JHARKHAND SPACE APPLICATION CENTER

Department of Information Technology, Govt. of Jharkhand

2nd Floor, Engineers Hostel – I, Golchakkar, Dhurwa, Ranchi – 834004, Ph 2401719, Fax 2401720

Tender Notice: JSAC/Tender/03/2015 Dated 18.03.2015

Jharkhand Space Applications Center, Department of Information Technology, Govt. of Jharkhand invites online sealed Tender (Technical and Commercial) from manufacturer or their authorized dealer for this region to supply and installation of **Differential Global Positioning System (DGPS), Electronic Total Station and Laser Range Finder** at Jharkhand Space Applications Center, Engineers Hostel -1 Dhurwa, Ranchi.

Tender Reference		
1.	Date of commencement of tender document	19/03/2015
2.	Date of Pre-bid Meeting	30/03/2015 in the Office Chamber of Director, JSAC at 11.00 am
3.	The last date of submission of bids	15/04/2015 up to 3.00 p.m at JSAC, Ranchi
4.	Date and Time of Opening of Technical Bid	16/04/2015 at 11.00 a.m
5.	Date and Time of Opening of Price Bid (Commercial Offer)	To be announced after opening of Technical bid.
6.	Place of opening tender offers	Jharkhand Space Applications Center, 2nd Floor, Engineers Hostel – 1 Dhurwa, Ranchi-834004

A. Conditions of Tenders for Technical Bid

1. A complete set of Tender document to be downloaded from http://jsac.jharkhand.gov.in or https://www.jsac.procuretiger.com and the fee of Rs 7500/- should be paid online.

2. Tenders are required to pay online corresponding EMD as per items mentioned in table below along with their offer. Unsuccessful Bidder's EMD will be discharged/ returned within 10 days after the finalization of tender

3. Tender Specific Authorization from the Principal Company (OEM) in the name of the Director, Jharkhand Space Application Center is must for all participating vendors mentioning details like tender number, date and products for which the authorization is provided.

4. The tenderer should indicate specifically the **Make & Model** of the DGPS, ETS and Laser Range Finder.

5. The Tenderers are required to furnish latest Valid VAT registration certificate from the sales

tax authority of the State of Jharkhand or any other State as applicable.

6. The Tenderers should have Service Tax registration. The latest service tax return certificate valid as on date of tender should be submitted.

7. The tenderers are required to furnish PAN Number.

8. A self certificate by company to be submitted that company has not been blacklisted in any state of India.

9. The rate quoted for the item must be inclusive of all applicable taxes and F.O.R.

10. Director JSAC reserves the right to accept or reject any tender offer without assigning any reason.

11. The offers shall be in two separate parts containing Technical and Commercial Offers. The technical and financial documents should be uploaded in prescribed folders.

12. Technically qualified vendor has to demonstrate their equipment, if they failed, they will be disqualified.

Schedule of Payment

1. After satisfactory completion of the work Supply, installation and training the agency will have to submit the challan/bill in triplicate with copy of Supply Order to this office and payment will be made by Jharkhand Space Application Center after passing of bill from this end.

2. 100% payment will be made after successful supply, Installation and training.

The number of items to be procured:

Sl.no	Items	EMD
1.	Differential Global Positioning System (DGPS) one Set (1 Base + 1 Rover)	Rs 1,00,000
2.	Electronic Total Station(ETS)	Rs 50,000
3.	Laser Range Finder	Rs. 10,000

1. Specification of DGPS

Technical Specifications for GNSS Dual Frequency Receiver		
1	**Main**	Identical Interchangeable Base and Rover complete system including accessories like Antenna receiver, controller and cables.
2	**Receiver Characteristics (Base & Rover)**	
2.1	**Type**	Combined antenna and receiver built into a single housing
2.11	**Tracking**	Dual frequency GNSS Geodatic System capable of tracking GPS and GLONASS Signals.
2.12		Should be capable of tracking GPS L1, L2 and GLONASS L1, L2

