

	<p style="text-align: center;">INDIAN INSTITUTE OF TECHNOLOGY MADRAS Chennai 600 036</p> <p style="text-align: center;">Telephone: (044) 2257 4818 E-mail: pshanmugam@iitm.ac.in</p>	
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Prof. P. Shanmugam
Project Coordinator

Ref: OED/2018/019/Project/PSHA
Dated: 19.02.2019

Limited Tender No: IC1819OEC073ONGCRSUN/001

Due Date: 05.03.2019, 4:00pm

Technical Bid opening meeting on Due Date: 05.03.2019, 4:30pm

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of "Real Time Kinematic (RTK) GPS along with Differential Global Positioning System (DGPS)" conforming to the specifications given in (Annexure-I):

Instructions to the Bidder

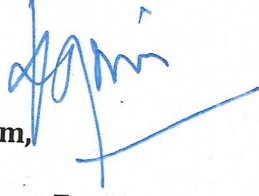
- I. **Preparation of Bids:** - The Limited tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid.
- II. **Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier or in person so as to reach the following address before the due date and time specified in our Schedule:
**Prof. P. Shanmugam,
Room No: 110
Department of Ocean Engineering,
IIT Madras
Chennai - 600 036.**
- III. **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and it will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. The bidders will be invited for opening of Technical bids. In respect of opening of financial bid, those bidders who are technically qualified only will be called for.
- IV. **Prices:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to **Department of Ocean Engineering.**

The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of tax & duties should be clearly indicated. The price should be quoted without custom duty and excise duty, since I.I.T. Madras is exempted from

payment of excise duty, and the custom duty will be paid at concessional rate against duty exemption certificate. In case of import supply, the price should be quoted on EX-WORKS and CIP basis indicating the mode of shipment.

- V. **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment and it should be included in the originally quoted basic price, if any.
- VI. **Terms of Delivery:** - The item should be supplied to our Department as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.
- VII. **Technical Bid Opening:** The technical bid will be opened on **05.03.2019; 4:30pm** at the Department of Ocean Engineering, IIT Madras and the financial bids of those tenders who are technically qualified will be opened at a later date under intimation to them.
- VIII. IIT Madras reserves the full right to accept / reject any tender at any stage without assigning any reason.

Yours sincerely,


Prof. P. Shanmugam,
Room No. 110
Department of Ocean Engineering,
IIT Madras
Chennai - 600 036.
044 2257 4818

डॉ. पी. शनमुगम
Dr. P. SHANMUGAM
प्राध्यापक / Professor
समुद्र अभियंत्रिकी विभाग
Department of Ocean Engineering
भारतीय प्रौद्योगिकी संस्थान मद्रास
Indian Institute of Technology Madras
चेन्ने-600 036, भारत / Chennai-600 036, India

SCHEDULE

Important Conditions of the tender

1. The due date for the submission of the tender is **05.03.2019, 4:00pm**.
The offers / bids should be submitted in two bids systems (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Limited Tender for supply of “**Real Time Kinematic (RTK) GPS along with Differential Global Positioning System (DGPS)**” should be written on the left side of the Outer bigger cover and sealed.

2. **Indian Agent:** If an Indian agent is involved, the following documents must be enclosed:
Foreign principal’s proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
 - ✓ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.

3. The offer/bids should be sent only for a machine that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.

4. Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.

5. Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.

6. **Validity:** Validity of Quotation not less than 90 days from the due date of tender.

7. **Delivery Schedule:** - The tenderer should indicate clearly the time required for the delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.

8. **Risk Purchase Clause:** - In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.

9. **Payment:** -

- I. No Advance payment will be made for Indigenous purchase. However 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).
- II. **Advance Payment:** - No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.

10. **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within 15 to 20 days from the date of receipt of the item at site of IIT Madras.

11. **Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately. (For more details please refer our Technical Specifications).

12. **Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.

13. **Acceptance and Rejection:** - IIT Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or rejects it in full without assigning any reason.

14. **Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

15. Disputes and Jurisdiction: -

- a. **Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate one arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceedings shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai..
- b. **The Applicable Law:** This Purchase Order shall be construed, interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
- c. Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

16. All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. 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 mail.

Acknowledgement: - It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER
ALONG WITH SEAL OF THE COMPANY WITH DATE**

