

**CENTRE FOR INDUSTRIAL CONSULTANCY AND SPONSORED RESEARCH (IC&SR)  
IIT MADRAS, CHENNAI 600 036**

**BID INVITATION NOTICE**

For and on behalf of IC & SR, IIT Madras sealed tenders are invited in **TWO COVER SYSTEM** (TECHNICAL BID AND FINANCIAL BID) for the work briefly described hereunder:

1)	Description	<b>HIRING OF SURVEY VESSELS WITH AND WITHOUT EQUIPMENT</b>
2)	Specification No.	<b>OED/NTCPWC/ <u>HIRING OF SURVEY VESSELS WITH AND WITHOUT EQUIPMENT</u> / Dated 21.11.2019</b>
3)	Earnest Money Deposit (EMD)	<p>Rs.1,00,000/- (Rupees. One lakh only) in the form of DD drawn on/ issued by any nationalized /commercial bank in favour of "The Registrar, IIT Madras", payable at Chennai. The original DD shall be enclosed with the Technical Bid failing which the tender will be summarily rejected.</p> <p>If the contractor/Tenderer withdraws their offer during the tendering process after submission and /or fails to undertake the above work after issuance of the work order or letter of acceptance, the EMD furnished shall be forfeited without any further correspondence or reference to the contractors /Tenderers.</p>
4)	Last date for submission of bids	16:00 hours. IST On 23.12.2019
5)	Method of submission of Tender	<p><b>The tenders shall be submitted under two cover system (i.e. Technical Bid and Financial Bid)</b></p> <p><b>Technical Bid:</b> Technical bid shall contain only the technical details/specifications, balance sheets and copies of the work orders/work completion certificate for the past three years in connection with the boats supplied to the Central and/or State Governments, Departments, Institutes, Ports, and/or other Research and Development related works to the National Authorities/Services, etc.</p> <p><b>Financial Bid:</b> The Financial bid shall contain item wise rates for each item. The rates quoted shall cover all commercial terms including cost of fuel, consumables, labour charges, transportation, payment terms etc. and exclusive of GST and others which will be paid/reimbursed by IIT Madras as applicable. However, the tenderers shall indicate applicable taxes and their rates at the time of submission of bids.</p> <p>The Technical and Financial bids shall be placed in separate covers and super scribed as "Technical Bid" and/or "Financial Bid" as the case may be, and sealed. Both the sealed covers shall be placed in an outer cover and super scribed with the name of the work, tender number, etc.</p> <p>The offers of only those vendors who can supply and operate various sizes of Boats on Hire as per this tender will be process further subject to their satisfying the qualification requirements</p>

6)	Date & Place of Opening of Tender (Technical bid)	<p>The offer/bids will be opened by a duly constituted Tender Committee at 16:15 hours IST on 23.12.2019 Conference Room of NTCPWC, Sixth Floor, New academic center (NAC) IIT Madras, Chennai. If the due date happens to be a holiday, the tenders received will be opened on the next working day at the time specified above</p> <p>On the day of opening, only the main cover and the Technical Bids will be opened in the presence of the tenderers who wish to participate the sealed financial bids of all the bidders will be kept in a cover and sealed.</p>
7)	Validity of offer	90 days from the date of opening of tenders
8)	Clarification to be obtained from	NTCPWC <a href="http://ntcpwc.iitm.ac.in">ntcpwc.iitm.ac.in</a>
9)	Cost associated with the tendering process	The bidders shall meet all the expenses connected with preparation and submission of their offers IIT Madras shall not be responsible for any costs associated in the tendering process.
10)	Tender Inviting Authority	Senior Manager, Project Purchase, Centre for IC &SR, Indian Institute of Technology, Madras, Chennai 600 036
11)	Authority to accept the bid	Centre for IC & SR, IIT Madras reserves the full right to accept or reject any tender at any stage without assigning any reasons.
12)	Evaluation of offer and opening of financial bids	<p>The Technical bids opened shall be evaluated by a duly constituted Committee or its Sub-committee to ascertain the suitability of the bid in accordance with the specifications and other requirements of the tender.</p> <p>The Financial bids of only those technically qualified bidders will be opened under intimation to the qualified bidders. The Financial bids of other bidders shall be returned to them unopened.</p>
13)	Date & Place of Pre-Bid Meeting	At 16:00 hrs IST on 09 <sup>th</sup> December 2019, at Conference Hall, NTCPWC, Sixth Floor, NAC, IITM, Chennai, Tamil Nadu
14)	Period of contract	12month (Extendable to additional 24 months)
15)	Cost of tender document	NIL
16)	Important instructions	Bidders shall note that their offer should be only quoted in BOQ attached to the tender and should be without any alterations, additions or deletions. In case the BOQ is found to be altered, the tender will be considered as defective and is liable to be rejected.

## SECTION – I

### INSTRUCTION TO BIDDERS

**Name of work: HIRING OF SURVEY VESSELS WITH AND WITHOUT EQUIPMENT**

#### 1.1. GENERAL

##### 1.1.1 Specification No. OED/NTCPWC/ HIRING OF SURVEY VESSELS WITH AND WITHOUT EQUIPMENT/ dated 21.11.2019

1.1.2 For and on behalf of the Centre for Industrial Consultancy and Sponsored Research (IC&SR), IITM, the National Technology Centre of Ports, Waterways and Coasts (NTCPWC) invites sealed competitive bids under Two Cover system for the above work as per the details furnished hereunder:

#### 1.2 SCOPE OF WORK

1.2.1 The near-shore, offshore and inland waterway related works handled by NTCPWC, IITM is in progress from 2016. The primary works are field measurements by instruments using different types and sizes of boats at/along the Major and Minor ports, Fishing harbours, estuaries, backwaters, rivers, canals, inland waters, navigational channels, port basins, etc irrespective of the weather and seasons. The bathymetry surveys, water level, wave, current & CTD measurements and also Seabed Sediments and Seawater sampling, borehole drilling and many other works can be carried out through experienced boat operators for a longer and/or short period.

