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-7/2024-25-C-(NUAV)-Q

Dated, the

March'2025

To

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

2. Director, DCPW

Subject: Regarding Corrigendum on approved QRs/TDs of "Nano UAV".

I am directed to refer on the subject mentioned above and to say that the Corrigendum on approved QRs/TDs of "Nano UAV" has been approved by the DG CRPF after deliberation and recommended by CAPFs sub-group and experts from DCPW.

Encl:-As above

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

No. B.V-7/2024-25-C-(NUAV)-Q

Dated, the

March'2025

Copy to:-

1. Mrs. Sugandhi, Technical Director, North block, MHA with request to upload the Corrigendum with approved QRs/TDs of "Nano UAV" on MHA website (e-mail ID: mpsugandhi@nic.in). QRs/TDs of "Nano UAV" has forwarded earlier vide letter No.B.V-7/2019-20-C(QRs) dated 06/05/2019 replaced with aforesaid Corrigendum with approved QRs/TDs of "Nano UAV".

Encl:-As above

DIG (Equipment)

Communication & IT Branch

Directorate General C R P F

GOVERNMENT OF INDIA (Ministry of Home Affairs) DIRECTORATE GENERAL

CENTRAL RESERVE POLICE FORCE

EAST BLOCK-7, SEC-1, R.K. PURAM, NEW DELHI-110066

(Tele/Fax No-011-26107493, Email-Id: comncell@crpf.gov.in)

No. B.V-7/2024-25-C-Q

Dated, the

March '2025

NSG vide letter No.72013/0061/2024/Prov (Procurement cell)/NSG/125 dated 22/01/2025 requested to issue amendment/Corrigendum in QRs/TDs of Nano UAV on parameter mentioned below.

Corrigendum for Approved QRs/TDs of "NANO UAV"

For	Read as
QRs/TDs Sl.No. 3 (3.3) (C)	QRs/TDs Sl.No. 3 (3.3) (C)
Parameter: - Electro Optic (EO) Daylight Payload, Specification:- Optical Zoom: 4X Zoom. Digital zoom :4X	Parameter:- Electro Optic(EO) Daylight Payload, Specification:- Optical Zoom: 4X Zoom or Digital Zoom:4X

The Remaining parameters of QRs/TDs of NANO UAV remain unchanged.

(Sub. J.P Gaur) Assam Rifles (Insp.Ranveer Singh) CISF

(Capt. Rahul Khandelwal, NSG (Ujjwal kumar Singh) AC (QR), CRPF

* (Vinay Barthwal)
Deputy Diretor), DCPW

(S.K.Sastri) Comdt, BSF (Rajesh Ranjan) Comdt, NSG

(Rajesh Pandey) Comdt, ITBP

(P.K.Raturi) Comdt,SSB

(Amit Taneja) DIG(Eqpt), CRPF

(P.C.Jha) DIG(Comn),CRPF (Syed Mohammad Hasnain)
IG (Comn& IT), CRPF

(Vitul Kumar, IPS) SDG (OPS), CRPF

Approved/Not Approved

(Gyanendra Pratap Singh, IPS) DG, CRPF

GOVERNMENT OF INDIA (Ministry of Home Affairs) DIRECTORATE GENERAL

CENTRAL RESERVE POLICE FORCE

EAST BLOCK-7, SEC-1, R.K. PURAM, NEW DELHI-110066

Email:- comncell@crpf.gov.in

Tele Fax:011-26107493

No. B.V-7/2019-20-C (QRs) To

Dated, the of May'2019

- 1. DIG (Comn), ITBP Block No. 2, CGO Complex Lodhi Road, New Delhi-03
- 2. DIG (Comn), NSG Meharam Nagar Palam, New Delhi-37
- 3. DIG (Comn), SSB East Block-V, R.K Puram New- Delhi-66
- 4. AIG (Comn), CISF Block No. 13, CGO, Complex Lodhi Road, New Delhi-03
- 5. DIG (Prov), BSF Block No. 10, CGO Complex Lodhi Road, New Delhi-03
- 6. Liaison Office, Assam Rifle Room No-171, North Block, MHA New Delhi -01

Subject: Regarding QRs/TDs of Communication Equipments.

Please find enclosed herewith QRs and TDs of Nano UAV & X-BIS Simulator System as Annexure-A & Annexure-B respectively duly approved by the competent authority for further necessary action.