2.13	**Channels**	Should have minimum 120 channels
2.14	**Measurements**	GPS:L1 CA, L1/L2 P-Code, L2C GLONASS: L1/L2 CA, L1/L2 P- Code, SBAAS:WAAS, EGNOS, MSAS, IRNS
2.15	**Modes**	Static, Rapid Static, Kinematic, Real Time Kinematic.
2.16	**Multipath**	Inbuilt multipath Mitigation technique
2.17	**Time for measurements**	Time for first measurements less than 30 seconds.
2.18	**Reliability**	Battery than 99.9%
2.19	**LEDs**	Suitable LEDs for power, tracking and Bluetooth/RTK.
2.2	**Ports**	Should have one Bluetooth and one Serial port
2.21	**External Power**	Should be possible to connect external power supplies like car battery to power the receiver the same should be offered with the system.
2.22	**Power consumption**	Less than 4 W
2.23	**RTK Rover Weight**	Weight of complete all on pole RTK Rover in operational mode should be less than 3.5 kgs
2.24	**Internal Memory/SD card**	2 GB or More
2.25	**Position Update**	10 Hz
2.26	**Humidity**	100%
2.27	**Drop**	With stands drop of 2 meter.
3		**Antenna Characteristics(Base & Rover)**
3.1	**Type**	Combined Antenna and Receiver.
3.11	**Tracking**	GPS and GLONASS L1 and L2 signals.
3.12	**Battery Slot**	There should be internal battery slot I antenna
3.13	**Bluetooth**	There should be a Bluetooth port in antenna and suitable port for connecting to controller over cable.
3.14	**Operation**	-30 C to + 65 C
3.15	**Storage**	-40 C to + 70 C
4	**Controller Characteristics**	
4.1	**Type**	Colour touch screen controller with complete graphical display, identical controller should be offered, separate controller should be offered with base and rover.
4.11	**Operating System**	Should run on Win CE
4.12	**Keyboard**	6 Keys and 1 arrow key/Alphanumeric key
4.13	**Memory**	Should have internal or flash card memory of 1 GB
4.14	**Operation**	-20 C to +50 C
4.15	**Storage**	-20 C to +60 C
5	**Control On Board Software**	
5.1	**Survey Style Configuration**	The Software should allow configurable survey style for RTK, PPK, Static / Fast Static, RTK & PPK etc.
5.2	**Multitasking**	The software should be capable of multitasking so that multiple

		operations can be opened at a time e.g COGO, Stakeout, Point
		Manager etc.
5.3	**Co-ordinate Systems Manager**	Should have datum and projection support. Should support
		Grid coordinates.
5.4	**Color Graphical Support**	The Software should have color graphical support to visualize
		work while working.
5.5	**Feature Coding**	Should support Feature Coding with attributes for GIS data collection. Control Coding should be possible for automatic plot
		creation.
5.6	**COGO**	Should support COGO functionality. Should be able to Key in
		Lines, Sub-divide lines and creating parallel lines for staking out purpose.
5.7	**Menu Driven**	Should be User Friendly and Menu Driven for easy field operation.
	Data Storage	Should be able to store GNSS data collected by the RTK system
5.8		Should be able to e-mail data collected in the field in case
5.9	**Transfer Data between Field and Office**	Facility is available. Should be able import and export user configurable files for effective GIS support.
5.10	**Stake Out**	Should support Graphical stakeout, not only for points but for Lines and DTM as well. Should be able perform Real Time Quality Control for stake out positions.
5.11	**Background Map**	Should be able to accept background maps in CAD format.
5.12	**Keyboard**	Touch screen keyboard/Hard Keyboard
		Controller should have inbuilt GPS, compass
		Controller should have inbuilt 5 MP camera
		Controller should have inbuilt SIM card facility for GPRS RTK
5.13	**Display**	Date, Time, Memory Status, Coordinates, Satellites view, Signal to noice ratio, DOP,HDOP, VDOP
5.14	**Input**	Field input of file name, antenna height and type, point ID, code , Layers and Notes.
6	**Post Processing Software**	
6.1	**Operating System**	Designed to run on Microsoft Windows XP, Vista and Window 7 operating system.
6.2	**Base Line Processing**	Should be capable of Baseline processing of GPS & GLONASS raw data for all Static, Fast Static, Kinematic Stop & Go, Kinematic Continuous measuring modes. Should able to handle RTK data as well.

