mentioned).
43.	Country of Manufacturer	As per paragraph 9 (To be mentioned).
44.	Year of Manufacturing	2024 or later.
45.	Type of Antenna with length	To be mentioned (Length Max 7 ft)
46.	Antenna RPM	20 rpm or more (To be mentioned).
47.	Antenna Gain	To be mentioned.
48.	Dimension of Antenna	To be mentioned.
49.	Weight of Antenna	To be mentioned.
50.	Power Supply	To be mentioned.
<b>Display &amp; Control Unit/ Radar Console</b>		
51.	Type	TFT/ LCD/ LED (To be mentioned).
52.	Brand	As per paragraph 19 (To be mentioned).
53.	Model	To be mentioned.
54.	Country of Origin	As per paragraph 21 (To be mentioned).
55.	Country of Manufacturer	As per paragraph 22 (To be mentioned).
56.	Year of Manufacturing	2024 or later.
57.	Major Features/Marks	Cursor, Range Ring, Heading Marker, Bearing Marker, Target Trail, VRM, EBL, Acquisition Zone, AIS Track, Way points, Routes, Map etc (To be mentioned).
58.	Ingress Protection (IP)	To be mentioned.
59.	Number of Display & Control Unit	01 (One).
60.	ARPA Features	To be incorporated.
61.	Size	24 inch or more (To be mentioned).
62.	Technology	Computer added color graphic technology or better.
63.	Display Resolution	HD Quality.
64.	Power Supply	To be mentioned.
<b>Power Supply Unit</b>		
65.	Power Supply Unit	
66.	Brand	As per paragraph 19 (To be mentioned).
67.	Model	To be mentioned.
68.	Country of Origin	As per paragraph 21 (To be mentioned).
69.	Country of Manufacturer	As per paragraph 22 (To be mentioned).
70.	Year of Manufacturing	2024 or later.
71.	Details Technical Specification	To be mentioned.
72.	<b>Cabinets.</b> All cabinets should be made of chromium plating or similar and painted sea water resistant aluminum to prevent corrosion.	

b. **Standard Accessories, Software and Cables.**

(1) **Standard Accessories.** Standard accessories must include every item and accessories, which are essential to make the offered system operational with full functionality, whether those are mentioned in the specification or not are to be supplied by the bidder within the scope of the supply. Any such accessories, kit and items associated to operate the said equipment are to be mentioned clearly with purpose and submit with the offer mentioning item wise price.

(2) **Software.** Supplier shall provide all related original software (lifetime license version) with backup software, maintenance /fault finding software and step

RESTRICTED

by step procedure for installation to BN during delivery of the items. In case of software crash, BN personnel should be able to install the back-up software to restore the whole system using step-by-step procedure. OEM engineer/ expertise is to provide necessary training on installation of those provided backup software to restore the whole supplied radar system using step- by- step procedure during radar installation. A list of all required software is to be provided with the offer.

(3) **Cables.**

(1) **Power Cable.** Necessary power cables should be of high quality (as per IEEE/IEC standard) is to be supplied by the bidder. **Actual requirement of cable is to be assessed by the bidder through on site visit** and to be submitted with the offer indicating unit price (per meter).

(2) **Control Cable.** Necessary control cables should be of high quality (as per IEEE/IEC standard) is to be supplied by the bidder. **Actual requirement of cable is to be assessed by the bidder through on site visit** and to be submitted with the offer indicating unit price (per meter).

c. **Certificate and Reports.**

(1) Following certificates and reports are to be provided in English for the offered item including associated equipment/ accessories **with the offer**:

- (a) 'Type Approval Certificates' of classification society.
- (b) Supply Assurance Certificate.
- (c) Guarantee and Warranty Certificates.
- (d) After Sales Service Support Certificate.

(2) Following certificates and reports are to be provided in English for the offered item including associated equipment/ accessories **during delivery**:

- (a) 'Type Approval Certificates' of classification society.
- (b) 'Quality Assurance Certificates' for each item and their associated equipment and instruments from OEM is to be provided.
- (c) 'FAT Certificates'.
- (d) Certificate of Genuine Product and Brand-New Item.
- (e) Supply Assurance Certificate.
- (f) Guarantee and Warranty Certificates.
- (g) After Sales Service Support Certificate.

d. **Drawing and Manual/ Documentation.**

(1) **Installation Drawings.** Following drawings are to be submitted for buyer's approval prior 04 (Four) months of commencing of installation work:

