Amendment # 4 Date :16/08/2013* for *Bid Document on '*Supply Of Survey Instruments & Accessories and Related Services'

[IFB NUMBER: Proc./SICOM/SOI/2012/02 dt.22.02.2013]

S. No.	Page No.	Section/Clause	As per Bid document	Amendment
1	26	**Section I (ITB)/ Clause30.3**	Bids from Agents, without proper authorization from the manufacturer as per **Section XII**, shall be treated as nonresponsive.	Bids from Agents, without proper authorization from the manufacturer as per **Section IV**, shall be treated as nonresponsive.
2	35	**Section II(BDS) / ITB Clause Reference 11.1(i)/2(iv)**	Reports on financial standing of the Bidder such as profit and loss statements, balance sheets and auditor's report for the past **three** years, banker's certificates, etc.	*Reports on financial standing of the Bidder such as profit and loss statements, balance sheets and auditor's report for the past **five** years, banker's certificates, etc*
3	36	**SECTION II (BDS)/ ITB Reference 18.3**	Period of time the Goods are expected to be functioning (for the purpose of spare parts): **10 years**	Period of time the Goods are expected to be functioning (for the purpose of spare parts): **8 *years (including 5 years warranty period)***
4	38	**SECTION II (BDS)/ ITB Reference 36.3(d)**	d)The Prices quoted by the bidder for comprehensive maintenance of the equipment year wise for two years following the end of the warranty period shall be reduced to net present value (NPV) at a discount rate of 10% per annum; the NPV shall then be added to the bid price of the equipment.	Deleted
5	41	**Section III (Evaluation and Qualification Criteria)/ 1(d). Evaluation Criteria (ITB Reference 36.3(d))**	(d) Comprehensive Maintenance Costs. Maintenance costs. An adjustment to take into account the maintenance costs of the Survey Instruments will be added to the bid price, for evaluation purposes only, if specified in BDS Sub-Clause 36.3(d). The adjustment will be evaluated in accordance with the methodology specified in the BDS Sub-Clause 36.3(d).	(d) Deleted
6	42	**Section III/ Evaluation and Qualification Criteria/ Clause 3a**	**……** **a) Financial Capability:** The Minimum required annual turnover in respect of successful bidder in any two of the last five (5) Financial Years i.e. 2007-08 to 2011-12 shall be of values as indicated in table below in INR or an equivalent amount in a freely convertible currency- **……**	**……** **b) Financial Capability:** The Minimum required annual turnover in respect of successful bidder in any two of the last five (5) Financial Years i.e. 2008-09 to 2012-13 shall be of values as indicated in table below in INR or an equivalent amount in a freely convertible currency-

S. No.	Page No.	Section/Clause	As per Bid document	Amendment
				.....
7	42	**Section III/ Evaluation and Qualification Criteria/ Clause 3b(i)**	(i) If the bidder is a Manufacturer, he must have manufactured, tested and supplied the instrument (s) similar to the type specified in the 'schedule of requirements' up to at least 300% of the quantity required in any one of the last 5 Financial Years i.e. **2007-08 to 2011-12**. The instrument (s) for supply must be of the most recent series models incorporating the latest improvements in design. The models should have been released on or after January 2011 and up to 200 % of the quantity for each item put to bid as mentioned in Schedule of requirements should be in satisfactory operation for 6 Months as on date of bid opening. Further, bidder should be in continuous business of manufacturing products similar to that specified in the schedule of requirements during the last **three** years prior to bid opening.	*(i)If the bidder is a Manufacturer, he must have manufactured, tested and supplied the instrument (s) similar to the type specified in the 'schedule of requirements' up to* **for Lot 1 (GNSS–Dual Frequency)** at least 300% of the quantity required i.e. Thirty (30)Nos **in any one** of the last 5 Financial Years **i.e. 2008-09 to 2012-13.** **For Lot 2 (Digital Level)** at least 100% of the quantity required i.e. Twenty (20)Nos **aggregate** in any three of the last 5 Financial Years **i.e. 2008-09 to 2012-13.** **For Lot 3 (Mobile Mapping System)** at least 300% of the quantity required i.e. Thirty (30)Nos **aggregate** in any three of the last 5 Financial Years **i.e. 2008-09 to 2012-13.** *The instrument (s) for supply must be of the recent series models incorporating the latest improvements in design. Up to **200 % of the quantity of items for Lot1 and Lot3 and 70% of the quantity of items for Lot2** put to bid as mentioned in Schedule of Requirements should be in satisfactory operation for 6 Months as on date of bid opening. Further, bidder should be in continuous business of manufacturing products similar to that specified in the schedule of requirements during the last **five** years prior to bid opening.'*
8	42	**Section III/ Evaluation and Qualification Criteria/ Clause 3b(ii)**	(ii) If the bidder is an Authorized Dealer, he must have successfully supplied, installed and commissioned the instrument (s) similar to the type specified in the 'Schedule of Requirements' up to at least 100 % of the quantity required in any one of the last 5 Financial	*(ii)If the bidder is an Authorized Dealer, he must have successfully supplied, installed and commissioned the instrument (s) similar to the type specified in the 'Schedule of Requirements' up to at least*