#### 1.3 EARNEST MONEY DEPOSIT (EMD)

Rs.1,00,000/- (Rupees . One lakh only) in the form of DD drawn on/ issued by any Nationalized /Commercial bank in favour of "The Registrar, IIT Madras", payable at Chennai. The DD shall be enclosed with the Technical Bid failing which the tender will be summarily rejected.

If the contractor/Tenderer withdraws their offer in the course of tender processing after its submission and /or fails to undertake the above work after issuance of the work order or letter of acceptance, the EMD furnished shall be forfeited without any further reference to the contractor/Tenderer.

No interest shall be paid on the EMD. The EMD deposited by the successful bidder shall be returned after the receipt and acceptance of Performance security in the prescribed form and issue of the work order/purchase order. The EMD submitted by unsuccessful tenderers shall be returned within 10 days after finalization of the award of contract and on receipt of a request along with an advanced stamped receipt.

#### 1.4 SUBMISSION OF TENDER:

1.4.1 Tender shall be submitted under Two cover system (i.e.) "Technical bid" and "Financial Bid" and both bids shall be placed in an outer cover and super scribed "**HIRING OF SURVEY VESSELS WITH AND WITHOUT EQUIPMENT**"

**1.4.1.1 Cover-1 (Technical Bid):** The Technical bid shall contain only the technical details/specifications, balance sheets and the copies of the work orders/completion certificates for work executed in the past three years prior to date of bid submission in connection with the boats supplied to the Port authorities or government agencies and/or other Port -related services. The supporting documents shall be either originals or notarized copies. Catalogue of the quoted model of boats shall also be submitted along with the Technical bid.

**There shall be no mention of the quoted prices anywhere in the Technical bid.**

**1.4.1.2 Cover-2: (Financial Bid):** The Financial bid shall contain item wise rates for each item. The rates quoted shall cover all commercial terms including cost of fuel, consumables, labour charges, transportation, payment terms etc. and shall be exclusive of GST which will be paid/reimbursed by IIT Madras as applicable. However, the tenderers shall indicate applicable taxes and their rates at the time of submission of bids.

1.4.2 The Technical and Financial bid shall be placed in separate covers and super scribed as “Technical Bid” and “Financial Bid” as the case may be, along with the name of work and sealed. Both the sealed covers shall be placed in an outer cover and super scribed with the name of the work with tender number etc.

1.4.3 The Main cover containing both Technical bid and financial bid shall be delivered or sent to the following address within the scheduled date and time specified for receipt of the tenders:

Senior Manager, Project Purchase,  
Centre for IC & SR,  
Indian Institute of Technology Madras,  
Chennai 600 036

1.4.4 The bidders have the option of sending the bid by Registered Post, courier or handing over the bid in person. NTCPWC shall not be held responsible for any postal or delivery delays. Bids submitted by Telex/Fax/Telegram/E-mail etc. will not be accepted and shall be rejected.

1.4.5 **Only vendors who can supply and operate various sizes of Boats and who is having any one of the mentioned equipment in this tender by their own needs to respond to this tender subject to their satisfying the qualification requirements.**

## **1.5 SCHEDULE FOR RECEIPT AND OPENING OF BID**

a) Last date and time for receipt of Technical and Financial bids : 23.12.2019 at 16:00 hours

b) Date and time for opening of Technical bid : 23.12.2019 at 16:15 hours.

If the due date of tender opening falls on a holiday, the tenders will be opened at the time mentioned earlier on the next working day.

## **1.6 OPENING OF TENDER**

The main cover and the cover containing the technical bid alone shall be opened at the Conference Room of NTCPWC, 06<sup>th</sup> Floor, NAC, IIT Madras, Chennai on the prescribed due date and time in the presence of such of those tenderers who may desire to participate in the tender opening.

1.6.1 On the day of opening of the tender, the sealed financial bids received, shall all be placed in a separate cover and sealed in the presence of Tenderers who participated in the Tender opening. Only the Financial Bid of the Tenderers whose Technical offers have been accepted, will be opened at a later date under intimation to the successful bidders and also after hosting the list on the website. The Financial bids of the non-qualified bidders in Technical evaluation shall be returned to them unopened.

1.6.2 The individuals attending the opening of tenders should be duly authorized by the respective participating firms in the tender.

1.6.3 If the tenderer has any doubt about the meaning of any portion of this tender document including the specification, they may address their queries to Tender inviting authority at least one week prior to opening of this tender. Any request for clarifications, beyond the stipulated date will not be entertained.

1.7 **Tender Inviting Authority**  
Senior Manager, Project Purchase,  
Centre for IC & SR,  
Indian Institute of Technology Madras,  
Chennai 600 036

1.7.1 **Late Offer**

The offers received after the due date and time will not be considered for evaluation. The Institute shall not be held responsible for the late receipt of tenders owing to postal/courier delays and/or loss during the transit.

1.7.2 Do not quote any the optional items or additional items unless otherwise stipulated in the Tender documents /specifications.

1.7.3 All amendments, extension of time clarifications etc., will be uploaded on the website only and shall neither be published in newspapers nor individual communications sent. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/time shall be considered on account of delay in receipt of any document by post.

1.7.4 Acknowledgements - The tenderers acknowledge that they have gone through all the conditions mentioned in this document and also agree to abide by all such conditions.

## **SECTION II**

### **COMMERCIAL AND TECHNICAL CONDITIONS**

#### **2.1 GENERAL**

The scope of services shall be as detailed in Section-III.

#### **2.2 LOCATION**

Indian coastal, Inland water ways, backwaters, lagoons, channels, river and any waters with specific reference to NTCPWC works.

#### **2.3 COMPLETENESS OF TENDER**

The Tender shall be complete in all aspects. The Bidders shall furnish all relevant details called for in this document and also attach supporting documents wherever required either in original or copies duly notarized, for consideration by the Tender Inviting authority or their authorized representatives. The tenders not containing the complete details as required are liable to be rejected.