- (a) Layout drawing of equipment including working and maintenance space.
  - (b) Electrical inter-connection diagram of all equipment (showing the position of circuit breaker, switches, etc).
  - (c) Cable diagram including cable route, cable type and cable grouping.
  - (d) Diagram showing interface (mechanical and electrical) and data protocol among the ship systems.
  - (e) List of works (welding/ cutting/ drilling, etc.) those are needed from BN.
  - (f) 04 (Four) sets of these drawings are to be supplied during the time of delivery of the radars.
  - (g) A block diagram of system configuration showing interface/ integration options is to be provided by the bidder with the offer for assessment.
- (2) **Manuals/ Document.** 02 (Two) set of following documents and manuals in English are to be provided **at free of cost** at the time of delivery:
- (a) Operating Manual.
  - (b) Technical Manual with Circuit Diagram (At lasts upto component level).
  - (c) Maintenance Manual.
  - (d) Parts Catalogue with parts Identification List (PIL).
  - (e) Installation Manual having Layout drawing of equipment, alignment instruction, electrical interconnection diagram, cable diagram, diagram showing interface (mechanical and electrical) and data protocol.

34. **Interface Control Document (ICD) and ENC (Optional).**

- a. **Interface Control Documents (ICD).** The supplier shall provide necessary ICD (Interface Control Documents) and interface protocol during delivery and installation of the item. The provided ICDs will be tested and demonstrated in the presence of buyer's representative during installation by qualified OEM Engineer. A job completion report/ certificate is to be signed by both parties in this regard. The cost of ICD is to be quoted separately.
- b. **Electronic Navigational Chart (ENC).** Supplier shall provide ENC including license (if needed). Chart management from Bay of Bengal, Indian Ocean, Arabian Sea up to Mediterranean Sea shall be provided for 2 (Two) years after installation on board ship. All ENC and other digital charts that will be required shall be mentioned in details including their update facilities. A list of such charts is to be mentioned. The price of electronic charts with duration is to be quoted separately.



RESTRICTED

35. **Spares (Optional).** A list of OEM recommended Spares (if any) are to be quoted separately mentioning item-wise price. The buyer may select item/ items from the proposed list.

36. **Factory Acceptance Test (FAT).** Following FAT is to be carryout in OEM premises for the offered radar system:

a. FAT will be carried out by 02 BN members for duration of 04 working days in OEM premises at the buyer's expense. Both way air fare, accommodation and food for the FAT team will be borne by BN. All types of movement/ transportation (air/sea/road) of the team within the manufacturer's country, reception and arrangement for entry into the country/ concerned area for the FAT are to be arranged by the supplier. The item-wise cost in this respect is to be quoted in the offer. The supplier should inform the buyer about the date of FAT (schedule) and FAT criteria at least 08 (Eight) weeks prior to the date of FAT. Moreover, FAT procedure shall be forwarded to the buyer 8 (Eight) weeks prior to the date of commencement of the FAT to the concerned directorate for approval of BN.

b. On return from the country of manufacturer, the FAT team will submit the report to concerned Directorate at Naval Headquarters. Naval Headquarters will, in turn, forward final decision along with FAT report, basing on which DGDP will render clearance for shipment of stores to the supplier concerned. The supplier will not make shipment of any item of the contract without clearance from DGDP.

c. The prime objective of FAT will be to check the capability of the system as the technical specification mentioned in the offer. Therefore, the capabilities of the quoted system which will be tested during FAT are to be separately mentioned in the offer. The FAT will be carried out at manufacture's factory premises. In this regard, the FAT protocol is to be submitted for approval by BN well in advance.

d. During FAT, various tests for checking performance are to be carried out and recorded. After FAT, a joint test report will be prepared and signed by both the seller and buyer's representative.

37. **Foreign Training.** The supplier will provide maintainers training to the nominated BN personnel at manufacturer's premises. Cost of both way air fare (Dhaka to manufacturer's premises and back) will be borne by the purchaser. Food, accommodation, training material and internal travel cost are to be arranged by the Supplier and the same is to be quoted separately. Training shall be provided in English Language as per the duration below:

Ser	Training	Remarks
1.	Maintainer's training for 02 (Two) BN personnel for a duration of 14 working days regarding operation and maintenance of offered Radar system is to be given.	The training should include 1 <sup>st</sup> and 2 <sup>nd</sup> level maintenance and interfacing aspect of the system in details. The details of training syllabus are to be provided with the offer.

a. **Training Objective.** The objective of the training should include flowing but not limited to:

(1) Nominated BN personnel should have comprehensive knowledge on Marine Radar with ARPA Facilities overview and its features and limitations. They should also acquire detailed knowledge and orientation with sub systems.