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			Years i.e. 2007-08 to 2011-12, which ……..	*for Lot 1 (GNSS–Dual Frequency)* *100% of the quantity required i.e. Ten (10)Nos in* ***any one*** *of in last 5 Financial Years i.e.* **i.e. 2008-09 to 2012-13.** *For Lot 2 (Digital Level)* *50% of the quantity required i.e. Ten (10)Nos* ***aggregate*** in **any three** of the last 5 Financial Years **i.e. 2008-09 to 2012-13.** *For Lot 3 (Mobile Mapping System)* *100% of the quantity required i.e. Ten (10)Nos* ***aggregate*** in **any three** of the last 5 Financial Years **i.e. 2008-09 to 2012-13.** which …….
9	44	**Section IV(Bidding Forms)**	7. Service Support Detail Form ……54 8. Technical Detail Form …….55	*7. Service Suppoort Detail Form……. …….53a (The Forms for each of the line items is given below)* *8. Technical Detail Form ……60-70 (The 'Technical Specifications' forms at pages 60-70 should be used as 'Technical Detail Form' in which* ***Bidders shall fill up the Offered Specifications / Compliance /Deviation Statement in col 3 against each of the required specifications at col 2***)
10	50	**Section IV(Bidding Forms)**	Table PRICE AND COMPLETION SCHEDULE - RELATED SERVICES	Table Deleted

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S. No.	Page No.	Section/Clause	As per Bid document	Amendment
11	57	**Section VI. (Schedule of Requirements)/Table1.(List of Goods and Delivery Schedule)/Col 6&7**	Earliest Delivery Date: 60 days Latest Delivery Date: 90 days	Read these days in case of Line item nos. 2 (Digital Level) and 3(Mobile Mapping System) also.
12	58	**Section VI. (Schedule of Requirements)/ Table1.(List of Goods and Delivery Schedule/Footnote 4**	Warranty for **1 year**	Warranty for ***5years***
13	59	**Section VI. (Schedule of Requirements)/Table2 (List of Related Services [ITB Clause 14.6(b)] and Completion Schedule)**	Table 2 . List of Related Services [ITB Clause 14.6(b)] and Completion Schedule	Deleted
14	60	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency) / A (GNSS Receivers)**	2. Channels Minimum **100** channels	2. Channels Minimum **50** channels
15	60	**-do- / A (GNSS Receivers)**	3.GNSS tracking : Capable to track L1,L2, L2C,L5 of GPS, L1,L2 of GLONASS and GALILEO SBAS: GAGAN enabled.	GNSS tracking : Capable to track at least L1, L2, L2C of GPS and L1, L2 of GLONASS.
16	60	**-do-/ A (GNSS Receivers)**	4. Sampling Rate : Selectable from 1 second to 60 second	Sampling Rate : Selectable from 1 second to 60 second or better
17	60	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency) /B (External Controller)**	2. Display : VGA Color graphical or better Daylight-readable touch screen with backlight illumination	2. Display : QVGA Color graphical or better. Daylight-readable touch screen with backlight illumination
18	60	**-do-**	2. Keypad : Full Alphanumeric Keypad desirable.	2. Keypad : Full Alphanumeric Keypad.
19	60	**-do-**	4. Functionality : …….. Display of battery **voltage**. …….	4. Functionality : …….. Display of battery **strength** in percentage …….

S. No.	Page No.	Section/Clause	As per Bid document	Amendment
20	61	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency) / C (Antenna)**	C. Antenna (Geodetic accuracy antenna with) …… 4 Antenna Cable(In case of external Antenna) External Antenna cable of length 20M/30M shall be provided. Two (2) antenna cables to be provided for each receiver, one each of the following lengths: 10-15 m (approximate) 3 - 5 m (approximate)	C. Antenna (External Geodetic accuracy antenna with) ……. 4 Antenna Cable Two (2) external antenna cables to be provided for each receiver, one each of the following lengths: 10-15 m (approximate) 3-5 m (approximate)
21	61	**-do-**	5 Tripod: Heavy duty wooden (or other suitable non-metallic) Telescopic Tripod with optical centering device	5 Tripod: Heavy duty light weight wooden (or other suitable non-metallic) with appropriate centering device.
22	61	**-do-**	6. Tribrach and Adaptor: Tribrach with optical plummet and appropriate adaptor/carrier, with tube bubble, to attach antenna to tribrach	6. Tribrach and Adaptor:: Tribrach with optical plummet and appropriate adaptor/carrier, with level/centering bubble, to attach antenna to tribrach.
23	61	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency) /D (Physical and Environmental Specification)**	4 Shock Resistance: Withstands 1.5m pole drop onto concrete floor	4 Shock Resistance: Withstands 1.0m pole drop onto concrete floor or better
24	61	**-do-**	5 Water/Dust proof: Protected from temporary immersion to a depth of 1metre and dustproof	5 Water/Dust proof: Compliance to IP67 or better
25	61	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency) /E (Tripod,Kinematic Pole and Bipod Stand)**	Reinforced solid base and reinforced opening	Deleted