#### **2.4 SUBMISSION OF TENDER**

Tenderers are advised to forward/send their tenders well in advance so as to reach this office in time. Tenders though posted in time but delayed in transit by post/courier will not be considered, if received after the due date and time.

#### **2.5 PRICE**

Tenderer shall quote FIRM Price only. For pricing structure kindly see the SECTION-IV which should be enclosed with technical bid. Unit rates for individual items and Taxes should be quoted separately in SECTION -V under the Financial Bid and Total price of the work shall also be filled in at the appropriate place.

#### **2.6 VALIDITY OF TENDER**

The tenders should be valid for a period of 90 days (ninety days) from the date of opening of tender. In case any bidder quotes a lower validity period than that specified, their offer shall be liable for rejection. In exceptional circumstances, the purchaser may solicit the bidder's consent for an extension of the period of validity. The request and response thereto shall be made in writing (including mail). All amendments/corrigenda to the tender shall also be enclosed in the bid during submission.

#### **2.7 EMPLOYER RESERVES THE RIGHT TO**

- a) Reject or Accept the lowest or any other tender;
- b) Reject any or all the tenders without assigning any reasons thereof;
- c) Relax or waive any of the conditions stipulated in the tender specification as deemed necessary in the best interests of the project for good and sufficient reasons; and.
- d) Revise the quantum of works/completion period of work of any or all the items covered by this Tender during the pendency of contract and to foreclose the contract if deemed necessary.

#### **2.8 EVALUATION AND COMPARISON OF TENDER OFFERS**

- a) The evaluation of the Tender will be done as per IIT Madras guidelines in vogue.
- b) The evaluation shall include contract value of works with applicable sales/service tax, etc; and
- c) In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

## **2.9 PERFORMANCE BANK GUARANTEE**

Performance Security will not be insisted upon. However, Security Deposit will be deducted from each bill at the rate of 5% of the value of each bill which will be refunded at the end of each year or completion of the contract whichever is earlier.

### **2.10 PAYMENT TERMS**

- a) The Contractor can submit the bills for payment normally once in a month for the work they have completed during the preceding month(s).
  - b) The bills will be passed for payment subject to the compliance of the bill with all tender requirements and payment shall be released normally within 15 days of submission of the bill.
- 2.10.1 Payment will be made either in the form of NEFT/RTGS or cheque on any of the Commercial/Nationalized banks or their branches in India as may be decided by NTCPWC from time to time. If the contractor requests for Payment by DD, Exchange commission for issue of bank draft shall be to the account of the contractor.
- 2.10.2 Only offers conforming to the above terms of payment will be preferred. Offers containing any deviation from the specified payment terms are liable to be rejected by the Authority/ NTCPWC.

## **2.11 SPECIAL CONDITIONS**

### **2.11.1 PRE QUALIFICATION CRITERIA**

The prospective bidder should have supplied at least one (1) boat during the last three years to one of the Central government, State government organizations/departments, Major/Minor port & Fishing harbours, universities, National agencies/institutes, etc.; for surveying, sampling, and /or any scientific- research related activities. Relevant work orders/agreements along with the completion certificate issued by the competent authorities shall be enclosed either in original or as notarized copies as proof of experience. The bidder can either own a boat or enter in to partnership with boat owners who will supply the boats. A copy of the boat registration certificate, sea sailing/going license and other relevant documents shall be enclosed with the Technical Bid. The bidder should have any one of the equipment mentioned in the Section - III and the proof of the ownership must be provided in the technical bid.

### **2.12 FORCE MAJEURE**

Neither the Contractor nor the NTCPWC shall be considered in default in performance of its obligations hereunder if such performance is prevented or delayed for any causes beyond the reasonable control of the party affected, such as war, hostilities , revolution, riot, civil commotion, epidemic, major fires, explosions, floods, earthquakes or because of any law, order, proclamatory regulations or ordinance of Government or because of any act of God, provided notice in writing of such cause with necessary evidence that the obligation under the Contract is thereby affected or prevented or delayed, is given within 14 days from the happening of the event and in any case it is not possible to serve the notice within 14 days period, then within the shortest possible period without delay. In case the Force Majeure conditions prolong beyond a continuous period of 6 months, the NTCPWC shall be entitled to decide the further course of action including revisions in the terms of Contract, if any.

- 2.12.1 As soon as the cause of the Force Majeure has been removed, the party whose ability to performance its obligation has been affected shall notify the other party about the actual delay occurred on account of such activities.

2.12.2 Even if the time for completion of work is suitably extended (not exceeding the period during which the work was stopped on account of Force Majeure clause), such extension will not entitle the contractor to in any financial claim against the NTCPWC on account of such a delay for any reason whatsoever.

## **2.13 TAXES**

The Price quoted shall remain firm and **shall be inclusive of fuel skilled/unskilled manpower for maneuvering the boats and also excluding GST. GST is applicable and shall be indicated which shall be either paid by NTCPWC, IITM directly or reimbursed at actual to the successful bidder/contractor. Necessary income tax will be deducted at source** on each bill as per the regulations in force and TDS certificate will be issued. If the Boat supplier is exempted from payment of income tax, the documentary evidence for the same has to be furnished.

## **2.14 LIQUIDATED DAMAGES**

If the contractor fails to supply suitable boats required by NTCPWC within the specified time, or fails to replace the defective / damaged boats, within the period specified by the NTCPWC and / or deserts the work or delays the work for reasons solely attributable to them, NTCPWC shall levy the Liquidated Damages (not by way of penalty) at the rate of 0.5% of the total contract value per week or part thereof subject to a maximum of 10% of the overall contract value. If the work has been abandoned or quality of the boat(s) supplied is not up to its satisfaction. NTCPWC shall also reserve its rights to terminate the contract after giving 10 days' notice, in addition to levying the Liquidated Damages and forfeiting the Performance Bank Guarantee. The decision of the NTCPWC in this regard is final and binding on the contractor.

