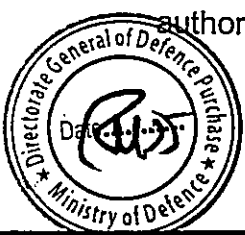


TENDER SPECIFICATION OF PORTABLE NAVIGATION RADAR - BNS NOBOJATRA

1. **Name of the Equipment.** Portable Navigation Radar.
2. **Purpose.** Military naval radar systems are used by navies and maritime forces around the world for navigation at sea, watching the skies and the water's surface to detect, identify and track targets and potential threats. Mainly Portable Radar is used for navigation purpose.
3. **Quantity** : 01 (One) Complete Set.
4. **Type** : To be mentioned.
5. **Brand** : To be mentioned.
6. **Model** : To be mentioned.
7. **Country of Origin.** : Germany, France, Italy, Spain, Austria, Denmark, Belgium, Netherlands, Sweden, Finland, UK, USA, Japan, Australia, Canada.
8. **Manufacturing Country** : Germany, France, Italy, Spain, Austria, Denmark, Belgium, Netherlands, Sweden, Finland, UK, USA, Japan, Australia, Canada.
9. **Year of Manufacturing** : 2024 or later.
10. **Manufacturer Name and Address** : Name and full address with e-mail of Manufacturer is to be mentioned.
11. **Supplier/ Principal/ Bidder Name and Address** : Name and full address with e-mail of Local Agent is to be mentioned.
12. **Local Agent Name and Address** : Name and full address with e-mail of Manufacturer is to be mentioned.
13. **Source of supply.** The Source of supply of offered Radar sets is to be Country of Origin or Country of Manufacturer.
14. **Standard.** Portable Navigation Radar, associated accessories and items supplied under the scope of the supply are to be designed, constructed/ manufactured and tested up to the requirement of marine standard and internationally recognized classification society (Standard to be mentioned). Type approval certificates in English are to be provided by the supplier with the offer.
15. **Qualification of Bidder.** The bidder is to be authorized by OEM/ OEM authorized agent/dealer of Radar for the supply of the items as per this tender. Authorization certificate in this respect is to be submitted with the offer. In case of offer from OEM authorized agent/dealer, certification of documents regarding such authorization/ agency ship/ dealership of OEM to the authorized agent/dealer is also to be provided.
16. **Certificate and Document of Authentication.** The concerned supplier must provide following original certificate(s)/ document(s) as applicable with the quotation and during delivery of items as regard to the genuinely of source and item(s) in order to establish chain of links from the original source to supply items:
 - a. One certificate by the Original Equipment Manufacturer (OEM) in favor of the local supplier (in case of OEM as principal).
 - b. Two certificate, one by the OEM to authorized dealer/agent and other by the authorized dealer/agent to supplier (in case of authorized dealer/agent as principal).



c. Three certificate, first one by OEM to authorized dealer/agent, second one by authorized dealer/agent to sub-agent and third one by sub-agent to supplier (in case of sub-agent as principal). If the supplier is unable to obtain the first certificate (by OEM to authorized dealer/agent), then it has to produce relevant document to prove agency-ship of its claimed agent of the recognized manufacturer.

17. **Scope of Supply.** Portable Navigation Radar are to be supplied as per the specifications enumerated in the subsequent paragraphs. The Portable Navigation Radar and associated accessories should be complete with all standard accessories, ready in all respect for operation after installation onboard. The scope of supply shall include:

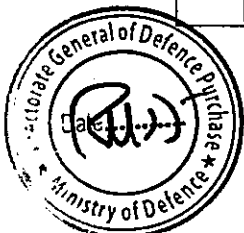
- a. 01 X Complete Portable Navigation Radar with accessories (as per Para 19 to 21).
- b. Software, firmware and necessary software/ firmware installation hardware (as per Para 22).
- c. Installation, supervision & STW (as per Para 23).
- d. Test Trial & Acceptance (as per Para 25).
- e. Local Training (as per Para 26).
- f. Additional Spares (as per Para 27).
- g. Documentation (As per Para 29).
- h. Certification (As per Para 32 & 33).