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S. No.	Page No.	Section/Clause	As per Bid document	Amendment
26	62	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency)/H. (Communication Ports)**	Minimum 1(one) USB port for data download/transfer integrated bluetooth for data download/transfer, suitable ports to connect through Radio Modem,. suitable ports for GSM/GPRS or CDMA connectivity	• Minimum 1(one) USB port, 2 serial ports for data download/ transfer • Integrated Bluetooth for data download/transfer in controller or receiver • Suitable ports to connect through Radio Modem, • Suitable ports for GSM/GPRS or CDMA connectivity in receiver or controller. • At least 2 external power ports for simultaneous power supply for AC and DC. The power ports should not be connected Internally.
27	62	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency) / 1. GNSS-Dual Frequency /I. (Electrical)**	**In case of power failure System should have a self starting capacity after restoration of power.**	Deleted
28	63	**Section VI (Schedule of Requirements)/ Table3/1 (Technical Specification/ GNSS-Dual Frequency)/L (RTK functionality-GSM/GPRS/ CDMA)**	Accessories: …….. **Rover station should have provision to indicate when sufficient data has been recorded to determine a position at the required accuracy** …….	Accessories: …… **Rover station should have provision to indicate the connectivity with base station.** ……
29	64	**Section VI (Schedule of Requirements)/ Table3/2 (Technical Specification/ Digital Level)**	3. Tilt sensor type: Dual axis	3.Tilt sensor type: Dual axis or any other compensator that can meet the accuracy and functional requirements laid down in the bid document
30	65	**-do-**	12 Internal Memory : Upto 5000 readings External Memory : 1GB or higher Flash Card/USB	12 Internal Memory : Upto 5000 readings (downloading facility through USB port) or better External Memory : 32MB or higher Flash Card/USB.

S. No.	Page No.	Section/Clause	As per Bid document	Amendment
31	65	**-do-**	16. Dust/Water proofing: IP 53 or better rating desirable	16. Dust/Water proofing: IP 53 or better rating.
32	65	**-do-**	17 Keyboard: Alphanumeric Hard Key Pad desirable	17 Keyboard: Alphanumeric Hard Key Pad.
33	65	**Section VI (Schedule of Requirements)/ Table3/2 (Technical Specification/ Digital Level)/24**	24 * Accessories to be supplied with Digital Level. …….. f) 13 Manuals (hard copy and softcopy) …….	Modified as: *'24 * Accessories to be supplied with Digital Level.* …….. f) 10 Manuals (hard copy and softcopy) …….
34	66	**Section VI (Schedule of Requirements)/ Table3/3 (Technical Specification/ Mobile Mapping System)/(A)Hardware Specifications**	2 Display 3.5 inch VGA/QVGA or better, Sunlight readable	2 Display 3.5 inch QVGA or better, Sunlight readable
35	66	**-do-**	5. GPS Channels: Minimum 12	5. GPS and **GLONASS** Channels: Minimum 12
36	66	**-do-**	15. Camera: 2 MP camera with geo-tagging facility. Auto-focus desirable.	*15. Camera:* *2MP Autofocus camera with geo tagging facility'.*
37	67	**-do-**	21 Support for Integration: Should support integration with **Total Station and Laser Range Finder**	*21 Support for Integration :* *Should support integration with **Laser Range Finder´***
38	103	**SECTION VIII. (SPECIAL CONDITIONS OF CONTRACT) / GCC Clause 16.1**	(c) The annual maintenance and repair cost (after warranty period) shall be paid in advance in equal half-yearly installments within thirty days of receipt of claim at start of each half-year period, after completion of warranty/maintenance obligations of the previous half-yearly period, at the rates quoted in the price schedule, on receipt of bank bank guarantee for 2.5%	(c)Deleted

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			of the cost of equipment (excluding annual maintenance costs) in the form provided in the bidding documents valid for 38 months from the date of completion of installation and commissioning. (The Bank guarantee submitted towards performance guarantee will be released only after receipt of the above).	
37	105	**SECTION VIII. (SPECIAL CONDITIONS OF CONTRACT) / GCC Clause 18.4**	The performance Security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including the warranty obligation, under the contract and following receipt of a performance guarantee for 2.5% of the contract value excluding annual maintenance costs towards guarantee for the annual maintenance as stated in Clause 28.8 of SCC.	*'The performance Security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including the warranty obligation, under the contract.'*
39	105	**SECTION VIII. (SPECIAL CONDITIONS OF CONTRACT) / GCC Reference - Clause 18.5**	Add as Clause 18.5 to the GCC the following: Failure to submit the bank guarantee for annual maintenance service in the period specified above will constitute sufficient grounds for forfeiture of the performance guarantee.	Delete
40	106	**SECTION VIII. (SPECIAL CONDITIONS OF CONTRACT) /GCC Reference – Clause 28.3**	The Supplier shall, in addition…….. of final destinations. (Please refer BDS corresponding to clause 14.6)	***Warranty- 5years*** *The Supplier shall, in addition……..of final destinations. (Please refer BDS corresponding to clause 14.6)'*
41	1 4	Cover IFB	(a)Period of sale of bid document : From 25.02.2013 To 13.06.2013 (b) Last Date and Time for Receipt of Bids: Date 14.06.2013, Time 10:00 hours	(a)Period of sale of bid document : From 25.02.2013 To 17.09.2013 (b) Last Date and Time for Receipt of Bids: Date 18.09.2013, Time 10:00 hours