## **2.15 JURISDICTION FOR LEGAL PROCEEDINGS**

No suit or any proceedings in regard to any matter arising in any respect under this contract shall be instituted in a Court save in the City Civil Court of Chennai or the Courts of Small Causes at Chennai. It is agreed that no other court shall have jurisdiction to entertain any suit or proceedings even though part of the cause of action might arise within their jurisdiction. In case any part of cause of action arises within the jurisdiction of any of the courts in Tamil Nadu and not in the courts in the Chennai City, it is agreed to between the parties that such suits or proceedings shall be instituted in a court within Tamil Nadu and no other court outside Tamil Nadu shall have jurisdiction, even though any part of the cause of action might arise within the jurisdiction of such courts.

The bidders shall furnish an undertaking on a non-judicial stamp paper of value Rs.100/- accepting the above condition as per schedule furnished in APPENDIX-I This should be furnished after issuing of the work order – and is applicable only to the selected L1 bidder

## **2.16 ARBITRATION**

Arbitration is not applicable to this contract.

## **2.17 COMPLETION PERIOD OF PROJECT**

The duration of completion period of this project is twelve (12) calendar months from the date of acceptance of work order. All the payments for short term and or long term services as per SECTION IV will be made only after getting the confirmation from the boat representative and NTCPWC, IITM on the operations & execution as per actuals. The certificate of final completion of project works will be given only by NTCPWC (IITM) office or their representative by the letter and/ or mail.



**2.18 ACKNOWLEDGEMENT**

The tenderer is deemed to have accepted all the terms and conditions of this tender including.

- Specific acceptance of terms of payment.
- Terms of Liquidated Damages for delay in completion of work and /or supply of boat/vessel.
- Validity of tender.

Even if no indication is given regarding the above by the tenderer in his offer, it is deemed that the tenderer is agreeable to all the terms and conditions stipulated by NTCPWC, IITM mentioned in this tender.

**2.19 LANGUAGE OF TENDER**

All information in the bid shall be in ENGLISH only. All corrections, over typing etc. in the tender should be duly attested by the authorized signatory of the Bidder/Tenderer.

**2.20 DEVIATIONS IN TENDER**

Any deviation from the tender conditions shall not be entertained.



**Section – III**  
**Technical Specification**

**Name of Work: HIRING OF SURVEY VESSELS WITH AND WITHOUT EQUIPMENT**

Bids are invited for supply of Boats along with the Equipment on daily hire basis to NTCPWC (IITM). The successful bidder engaged to provide the Boat Supply along with equipment will be known as “CONTRACTOR”. The field measurement program of NTCPWC of IITM in near shore, offshore, inland waters, rivers, ports, etc involves continuous and periodical field measurement campaigns in India. NTCPWC requires different types of Boats and different equipment for different works as and when required. The boats should have the capacity to operate up to 30m water depth continuously for minimum period of 10 hours per day. The boat services involve the following items, which are however exhaustive.

**I. Boat Supply without Equipment**

- a. Sheltered Waters
- b. Open Waters

**II. Boat Supply with Equipment**

- a. DFSBESBS (Dual Frequency Single Beam Echo Sounder Bathymetry Survey)
  - Transducer
  - Sound Velocity Profile
  - Dynamic Motion Sensor
  - DGPS/RTKGPS
  - Data Collection Software
  - Chart Preparation, Printing and Report Submission
- b. MBESBS (Multi Beam Echo Sounder Bathymetry Survey)
  - Transducer
  - Dynamic Motion Sensor
  - Sound Velocity Profile
  - DGPS/RTKGPS
  - Gyro Compass
  - Data Collection Software
  - Data Processing Software
  - Data Collection and Processing Engineers
  - Chart Preparation, Printing and Report Submission
- c. GPI (Geo – Physical Investigations) & Report Submission:
  - SSS (Side Scan Sonar)
  - SBP (Sub Bottom Profile)
  - MGM (Magnetometer)
- d. DM (Discharge Measurement) & Report Submission
  - Current Meter
  - ADCP (Acoustic Doppler Current Meter)
  - ADV (Acoustic Doppler Velocity Meter)
- e. BSS (Bed Sediment Sampling) & Report Submission:
  - Sampling at different depths
- f. WS (Water Sampling) & Report Submission:
  - Sampling at different depths at same locations and also different locations

## Special Conditions

- (i) All the boat/survey vessel and equipment shall comply with minimum requirements as provided in **DETAILED SPECIFICATIONS (Annexure – I)**.
- (ii) **Boat Service for Sheltered Waters:**
  - a. Ports, Harbour, Basin, Berth Pockets, Channel, Estuary, Lagoon, etc...
  - b. The CONTRACTOR shall use boats of suitable size with capable to operations up to 30m water depth with all required necessary mandatory accessories, permissions, etc...
- (iii) **Boat Service for Open Water:**
  - a. Sea, Ocean, Coasts, Marine, Navigational Channels, River, etc...
  - b. The CONTRACTOR shall use boats of suitable size with capable to operations up to 100m water depth with all required necessary mandatory accessories, permissions, etc...
- (iv) The qualified, experienced and required manpower needs to be provided for the operations and executions of the NTCPWC services.
- (v) The above mentioned equipment's and services (II. a, b, c, d, e & f) are required with minimum of any two at a time and will be intimated by NTCPWC.
- (vi) No mobilization and demobilization charges payable upto 1000km from Chennai at Tami Nadu. Keeping "Chennai" as a base for NTCPWC execution of mentioned services but not exhaustive.
- (vii) **Additional Mobilization:** If any work is ordered in the place of 1000km beyond the base place viz. Chennai, Mobilization charges is payable @ 20000 +[  $X - 1000$  ] /500 x 10000.
- (viii) The above mobilization charges are applicable upto two (2) types of services ordered beyond a lead of 1000kms.
- (ix) If number of services ordered is more than two (2) additional mobilization charges are payable for every additional two (2) types of services or part thereof at the same rate mentioned above.
- (x) **De-mobilization:** No separate charges are payable for demobilization and the amount mentioned in the "vi" above is deemed to cover the demobilization cost.
- (xi) The boat/vessel should have automatic robotic mechanical capacity for lifting and lowering a minimum one (1) Ton weight equipment's, moorings, buoy, etc...
- (xii) The boat/vessel should have helmsman, fuels, suitable navigational, safety measures, life jackets, shore & offshore communications, walkie talkies, hand-held GPS, etc...
- (xiii) The boats should be motorized (or) have an outboard motor, Seagoing Indian Water Navigational, Surveying and related licenses and other approvals required for the use of NTCPWC is the responsibility of the Contractor.