Encl: (QRs & TDs of subject items)

(P.R.Jha, DC (Comn))

For DIG (Equipment) Directorate General, CRPF

QRs of Nano UAV/UAS

1.1 U 1.2 C 1.3 I 1.4 U 2 I 2.1 F 2.2 I 4 I 2.3 A 2.4 I	UAV Bird with batter Ground Control state Daylight & night Ca Universal Battery Ch Nano UAV characte Role Launch and Recovery mode Aural Signature Payloads carrying	ion with data link equipment mera Payload harger with Power Supply System ristics:- Personal soldier Surveillance, air platform of very small size of close range surveillance and detection during day and night. i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
1.2 (1.3 II.4 IV.2 III.4 IV.4 IV.4 III.4 IV.4 IV.4 III.4 III.4 IV.4 III.4	Ground Control state Daylight & night Ca Universal Battery Ch Nano UAV characte Role Launch and Recovery mode Aural Signature Payloads carrying	ion with data link equipment mera Payload harger with Power Supply System ristics:- Personal soldier Surveillance, air platform of very small size of close range surveillance and detection during day and night. i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
1.3 II 1.4 U 2 II 2.1 F 2.2 II F 2.3 A 2.4 II	Daylight & night Ca Universal Battery Ch Nano UAV characte Role Launch and Recovery mode Aural Signature Payloads carrying	mera Payload narger with Power Supply System ristics:- Personal soldier Surveillance, air platform of very small size of close range surveillance and detection during day and night. i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
1.4 U 2 I 2.1 F 2.2 I F 2.3 A 2.4 F	Universal Battery Ch Nano UAV characte Role Launch and Recovery mode Aural Signature Payloads carrying	Personal soldier Surveillance, air platform of very small size of close range surveillance and detection during day and night. i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
2 I 2.1 F 2.2 I F 2.3 A 2.4 F	Nano UAV characte Role Launch and Recovery mode Aural Signature Payloads carrying	Personal soldier Surveillance, air platform of very small size of close range surveillance and detection during day and night. i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
2.1 F 2.2 I F 2.3 A 2.4 F	Role Launch and Recovery mode Aural Signature Payloads carrying	Personal soldier Surveillance, air platform of very small size of close range surveillance and detection during day and night. i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
2.2 I F	Launch and Recovery mode Aural Signature Payloads carrying	small size of close range surveillance and detection during day and night. i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
2.3 A 2.4 I	Recovery mode Aural Signature Payloads carrying	Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
2.3 A 2.4 I	Aural Signature Payloads carrying	10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	
2.4 I	Payloads carrying	of UAV	
2.4 I	Payloads carrying		
	-	≤40dB at 50 feet Above Ground Level	
2.5 I	capability	day and Thermal Imager (TI) for night one at a time. OR Integrated day & Night payload.(As per user requirement)	
	a) Fully autonomous vertical takeoff or har launch. b) Fully autonomous vertical landing or belly landic) C)Hover at defined waypoint d) Autonomous waypoint navigation (pre-defined well as dynamically adjustable waypoints duriflight) e) Remote Piloted mode for video based us navigation. f) Vision based Autonomous Target Tracking of fix		
		and moving targets.g) Should be controllable in real time from the GCS up to recovery.h) Fully autonomous and stabilized.	
2.6	Endurance	20 minutes or more with all payloads at Mean Sea Level.	
2.7	Operating Altitude	100 feet AGL (Above Ground Level) or more.	
2.8	Launch Altitude	2000m AMSL (Above Mean Sea Level) or more	
	Range of Operation		
2.10	Cruise Speed	18 km/h or more	
	Operating Wind Conditions	b) Landing: 10 knots or more c) gust: 15 knots or more	
2.12	Fail safe features	a) Automatic Return to Home on communication	