RESTRICTED

(2) Nominated BN personnel should know which level of maintenance they can do, what kind of tools and skill needs to be used to carry out maintenance works as per OEM recommended maintenance system/ schedule.

(3) Nominated BN personnel should be completely aware of all hardware/ software including all kinds of documentations related to the system.

(4) A standard operating procedure shall be provided to the trainees for developing a ready response team onboard to address defect identification and rectification.

(5) Nominated BN personnel shall be able set to work, configure and interface the whole system including re-installation of all software used in the system.

b. **Training Contents.** The training Contents should include flowing but not limited to:

(1) System Overview and system configuration.

(2) System operation covering all functions.

(3) Details about System architecture.

(4) Lessons on ICDs (consisting communication type, NMEA standard, message format, data structure and etc).

(5) Hardware and software and their function, troubleshooting, backup software, system restoration (if crashed) etc.

(6) Familiarization of manuals, publications and document which are to be provided.

(7) Signal/ Power flow diagram.

(8) Testing of Receiver Sensitivity.

(9) Repair and maintenance.

(10) Fault finding and understanding error message.

38. **Local Training.** A group of operators/ technicians are to be trained locally in Bangladesh for 05 (Five) working days by the Manufacturer's Engineer on completion of installation and Test/Trial. Cost of air fare (to and from Bangladesh (installation site)), accommodation, food and internal transportation (to and from work site and hotel) of the Manufacturer's engineer will be borne by Supplier. The cost of local training is to be quoted within the main price and showing separately for future reference.

a. **Training Objective.** Objective of training is to learn about the functionality and maintenance of newly installed Marine Radar with ARPA Facilities.

b. **Training Contents.** The contents of the training should include following (but not limited to):

RESTRICTED

- (1) BN operators should be totally oriented and skilled for the operation of the radar system including various software functions and applications.
- (2) System composition, configuration, principle of operation and troubleshooting.
- (3) Software installation, operation and configuration for smooth conducting of all the tests.
- (4) Theoretical concept and procedure of tests (practical).
- (5) Repair and maintenance.

39. **Installation, Supervision and Setting to Work (STW).**

a. **Assessment for Installation.** The supplier may make pre-assessment for installation of whole system onboard at their own expenses. BN will facilitate like removal & refitting of existing equipment/ structures and docking if required. In this regard, bidder has to mention clearly about the actual requirement of installation and docking facility with duration in details in site survey report and submit with offer.

b. **Installation Materials and Accessories.** All installation materials including shock mountings (but not limited to) is to be provided by the manufacturer. Available Welding/ Cutting will be provided by the user. Support equipment may be provided (if available) from the user side upon request prior installation. Bidder may visit the site to evaluate the actual requirement prior submission of offer and submit the list with the offer.

c. **Integration/ Interfaces Requirement.** The navigational radar shall be integrated/ interfaced with following equipment:

Ser	Description	On Board Ship
1.	AIS	Brand: FURUNO, Model: FA-100
2.	GPS	Brand: FURUNO, Model: GP-150
3.	ECDIS	Brand: TRANSAS, Model: Navi Sailor 4000
4.	TDL	Brand: Tecnobit grupo oesia (Spain), Model: Bangla 22
5.	EM Log	Walker 7070
6.	Gyro	Brand: France, Model: Sigma-40 Brand: Germany, Model: STD--22
7.	ESM	Standard blanking pulse is to be provided by OEM for sending such data to ESM in future. Blanking pulse details are to be mentioned

d. **Interfacing Responsibility.** The requirement of interfacing responsibility is stated as follows:

- (1) Interfacing with Ships fitted navigational equipment as stated above is to be done under the full responsibility of supplier **except the Tactical Data Link (TDL). Interfacing of supplied Radar with TDL is to be done by Bangladesh Navy** (Trained BN personnel who has been completed relevant foreign training in this regard) with the help of Data Link Management Centre (DLMC). Complete cost of addition/ alteration of any kind of hardware, software and document of any interfaced/ integrated systems or ship's system/ items are to be borne by the supplier. The supplier may visit the ship and collect necessary information with due consent from BN before submitting the offer. Buyer will not be responsible for

interfacing work. The supplier shall provide all types of protocol and ICD to interface other sensors/ systems during installation and it will be tested and demonstrated. **Moreover, bidder may engage any local BD engineer/ Expertise team for said interfacing work, which is more preferable by BN.**

(2) Any sort of complication for interfacing of supplied radar with any equipment and system in future (whenever necessary, whenever requested by BN not exceeding 5 years from the date of acceptance) is to be solved by online assistance of OEM expertise without any additional cost. In this regard, bidder has to provide online assistance assurance certificate from OEM with offer.