- (xiv) In case of loss of equipment, intimation to the local police, near/far/ all coastal communities, search operations and other relevant and necessary retrieval, search – and - find operations are the sole responsibility of the Contractor.
- (xv) All insurance coverage for the boat and helmsman and other manpower are the responsibilities of the CONTRACTOR.
- (xvi) Availability / engagement of suitable support crafts (one (or) two) to assist the above services is the responsibility of the CONTRACTOR for the present services.
- (xvii) NTCPWC will provide the specialized, technical manpower based on the availability.
- (xviii) The CONTRACTOR is required to mobilize and supply the specific type of boats and service as envisaged by NTCPWC should be successfully executed as and when required for the operations of oceanographic equipment's and measurements.
- (xix) A detailed tentative program of the required services will be handed over to the contractor by NTCPWC (IIT Madras) in advance.
- (xx) The approximate number of days for which the services are required at each site will differ and may vary time to time as required which needs to be carried out by the contractor.
- (xxi) The bids under this tender should be valid for a maximum period **of 12 months** (Extendable for additional 24 months period) from the day of award of the work. The rates quoted in the Financial Bid shall remain firm for the entire duration of the contract.
- (xxii) The CONTRACTOR shall comply with all Terms and Conditions contained in the tender document. Bids not conforming to the above terms and conditions will not be considered for further evaluation.

**SECTION IV**

**UNPRICED BILL OF QUANTITY /RATES (To be enclosed with Technical bid)**

**Part A – In Sheltered Waters**

<b>S.No</b>	<b>Items / Nature of Work</b>	<b>Unit</b>	<b>Rate (Rs) excluding GST</b>	<b>Amount (Rs.)</b>	
1.	Boat Service Without Equipment:	Day	<b>NOT TO BE FILLED</b>		
2.	Boat Service with Equipment:				
	a. DFSBESBS	Line Kilometer			
	b. MBESBS	Line Kilometer			
	c. GPI:				
	i. SSS	Line Kilometer			
	ii. SBP	Line Kilometer			
	iii. MGM	Line Kilometer			
	d. DM	Line Kilometer			
	e. BSS	NO.			
	f. WS	NO.			

**Part B – In Open Waters**

S.No	Items / Nature of Work	Unit	Rate (Rs) excluding GST	Amount (Rs.)
1.	Boat Service Without Equipment:	Day	<p style="font-size: 2em; color: blue; opacity: 0.5;">NOT TO BE FILLED</p>	
2.	Boat Service with Equipment:			
	a. DFSBESBS	Line Kilometer		
	b. MBESBS	Line Kilometer		
	c. GPI:			
	i. SSS	Line Kilometer		
	ii. SBP	Line Kilometer		
	iii. MGM	Line Kilometer		
	d. DM	Line Kilometer		
	e. BSS	NO.		
	f. WS	NO.		

- This contract valid for one year. At the discretion of the NTCPWC the contract can be extended for two more years in two spells.
- The bidders are required to quote the rate for the first year only. Whenever the contract is extended for additional one year or two years as the case may be, an escalation at the rate of 10% of the quoted rates for each of the items shall be paid automatically. If the contract is extended in the second year, the escalation of 10% is payable on the previous year rate.
- Predominantly the works shall be carried out in Major & Minor Ports, Fishing Harbours, Rivers, Estuaries, Backwaters, canals, lagoons. However, NTCPWC reserves its rights to deploy the above equipment and vessels at any other place along the east and west coast of India and in such case advance notice will be given.
- Each work along with its location, duration and all other relevant details relating to the work shall be intimated to the tenderer at least one week in advance. It is the responsibility of the successful tenderer to mobilize supportive equipment and vessels within the stipulated time. Even if the works delayed during the tenure of the contract period of the particular assignment no idle time payment shall be made for reasons whatsoever.
- The bidders shall be capable of deploying more than one set of boats and equipment's at any given point of time. The NTCPWC, at his discretion may order the contractor to carry out the work simultaneously in maximum of two locations.

- Bathymetric, GPI & DM surveying can be quoted for one running line kilometer.
- It is the responsibility of the tenderer to pose necessary watch and ward to safeguard their boat and equipment and no claim in this regard shall be entertained for reasons whatsoever.
- Whenever ordered to execute the work within any designated port or secured area, the Contractor shall follow the procedure in vogue for entry and exit of their men, material and equipment. Necessary charges towards Entry Permits and other local tariffs shall be borne by the Contractor and NTCPWC will facilitate to obtain necessary permission.