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S. No.	Page No.	Section/Clause	As per Bid document	Amendment
	37	ITB/ Section II (BDS) / 24.1	(c) Time and Date of Opening of Bids: Date 14.06.2013, Time 10:30 hours	(c) Time and Date of Opening of Bids: Date 18.09.2013,Time 10:30 hours

* Please ensure Validity Period of Bid Security as per ITB/ Clause 21.2(e) -in view of extension in Bid Submission deadline.

SERVICE SUPPORT DETAILS - GNSS Dual Frequency (Refer SNo. 9 of Amendment #4)

Pack No.	Destination (SoI Premises at)	NEAREST SERVICE CENTRE*					
		Location (Address)	Phone No. Fax No. e-mail	Status of Office Working Days and Hours	Number of Engineers	Number of Staff	Value of Min. Stock Available at all times
1	Gandhinagar						
2	Pune						
3	Thiruvananthapuram						
4	Chennai						
5	Hyderabad						

SERVICE SUPPORT DETAILS – DIGITAL LEVELS (Refer SNo. 9 of Amendment #4)

Pack No.	Destination (SoI Premises at)	NEAREST SERVICE CENTRE*					
		Location (Address)	Phone No. Fax No. e-mail	Status of Office Working Days and Hours	Number of Engineers	Number of Staff	Value of Min. Stock Available at all times
1	Gandhinagar						
2	Pune						
3	Bangalore						
4	Thiruvananthapuram						
5	Chennai						
6	Hyderabad						
7	Bhuvaneshwar						
8	Kolkata						

SERVICE SUPPORT DETAILS – MOBILE MAPPING SYSTEMS (Refer SNo. 9 of Amendment #4)

Pack No.	Destination (SoI Premises at)	NEAREST SERVICE CENTRE*					
		Location (Address)	Phone No. Fax No. e-mail	Status of Office Working Days and Hours	Number of Engineers	Number of Staff	Value of Min. Stock Available at all times
1	Gandhinagar						
2	Pune						
3	Bangalore						
4	Thiruvananthapuram						
5	Chennai						
6	Hyderabad						
7	Bhuvaneshwar						
8	Kolkata						

Clarifications # 1 - Dated: 16-08-2013 to Queries received for Bid Document on 'Supply Of Survey Instruments & Accessories and Related Services'
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Query #	Reference to Bid Document	Query	Clarification given by Bid Evaluation Committee
GNSS–Dual Frequency			
1	3. Technical Specification/ 1. GNSS-Dual Frequency/ A. GNSS Receivers/ 2. Channels	Minimum of 72 Channels- 72 channels are sufficient to track GPS and GLONASS L1 and L2 which are currently two fully functional satellite systems. Presently no software solution in market can process Upcoming satellite signals. Hence it is recommended that for the application perceived L1,L2 for GPS and GLONASS are more than sufficient.	Accepted. Amendment being issued for minimum of 50 channels
2	3. Technical Specification/ 1. GNSS-Dual Frequency/ A. GNSS Receivers/ 3.GNSS tracking	Capable to track GPS L1, L2 and GLONASS L1, L2. SBAS Enabled. There is no clarity on Galileo and L5. It will take more than 10 years for the full constellation to come operational. By that time hardware technology will change drastically. This is contradictory to the above point as 100 channels will not take care of all signals from GPS, GLONASS and Galileo. L2C and L5 signals broadcast will not include a data message until OCX (Next Generation Operational Control System) comes online. The OCX Block 1 is schedule to enter service in 2016 that will enable the use of L2C only. OCX Block II for supporting L5 is not yet schedule to be launched. L5 signal is available only with GPS Block IIF satellites which are just three in operation. A user would need 18 to 24 satellites to make use of L2C and L5 signals in surveying. The user will be able take advantage of L2C and L5 not before 2020.	Amendment being issued . The present GNSS tracking with signals L1, L2 of GPS and L1, L2 GLONASS. L2C is also expected to be operational in near future. Hence requirement of these signals have been made mandatory, while signals like L5 of GPS and L1,L2 of GALILEO which will come in distant future have made optional.
3	3. Technical Specification/ 1. GNSS-Dual Frequency/ A. GNSS Receivers/ 3.GNSS tracking	1. Tracking of GPS L5 and GALILEO signals Although it was quoted in meeting that GPS L5 has no significance for present and future, we will like to submit the proofs of our justification to the requirements as was debated by us in meeting using notifications from URL, Articles and enclosures to give a healthy justification for the department to focus on GPS L5 and GALILEO.	Refer clarification given to Query #2

