



## **GOVERNMENT OF INDIA** (Ministry of Home Affairs) **COMMUNICATION & IT DIRECTORATE CENTRAL RESERVE POLICE FORCE** EAST BLOCK-7, SEC-1, R.K. PURAM, NEW DELHI-110066

(Email:- comncell@crpf.gov.in Tele/Fax:011-26109038)

No. B.V-7/2023-24-C (QRs)

Dated, the December'2023

То

1. The DsG: AR, BSF, CISF, ITBP, NSG, SSB and BPR&D

2. Director, DCPW

## Subject: Regarding Revision of QRs/TDs of "3D Laser Scanning and Imaging System".

I am directed to refer on the subject mentioned above and to say that the revised QRs/TDs of "3D Laser Scanning and Imaging System" which has been recommended by CAPFs sub-group and experts from DCPW & BRP&D has been approved by the DG CRPF.

QRs/TDs of "3D Laser Scanning and Imaging System" has forwarded 2.earlier vide letter No.B.V-7/2023-24-C(3DLS) dated 13/05/2019 is rescinded.

Encl:-As above

26/12/23 {Amit Taneia

**DIG (Equipment) Communication & IT Branch** Directorate General C R P F

No. B.V-7/2023-24-C (QRs)

Dated, the becember'2023

## Copy to:-

1. Mrs. Sugandhi, Technical Director, and North block, MHA with request to upload the revised QRs/TDs of "3D Laser Scanning and Imaging System" on MHA website (e-mail ID: mpsugandhi@nic.in).

Encl:-As above

**DIG (Equipment) Communication & IT Branch** Directorate General C R P F

## QRs/TDs OF 3D LASER SCANNING AND IMAGING SYSTEM

S.No	Specifications	Trial directives		
1.	System must provide automatic 3D Scanning with	Firm will submit OEM		
	360 degree horizontal by 300 degree or better vertical	Certificate.		
	field of view			
2.	Ranging Accuracy <b>3mm</b> or better at 10 mtr	Firm will submit Of		
	With user selectable resolution settings	Certificate.		
3.	Option-1:-	(a) BOO will check		
	(a) System must capture objects at a minimum	practically.		
	range of 0.65 mtr or lesser and upto 70 mtr or			
	better from axis of scanner (Radial Range).	(b) & (c) Firm wil		
	(b) System must support 165 Mega pixels or	submit OEM certificate.		
	better panoramic image full dome capture with			
	HDR Image option for up to 5X exposure.			
	(c) Data Acquisition rate must be minimum			
	5,00000 points per second or better.			
	Option-2:-			
	(a) System must capture objects at minimum			
	range of 0.65 mtr to 300 mtr or better from axis of			
	scanner (Radial Range)			
	(b) System must support 165 Mega pixels or			
	better panoramic image full dome capture with			
	HDR Image option for up to 5X exposure.			
	(c) Data Acquisition rate must be minimum			
	10,00000 points per second or better at 300			
	meter. (As per user requirement)			
4.	System must use Waveform Digitization Technology	Firm will submit OEM		
	for better results and provide encrypted security	certificate.		
	(Digital Hashing) to all raw scans in scanner.			
5.	System must support at least IP54 rating for dust	Firm will submi		
	and water protection.	certificate of any Gov		
		Lab, NABL or ILA		
6.	System must provide onsite registration, real time	accredited Laboratory. BOO will chec		
0.	viewing &navigation of image and point cloud data.	BOO will check practically.		
7		BOO will chec		
7.	System must operate on portable single battery with minimum 4 brs of operation per battery or better	practically.		
	minimum 4 hrs of operation per battery or better	practically.		
	,and also provide spare battery with suitable battery			
	charger.	DOO		
8.	System have scan time roughly 5 minutes per	BOO will chec practically.		
	position that should include 165 Mega pixels or	practically.		
	better panoramic image.			

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3.No	Specifications	Trial directives		
9.	System must support universal external memory like	Firm will submit OEM		
	standard SDXC card, micro SD card of standard 3.0	certificate.		
	pen drive or better			
10.		BOO will check		
	visualisation and modelling capabilities such as	practically.		
	creation of 2D drawing and creation of CAD objects			
	and VR viewing capabilities using VR headset.			
11.		BOO will check		
	Security planning, analysis and modelling, web	practically.		
	publication, animation and 3D modelling and VR			
	viewing			
12.		BOO will check		
	web-based format for online collaboration, support	practically.		
	hyperlink, measurement, markup inside web			
	browser. System should be simple to use and install			
	and should not require server installation.	BOO will check		
13	System must come with centralised storage for high	BOO will check practically.		
	speed point cloud rendering with administrative	practically.		
	privileges which allow a user to grant access to a			
	particular project.	BOO will check		
14		practically.		
	preferably not more than 6kg	BOO will check		
15	Capture instrument should support remote			
	operation through Wi-Fi (802.11n protocol) between	practically.		
	laptop and instrument.	BOO will check		
16	. The scanner shall be supplied with a light weight			
	carbon fibre tripod, capable of handling minimum			
	18kg of payload weight.	Firm will submit		
	. The transportation box of the equipment (with all			
	accessories) should be waterproof with IP 65 or	Lab or NABL or ILAC		
	better	accredited Laboratory.		
18	. Software system must be able to handle unlimited	Firm will submit OEM		
	size of point cloud database.	certificate.		
19	. Software system must be client server based to allow	BOO will check		
	a single storage of and dissemination of point cloud	practically.		
	data.			
20		BOO will check		
	event reconstruction Tools	practically.		
2		g BOO will check		
	capability in synchronized views & must provide	practically.		
	visualisation tool like VR/ 3D Goggle.			