(3) Available welding, cutting, paneling work facility in BN and assistance for equipment installation shall be provided by BN. In this regard, qualified manufactures'/ suppliers' representatives shall supervise. All other works shall be done by supplier.

e. **Bidder/ Supplier Responsibility.**

(1) The complete Radar system is to be installed by replacing the existing navigation and helo control radar systems and to be commissioned by the supplier (Local Engineer Preferable). Installation includes STW, integration/ interfacing with associated equipment, test/ trial at harbour and at sea.

(2) The supplier at no additional cost will do any modification/ alteration required to install the set. The supplier has to mention in the offer whether docking of ship will be required for said installation work.

(3) The Supplier is to provide the drawings for the supporting structure well in advance. In this regard, qualified manufactures'/ suppliers' representatives are to supervise the supporting structure fabrication and fixing the same onboard. All other works are to be done by supplier.

(4) Qualified manufacture's engineer is to be employed for the installation and STW. All expenses for food, accommodation, airfare and internal travel etc for installation engineers are to be borne by the supplier.

(5) Cost of installation works, Supervision, STW and Commissioning are to be quoted separately.

(6) Any damage to onboard existing systems, items, equipment and machineries due to cable laying and installation of supplied radar shall be compensated by supplier to make damage items operational.

(7) Supplier shall provide List of works (facility work/ support those are needed during docking (if required), at harbour and at sea from BN) during submission of offer for approval of BN.

f. **Purchaser Responsibility.** Purchaser (BN) shall provide available assistance (if required) for installation under the direct supervision of OEM Engineer. BN Dockyard shall provide available work/ facility (if required) for installation. Support equipment may be provided (if available) from the user side upon request prior installation.

40. **Test, Trial and Acceptance.**

a. **General.** The supplier's representative/ OEM engineer will ensure satisfactory tests, trial and functioning/ commissioning of the equipment at purchaser's premises after all necessary integration/interfacing with other systems.

RESTRICTED

- b. **HAT and SAT Protocol.** The HAT and SAT protocol/ procedures is to be approved by BN at least 06 (Six) weeks prior to commencement of individual schedule.
- c. **HAT.** Harbour Acceptance Test (HAT) will be carried out at harbour on completion of setting to work (STW).
- d. **SAT.** Sea Acceptance Test (SAT) will be carried out at sea on completion of satisfactory HAT.
- e. **Acceptance.** On completion of satisfactory Test/ Trial (HAT and SAT), an acceptance certificate will be signed by both user/ purchaser and supplier.

**PART III: TERMS AND CONDITIONS**

41. **Delivery.**

a. **Delivery and Installation Time.** Item delivery and installation as per scope of supply shall be completed within 15 (Fifteen) months from the date of signing of contract and breakdown of said time line is appended below:

(1) **Delivery Time.** The items shall be delivered to the "Place of Delivery" within 09 (Nine) months after signing the contract.

(2) **Installation Time.** The Marine Radar with ARPA Facilities shall be installed within 06 (Six) months after delivery of the items.

b. **Place of Delivery.** NSD Khulna/ NSD Chattogram.

c. In case of CFR/CPT, the supplier shall carry the items from sea port/ air port (as applicable) to NSD Khulna/ NSD Chattogram at the their cost and risk of supplier.

42. **Shipment.**

a. **Source of Raw Material.** To be mentioned.

b. **Source of Supply.** The source of supply of the offered systems are to be mentioned. It should be from the country of manufacturer or country of origin.

c. **Port of Shipment:** To be mentioned. The port of shipment is to be from the country of manufacturer or country of origin.

d. **Consignee.** The supplied item shall be the following consignee:

The Commanding Officer  
Naval Stores Depot  
New Mooring, Chattogram,  
Bangladesh  
BIN-002349278-0503

or Officer In Charge  
Naval Stores Sub Depot Dhaka  
Naval Unit Khilkhet  
Namapara, Dhaka-1229, Bangladesh

e. All items are to be brand new and to be delivered in seaworthy packing to ensure safe transit by sea. Certificates in this regard are to be provided during delivery.

f. 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.