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SN	Parameter	Specifications		
2.13	Propulsion system			
3.	Payload characteri	istics:-		
3.1	Payloads required	a) Electro Optic (EO) for day (colour)		
5.1	Tayloads required	b) Thermal Imager (TI) or IR for night		
		c) Integrated day & night payload.		
		(As per user requirement)		
3.2	Payload and Video	a) Video output should be digitally stabilized at all		
3.2	Stabilization	zoom levels.		
	Stabilization	b) Quality of video should not be affected by UAV		
		vibrations.		
3.3	Flectro ontic (FO)	a) Color Camera with 90° pan / tilt.		
0.0		b) Resolution: 1280 X 720 pixel or better		
	Daylight Payload	c) Optical Zoom: 4X zoom. Digital zoom: 4X		
		d) Should be able to detect human size target at 100 meter slant or more.		
3.4	Thermal Imager			
3.4		a. Thermal Camera with 90° pan/ tilt b. Resolution: 320 X 240 pixels or better		
	Payload			
		c)White/Black Hot modes for TI payload		
	(As per user requirement)	d) Digital Zoom: 4X or more		
	requirement	e) Should be able to detect human size target at 70		
0.5	N: 1. D	meter slant or more		
3.5		Recovery Switchable (from GCS) LED light when operat		
	Beacon	with Night Payload		
4.1	Ground Control Station characteristics:			
	Option-1: GCS should have MIL-STD-810G or better and IP51 or better, semi rugged laptop. Option-2: GCS should have MIL-STD-810G or better and IP65 or better,			
	rugged laptop.			
4.2	(As per user requirement) Computing Hardware:-			
4.2		Intel Core i5 v Pro Processor, 2.3 GHz or equivalent		
		/better		
	Storage	Minimum 500 GB		
	Memory	2GB or more		
	Display	Minimum 10 inch – 1024 x 768 XGA sunlight		
		readable screen, anti-glare.		
	Keyboard & input	Touch screen		
4.3	Battery Operation	Minimum two hours at peak utilisation.		
4.4	Battery Charging	Should be less than 3.5 hours		
	time of GCS			
4.5	Data portability	Ports for data transfer to external secondary storage		
		devices		
4.6	Interface	VGA/HDMI, USB, 10/100/1000 Ethernet.		
4.7	Capability	a) Transmit control commands to UAV.		
		b) Receive UAV flight and propulsion parameters.		
		c) Receive, display and record real time day and		
		night video from UAV.		
		d) Capability to control UAV while on the move.		
4.8	GCS Application Software	a) Geographic Map along with UAV location, UAV trajectory, camera view polygon, waypoints and flight		
		plan.		

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SN	Parameter	Specifications			
		b) Real-time video from the UAV with on-screen display			
		of important parameters like:-			
		i. Coordinate of target			
		ii. Ground altitude of target			
		iii. UAV Position			
		iv. Height of UAV above ground label			
		222224			
		vii. Ground speed of UAV			
		viii. UAV Heading/ True North indication			
		ix. Mission time			
		c) Geographic map and real-time video should be			
		displayed at all times during the flight.			
		d) Geographic map and real-time video views window			
		should be resizable and/or switchable to allow user to			
		switch between big map/small video and small map/big			
		video views through a single click/button input. e) Artificial Horizon indicating UAV altitude.			
4.9	Map Formats	a) Should have the capability to integrate geo-referenced			
		raster maps provided in at least one of the commonly			
		used digital map formats (GIF, TIFF, DTED and SRTM			
		etc.)			
		b) Should be able to work with Google Maps, application			
		should have the capability to download maps automatically after specifying location GPS co-ordinates.			
4 10	D11	a) Selection and switch on/off of payload			
4.10	Payload Controls				
	Controls	b) Pan/tilt/Zoom Controls c) Recording on/off			
		d) Switch on/off Night Recovery Beacon			
4.11	Joystick	i. Full Camera Control-			
1.11	Controls	a).Pan/tilt			
	001111010	b). Zoom In/Out			
		c).Black/White Hot(only in case of TI)			
		ii. RPV Mode			
		iii. Altitude Control			
4.12	Video	a) Video should be recorded in any commonly portable			
		video formats (AVI/MPEG/ MP4 etc)			
		b) Video of the full flight should be recorded			
		c) Should have capability to take image snapshots at any			
	`	time during flight			
		d) Software should be provided that will facilitate			
4 12	Pre-flight	extraction of imagery from the recorded video post flight Self-test of UAV system, Output: go/no go			
4.13	checks	Sch-test of OAV system, Output, go/no go			
	CHECKS				