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22.	System must brovide minimum en ou - geote	BOO will check
	methods and algorithms that can be used	practically & Firm will
	independently or in conjunction, namely:-	also submit OEM certificate.
	(a) Cloud-to-cloud matching.	ceruncate.
	(b) Known targets.	
	(c) Automatic Visual Registration Tools.	
23.	System must provide audit logs for evidence integrity.	BOO will check practically.
24	System must be compatible with Major point cloud	BOO will check
24.	handling and publishing software's and should be	practically.
	able to conduct two way communications.	BOO will check
25.		practically.
	superimpose internal images automatically and	pructically:
	external images (3D Cubic Map and single camera	
	image) on scanned data for photo-realistic	
	presentation.	7000 <sup>111</sup> h1-
26	Provide various scene investigation tools like bullet	BOO will check
	trajectory, camera planner, security ring, security	practically.
	halo, animation for reconstruction, point cloud	
	overlay on images for measurement and analysis,	
	view point analysis, wizard for creating finished	
	diagrams, sketching mode.	
27	. Should support extraction of 2D drawings from 3D	BOO will check
	models and scanned data.	practically.
28	. Should have direct import of each format i.e XYZ, E5	BOO will check
	7, LAS, LAZ, LS, PTS, PTX, DXF, FBX, OBJ, ASC,	practically & Firm will
	FWS, ISPROJ, TXT, DXF & DWG format.	also submit OEM
		certificate.
29	. Should have direct export of each format i.e ASC,	BOO will check
	LAS, OBJ export each format i.e XYZ, IGES, LAS,	
	LAZ, POD, BSF, DXF, RCP, PTS, E57, DXF, DWG,	certificate.
	PLY & XML format	
30	. Must provide 3D limit box to reduce point density	BOO will check
		practically. BOO will check
31	. Must provide automatic and manual point density	BOO will check practically.
	control.	
32	2. Must provide cloud to cloud registration capabilities	BOO will check
		practically. BOO will check
33	3. Must support Dynamic level of detail management,	
	displaying different levels of scanned data & 3D	practically.
	model for fast visualization	
34		BOO will check
	slope distances; volumes and surface areas	practically.
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S.No	Specifications	Trial directives
35.	Must support visualization on mobile/tablet in both mode - online and offline	BOO will check practically.
36.	Must have internal Height Sensor, GPS, GLONASS with inbuilt Compass to provide scan orientation and must support integration with Industrial GIS Platforms	BOO will check practically & Firm will also submit OEM certificate.
37.	Must support integration with3D modelling software like sketch up Pro, Auto CAD, Autodesk, Maya,3DS Max, Blender, Modo, Archi CAD Solidworks, V-Ray, etc	BOO will check practically & Firm will also submit OEM certificate.
38.	Must support visualization with or without server	BOO will check practically & Firm will also submit OEM certificate.
39.	Operating temperature for equipment -20°C to + 55 °C	Firm will submit certificate of any Govt Lab or NABL or ILAC accredited Laboratory.
40.	Must be able to create a web share of the captured/processed data to be reviewed at any remote location on any normal configuration of Laptop online and offline without any software installation	BOO will check practically.
	Laser Class-1 must comply IEC 60825-1:2014 Laser used to scan should be human safe	Firm will submit certificate of any Govt Lab or NABL or ILAC
43.	Software application must support Integrated Virtual reality mode for better visualization	accredited Laboratory BOO will check practically.
44.	Point cloud processing software should support all formats of standard point cloud data outputs like e57, PTS and XyZ	BOO will check practically.
	Output created by Software should be supported by3D Formatting tools likesketch up Pro, Auto CAD, Autodesk, Maya,3DS Max, Blender, Modo, Archi CAD Solidworks, V-Ray, Mental Ray. Cinema 4D & Houdini etc	BOO will check practically.
46.	Application should support registration of multiple captures/ scans/images automatically	BOO will check practically.
47.	Service / Support of the equipment should be provided on PAN India basis.	Firm will submit OEM certificate.
48.	Training: The bidder shall arrange to provide Onsite training for Anti - Terrorism, VVIP Security Planning, Indoor and outdoor Crime scene scanning and shall essentially conduct a workshop for the same. Firm will provide operating and technical manual	Firm will submit under taking certificate.

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	49.	OEM Should essentially have a local office in India.		Firm will certificate.	submit	OEM
	50.	Warranty-03 Years or More	2	Firm will certificate.	submit	OEM
	51.	After sale support- Minimu	m 05 Years after warranty	Firm will certificate.	submit	OEM
	52.	System must provid processing and storage may be a computing de device for data proce specifications:- (a) SSD - 1 TB or bett (b) Processor - i9 with (c) RAM - 64 GB (d) OS - Windor (e) Graphic card:- In better (f) MS office:- Office 1 (g) NAS :- 200 TB with (h) Computing device 3D Laser scanning	BOO practically.	will	check	
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(WO. Sandeep Kumar) Assam Rifles			(SI. Satyadev Arya) CISF	(Insp/RM.Jasbir Sin BSF		Singh)
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ITBP		BP	(Munesh Kumar, AC) SSB	(K.Saha, A DCP	Asstt.Dire	irector)
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	D	(P.C.Jha) IG(Comn), CRPF	(Syed Mohammad Hasnain) IG (Comn& IT), CRPF		tul Kumar DG (OPS),	
			Approved/Not Approved	-		
			(Sh.Anish Dayal Singh, IPS) DG, CRPK			