4	3. Technical Specification/ 1. GNSS-Dual Frequency/ A. GNSS Receivers/ 4. Sampling rate	10 Hz or more , Because for appropriate RTK, higher logging interval is required for achieving accuracy. This feature is offered by all quality manufacturers hence it is strongly recommended for inclusion.	Accepted. Amendment being issued.
5	3. Technical Specification/ 1. GNSS-Dual Frequency/ A. GNSS Receivers/ 7. Memory(Internal and/or Flash Card)	1 GB in case of modular unit or 10MB in case of integrated unit.	Bid is called for modular units only. Hence no amendment is required.
6	3. Technical Specification/ 1. GNSS-Dual Frequency/ A. GNSS Receivers/ 7. Memory(Internal and/or Flash Card)	Internal Memory of 128 MB or more expandable with 32 GB with USB	Pl refer clarification given to Query #5
7	3. Technical Specification/ 1. GNSS-Dual Frequency/ B External Controller/ 1. Operating System	Microsoft Windows CE/Mobile Professional	There is provision for MS Windows CE or Equivalent in the bid document. Hence No amendment is required.
8	3. Technical Specification/ 1. GNSS-Dual	QVGA/VGA Color graphical or better Daylight-readable touch screen with backlight illumination For a small 3.5" screen QVGA and VGA does not make any difference in visibility of the screen.	Accepted. Amendment being issued

	Frequency/ B External Controller/ 2.Display.		
9	3. Technical Specification/ 1. GNSS-Dual Frequency/ B External Controller/ 3.Keypad.	Alphanumeric Hard keypad. (Please remove the word desirable) Alphanumeric hard keypad is use full as in case of touch screen failure, the controller can still be used for the survey.	Accepted. Amendment being issued
10	3. Technical Specification/ 1. GNSS-Dual Frequency/ B External Controller/ *4. Functionality.*	Full operator control of receiver functions. Field input of file name, antenna height and type, point ID. Display of battery **power**. Display of date, time, day number. Display of files in memory and available memory. Display of antenna position and PDOP. Display of satellite health, satellite rise and set times. Display of satellite elevations, azimuths and signal to noise ratio (signal strength).	Accepted. Amendment being issued
11	3. Technical Specification/ 1. GNSS-Dual Frequency/ C. Antenna (Geodetic accuracy antenna with)	External Geodetic Antenna. We understand that you require an external antenna. Please do confirm. External antenna has various advantages like: it can be mounted on a long range pole in case of data collection in high canopy area. Use of external antenna is more ergonomic for RTK surveying due to light weight of external antenna. The modular assembly can be used with backpack for longer duration of survey in large areas. External antenna provides better techniques to burn multipath signals and provides better phase center repeatability. Due to these reason Survey of India has been using modular units for Geodatic purposes. Moreover for long static survey a user can keep receiver which is more costly in a safe place and antenna outside for safety purposes.	Confirmed. External Geodetic Antenna is required to cater the various field survey condition.
12	3. Technical Specification/ 1.	Use of separate antenna and receiver: calibration offsets are minimal for separate antenna and receiver configuration and the	Accepted. Amendment being issued.

	GNSS-Dual Frequency/ C. Antenna (Geodetic accuracy antenna with)/4 Antenna Cable(In case of external Antenna)	same will also affect the final accuracy being achieved, so we request you to keep the requirement to separate antenna and receiver.	
13	3. Technical Specification/ 1. GNSS-Dual Frequency/ C. Antenna (Geodetic accuracy antenna with)	we wish to confirm the advantages of a completely Integrated system verses the Receiver and Antenna separate GNSS system. The points are as under :- 1. The Integrated unit is better, because it does away with the Cable that is required to connect the Antenna to the Receiver. Many a time, this cable snaps (if you increase the height of the Pole suddenly, and if the Cable length is insufficient, chances are that the Cable will break) leadings to service problem. 2. In the Integrated system, the Receiver, Antenna, Batteries and Internal Radio are all mounted together in one Compact unit weighing ≤1.5 Kgs. This is mounted on a Pole which weigh ≤1.4 kg. Hence, total weight in the hand of a person will be approx.. ≤3 kg. In addition to this, a Controller will be mounted on the Pole, which weighs 0.5 kg. Therefore the total weight including Controller is 3.5 kgs. 3. Against this, a separate unit will need to have Receiver put in the backpack. This Receiver itself may weight approx.. 2.5 kgs. In addition to this, if you are using an External battery, this battery will weight another 2 kgs. Please check this with competition. So the weight on the back of a person would be anywhere around 4 kgs+. Moreover, the receiver which is on the backpack will be connected to the Antenna by Cable and the weight of the Antenna with range pole will be separately around 1.4 Kgs (Pole), + 0.5 kgs (Antenna) = 2 kgs. + Weight of the Controller 0.5 kgs. So total	Refer clarification given to query #11 &#12.