### **Commercial Terms**

- No Advance Payment will be made for any of the services under this Contract.
- The CONTRACTOR can submit the bills for payment normally once in a month for the work they have completed during the previous month(s).
- The bills will be passed for payment subject to the compliance of the bill with technical/finance requirements.
- No idle time shall be paid for reasons whatsoever.
- Chennai, Tamil Nadu is the base for all mobilization and demobilizations.
- NTCPWC will have the right to accept or reject any bids without assigning any reasons.
- NTCPWC -IIT Madras will have the right to cancel the tender in full or part or to change the quantity of items mentioned in the tender without assigning any reason. The rates shall remain firm for the entire contract period.
- CONTRACTOR shall enclose the unpriced copy of the Commercial bid (SECTION IV) with Signature along with Technical bid.
- An EMD of Rs.1, 00,000/- (Rupees One Lakhs) should be submitted along with the technical bid as per tender.
- Performance Security will not be insisted upon. However, Security Deposit will be deducted from each bill at the rate of 5% of the value of each bill which will be refunded at the end of each year or completion of the contract whichever is earlier.
- The rates for the individual items will however remain firm for the entire period of contract i.e initially for 12 months. (Extendable for additional 24 months period).
- The rate for each item of the BOQ shall be inclusive of all levies and taxes excluding GST.
- **As the items of the BOQ are inter -dependent they cannot be considered in isolation. Hence the award of contract will be made by considering the work in totality.**

**SECTION -V**

**BILL OF QUANTITY /RATES (PRICED)**

**(To be filled and enclosed separately in the sealed Price Bid cover and not enclosed with the Technical bid)**

**Part A – In Sheltered Waters**

<b>S.No</b>	<b>Items / Nature of Work</b>	<b>Unit</b>	<b>Rate (Rs) excluding GST</b>	<b>Amount (Rs.)</b>
1.	Boat Service Without Equipment:	Day		
2.	Boat Service with Equipment:			
	a) DFSBESBS	Line Kilometer		
	b) MBESBS	Line Kilometer		
	c) GPI:			
	i. SSS	Line Kilometer		
	ii. SBP	Line Kilometer		
	iii. MGM	Line Kilometer		
	d) DM	Line Kilometer		
	e) BSS	NO.		
	f) WS	NO.		

I / We the CONTRACTOR accept all the Terms and Conditions as per this Bid comprising all sections of the tender including SECTION IV

**Date:**

**Authorized Signatory**

**Place:**

(for \_\_\_\_\_)

**Company Seal**



**Part B – In Open Waters**

<b>S.No</b>	<b>Items / Nature of Work</b>	<b>Unit</b>	<b>Rate (Rs) excluding GST</b>	<b>Amount (Rs.)</b>
1.	Boat Service Without Equipment:	Day		
2.	Boat Service with Equipment:			
	a) DFSBESBS	Line Kilometer		
	b) MBESBS	Line Kilometer		
	c) GPI:			
	i. SSS	Line Kilometer		
	ii. SBP	Line Kilometer		
	iii. MGM	Line Kilometer		
	d) DM	Line Kilometer		
	e) BSS	NO.		
	f) WS	NO.		

I / We the CONTRACTOR accept all the Terms and Conditions as per this Bid comprising all sections of the tender including SECTION IV

**Date:**

**Authorized Signatory**

**Place:**

(for \_\_\_\_\_)

**Company Seal**

(This should be furnished by the selected L1 Bidder (contractor))

**APPENDIX-I**

**UNDERTAKING TOWARDS JURISDICTION FOR LEGAL PROCEEDINGS**

**(To be typed in NON-JUDICIAL STAMP PAPER VALUE RS.100/-)**

This undertaking executed at.....on this ..... (Date) .....  
(Month) Two thousand and ..... by M/s ..... Registered under Companies Act,  
1956 having its registered office at ..... hereinafter called the  
contractor (which expression shall where the context so admits mean and include its successors in office and in  
favour of Indian Institute of Technology Madras, Chennai- 600 036. herein after called the purchaser (which  
expression shall where the context so admits means and includes its successors if Office and assigns).

WHEREAS a contract for the supply of .....has been awarded in favour of the contractor  
under the Purchase order No.....dated.....

AND WHEREAS in accordance with the terms of the above Purchase order, the contractor has to furnish an  
undertaking to the effect that no suit or any proceedings in regard to any matter arising in any respect under  
this contract shall be instituted in any matter in any respect under this contract shall be instituted in any court  
other than in the High court, Madras or District court at ..... or Sub-court at .....or at  
the District Munsiff court at ..... as the case may be.

IN CONSIDERATION of the Board having agreed to accept the undertaking the contractor hereby undertakes  
that no suit or any proceedings in regard to any matter arising in respect of this contract shall be instituted in  
any court, save in the High court, Madras or District court at.....or sub court at ..... or  
at the District Munsiff court at .....as the case may be it is agreed that no other court shall have  
jurisdiction to entertain any suit or proceedings, even though , part of the cause of action might arise within  
their jurisdiction. In case any part of the cause of action might arise within the jurisdiction of any other Courts  
in Tamil Nadu and rest within the jurisdiction of Courts outside the State of Tamil Nadu, then it is agreed to  
between the parties that such suits on proceedings shall be instituted in a court within the State of Tamil Nadu  
and no other Court outside the State of Tamil Nadu shall have jurisdiction.

IN WITNESS WHEREOF Thiru..... of M/s ..... hereby put his  
hand and seal for due observance of the undertaking in the presence of the following witnesses

COMPANY SEAL :  
DESIGNATION :  
COMPANY :  
DATE :

SIGNATURE :

WITNESSES:

- 1)
- 2)

## DETAILED SPECIFICATION

### Annexure - I

#### I. Boat Supply without Equipment

##### a. Sheltered Waters:

The required boats total length is about 10m to 12m with a breadth of 4m to 6m which can able to operate to a depth of 2m to 3m with a draft of less than 1.5 to 2.0m. The boat should be a neat and clean with resting accommodation and toilet facilities for minimum of 3 to 5 scientists/engineer/staff in proper condition.

