

TENDER SPECIFICATIONS OF SUB BOTTOM PROFILER

1. **Name of Equipment:** Sub Bottom Profiler.
2. **Purpose:** The Sub Bottom Profiler (SBP) will be used on board hydrographic survey vessel/craft/boat primarily for getting the upper layer profile of the sea bottom. It will be utilized for the following purposes:
 - a. To determine the sea bed structures.
 - b. To investigate any wreck/buried object.
 - c. To conduct any pre-dredging/post-dredging survey.
 - d. To conduct cable and pipe line survey.
 - e. To carry out bottom classification.
 - f. To conduct geotechnical investigations.
 - g. To conduct geological survey.
3. **Type.** The SBP will be portable (***towed type***) so that it can be used in any vessel of opportunity. The transducer to be mounted on a towfish.
4. **Quantity.** 01 (one) in no (complete system).
5. **Brand/Model.** To be mentioned.
6. **Country of Origin.** USA/Canada/European countries (Name of the country to be mentioned).
7. **Country of Manufacturer.** USA/Canada/European countries (Name of the country to be mentioned).
8. **Name and Address of the Manufacturer.** To be mentioned (address, telephone, facsimile number, email address are to be mentioned).
9. **Date of First Introduction in the Market.** To be mentioned.
10. **Year of manufacture.** 2024 or later.
11. **Qualification of Bidders.** Only genuine manufacturers and authorized dealer (Foreign Principal) can submit quotation through authorized agents/dealer enlisted in the Directorate General of Defense Purchase (DGDP).
12. **Scope of Supply.** The SBP will be supplied along with all accessories as per the specification mentioned in this document.
13. **Basic Composition:** The SBP should comprise following main units:
 - a. Data acquisition processor/unit.
 - b. Data display unit.
 - c. Trans-receiver unit.
 - d. Towfish and other accessories.
 - e. Tow cable.
 - f. Electric winch.
 - g. Software for data acquisition, processing and sea bed classification.
 - h. Data storage and backup system.
 - J. Acoustic Pinger with receiver for tracking and monitoring the tow fish from onboard ship/craft (Details to be mentioned).

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14. **Technical Specification.** The SBP is to be robust in design and construction. It should have following criteria:

Ser	Description	Requirement
a.	Transducer	Installed on a Towfish. The weight and dimension of the Towfish is to be mentioned.
b.	Depth range of operation	200 m water depth or more.
c.	Logger and display unit	Portable LCD display of at least 17".
d.	Length of the tow cable	As required for maximum operating depth.
e.	Dual-frequency or Chirp system	To be mentioned.
f.	Frequency range (kHz)	To be mentioned.
g.	Penetration	> 60 m below the sea bed (soft clay). > 5 m below the sea bed (sand).
h.	Resolution	At least 8 cm.
j.	Maximum pulse sounding rate (Hz)	To be mentioned.
k.	Pulse length	To be mentioned.
l.	Support for positioning data inputs	Should support external data inputs from GPS.
m.	Output Power	At least 2000w.
n.	Marking of events and annotations	Yes.
p.	Data output formats	SEG-Y standard. If there is any other data output formats available, that is to be mentioned.
q.	Data output for sea floor classification	Yes.
r.	Software	Software for data acquisition/ processing and sea floor classification are to be included with the offer. Details of the software are to be provided.
s.	Type of possible post processing	To be mentioned.
t.	Data logging	Should be PC based. The hard drive should be large enough and have the capacity of logging data for at least 24 hrs continuous operations.
u.	Type of tow cable	Kevlar reinforce tow cable.
v.	Tow cable length	At least 50 m.
w.	External data storage device	An external data storage device of at least 2 TB is to be included with the offer.
x.	Auto phasing option for sudden change of depth	Yes.

15. **Power Requirement.**
- a. **Supply Voltage.** To be mentioned.
 - b. **Average Power Consumption.** To be mentioned.
16. **Life time of the SBP.** Durability/Life time of the SBP to be at least 10 years.
17. **Condition While Supplying.** The offered set must be brand new and in operation.
18. **Catalogue/Brochure.** Two sets of original Catalogue/Brochure in English to be supplied with the offer.
19. **Quality Management System.** To assess the quality management system (QMS) of the manufacturer, ISO or equivalent certificate has to be provided with the offer.
20. **Certificate/Document of Authentication.** The local supplier must provide following original certificate/document with the offer/quotation to ascertain the genuineness of source and items in order to establish chain of links from the original source to supply items.
- a. One certificate/document by the manufacturer in favour of the supplier (In case of manufacturer as direct source).
 - b. Two certificates/documents, one by the manufacturer in favour of the authorized agent and other by the authorized agent in favour of the supplier (In case of authorized agent as immediate source).
21. **Manuals.** Following books/manuals are to be supplied with the equipment at the time of delivery:
- a. 02 copies of operating and technical manual in English.
 - b. A reference book on SBP image interpretation and sea floor classification containing different examples, pictures, tables, case studies etc.
 - c. Parts catalogue.
22. **Test and Trial.** Manufacturer's representative will carry out test and trial of the SBP on board BNS SHAIBAL where successful data collection and processing is to be completed. Initial test and trial will be done at harbour. Final trial will be conducted at sea with Manufacturer's representative on board.