43. **Project Timeline.** A forecasted project timeline indication month-wise event is to be provided with the offer and another reviewed project time line with project implementation plan is to be submitted after 15 days of signing the contract. The project timeline and implementation plan

shall have clear indication of docking required and duration of docking with details of support/ facility work required from BN.

44. **Warranty, Guarantee and After Sales Service.**

a. **Warranty.**

(1) 12 (Twelve) months manufacturer's warranty for trouble free operation is to be provided for the item from the date of acceptance by the purchaser. If any component and submit of the supplied items becomes defective during the warranty period, the overall warranty shall be extended automatically for the period of subject component remains defective.

(2) For warranty repair/ replacement, the supplier shall collect the defective item from NSD, Chattogram/ NSD Khulna/ NSSD, Dhaka (as applicable) and re-supply the same to collecting place after warranty repair or for replacement within 90 (ninety) days from the date of defect at no cost to the purchaser.

b. **Bank Guarantee (BG) for Warranty.** The BIDDER shall issue a Bank Guarantee (BG) during submission of last 20% payment for a value of **@ 05% (Five percent) of the total CFR/CPT value** from any scheduled bank in Bangladesh in favour of The Senior Finance Controller (Navy), Sailors Colony, Lalasarai, Mirpur-14, Dhaka-1206, representing Bangladesh Navy, Peoples Republic of Bangladesh, information to The Directorate General Defence Purchase, Ministry of Defence, Peoples Republic of Bangladesh. This BG shall remain valid until the warranty period of the Marine Radar with ARPA Facilities and other items (notwithstanding minor deficiencies which would be mutually settled and agreed between PURCHASER and BIDDER) in Bangladesh, and it shall expire on receipt of **Warranty Completion Certificate**. If the contractual obligation warrants the extension of the validity of the BG, the BIDDER shall remain liable to do so at its own cost. In case of material failure of the BIDDER to fulfill its contractual obligation as per the terms and conditions of the contract, the BG in full or part thereof may be forfeited at the discretion of the PURCHASER.

c. **Guarantee.** The supplier is to give guarantee of continued supply of spares for at least 10 (Ten) years at a reasonable price (not exceeding 3% per year). Certificate is to be submitted with the offer.

d. **After Sales Service.** After sale service should be available with the local agent of supplier and is to be provided as and when required for indefinite period or at least 15 years after the installation. If any system, equipment etc becomes obsolete or out of production during or after the installation period (at least upto 15 years), the supplier is to submit alternative of same/ improved version for selecting the suitable replacement.

45. **Terms of Payment.** Payment shall be made through an Irrevocable Letter of Credit (LC). LC shall be opened at the expense of the PURCHASER and 100% LC value shall be made operative in favour of Supplier. CFR/ CPT value being the value of the supplied goods, payment shall be made as under:

a. **1<sup>st</sup> Installment.** 80% of CFR/ CPT value shall be paid **after shipment of hardware and software** and on submission of the following documents to the bank:

(1) Original Airway Bill (AWL)/ Bill of Lading (BL) must be issued by air lines/ shipping lines or authorized agent of shipping lines/ air lines against DGDP contract reference (after signing the contract). LC number, and Bangladesh bank registration number are to be mentioned in AWL/ BL. Freight amount must be shown separately otherwise only FCA value shall be paid. All documents to be submitted (01) original with at least (05) five copies other than bill of lading shall be

RESTRICTED

(03) three original with (03) three copies. In addition to this, following shall also be considered:

- (a) Name of the carrier must be indicated in AWL/ BL.
- (b) Must be signed by carrier or a named agent for/ on behalf of the carrier.

(2) 'Supplier's Signed Commercial Invoice' for (freight/ services amount to be shown separately (if applicable)) representing 80% of CFR/CPT value as stated in the contract.

(3) "Packing List" signed by the authorized representative of the shipping company or exporter.

(4) "Certificate of Origin" signed by the Manufacturer's Authorized Person/Authorized Official of the exported country.

(5) 'Manufacturer's Certificate' Signed by the MANUFACTURER/ SUPPLIER. Certifying that product has been produced as per technical data/ analytical data and specification as per contract.

(6) "Manufacturer's Warranty Certificate" Signed by the MANUFACTURER/ SUPPLIER.

(7) "Factory Acceptance Test (FAT)/ Pre-Shipment Inspection (PSI) Completion Certificate" signed by the SUPPLIER.

(8) 'Quality Assurance Certificate' (QAC) signed by the SUPPLIER.