		weight will be 2.5 kg + weight of the receiver and weight of the External battery which will be approx.. 4 kgs. The major problem is the hassle of connecting the External Antenna and Receiver via Cable and also the movement of the surveyor will be restricted due to two baggage, i.e. one backpack with Receiver with battery, another Pole with Antenna + Controller on the Pole. Well, in case of an Integrated system, there are no cable involved, as the receiver will be only connected to controller via Bluetooth. So the Surveyor will move easily with only one baggage, i.e. Pole and Receiver on top of the pole. 4. The latest technology that is available in the market is Integrated system, as the surveyor does not need to look after Cables separately, antenna separately and receiver separately and if radios are involved, again he has to look after Radios separately and batteries for such radio separately and battery for receiver again separately. All these is integrated into one unit only in the integrated system.	
14	3. Technical Specification/ 1. GNSS-Dual Frequency/ C. Antenna (Geodetic accuracy antenna with)/1. Phase Center Repeatability	We found the below mentioned Clause which is need not be floted seperately. Phase Center Repeatability < 1mm As there is a Clause in the Technical Specification of the Tender for HZ and Vertical Accuracies Positioning Accuracies Static 0.5Cm + 0.5ppm (Horizontal) 1.0cm + 1ppm (Vertical) Rapid Static 1cm +0.5ppm (horizontal) 2.0cm+1ppm (vertical) Real Time Kinematic 1cm+ 1ppm (horizontal) 2cm+2ppm (vertical). Our DGPS Receivers has the following Accuracies Static Horizontal 5mm+0.5ppm Vertical 10mm+0.5ppm Rapid Static Horizontal 3mm+0.5ppm Vertical 6mm+0.5ppm	Not Accepted. Refer clarification given to query #11 &#12.

		Real Time Kinematic Horizontal 10mm+1.0ppm Vertical 20mm+1.0 pap As we Matches the Above Accuracies it would not Affect the factor of your phase Center Accuracy. Hence we would Request you Amend This Clause Against your Technical Specification Antenna (Geodetic accuracy antenna with) Phase center Repeatability <1mm) .More over we under stood that some of the Manufactures confusing with Separate antenna & Receiver Concepts which was Established in olden Days, now a Days all the Dgps System will come with Integrated Antenna and Receivers.	
15	3. Technical Specification/ 1. GNSS-Dual Frequency/ C. Antenna (Geodetic accuracy antenna with)/4 Antenna Cable (In case of external Antenna)	External Antenna cable of length 20M/30M shall be provided. Two (2) antenna cables to be provided for each receiver, one each of the following lengths: 10-15 m (approximate) 1.5 - 3 m (approximate)	The requirement is External Antenna. Amendment being issued
16	3. Technical Specification/ 1. GNSS-Dual Frequency/ C. Antenna (Geodetic accuracy antenna with)/5. Tripod	Heavy duty wooden (or other suitable nonmetallic) Telescopic Tripod. Optical centering device comes attached with tribrach.	Accepted. Amendment being issued

17	3. Technical Specification/ 1. GNSS-Dual Frequency/ C. Antenna (Geodetic accuracy antenna with)/6. Tribrach and Adaptor	Tribrach with optical plummet and appropriate adaptor/carrier, with level/centering bubble, to attach antenna to tribrach. Tube bubble is obsolete	Accepted. Amendment being issued
18	3. Technical Specification/ 1. GNSS-Dual Frequency/ **D Physical and Environmental Specification/** 4. Shock Resistance	Designed to survive 1m drop onto concrete. 1.5m pole drop onto concrete floor is the specification for the integrated system. For modular unit it should have free fall from 1m onto concrete floor.	Accepted. Amendment being issued
19	3. Technical Specification/ 1. GNSS-Dual Frequency/ **D Physical and Environmental Specification/** 5. Water/Dust proof	IP 67 compliance is the standard for Water and dust proof.	Accepted. Amendment being issued
20	3. Technical Specification/ 1. GNSS-Dual Frequency/ **E. Tripod,Kinematic Pole and Bipod**	Reinforced solid base and reinforced opening of tripod back pack	Accepted. Amendment being issued