##### b. Open Waters:

The required boats total length is about 16m to 18m with a breadth of 5m to 7m which can able to operate to a depth of 2m to 3m with a draft of less than 2.0m. The boat should be a neat and clean with resting accommodation and toilet facilities for minimum of 3 to 5 scientists/engineer/staff in proper condition

- The Engine of the boat shall be in good working condition with proper maintenance.
- The boats should be insured during the field work period and should have all necessary certificates from the appropriate authorities. All certificates photocopy should be submitted to NTCPWC before the commencement of the work.
- The boats should be equipped with on board power source with a capacity of 24V DC Battery or 230V AC supply.
- The boats shall have communication systems (VHF), Marine compass, GPS, Echo sounder, Fuel storage tank and Firefighting appliances with proper working condition. Lifesaving equipment should be provide for all the persons on board.
- Two master and two crew members must be on board during the usage of boat.
- The boats shall have sufficient space to accommodate all the equipment.
- Equipments belonging to NTCPWC will be kept on board from the commencement of work till its completion and the owner of the boats shall be responsible for the safety of all the equipment on board.
- A Navigator from the local area need to be available during the execution of the work.

If required the small mechanized fibre boat which may require to operate in river / estuary / back waters/ lagoons/ canals, etc with a total length of 10.0m & with a breadth 3.0m required.

## II. Boat Supply with Equipment

S.No	Name of Equipment
<b>a</b>	<b>DFSBESBS</b> <ul style="list-style-type: none"> <li>• Transducer</li> <li>• Motion Sensor</li> <li>• Heading Sensor</li> <li>• Sound Velocity Profiler</li> <li>• DGPS/RTKGPS</li> <li>• Paper Roll and/or E-Chart</li> <li>• Data Collection and Processing hardware and software</li> <li>• One Data Collection and One Data Processing Engineer</li> </ul>
<b>b</b>	<b>MBESBS</b> <ul style="list-style-type: none"> <li>• Transducer</li> <li>• Motion Sensor</li> <li>• Heading Sensor</li> <li>• Sound Velocity Profiler</li> <li>• DGPS/RTKGPS</li> <li>• Paper Roll and/or E-Chart</li> <li>• Data Collection and Processing hardware and software</li> <li>• One Data Collection and One Data Processing Engineer</li> </ul>
<b>c</b>	<b>GPI</b> <ul style="list-style-type: none"> <li>• Side Scan Sonar</li> <li>• Sub Bottom Sonar</li> <li>• Magnetometer</li> <li>• One Data Collection and One Data Processing Engineer</li> </ul>
<b>d</b>	<b>Discharge Measurement</b> <ul style="list-style-type: none"> <li>• Current Meter</li> <li>• ADCP</li> <li>• ADV</li> <li>• One Data Collection and One Data Processing Engineer</li> </ul>
<b>e</b>	<b>Bed Sediment Sampling</b> <ul style="list-style-type: none"> <li>• Grab Sampler</li> </ul>
<b>f</b>	<b>Water Sampling</b> <ul style="list-style-type: none"> <li>• Water Sampler</li> </ul>

**a. DFSBESBS (Dual Frequency Single Beam Echo Sounder Bathymetry Survey)**

A survey grade Dual Frequency Single-Beam Echo Sounder (33 kHz and 200/210 kHz) with motion sensor, heading sensor, Sound Velocity Profiler and DGPS/RTK systems. Also, the system should have Paper roll/ E-chart which can generate seabed profile with fix-marks during data acquisition. Bar-check must be carried out at least daily before and after use at the actual location of the survey area by means of bar or plate lowered at known depth below the water surface to ensure the accuracy of the echo-sounder. Also, at the start of the survey, the positioning system like Differential Global Positioning System (DGPS) and/or Real Time Kinematic Global Positioning System (RTKGPS) need to be checked with reference to the known point to ensure the horizontal accuracy. The equipment specifications mandatory during the data acquisition is as follows:

Depth Accuracy	≤ 1cm @ 200kHz; ≤ 7cm @ 33kHz
Depth resolution	0.01m
Depth range	0.2m - 1500m
Navigation input	NMEA 0183, GLL, GGA, RMC, VTG, VHW, HDT.
Ping rate	Up to 20Hz in shallow water (10m) range

A qualified surveyor and an instrumentation engineer must be onboard during data acquisition. The data processing may be carried out in the presence of IIT officials if required. The transducer must be, compact, portable, rugged, shock-proof, robust and its weight in atmosphere may be less than or equal to 15 kg. This equipment should be capable of operations at water depth range for 200/210 kHz from -0.2m to -200m and for 30/33 kHz from 0.5 to 1500m. Sound Velocity Profiler needs to be operate from 1370 m/s to 1900 m/s with the resolution of 1m/s along rechargeable battery with LED Status indications for Battery and Communications may along with the Temperature Sensor.

DGPS/RTKGPS with an accuracy of less than or equal to 10 cm (≤ 10cm) which can be built in and / or Stand alone to integrate with Data Collection Software. The Industrial Standard Data Collection Software like Hypack or equivalent must be provided. The Internal Data Storage and Play Back with the LCD model which can capable of data collection environment of 0° C to 50° C (90% relative humidity, non-condensing) with the Depth control on PC.

**b. MBESBS (Multi Beam Echo Sounder Bathymetry Survey)**

Frequency range	200 to 400 kHz in steps of 10 kHz
Beam width	1 * 1 degree at 400 kHz
Max ping rate	50 Hz
Swath coverage sector	Up to 130 degrees (single head) / 200 degrees (dual head)
Sounding patterns	Equiangular, equidistant and high density
No. of soundings per ping	400 (single head, single swath) 800 (single head, dual swath) 1600 (dual head, dual swath)
Roll stabilised beams	+/-15 degrees
Pitch stabilised beams	+/-10 degrees
Yaw stabilised beams	+/-10 degrees (Dual head)

## Hydrographic Work Station (HWS)

- **Hardware:** It should be equipped to handle heavy processing requirements and high speed, large-volume data storage demands.

Special features of the HWS should be;

- Data logging from all the Hydrographic components on board the vessel.
- Gridding of sounding data.
- Filtering of sounding data.
- 3-D visualization of sounding data.
- Storage and visualization of high resolution back-scatter data from the seabed and the water column.