23. **Training.** At least 03 working days equipment orientation on operation, maintenance, installation, data acquisition, processing & Image interpretation, sea floor classification etc is to be taught by the manufacturer's expertise. The outcome of the training should encompass following:
- a. Trainees should gain sufficient knowledge to use the equipment and related software efficiently and effectively to deploy and operate the equipment.
 - b. Have general trouble shooting knowledge on equipment and software.
24. **Acceptance.** On completion of satisfactory test and trial final acceptance certificate will be signed jointly by the manufacturer's representative.
25. **Warranty.**
- a. At least one year warranty after satisfactory acceptance by BN is to be provided.
 - b. For warranty repair/replacement, the supplier will collect the defective item from NSD Chattogram and re-supply the same to collecting place after warranty repair or replacement within 90 (ninety) days from the date of defect. Cost of the replaced unit/component including air freight is to be borne by the supplier.
 - c. Warranty period will be extended for the duration of non-operational time for the equipment.
26. **Tools.** Tools required for servicing and maintenance are to be supplied with the SBP. List of the tools are to be provided with the offer.
27. **Standard Accessories.** Standard accessories must include every item and accessories, which are essential to operate the SBP, whether those are mentioned in the specification or not. List of such accessories is to be provided with the offer.
28. **Towing Gear (with winch).** Necessary gears for towing arrangements of tow fish (i.e. pulleys, stoppers, bolts etc.) along with a suitable electric winch are to be supplied with the system at the time of delivery. Detail description of the electric winch such as dimension, constructing material, capacity, weight, operating procedure etc supported by brochure to be given with the offer.
29. **Spares.** Spares required for 5 years trouble free operation are to be quoted separately indicating item wise price. Supply of spares for minimum 10 years to be ensured and manufacturers' certificate to be submitted in this regard. List and price of consumable/spares are to be submitted separately in the offer. If the item is of one time use/not repairable that is to be mentioned clearly. Quoted price of spares will influence the evaluation of final acceptance.
30. **Optional Items.** List of optional items which are nice to have is to be provided with the offer. However, the 100% performance of SBP should be achieved without those optional items. Prices of optional items which are nice to have are to be quoted separately in the offer.

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31. **Documents.** Following documents are to be submitted with the offer:
- a. Two sets of original catalogue/brochure in English.
 - b. List of standard accessories with pattern number and other specification.
 - c. List of optional accessories.
 - d. List of 10 years spares parts.
 - e. List of Tools.
 - f. User list.
 - g. Manufacture's authenticity certificate.
 - h. Quality assurance certificate.
 - j. Design/drawing of portable installation method and associated fittings (if not included in original catalogue).
32. **Record of Sale.** To be provided in the offer along with the name of the users and their contact addressee.
33. **Validity.** Up to 30 June 2025.
34. **Shipments and Delivery.**
- a. The supplier will arrange shipment of all items by sea/air to Chattogram sea/air port, Bangladesh within 180 days from the date of 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/air port (as applicable) to NSD Chattogram at the cost and risk of supplier.
35. **Source of Supply.** The bidder is to mention the name, address and contact detail of original source (Country of Origin/Country of Manufacturer) from where the SBP will be imported.
36. **Port of Shipment.** Any port of the manufacturing country (to be mentioned).
37. **Consignee.** The Commanding Officer, Naval Store Depot, New Mooring, Chattogram, Bangladesh.
38. **Price without Import Duties.** Quoted price is to exclude all import duties as those will be consigned against BN.
39. **Terms of Payment.** Necessary letter of credit will be opened for full purchase amount in favor of the principal 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 on production of necessary shipping document.
 - b. Remaining 20% CFR value and 100% cost of test/trial amount will be paid after satisfactory acceptance by BN.



40. **Condition for Acceptance of Quotation.** Quotation may not be considered if detailed information/ specification, original maker's books and catalogue about the same model of the offered item, accessories, scope of supply etc are not provided.

41. **Compliance Statement.** A compliance statement fulfilling all the requirements of the tender is to be submitted for evaluation as required:

a. Article wise compliance report must be given. An incomplete compliance statement may attribute to cancellation of the offer.

b. If any clause of this specification does not commensurate with offered item, the deviation has to be spelt out clearly.

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