



Forest Survey of India

Ministry of Environment, Forest & Climate Change, Government of India

Kaulagarh Road, P.O. – IPE, Dehradun - 248195

CORRIGENDUM – 01

Dated: 05th August 2019

Refer Tender No: 14-7-2019 –CRMD/3420, Dated: 25th July, 2019.

1. Section II (TERMS AND CONDITIONS OF CONTRACT), point 19.0: Pre-Qualification Criteria for Bidders with Broader Requirements 'Terrestrial Laser Scanner (TLS)',

(This compliance document duly filled in must be submitted by the bidder with the technical bid. Put page number from your technical bid document against each row in support to the compliance for verification)

S. No	DESCRIPTION	Parameters	Points	Compliance Y/N/Points (page no.)
1	Original: The responder's average annual turnover should be at least ₹2.00 Crore (Rupees two crores only) during the last three years. The turnover refers to a company and not the composite turnover of its subsidiaries /sister concerns etc.	>= 2 crore	10	
	Updated: The responder's average annual turnover should be at least ₹2.00 Crore (Rupees two crores only) during the last two years. The turnover refers to a company or its OEM and not the composite turnover of its subsidiaries /sister concerns etc.	<2 crore	5	
2	Original: Preferably the firm should be an OEM of Analytical Grade TLS Instrument of sub centimetre precision. Proof – Factory details & ISO certification for manufacturing of electronics products in India. ISO certificate provided by dealer is also admissible.	Yes	5	
	Updated: Preferably the firm should be an OEM or its authorized distributor of Analytical Grade TLS Instrument of sub centimetre precision. Proof – Factory details & ISO certification for manufacturing of electronics products in India. ISO certificate provided by dealer is also admissible.	No	0	

S. No	DESCRIPTION	Parameters	Points	Compliance Y/N/Points (page no.)
3	Minimum supply of 3 nos. of TLS Instrument to State Govt. or Central Govt./ Govt. aided Institutes/ Organizations in the last three years. (Documentary evidence as in Work Order/ Work Certificate / Proof of Supply documents to be provided)	≥ 3	Original: 10	
			Updated: 5	
		< 3	Original: 0	
			Updated: 0	
4	<u>Original:</u> Fully Windows or Android based PC/Mobile controlled TLS data recording system in the field with Wifi or Bluetooth connectivity with the measuring TLS instrument. <u>Updated:</u> Fully IOS or Windows or Android based PC/Mobile controlled TLS data recording system in the field with Wifi or Bluetooth connectivity with the measuring TLS instrument.	Yes	10	
		No	0	
5	Integrated post processing software to analyse data collected from field, to calculate the volume of several parts of the tree directly.	Yes	10	
		No	0	
6	The integrated software should suggest the best fitting curve and its respective regression equation(s) between 'Tree Volume' and 'Diameter at Breast Height'.	Complied	10	
		Non-Complied	5	
7	Certification: Minimum ISO Certification in Electronics goods servicing. Proof – Copy of valid certification	Yes	5	
		No	0	
8	<u>Updated</u> The TLS instrument can be controlled during data collection through remote / mobile applications	This row has been omitted in updated corrigendum due to duplication with point no,4		
8	The instrument is required an automatic calibration method with respect to any predefined position or factory reset option without the loss of any data.	Automatic	10	
		Manual	5	
9	The collected data by the TLS instrument should be transferred by USB devices (beside connecting cables) to the PC kept for post process analysis.	Yes	5	
		No	0	

S. No	DESCRIPTION	Parameters	Points	Compliance Y/N/Points (page no.)
10	Vendors should quote TLS instrument along with all its hardware parts, post processing software to analyse field data and post processing capability to calculate volume, availability of spares, periodic calibration, maintenance, training and 2 years' warranty.	Yes	10	
		No	0	
11	<p>Original: A complete working demonstration of the TLS Instrument is required from the vendor, as a part of Technical Evaluation.</p> <p>Updated: A complete working demonstration of the TLS Instrument is required from the vendor, as a part of Technical Evaluation on the day of technical evaluation in the local field at Dehradun, with the same 'Tree' as object</p>	Original:	Original:	
		Yes	10	
		No	0	
		<p>Updated:</p> <p>i) Scanning and Data Collection (5 marks)</p> <p>ii) Registration ease and efficiency (5 Marks)</p> <p>iii) Tree Volume analysis (5 Marks)</p> <p>iv) Analytical report generation (5 Marks)</p>	<p>Updated:</p> <p>Out of Total 20</p>	
Total Points		100		

2. In Section II (Terms and Conditions of Contract), the clause for imported items should not be valid because **all the quote should be made in INR (Indian Rupees) only.**
3. In Section II (Terms and Conditions of Contract), point 8.0: **Warranty:** should be considered as **24 months (or 2 years)** commencing upon the setting to work of item.