6.3	**Feature Coding**	Should Support feature Coding
6.4	**COGO**	Should have COGO Functionality
6.5	**Network Adjustment**	Should be able to perform Network Adjustment using Least Square adjustment principle
6.6	**Import Data**	Should be able to import the RINEX data. Should also be able to import data & precise ephemeris data via internet (IGS data)
6.7	**Datum Conversion**	Facility to compute parameters for datum conversion
6.8	**Export**	Should be capable to export data in RINEX format, GIS as well as in CAD format.
6.9	**Job/Field Planning**	Must have full mission planning software to provide full information on, and plots of: Satellite visibility PDOP & GDOP Satellite azimuth & elevation.
7	**Radio Characteristics**	
7.1	**Type**	License free Radio for use in India
7.2	**Range**	3 Km or more
8	**Accuracy Specification**	
8.1	**Static and rapid static Accuracy**	
	Horizontal	3 mm + 0.5 ppm
	Vertical	5 mm + 0.5 ppm
8.2	**Kinematic**	
	Horizontal	10 mm + 1 ppm
	Vertical	15mm + 1 ppm
8.3	**Real Time Kinematic (RTK)**	
	Horizontal	10 MM + 1 PPM
	Vertical	15MM + 1 PPM

9 Criteria for License Free Radios:		
Criteria for License Free Radios:		Under Exemption From Licensing Requirement as per Notification No. (R-11014/23/2004/LR dated New Delhi, the 11 March, 2005) of the Wireless Planning & Coordination Wing, Ministry of Communications & Information Technology, Department of Telecommunication.
9.1	**Operating Frequency**	**865-867 MHz**
9.2	**Power / Watts**	**0.5W / 1W**

2. Specification of Electronic Total Station

TECHNICAL SPECIFICATIONS AUTO-POINTING REFLECTORLESS ELECTRONIC TOTAL STATION WITH DATA PROCESSING SOFTWARE		
SL. No	**Specification**	
1.	**Angular accuracy**	: 2" or better.
2.	**Least count**	: 0.5" or better.
3.	**Auto-Pointing range with single prism**	: 1 Km. or better.
4.	**Distance range in reflectorless mode**	: 1 Km. or better.
5	**Distance Range with single prism. Under average conditions.**	: 2.5 Km. or better
6.	**Laser output in prism mode**	: Class1.
7.	**Laser output in reflectorless mode**	: Class1/2/3/3R.
8.	**Distance Accuracy with prism**	: 1.5mm ± 2ppm or better.
9.	**Motor Drive System**	: DC Servo Motor.
10	**Rotation Speed**	: 70 º. / sec
11	**Operating System**	: Microsoft Windows CE 6.0
12	**Data Storage**	: Internal memory 500MB or more.
13	**Plug in memory device**	: USB pen drive 4 GB or more.
14	**Interface**	: Serial RS-232C, USB.
15	**Display/Keyboard**	: 3.5 inch. Semi-transmissive TFT QVGA or better Dual face Colour display / Illuminated keyboard / LCD touch screen / Graphical display of measured field point.
16	**Laser Pointer**	: Yes.
17	**Guide Light**	: For quick Setting Out.
18	**Optical Plummet**	: 3x or better.
19	**Dust & Water proof**	: IP55 or better
20	**Operation temperature**	: -20 to +50°C
21	**Weight**	: Approx 5.5 kg or less excluding batteries.
22	**Rechargeable battery**	: **2nos.**