18. **Operating Environment.** The Portable Navigation Radar and associated accessories and items are to be designed to operate in the following ambient condition:

Operating Temperature	- 5° to + 55°C
Relative humidity	Up to 95% (Non condensing)
Waterproof	At least IPX-6

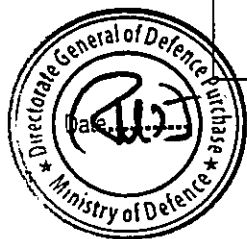
19. **General Particulars of Portable Navigation Radar.**

Description of the Portable Navigation Radar.			
1.	Portable Navigation Radar	(a) Type: To be mentioned.	
		(b) Brand: To be mentioned.	
		(c) Model: To be mentioned.	
		(d) Band: X Band.	
		Country of Origin and Manufacturer: Germany, France, Italy, Spain, Austria, Denmark, Belgium, Netherlands, Sweden, Finland, UK, USA, Japan, Australia, Canada.	
		(f) Manufacturer: Germany, France, Italy, Spain, Austria, Denmark, Belgium, Netherlands, Sweden, Finland, UK, USA, Japan, Australia, Canada.	
		(g) Year of Manufacturer: 2023 or later.	
2.	Antenna Unit	Particular	Description
		Dimensions	Dia 17" - 22" Height: 8" - 8.8"
		Transmitting Frequency	9.4 to 9.5 GHz
		Range Scales	20m - 40 NM



RESTRICTED

		Radar Modes	Harbour, Offshore, Weather, bird, Dual Range, North Up, Course Up, Head Up, Relative Motion, True Motion
		Rotation speed (mode dependent)	(24 - 60) rpm
		Antenna Cable	10 m
		Plane of polarization	Horizontal Polarization
		Transmitter peak power output	(12-25) W
		Sweep repetition frequency	(700-2400) Hz (mode dependent)
		Sweep bandwidth	(40-48) MHz (max)
		Horizontal beam width (Tx and Rx antenna)	4°- 5° Nominal (-3 dB width)
		Vertical beam width (Tx and Rx antenna):	20°- 30°Nominal (-3 dB width)
		Side lobe level (Tx and Rx antenna)	Below -18 dB (within ±10°); Below -23 dB (outside ±10°)
		Noise figure	Less than 5 dB nominal
		Range Resolution	20m or less (to be mentioned)
		Azimuth Resolution	2° or less (to be mentioned)
3.	Display Unit	Display Unit	12"+1"
		Display Resolution:	1280W x 800V pixels or higher
		Display control	Full Control via touch screen with button control
		Voltage	12V DC
		2D/3D Dual Mode Display	Yes
		Number of Track processing	10 Tracks or more (to be mentioned)
		Ethernet	02 port Minimum
		Data Card Slot	02 SD port Minimum
		Chart Plotter Option	Yes
		GPS Built-in	Yes
		Waypoints	5000 Maximum
		Routes	200 Maximum
4.	Power Supply	DC input	10.5-31.2 V with reverse polarity protection
		Operating Power:	17-29 W (Range/mode dependent)
		Power cable	(15-20) m
		Power Consumption, max	(20-30) W
5.	Interfacing	Sonar Compatible	Yes
		AIS Supports (tracks target ships position)	Yes



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		Tide Tables (from map card option)	Yes
		Autopilot Compatible	Yes
		Audio System Compatible	Yes
		Fusion-Link Compatible Marine Radio Support	Yes
6.	Performance	Portable Navigation Radar should be suitable to run continuously.	
7.	Standard and Classification	To be mentioned.	

20. **Standard Cables.** The supplier is to provide necessary high-quality 10m cable for antenna unit to connect with display unit and 10m power cable for display unit to connect with power supply unit with quoted price.

21. **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 in full functionality are to be mentioned clearly with purpose and submit with offer mentioning item wise price.

22. **Software and Firmware.** All necessary software and firmware of radar are to be provided. Method and items required for loading the software and firmware are also to be provided.

23. **Installation, Supervision & STW (Setting to Work).**

- a. Technical documents (Installation drawings, Installation instruction, specifications etc) required for installation of the Radar sets should be supplied by the manufacturer.
- b. Installation of the item shall be done by the ship's staff under supervision of supplier (if necessary) following standard practice.
- c. A qualified manufacturer's/ supplier engineer is to supervise the installation works and setting to work.

24. **Installation Materials.** All Installation materials, like junction's boxes, brackets, nuts, bolts, securing tie clips, slips, channels etc are to be provided by the supplier.

25. **Test, Trial & Acceptance.**

- a. Test, trials and commissioning of Radar sets in accordance with the instructions provided by the supplier.
- b. After satisfactory test trials (HAT and SAT) an acceptance certificate will be provided by the purchaser.
- c. HAT & SAT procedure shall be forwarded to the buyer 04 (Four) weeks prior to the date of commencement of the HAT & SAT for BN approval.