4.13 Pre-flight checks

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S.N	Parameter	Specifications	
5.	Communication l	Link:-	
5.1	Communication	i) Transmit control commands from GCS to UAV	
	link equipment	ii) Transmit parameter of UAV and payload to GCS	
	capability	iii) Transmit day and night video from UAV to GCS	
5.2	Type of link	Secured digital uplink & downlink with AES	
		encryption.	
5.3	Frequency Band	System should operate on S & C frequency Band	
		uplink and down link, preferably on license free	
		band i.e 2.4 GHz or 5.8 GHz.	
6.	General System r	equirements:-	
6.1	Weight	The maximum all up weight (including payload)	
		should be ≤ 250 gms.	
6.2	Assembly/	≤5 minutes	
	Disassembly time		
6.3	Life of Nano UAV	The total technical life of Nano UAV should not be	
		less than 750 flights (250 flying hours).	
6.4	Environmental	The UAV and associated systems should be	
	Conditions for	certified for operation and storage for following	
	Operation and	environment conditions.	
Storage		i) Damp Heat: 40 °C at RH not less than 95%	
		ii) Operating temperature & Storage temp: -10°C to +55°C	
		iii) Ability to withstand dust, drizzle and humid	
		conditions	
5.5	Portability and	The Nano UAV should be battery operated	
	Operation	portable, light in weight, compact, for day and	
		night surveillance, capable of being carried and	
		operated by two men.	
6.6	Battery of AV	The intelligent standard battery pack should have	
		the backup of minimum 20 minutes.	
5.7	Life of AV Battery	Minimum 250 charging cycles.	
5.8	Battery Charger	Suitable universal battery charger to charge the	
	of AV battery	batteries within two hours.	
5.9	Accessories -	a) Water proof Back Packs IP66: 1 set	
		b) Field Repair kit: 1 No's	
		c) Battery packs; 3No's	
		d) Spare propeller Sets: 2 No's	
		e) Associated Cables & Mountings: 1set	
1		f) Hard transportation boxes: 1set	
		g) User, Technical & Maintenance Manual: 1set	
		h) Log book: 1 set	

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S.N	Parameter	Specifications	
7	Miscellaneous :-		
7.1	Training: 5 working days training will be provided to 04 pilots.		
7.2 Nano UAV must complied all relevant parameters as per DC			
	F.No.05-13/2014-AED Vol.IV dated 27.08.2018		

NSP. B.C. Roy Choudhary **BSF**

Major. Ajit Kumar

NSG

Hem Chandra Kapil, DC

ITBP

J. K. Sharma, DC

SSB

R.K. Meel, DC CISF

P.R.Jha, DC(Comn) **CRPF**

Sanjay Sharma, PSO (Weapon) BPR&D

Col. Sudhanshu Sharma, 5M

Assam Rifles

Harjinder Singh, DIG(Eqpt) **CRPF**

Ajay Kumar Yadav, IPS, IGP(Comn &IT) **CRPF**

Md. Javed

thar, IPS, ADG (Comn)

CRPF

D.S.Rawat, DIG(Comn)

