DEPARTMENT OF OCEAN ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI 600 036,INDIA

Ref : OED/2017/002/Project/VSUN **Date: 17th April 2017**

RTK GPS - 1 NO

Due date:

* Submission of technical and commercial proposal: **3 pm 3rd May 2017**
* Bid opening: **3.30 pm 3rd May 2017**

1. Quotations are invited in duplicate for the item shown in enclosed list as Annexure 1.
2. The quotations must be submitted under two bid system indicating clearly technical bid and financial bid on the envelope. Both the bids should been closed in the single envelop in a sealed cover.
3. The Quotations duly sealed and super scribed on the envelope with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above.
4. The Quotations shall be valid for 180 days from the due date and the period of delivery,warranty terms etc. should also be clearly indicated. A minimum of one year warranty is required.
5. Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided.
6. Compliancy certificate is to be provided indicating conformity to the technical specifications.
7. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
8. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples / machine/ equipment if called for should be submitted / demonstrated at free of charges, and collected back at the supplier's expenses.
9. Packing and delivery charges must be clearly indicated.
10. The rate of sales / General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for Sales / General Taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to non Government Educational Institutions run with no profit motive for which a concessional Sales Tax Certificate will be issued at the time of final settlement of the bill.
11. IIT Madras is exempt from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. IIT Madras will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.
12. Goods should be supplied carriage paid and insured.
13. Goods shall not be supplied without an official supply order.
14. Payment: Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.
15. Acceptance and Rejection:- I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully,

V. Sundar

Dr. V. SUNDAR
PROFESSOR
DEPT. OF OCEAN ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI - 600 036. INDIA.

Annexure-1

DEPARTMENT OF OCEAN ENGINEERING

Ref.: OED/2017/002/Project/VSUN

CALL FOR PROPOSAL OF THE FIELD SURVEY INSTRUMENT - "RTK GPS"

Real Time Kinematic Global Positioning System (RTK GPS)

1. Specifications:

The differential GNSS system should be of geodetic quality and RTK enabled (GSM & UHF) with GNSS Base & 2 Rover receivers, identical, interchangeable and having following specifications:

Technical Specifications	Description
Satellite tracking	Tracking of most of the presently available frequencies of globally existing GNSS constellations like GPS (L1, L2, L2C, L5), GLONASS (L1, L2, L3), BeiDou (B1, B2), Galileo (E1, E5A, E5B), QZSS, SBAS (WAAS/EGNOS/ MSAS/ GAGAN) and IRNSS (L5)
No of Channels	GNSS receiver system should have 300 or better channels
Measuring Mode	Static, DGPS, RTK GPS& GPRS Module
Technology for optimal GNSS performance	
Supported data formats: NMEA 0183, RTCM (2.2, 2.3, 3.1, 3.2, etc), CMR, CMR+, etc	
Capable to work GSM & low power UHF radio, both built into the same GNSS sensor unit	
Provision for SIM Card for GSM RTK in GNSS Sensor.	
RTK Accuracy	
Horizontal	8 mm + 1 ppm
Vertical	15 mm + 1 ppm
RTK initialization	RTK Initialization range in the GSM/GPRS mode: 30 km or better
Static Accuracy	
Horizontal	3 mm + 0.1 ppm
Vertical	3.5 mm + 0.4 ppm
GNSS interface	1. Both cable and Bluetooth communication between Receiver and Controller
	2. RS232, USB & Web UI for Receiver Status, Settings and Data Transfer
Power Characteristics	Battery for a minimum of 8hrs operation. Standby battery to be given for each GPS and controller.
Charger	Each battery to be given a separate charger unit.
GNSS Internal Memory/Update rate	Removable memory card of upto 8GB in the GNSS sensor and update rate: 20hz.
Protection	Waterproof, Shockproof, Dustproof, Humidity-proof (100%) and condensation-proof as per IP68 standards.
Drop survival	2m pole drop onto concrete.

User Interface	7 status LED Indicators, on & Off buttons, Web server: Full status information and configuration options
Operating Temperature	10°C to 50°C
Initialization Reliability	better than 99.99%
Initialization Time	typically less than 4 sec.
Humidity	Up to 100%
2. Controller unit (One controller for each receiver unit)	**Display:** 5" WVGA colour touch screen
Processor	1GHz or better
Internal memory	1 GB RAM or better, 2GB Flash on board internal memory or better and Expandable up to 32 GB
Operating System:	Windows mobile latest version, Windows EC7
Keyboard & Screen	Full alpha numeric hard QWERTY & Touch keyboard, WVGA 800 x 480 resolution, Sunlight-Readable colour TFT
Environment protection for external Controller: Water proof with IP68	
Input & Output: USB Host, USB client & RS 232 Serial, Bluetooth	
Built in Sensors on the external Controller:	Built in Camera with at least 5 MP resolution with LED flash, Integrated Accelerometer, Built in Digital Compass, gyro, Integrated Distance Meter (40m)
Protection	Waterproof, Shockproof &Dustproof
	Provision for SIM Card for GSM/GPRS RTK
	Battery for minimum 8 hrs of operation.
3. Field Survey Software for controller	
The software capable of multitasking so that multiple operations can be opened at a time e.g. COGO, Stakeout, Point etc.	
Have Graphical stakeout &perform Real Time Quality Control for stake out positions.	
Coordinate system support: predefined grid systems, datum's, projections, geoids,etc	
Geodetic geometry: intersection, azimuth/ distance, offsetting, poly-line, curve, area	
Can accept background maps in Vector and Raster formats	
RTK, PPK and Static Survey Module	
OGC Compliance	Certificate Required (Optional)
Any auxiliary components and spare parts should be given as optional items	
Annual Maintenance Requirements, if any to be mentioned for 5 years (optional)	
NB: Should indicate the authorized service centre in India if the item is 'imported'.	

Should contain the below items:

1	Integrated GNSS Receiver	3
2	Controller	3
3	Controller Bracket	3
4	Tripod, Tribrach and Adaptor	3
5	Range Pole	3
6	Post Processing Software	1 License
7	Hard Plastic carrying case	3
8	External Power Cable	3

2. Prerequisite

The vendor has to submit proof of documents for similar studies. In addition, the proof of documents for successful completion of at least two projects of similar nature should be submitted.

3. Payment terms

Please specify the payment terms. IIT Madras reserves the right to negotiate the terms of payment as acceptable to the purchase procedures prevalent from time to time.

4. Terms and conditions

Please quote the rate with the following details.

1. Quotation validity minimum 180 days.
2. Submission of Methodology, Delivery and commissioning periods.
   Tax details.
3. Please note IIT Madras is exempted from Excise Duty.

5. Force Majeure

Neither the Agency nor the owner 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, riots, civil commotion, epidemic, major fires, explosions, floods, earthquakes or because of any law, order, proclamatory regulations or ordinance of Government, 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 the said 14 days period, then within the shortest possible period without delay.

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

Although the time for completion of work shall be suitably extended (not exceeding the period during which the work was stopped on account of Force Majeure clause), such extension shall not result in any financial claim by the Agency against the Owner on any account of such a delay for any other reason whatsoever.

Pre-bid meeting will be held on 26th April 2017 at 3.00 pm – Venue 2nd Floor Seminar Hall, Department of Ocean Engineering, IIT Madras.