26. **Local Training.** The manufacturer/ supplier is to send one representative who will provide operation and maintenance training in Bangladesh to BN personnel for a duration of 03 (Three) working days after test, trial and commissioning of radar set. During training, emphasis is to be given on operation, maintenance and faultfinding of radar. Cost of airfare (to and from Bangladesh), accommodation, food and internal transportation (to and from work site and hotel) of the manufacturer's/ supplier representative is to be borne by the supplier (If required). A set of



detail training content is to be provided by bidder to BN 02 (Two) weeks prior to the said training. The training should include (but not limited to) the following:

- a. System composition, configuration, principle of operation and troubleshooting.
- b. Software installation, operation and configuration for smooth conducting of all the tests.
- c. Theoretical concept and procedure of tests (practical).
- d. Repair and Maintenance.

27. **Additional Spare.** A list of the following additional spares is to be quoted separately. The buyer may select the any of the spares as required from the list:

Ser	Name of Item	Qty	Price	Remarks
1.	Power supply AC to DC converter	01		
2.	Antenna rotating belt	02		

28. **Brochure & Catalogue.** A copy of manufacture's brochure & catalogue are to be provided with the offer.

29. **Documentation.**

a. Following documents and manuals in English are to be provided with the Radar sets free of cost at the time of item delivery:

- (1) 01 (one) set of drawings and instructions manual necessary for installation of the Radar sets with all equipment are to be supplied.
- (2) 01 (one) set of operation and maintenance manual of the Radar.

30. **Technical Support.** Technical support is to be provided to solve any maintenance and operational problem arising with the item within the warranty period. An assurance agreement in this respect is to be submitted with the offer.

31. **Guarantee.**

a. The supplier will guarantee to supply the spares (from manufacturer) for at least 05 years with reasonable price. Yearly increase of price of spares should not be more than 5% of the list of spares with price to be supplied with the quotation.

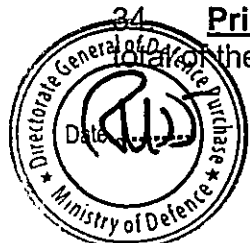
b. The supplier is to provide performance guarantee of 10% of the total contract price for satisfactory performance of the supplied items.

32. **Quality Assurance Certificate.** The Quality Assurance Certificate (QAC) in respect of manufacturing and performance of the offered Portable Navigation Radar with associated accessories is to be provided by the manufacturer at the time of delivery.

33. **Certificate.** Following certificates are to be provided by the supplier of the Radar sets and associated equipment/ accessories:

- a. Inspection Certificate (in English) are to be provided at the time of item delivery.
- b. Necessary marine class certification as per Para 13.
- c. Quality assurance certificates for the Radar sets, their associated equipment and instruments in regard to its manufacturer and performance is to be provided at the time of items delivery.

34. **Price.** Price of the Radar sets of the total offer is to be shown separately. Then grand of the foreign currency to be shown on the original offer submitted by the bidder.



35. **Warranty.**

a. Manufacturer's warranty for repair/ replacement at supplier's cost for the supplied Portable Radar sets for a period of minimum 02 Years after final acceptance by BN on completion of installation and necessary test/ trial onboard the ship is to be provided. The warranty shall cover all parts and service costs/ charges throughout the warranty period. Certificate from OEM regarding warranty is to be provided with the offer.

b. If for defect of any unit or sub unit of the supplied items, the Radar or any supplied items remain non-operational for a certain period within warranty, the warranty will be extended by the same period.

c. For warranty repair/ replacement, the supplier will collect the defective item (portable) from NSD, Chittagong/ 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.

36. **Shipment & Delivery.**

a. The supplied items are to be delivered **without import duties** within **06 (Six) months** after signing the contract to the following Consignee:

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

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

b. **Place of Delivery:** NSD, Chittagong.

c. In case of CFR, the supplier will carry the items from sea port/ airport (as applicable) to NSD Chittagong at the cost and risk of supplier.

37. **Port of Shipment.** To be mentioned. The Port of shipment shall be from country of manufacturer or country of origin.

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

39. **User List.** List of users of the offered Radar is to be mentioned with full address. The list shall provide the name of various users with respective model and brand of the system. The offered system should be widely used by various users. The user list will be used for the assessment of the offer.

40. **Terms of Payment.** Letter of Credit will be opened for full amount of contract price in favor of the supplier/ Principal for the complete scope of supply with the following terms of payment:

a. 80% of contract price will be released after shipment of all items and on submission of necessary documents as per DGDP rules.

b. The remaining 20% of contract price of Radar will be released after successful test/ trial, jointly carried out by the buyer's representative and supplier's representative and final acceptance of the Radar sets by the purchaser.



41. **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 offered Radar sets, the deviation has to be spelt out clearly.