	(Operational time for each approx. 5 hrs.)	
23	**Quick charger.**	: **1no.**
24	**Programs & Features**	: Mesh Scanning, Monitoring, Set Collection, Line work, Layer work, Area Calculation, Volume Calculation, Contour Generation, Traverse Adjustment with generation of report, Set-Out line, Set-Out Curve, MLM, REM, etc. Export file as *.dwg,*.dxf,*.shp,*.dgn, *.csv, *.txt, etc.
25	**Accessories**	: Wooden Telescopic Tripod - : **1no.** Single Prism assembly consisting of Range Pole, Prism, Target plate, Spirit Bubble, Tripod all in carrying cases - : **2nos.** Tubular Compass, Plumbob, Sunshade, Lens cap, Tool kit, Shoulder strap, carrying case and all relevant manuals – **1No.**

3. Specification of Laser Range Finder

Specification for Bluetooth enabled Laser Range Finder	
SL. No	**Specification**
1.	The Laser Range finder should have Laser distance meter, digital inclinometer and sighting scope.
2.	Should have Bluetooth capability
3.	Remote data should be integrated with GNSS receivers.
4.	Size should not be more than 110 mm x 100 mm x 50 mm
5	Weight should be less than 470 g with battery
6.	Battery should be Li –Ion rechargeable with 1100 mAh, 7.2V
7.	Should be possible to Mount on monopod/tripod
8.	Operating temperature should be in between -10°C to +45°C
9.	Casing should be Dust proof and water resistant per IP63 standard
10	Laser should be Class 1 Eye Safe Laser distance meter (IEC / FDA)
11	Optics should have minimum 5x magnification
12	Passive range should be up min 150 m
13	Range to reflector should min 600 m
14	Accuracy should be 10 cm
15	Resolution should be 1 cm
16	Measurement time should not be more than 0.3 seconds
17	Compass Heading accuracy should be 2°2
18	Compass Resolution should be 0.1°
19	Inclinometer Range should be -70° to + 70°
20	Inclinometer Accuracy. Should be 0.2°
21	Inclinometer Resolution should be 0.1°

B. Price Bid

Name of Work: *Tender Notice Inviting quotation for*
1. Supply and Installation of Differential Global Positioning System (DGPS)
2. Supply and Installation of Electronic Total Station (ETS)
3. Supply and Installation of Laser Range Finder

Tender No. JSAC/Tender/03/2015

			Combined Price is to be quoted	
SL No.	Description of Item	Quantity	Rate	
			In figure	In Words
1.	Differential Global Positioning System (DGPS)	One Set		
2.	Electronic Total Station (ETS)	One Set		
3.	Laser Range Finder	One(1)		
Total				

1. Rate should be inclusive of all applicable taxes, F.O.R and any other expense.
2. Price bid should be valid for 3 months.

Name and Signature of Authorized Person: ……

Name of Company……

Address: ……..

……

……

Date: ……

All fields Mandatory

C. Technical Requirement Checklists

Sl. No	Items	Remarks(*)
1.	Tender Document Fee	
2.	EMD	
3.	Tender Specific Authorization from the Principal Company (OEM).	
	A. Differential Global Positioning System (DGPS)	
	B. Electronic Total Station (ETS)	
	C. Laser Range Finder	
4.	Latest VAT registration certificate.	
5.	Valid Service Tax Registration certificate.	
6.	PAN Number.	
7.	A self certificate by company to be submitted that company has not been blacklisted in any state of India.	
8.	Make & Model	
	A. Differential Global Positioning System (DGPS)	
	B. Electronic Total Station (ETS)	
	C. Laser Range Finder	
9.	Technical Specification	
	A. Differential Global Positioning System (DGPS)[As per Above List]	
	B. Electronic Total Station (ETS) [As per Above List]	
	C. Laser Range Finder[As per Above List]	