## Features

- **CPU:** Intel Core i7 64-bit Quad-Core processor
- **Memory:** 4\*4 GByte
- **Graphic card:** Nvidia Quatro K620
- **Storage:** 2\*2TB Hard disks
- **USB Interfaces:** 5\*USB2.0\*USB3.0
- **Motion Sensor**

It should be specially designed for high precision motion measurements in marine application with high accuracy roll, pitch and heave measurements and be compatible with other systems.

<b>ROLL AND PITCH OUTPUT</b>	
Angular orientation range	±180°
Angular rate range	±150 °/s
Resolution roll, pitch	0.1°
<b>HEAVE OUTPUT</b>	
Output range	±50 m
Periods (real-time)	0 to 25 s
Periods (delayed)	0 to 50 s
Heave accuracy (real-time)	5 cm or 5% whichever is highest
Heave accuracy (delayed)	2 cm or 2% whichever is highest

### c. GPI (Geo – Physical Investigations) & Report Submission:

- **SSS (Side Scan Sonar):**

The SSS should be able to generate ultra-high resolution images in order to delineate the seabed geology and to identify the man-made object if any on seafloor. The system also should have standard heading, pitch, roll altitude & pressure sensors. The tow fish must be suitable for pole mounting and towing at different water depths based on swath coverage. Minimum 25% of overlap should be maintained during the seabed coverage. One Geophysicist and One instrumentation engineer must be onboard during data acquisition to monitor the data quality. The SSS data must be processed and certified by an experienced Geophysicist. The data processing may need to be carried out in the presence of IIT Madras officials if required. The SSS instrument specifications for data acquisition:

Frequencies (Dual Simultaneous)	Choice of either a 400/900 kHz or 600/1600 kHz tow-fish
Operating Range	150m @ 400 kHz, 75m @ 900 kHz; 120m @ 600 kHz, 35m @ 1600 kHz
Horizontal Beam Width	0.46° @ 400 kHz, 0.28° @ 900 kHz; 0.33° @ 600 kHz, 0.20° @ 1600 kHz
Vertical Beam Width	50°
Resolution Across Track	400 kHz: 2.3 cm, 900 kHz: 1.5 cm, 600 kHz: 1.5 cm, 1600 kHz: 0.6 cm

- **SBP (Sub Bottom Profile):**

The sub-bottom profiler should be able to generate ultra-high resolution images of sub-seafloor in order to delineate the geological properties of sub-seafloor and to identify the man-made objects if any with accurate position. Also, the tow fish must be suitable for side-pole mounting and towing, based on sub-seabed and water depth conditions at site. One Geophysicist and One instrumentation engineer must be onboard during data acquisition to monitor the data quality and the data needs to be processed and reports signed an experienced Geophysicist. The data processing may be carried out in the presence of IIT officials if required. The SBP instrument specifications for data acquisition:

Frequencies and Transmission type	2 kHz to 33kHz with SEG-Y format & full spectrum, FM signal (Chirp)
Vertical resolution	6 to 10cm
Depth rating	100m
Vertical Beam Width	50°
Pulse rate	Up to 40/s

- **MGM (Magnetometer):**

The marine magnetometer should have the higher absolute accuracy of 0.2nT to identify the fallen target/objects with higher positioning accuracy. The tow fish must be suitable for towing, based at shallow and deep-water conditions. The following technical specifications shall be mandatory on instrument for data acquisition.

Absolute Accuracy	0.2nT
Sensor Sensitivity	0.01nT
Counter Sensitivity	0.001nT
Resolution	0.001nT
Range	18,000nT to 120,000nT

A Geophysicist and an instrumentation engineer must be onboard during data acquisition to monitor the data quality and the data should be processed by an experienced Geophysicist. The data processing may be carried out in the presence of IIT officials if required

**d. DM (Discharge Measurement) & Report Submission**

- **Current Meter:** Single Point Current Measurements for the Velocity & Direction measurements.
- **ADCP (Acoustic Doppler Current Meter):**

The current profiling/discharge measurements shall be carried out using Acoustic Doppler Current Profiler (ADCP) with the profile range between 1m to 150m. The system should have minimum four beams to acquire reliable and accurate current profiles.

The equipment specifications shall be mandatory on instrument for data acquisition;

Velocity Accuracy	0.3% of the water velocity relative to ADCP $\pm 0.3\text{cm/s}$
Velocity Resolution	0.1cm/s
Velocity Range	$\pm 5\text{m/s}$ (default) $\pm 20\text{m/s}$ (max)
Number of Depth Cells	1–255
Navigation input	Up to 10Hz
Beam Angle	20°
Saltwater Protection Package, Temperature Sensor, Compass and/or Tilt Sensor, Internal (Battery) Power Supply	

- **ADV (Acoustic Doppler Velocity Meter):**

The Acoustic Doppler Velocitymeter (ADV) for the vertical column current measurement either by boat fixed (downward looking) and/or standalone with moorings for the measurement from upward looking from seabed mounted. The ADV must be minimum three beams to acquire reliable and accurate current profiles.

Velocity Accuracy	1% of the measured velocity $\pm 0.3\text{cm/s}$
Velocity Resolution	0.01
Velocity Range	3 to 500 cm/s
Maximum Depth	60 m
Sampling Rate	0.2 to 50 Hz
Beam Angle	20°
Pressure Sensor	In-Built
Model for	Lab and Field
Saltwater Protection Package, Temperature Sensor, Compass and/or Tilt Sensor, Internal (Battery) Power Supply	

**e. BSS (Bed Sediment Sampling) & Report Submission:**

The sampler should be capable to collect the sea bed sample of minimum 1 kg from any water depths upto 100m. The sampler material must be Stainless steel or marine grade. The sampler weight may be less than 10 to 12kg in atmosphere. The marine grade wire ropes must be provided to operate the sampler upto minimum 30m water depths.

**f. WS (Water Sampling) & Report Submission:**

The water sampler should be capable of minimum 1 litre sample collection at any locations (Surface Water, Deep Water Sample and also any water depth sample collection. The sampler should be capable to operate upto 100m water depths.