Specifications for Differential Global Positioning System (DGPS) with RTK			
SI.No	Description		Specifications
	Receiver:		
1	GNSS receiver		Rugged single housing with inbuilt high gain integrated antenna for independently GNSS satellites tracking
2	RTK Range		Up to 30 km
3	No of channels		220 or more
4	Multi - frequency Satellite Signals Tracking and Recording		GPS: L1,L2,L2C,L5; GLONAS: L1,L2; Beidou: B1, B2; Galileo: E1,E5A,E5B ; IRNSS tracking
5	SBAS Tracking		QZSS,WAAS,EGNOS,GAGAN,MSAS
6	SBAS Corrections		GAGAN
7	Measuring Modes		Static, Kinematic, Real time (RTK) with GPRS and UHF Module
8	Position update Rates		Up to 20 Hz (0.05 sec) or better
9	DGPS Position	Horizontal	0.25 m + 1 ppm RMS or better
		Vertical	0.50 m + 1 ppm RMS or better
10	Data recording rate		Up to 20 Hz or better
11	Static Accuracy	Horizontal	3 mm + 0.5 ppm RMS or better
		Vertical	5 mm + 0.5 ppm RMS or better
12	RTK Accuracy	Horizontal	8 mm + 1 ppm RMS or better
		Vertical	15 mm + 1 ppm RMS or better
13	Post Processing Accuracy (RMS)	Horizontal	3 mm + 0.1 ppm or better
		Vertical	3.5 mm + 0.4 ppm or better
14	Initialization Time		≤ 8 Seconds
15	Temperature	Operation	0° C to + 55° C or better
		Storage	0° C to + 55° C or better
16	Ingress Protection		IP67 Standards
17	Ports		1 Serial port for Hand held device,1 serial port for external radio/modem, External Power port, Network, Wi-Fi and Integrated Bluetooth
18	Inbuilt Radio		Fully Integrated, fully sealed Internal radio signal transceiver with minimum of 0.5 watt transmitting power with 3 - 5 km coverage
19	Cellular Modem		Fully Integrated, fully sealed Internal GSM/GPRS modem

20	Navigation		Full Navigation Information in position and stakeout displays , position course speed, bearing and distance to waypoint
21	Upgradeability		Receivers should be upgradeable to any further enhancements in satellite constellations.
22	Data format		NMEA,RTCM versions 2.x,3.x, CMR, CMR+, CMRx or compressed format
23	Power Supply	Internal	Rechargeable, removable Li-ion battery with 8 hours continuous operation time in RTK rover mode with internal radio and Bluetooth in use
		External	External DC 12 V to 28 V on power port
		Chargers	Chargers for both external and internal batteries
Controller:			
24	Processing Speed		800 MHz or better
25	Memory		2 GB or better internal memory and expandable up to 32 GB through SD card
26	Display		Sun-light readable color 5 inch or large size touch screen VGA display
27	Keypad		Full alphanumeric keypad
28	Communication		USB Host, USB Client, 9-pin serial RS- 232 Integrated Bluetooth, Integrated GSM/GPRS modem, Integrated GPS, Compass, Camera
29	Operating system		Windows Mobile 6.5 Professional operating system or latest version
30	Ingress Protection		IP65 or better
31	Operating temperature		0° C to + 55° C or better
32	Power Supply	Battery	Rechargeable Li-ion battery pack with 8 hours continuous operation time under normal operating conditions
		Charger	Suitable battery charger
33	External UHF radio modem kit with external battery and battery charger Suitable 35 watt capacity UHF radio modem with antenna and other accessories		
34	Tribrach with optical plummet		
35	Tribrach Adapter		
36	Pole mount bracket for controller		
37	Wooden Tripod		
38	Range Pole		
39	HI measuring tape		
40	Field carrying hard case		
41	Set of interconnecting cables		
42	External power supply cables for GNSS receiver		

43	<p>Controller software with license</p> <p>The software should allow configurable survey style for RTK, PPK, Static / fast static, polygon, area calculation, satellite view, PDOP, HDOP etc.</p> <p>The software should be able to log data for all the signals tracked</p> <p>Active Background maps of JPEG/TIFF, DXF/DWG formats</p> <p>Import & Export to industry standard formats like CSV, DXF, KML etc.</p> <p>COGO Functionality</p> <p>Supported Co-ordinate system : Datum , Projection and local grid coordinates</p> <p>Data Storage: Should be able to store GNSS data collected by the RTK system</p>
44	<p>Post Processing software with license</p> <p>Operating System: Windows 10</p> <p>Should be able to import raw data of GPS L1, L2, GLONASS L1, L2 and as well as RINEX data processing of raw data of GPS L1, L2, GLONASS L1, L2</p> <p>Import & Export to RINEX formats as well in CAD format</p> <p>Datum Transformation: Should have the facility of transferring of data from one datum to another datum for given set of common points</p> <p>Feature coding and automatic drafting. Layer management.</p> <p>Reporting: Software should be capable of generating reports directly for the surveyed data Coordinate System Manager</p> <p>Baseline Processing</p> <p>Feature to process static data of single point for control</p> <p>RTK data: Should be able to handle RTK data.</p>
45	<p>Manuals: User guide, quick start manual and troubleshooting and maintenance manual should be supplied both soft and hard copies</p>
46	<p>Warranty: Minimum 24 months onsite warranty from the date of installation and commissioning</p>
47	<p>Training: Supplier should provide training to staffs at IIT Madras on operation and maintenance for a period of 4 working days</p>
48	<p>Installation and commissioning: Supplier should carryout installation and maintenance at IIT Madras</p>