4. In Part II (TECHNICAL SPECIFICATIONS AND DETAILS), point 4.0:

Minimum Technical Specification of the 'Terrestrial Laser Scanner' (TLS):

(This compliance document duly filled in must be submitted by the bidder with the technical bid. Put page number from your technical bid document against each specification row in the said table in support to the compliance for verification)

S No	Features	Specification	Updated	Compliance (Y/N)
A. Scanning Unit				
1.	Laser Scanning Speed	1 lakh points per second or higher	No	
2.	Maximum Distance of Measurement (m)	50 m or more (Original) 100 m or more (Updated)	Yes 100 m or more (Updated)	
3.	Minimum Distance of Measurement (m)	1 m or less	No	
4.	Geo- Positional Accuracy (Long, Lat.)	2 m or Less	No	
5.	Geo- Altitudinal Accuracy (Depth or Altitude w.r.t. MSL)	5 m or less	No	
6.	Laser Range Measurement Accuracy	5 mm or better	No	
7.	TLS Operating temperature	5°C to 40°C or better	No	
8.	Horizontal Field of View or Horizontal Angle of Scan	360°	No	
9.	Vertical Field of View or Vertical Angle of Scan	270° or better	No	
10.	Angle of accuracy	6 min. (1/10 th of 1°) or better	No	
11.	Weight of the TLS including Tripod	Must be less than 10 Kg	No	
12.	Laser Class	Must be 1 or better	No	
13.	Telescopic Wide Angle Camera with zoom and pixel resolution	4X or above Zoom and 5 Megapixel or above	No	
14.	Battery Operation Time in Full Charge Condition	4 hours or above	No	
15.	Data Storage Capacity	64 GB or more	No	
16.	Should support USB port along with SD Card slot and Data transfer cable	One SD card slot and Data cable for data transfer, USB port is desirable	No	
17.	Should have inbuilt features like	GPS (with Altimeter), Auto-adjustment of tilt and inclination	No	
B. Display and Control Unit				
18.	The scanning unit can be controlled	By physical contact with the unit as well as by using remote control unit from a distance of at least 20m	No	

S No	Features	Specification	Updated	Compliance (Y/N)
19.	Field check of captured images	There should be high quality 'Touch Screen' display to control the scanning unit and view the scanned images.	No	
20.	Selective retake of scan option	There should be option to retake the erroneous and obstructed images selectively without doing the entire scanning process again	No	
C. Post Processing Software				
21.	OS Compatibility	Windows 8.1 or advanced 64 bit compatible	No	
22.	Auto Register	The scanned images should get seamlessly registered automatically to get 3D images	No	
23.	Tree parts' volume estimation	The software should be capable of isolating different parts of tree (leaves, branches, stem) and should be able to calculate their 'VOLUME'. The firm may have a proprietary software of its brand or a third party software which is compatible with the device should be made available.	No	
24.	Colour balancing	Should be capable of balance colour of scanned images	No	
25.	Importing data	Should be capable of importing the *.csv or shape files as control points for connecting plant information table with the measured plant location shape file	No	
26.	Exporting data	Should be capable of exporting point cloud data to GIS platforms for further Modelling	No	
27.	Precise identification and measurement of each TREE from every angle with maximum four (04) directional scanning	Automatic identification and precise measurements of corner points, edges, plane and curved surfaces	No	

S No	Features	Specification	Updated	Compliance (Y/N)
28.	Filter	Software should preferably filter moving objects like people, vehicle, dart points, edge artifacts, noise etc.	No	
29.	Auto colour of scans	Automatic colouring of the scans with the high-resolution colour photographs to make the 3D scanned image facet look real	No	
30.	Parallel processing capability	The software should be capable to process voluminous point cloud data in smooth fashion and fast, without any crash	No	
D.	Accessories			
31.	Tripod Stand for mounting TLS	01	No	
32.	Rechargeable Batteries	02 Sets (One set is for keeping as reserve)	No	
33.	Battery Charger	01	No	
34.	SD Card and Pen Drive (64 GB)	01 No. each	No	
35.	Ruggedized (Mil Grade) case for carrying TLS and its accessories	01	No	
36.	Processing Software license (Permanent) floating	01	No	
37.	Original: Other relevant accessories Updated: Target Registration Kit and other relevant accessories	As per requirement	Yes Updated: Target Registration Kit and other relevant accessories	
E.	Warranty			
38.	Warranty	2 Years	No	
F.	Installation and Post Installation Training			
39.	Installation and Post Installation Training	Training should be imparted for operating both TLS hardware and software for 2 weeks (10 working days) in Forest Survey of India, Dehradun office, including field visit.	No	

S No	Features	Specification	Updated	Compliance (Y/N)
G.		Support (24 X 7)		
40.	Support	There should be 24 X 7 online support and maximum downtime should be 48 hours in working days, during warranty (or future extended warranty, if any) period	No	

5. In Section 0: (NOTICE INVITING TENDER), point: 1.2:

Important Dates of Tender:

The Date and Time for evaluation of Technical Bid should be on 20th August 2019, 11 AM onwards, at FSI Dehradun.

6. Few major features' Sl. Nos. have been updated, which was a part of typographical error in original tender i.e.

'C' = Accessories (in Original), it should be 'D' in updated chronology and so on till the end of the table: **Minimum Technical Specification of the 'Terrestrial Laser Scanner' (TLS)**

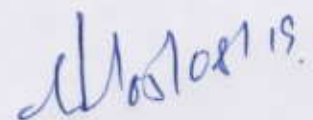
7. In every cases within the tables mentioned above as:

Pre-Qualification Criteria for Bidders with Broader Requirements 'Terrestrial Laser Scanner (TLS)',
and

Minimum Technical Specification of the 'Terrestrial Laser Scanner' (TLS);

the '**Updated**' statement should be taken into consideration henceforth, and the '**Original**' statement (which was present in the **Tender No: 14-7-2019 – CRMD/3420, Dated: 25th July, 2019**) should be updated only for those points as stated in this Corrigendum 01, dated 05th August 2019.

8. All the other 'Terms and Conditions' as mentioned in the Tender No: 14-7-2019 – CRMD/3420, Dated: 25th July, 2019 remain unaltered.


(Prakash Lakhchaura)
(DDG TFI)