(9) 'Shipment Clearance Letter' Signed by DGDP (Directorate General Defense Purchase, Dhaka, Bangladesh) as PURCHASER.

b. **2<sup>nd</sup> Installment.** 20% of CFR/CPT value shall be paid **after successfully commissioning the system** and on submission of the following documents to the bank:

(1) 'Supplier's Signed Commercial Invoice' for representing 20% of CFR/CPT value as stated in the contract.

(2) 'Final Acceptance Certificate' issued by the PURCHASER after successful completion of installation, integration with related ship borne equipment, HAT, SAT and commissioning of system.

(3) The bidder shall submit the relevant document of 5% BG of CFR value, which shall be released on submission of warranty completion certificate.

c. **Installment of Training and Services.**

(1) **Foreign Training.** 100% cost of Foreign Training (Optional) shall be paid **after successful completion of foreign training** and on submission of the following documents to the bank:

- (a) 'Foreign Training Completion Certificate' signed by the PURCHASER for the successful completion of the Foreign Training in OEM premises.

(b) 'Supplier's Signed Commercial Invoice' for representing 100% of Foreign Training value as stated in the contract.

(2) **Local Training.** 100% cost of Local Training shall be paid **after successful completion of local training** and on submission of the following documents to the bank:

(a) 'Local Training Completion Certificate' Signed by the PURCHASER for the successful completion of the Local Training in Bangladesh.

(b) 'Supplier's Signed Commercial Invoice' for 100% of Local Training value as stated in the contract.

(3) **Installation and Acceptance.** 100% cost of Installation shall be paid **after successful completion** of Installation and final acceptance on submission of the following documents to the bank:

(a) Certificate Signed by the PURCHASER for the successful 'Completion of the Installation and Final Acceptance' in Bangladesh.

(b) 'Supplier's Signed Commercial Invoice' for 100% of Installation and Final Acceptance value as stated in the contract.

46. **Import Duties.** These are the Defence stores and shall be used by the Defence Forces only and hence are exempted from payment of Custom Duties and Sale Taxes as per ministry of finance (NBR) memo no 9(41) NBR/CUS-IV/27/246 dated 10 April 1981. Therefore, if the item is imported against this tender, price to be quoted without import duties.

47. **Terms and Conditions (DGDP).** Following terms and conditions shall governed by the tender schedule/ existing rules of Directorate General Defence Purchase (DGDP):

- a. Agency Commission.
- b. LC Amendment Charges.
- c. Insurance Charges.
- d. Liquidated Damages (LD).
- e. Arbitration.
- f. Force Majure and War Risk.
- g. Termination of Contract.
- h. Letter of Credit.
- j. End User Certificate (EUC).
- k. Recoveries.
- l. Performance Guarantee (PG).
- m. Other Conditions.

48. **Price and Financial Offer.** Price of offered item (for each point of scope of supply) of the total offer is to be shown separately and then grand total of the foreign currency to be shown on the original offer submitted by the bidder. The BIDDER shall comply as asked in the tender specification. The BIDDER may mention the price of additional items and services in the financial offer. Item-wise price for additional item are to be mentioned for each item and services. The BIDDER may also explain the financial terms and conditions in the financial offer as appropriate. To evaluate the financial competitiveness, BIDDER has to submit the summary of financial offer as per following format:



RESTRICTED

Ser	Description	Qty	Unit Price	Currency (USD, EURO, GBP etc)	Total Value
1.	Complete set of Marine Radar with ARPA Facilities including followings: a. Software b. Cables c. Certification and Reports d. Drawing and Manual/Documentation	01	To be mentioned separately	To be mentioned	To be mentioned separately
2.	Interface Control Document (ICD) and Electronic Navigational Chart (ENC) (Optional)	-	To be mentioned	To be mentioned	To be mentioned
3.	Spares (Optional)	-	To be mentioned	To be mentioned	To be mentioned
4.	Total Freight on Board (FOB)	-	-	-	To be mentioned
5.	(+) Freight Charge	-	To be mentioned	To be mentioned	To be mentioned
6.	CFR Value in Foreign currency	-	To be mentioned	To be mentioned	To be mentioned
7.	CFR Value Equivalent to Bangladeshi Taka (BDT)	-	-	-	Buyer shall fill-up
8.	Foreign Training	-	To be mentioned	To be mentioned	To be mentioned
9.	Local Training	-	To be mentioned	To be mentioned	To be mentioned
10.	Installation, Test/ Trial and Acceptance	-	To be mentioned	To be mentioned	To be mentioned
11.	Total Quoted Price	-	To be mentioned	To be mentioned	To be mentioned