	Stand		
21	3. Technical Specification/ 1. GNSS-Dual Frequency/ H. Communication-Ports	Minimum 1(one) USB port, 2 serial port for data download/ transfer Integrated Bluetooth for data download/transfer in controller or receiver, Suitable ports to connect through Radio Modem, Suitable ports for GSM/GPRS or CDMA connectivity in receiver or controller. At least 2 external power ports for simultaneous power supply for AC and DC. The power ports should not be connected Internally.	Accepted. Amendment being issued
22	3. Technical Specification/ 1. GNSS-Dual Frequency/ H. Communication-Ports	Communication Ports Integrated Bluetooth for data download/transfer: Typically all the receivers as on date come with inbuilt Bluetooth which gives an added advantage where a person can stand at a distance and can still do the receiver configuration. Apart from this there is a morphological advantage where a person can carry the entire system with antenna and the operator can still stand at a distance and wirelessly operate the system or in a case where we want minimal cables with receiver. Typically as on date the Bluetooth that comes in all receivers is a Class 3 blue tooth for short range communication say less than 5 meter and operates on 2.4 Ghz frequency band. Attached Notification as Enclosure 3 for usage of 2.4 Ghz band for being license free and requires only Type approval:	Since the communication from receiver via Bluetooth is a short range communication say upto 5m only, it may not help in the field survey considerably. Hence Bluetooth is kept optional for receivers.
23	3. Technical Specification/ 1. GNSS-Dual Frequency/ **I. Electrical**	In case of power failure System should have a self-starting capacity after restoration of power. Please remove this as this facility is meant for permanent stations.	Accepted. Amendment being issued
24	-Do-	In case of power failure System should have a self-starting capacity after restoration of power. Kindly delete. This is a functionality of CORS station not with Geodetic receiver	Pl refer clarification given to Query #23
25	3. Technical Specification/ 1. GNSS-Dual	Please clarify. By standard battery do you please mean external 12V battery.	Yes. The spare power cable is to connect external battery.

	Frequency/ **J. Spare Power Cable**		
26	3. Technical Specification/ 1. GNSS-Dual Frequency/ K. Tripod Bag	Reinforced solid base and reinforced opening for tripod bag	Clarified that this requirement is for tripod bag.
27	3. Technical Specification/ 1. GNSS-Dual Frequency/ **L. RTK functionality (GSM.GPRS/CDMA)**	Rover station should have provision to indicate when sufficient data has been recorded to determine a position at the required accuracy. Pl Clarify.	Rover station should have provision to indicate the connectivity with base station.. Amendment being issued
2. DIGITAL LEVEL			
28	3.Technical Specification / 2. Digital Level / 3 Tilt sensor type:	We offer Pendulum type compensator with air damping system. Kindly allow pendulum type compensator. One manufacturer offer Dual axis compensator in digital level. Dual axis compensator is useful for total station for horizontal and vertical axis. In case of Digital level we work only with height hence dual axis compensator is not required.	Other compensators that can provide desired accuracy is accepted. Amendment being issued
29	3.Technical Specification / 2. Digital Level/ 12 Internal Memory : External Memory :	Although the external memory asked for is just 5000 records but the external memory capacity mentioned is 1 GB which is too high taking into consideration the amount of records that can be stored in a 1 MB of memory which is typically is around 1350 records and we take a 32 MB of memory it is sufficient for storage of 43200, since we manufactures digital levels with maximum external memory capacity of 32 MB so it requested to keep the external memory requirements to 32 MB or more.	Amendment on external memory is being issued
30	3.Technical	Minimum IP 54 since it provides protection against water splash	There is provision for IP 53 or

	Specification / 2. Digital Level/ 16 Dust/Water proofing:	which at times is the essential feature for a sensitive field instrument.	better rating accepted. Amendment being issued
31	3.Technical Specification / 2. Digital Level/ 17 Keyboard	Recommended for Alphanumeric Hard Key Pad. Please remove the word desirable.	Accepted. Amendment being issued
32	3.Technical Specification / 2. Digital Level/ 24 * Accessories to be supplied with Digital Level.	Please clarify how many manuals are required in hard copy.	Each Digital Level Set includes all accessories, softwares, hardcopy and softcopy manuals etc. Amendment being issued
3. MOBILE MAPPING SYSTEM			
33	3.Technical Specification / 3. Mobile Mapping System /(A) Hardware Specifications/1 Processer	Request for 800Mhz.With the higher processor speed will help to open large background files	There is provision 533 Mhz or better in the bid document. Hence no amendment is required.
34	3.Technical Specification / 3. Mobile Mapping System /(A) Hardware Specifications/2. Display	We will like to mention here that sunlight readability and display resolution go hand in hand with each other apart from other advantage where we can see the back ground high resolution image easily and identify each and every color band in the image by using full VGA display. The higher resolution displays put lesser strain on the eyes which has also been scientifically proven fact refer:http://www.ncbi.nlm.nih.gov/ pubmed/9974229. We request you to keep above in consideration and modify the display to VGA only.	Accepted. Amendment being issued
35	3.Technical	Since it is already a proven fact that adding GLONASS enhances	Accepted. Amendment being

	Specification / 3. Mobile Mapping System /(A) Hardware Specifications/5 GPS Channels	the operational coverage to areas where it was difficult to do a positioning with GPS alone by adding more satellites from GLONASS constellation. We request you to add GLONASS to the constellation being tracked. Typically for positioning with a single frequency receiver 12 channels are sufficient enough with two separate channels for SBAS.	issued
36	-Do-	Request to add GLONASS with 30 channels	Refer clarification given to query #35. It is clarified that typically for positioning with a single frequency receiver 12 channels are sufficient enough with SBAS for desired accuracy. Hence no amendment in number of channels is required.
37	-d0-	We recommend more than 24 channels so that all L1 GPS and GLONASS can be tracked appropriately allowing data gathering in difficult conditions. At present any time during the day there are more than 16-18 satellites of both constellations available. Still Glonass will add more satellites in a year or so then the number of satellites at any time may go up to 12 GPS+12 GLONASS hence 24 channels would be appropriate keeping near future utility in mind. Additional SBAS channels are also required for GAGAN tracking.	Refer query #35 and #36.
38	3.Technical Specification / 3. Mobile Mapping System /(A) Hardware Specifications/8 Connectivity	We request you to kindly remove Wireless LAN since we do not offer the same.	Not accepted.
39	3.Technical Specification / 3. Mobile Mapping System	2MP Autofocus camera with geo tagging facility. Since autofocus functionality adds value without any financial implications and it	Accepted. Amendment being issued.

	/(A) Hardware Specifications/15 Camera	is a standard feature with all devices in industry.	
40	3.Technical Specification / 3. Mobile Mapping System /(A) Hardware Specifications/ 17 Accuracy Specifications (Horizontal RMS)	Please do confirm that mentioned accuracies should be achievable with internal integrated antenna only. Since in case an external antenna is required to achieve sub meter accuracy then it defeats the purpose and it cannot be classified as handheld GPS receiver.	Sub-metre accuracy is required for Post processed data irrespective of type of antenna (internal or external)
41	3.Technical Specification / 3. Mobile Mapping System /(A) Hardware Specifications/20 External Antenna	Kindly do remove wireless/Bluetooth connector since it is impractical to have integrated handheld unit with external antenna containing a bluetooth device. Actually an external antenna should not be required since there are innumerous devices with integrated antenna that can achieve the desired accuracies. You may end up getting obsolete technologies in case a supplier offers a solution which can achieve desired sub meter accuracy with external antenna only.	Not Accepted. Hence no amendment is required.
42	3.Technical Specification / 3. Mobile Mapping System /(A) Hardware Specifications/21 Support for Integration	The integration with total station is not practical in this case and should be removed as the accuracy levels are different for both the sensors. This functionality is offered by only one manufacturer. This integration is offered in Survey grade GPS and Total stations only. We request you to please remove this clause from here and add it in dual frequency receiver specifications.	Accepted. Amendment being issued.
43	-do-	The integration function is not understood. Kindly clarify what level of interface is required.	Refer query #42
44	-do-	We request you to kindly explain the requirement in detail for our understanding.	Refer query #42
45	3.Technical Specification / 3. Mobile Mapping	Kindly delete as this functionality is not adopted in general by most of the OEMs.	Not accepted.

	System/(B) Software Specifications /3 Functionalities / (x) Interoperability		
46	3.Technical Specification / 3. Mobile Mapping System/(B) Software Specifications /3 Functionalities / (xi) Measurements	Kindly delete the angle option	Not accepted
47	3.Technical Specification / 3. Mobile Mapping System/(B) Software Specifications /3 Functionalities / (xiii) Camera functions	This functionality is not understood. Pl Clarify	The function is already explained in the para and is self explanatory.
48	3.Technical Specification / 3. Mobile Mapping System/(B) Software Specifications /3 Functionalities	We request you to please change the functionality as follows: • Zoom in / out • Pan • Display of data at any Zoom in/out level • Record data after the specified time and distance for quick positioning afterwards • Support rich symbolization of a layer based on colour, style, weight.	Basic requirement is already mentioned in the bid. Any additional functions other than these basic functions are optional and acceptable. Hence no amendment is required.
49	Section III/ Evaluation and Qualification Criteria/3b(i)	We request you to kindly delete percentage and amend to as follows: "If the bidder is a Manufacturer, he must have manufactured, tested and supplied the instrument (s) similar to the type specified in the „schedule of requirements" during the last 5 Financial Years i.e. 2007-08 to 2011-12."	This clause is being amended.

50	Section III/ Evaluation and Qualification Criteria/3b(ii)	Same, amendment is requested in case, if the bidder is an Authorized Dealer. " In case a subsidiary of foreign manufacturer/supplier bids in Indian currency, please clarify the financial capability and supply of parent company will be taken into consideration"	This clause is being amended. The financial capability of the bidder will be taken into consideration.
51	Section III/ Evaluation and Qualification Criteria/3b(ii)	(ii) If the bidder is an Authorized Dealer, he must have successfully supplied, installed and commissioned the instrument (s) similar to the type specified in the 'Schedule of Requirements' up to at least 100 % of the quantity required in any one of the last 5 Financial Years i.e. 2007-08 to 2011-12, which must be in satisfactory operation for at least 6 months on the date of bid opening and must be providing annual maintenance services for the above installations in at least two centers in the country for over one year. However, …… Please delete the underlined. Since it is optional to the buyer to go for AMC unlike warranty.	This clause is being amended.
52		Request for extension of 3 weeks.	Accepted. Please refer Amendment#4