CRPF

Approved/Not Approved

Rajeev Rai Bhatnagar, IPS DG, CRPF

	TDs of Nano UAV/UAS			
SN	Parameter	Specifications	Trial directives	
1		UAS system should consist of th	e following sub-systems:-	
		ith battery pack	Board will check it practically	
1.2	Ground Co	ontrol station with data link	and will ensure that items are available as per tender	
1.3		night Camera Payload	publication.	
		attery Charger with Power Supply		
	System	•		
2		characteristics:-		
2.1	Role	Personal soldier Surveillance, air platform of very small size of close range surveillance and detection during day and night.	Board will check it practically during day and night and will ensure that UAV equipped with these features.	
2.2	Launch and Recovery mode	i) Vertical Take Off and Landing (VTOL) or Hand Launch and Belly landing within an area of 10m x 10m clearing or less ii) Payload should not get damaged during recovery of UAV	Board will check practically by within the shown area and will ensure that payload should not get damaged during recovery of UAV.	
2.3	Aural Signature	≤40dB₃ at 50 feet Above Ground Level	The firm will submit certificate of Govt. Lab. or DRDO or NABL accredited or ILAC accredited laboratory.	
2.4	Payloads carrying capability	Should have capability to carry electro Optic (EO) for day and Thermal Imager (TI) for night one at a time. OR Integrated day & Night payload. (As per user requirement)	Board will check practically.	
2.5	Flight Modes	a) Fully autonomous vertical takeoff or hand launch. b) Fully autonomous vertical landing or belly landing. c)Hover at defined waypoint d) Autonomous waypoint navigation (pre-defined as well as dynamically adjustable waypoints during flight) e) Remote Piloted mode for video based user navigation. f) Vision based Autonomous Target Tracking of fixed and moving targets. g) Should be controllable in real time from the GCS up to recovery. h) Fully autonomous and stabilized.	Board will check practically.	
2.6	Endurance	20 minutes or more with all payloads at Mean Sea Level.	Board will check practically with maximum payload up to launch altitude of 1000 meter Above Mean Sea Level (AMSL).	
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SN	Parameter	Specifications	Trial directives	
2.7	Operating	100 feet AGL (Above	Board will check practically by	
0.0	Altitude	Ground Level) or more.	flying the UAV.	
2.8	Launch	2000m AMSL (Above	Firm will submit OEM	
2.0	Altitude	Mean Sea Level) or more	certificate.	
2.9	Range of		Board will check practically.	
2.12	Operation	sight		
2.10	Cruise Speed	18 km/h or more	Board will check practically and firm will submit OEM certificate.	
2.11	Operating Wind	a) Take off: 10 knots or	Board will check it practically	
	Conditions	more	or firm certificate will be	
		b) Landing: 10 knots or	accepted in this regard.	
		more		
		c) gust: 15 knots or more		
2.12	Fail safe features	a) Automatic Return to Home on communication failure	Board will check it practically.	
		b)Automatic Return to Home/ Land on low battery		
		c) Multiple GPS on-board for GPS failure redundancy	Firm will submit OEM certificate.	
2.13	Propulsion	Electrical with	Board will check it practically.	
	system	rechargeable batteries		
3.	Payload charact	eristics:-		
3.1	Payloads required	a) Electro Optic (EO) for day (colour) b) Thermal Imager (TI) or IR for night c) Integrated day & night payload. (As per user requirement)	Board will check practically after fitting the required payloads and ensure that UAV working satisfactorily.	
3.2	Payload and Video Stabilization	a) Video output should be digitally stabilized at all zoom levels.b) Quality of video should not be affected by UAV vibrations.	Board will check practically all parameters	
3.3	(EO) Daylight	a) Color Camera with 90° pan / tilt.b) Resolution: 1280 X 720 pixel or better	Board will check it practically and ensure daylight payload working as per their parameters and firm will submit OEM certificate for	
			resolution and FOV.	

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SN	Parameter	Specifications	Trial directives
		c) Optical Zoom: 4X zoom. Digital zoom: 4X	2224 4170011403
		d) Should be able to detect human	
		size target at 100 meter slant or	
		more	
3.4	Thermal	a. Thermal Camera with 90° pan /	Board will check i
	Imager (TI)	tilt.	practically and ensure
		b. Resolution: 320 X 240 pixels or	daylight payload working
	Payload	better	as per their parameters
	(As per user	c)White/Black Hot modes for T	
	requirement)	payload	OEM certificate for
		d) Digital Zoom: 4X or more	resolution.
		e) Should be able to detect human	
		size target at 70 meter slant or more	
3.5	Night Recovery	Switchable (from GCS) LED light	Board will check it
	Beacon	when operating with Night Payload	practically.
4.	Ground Control	Station characteristics:-	p-security,
4.1	Option-1: GCS s	should have MIL-STD-810G or better	Firm will submit
	and IP51 or bette	er, semi rugged laptop.	certificate of Govt. Lab. or NABL accredited or
	Option-2: GCS s	should have MIL-STD-810G or better	ILAC accredited
	and IP65 or bette	er, rugged laptop.	laboratory.
	(As per user requ	airement)	
4.2	Computing Hard	dware :-	
	CPU	Intel Core i5 v Pro Processor, 2.3	BOO will check it
		GHz or equivalent /better	practically one by one all
	Storage	Minimum 500 GB	parameter, and supplier
	Memory	2GB or more	will also provide OEM
	Display	Minimum 10 inch - 1024 x 768	certificate in this
		XGA sunlight readable screen, anti-	regards. Ensure all
		glare.	parameters are available
		Touch screen	in the equipment.
	input		
4.3	Battery	Minimum two hours at peak	Board will check
	Operation	utilisation.	practically
1.4	Battery	Should be less than 3.5 hours	Board will check
	Charging time	•	practically
	of GCS		
1.5	Data portability	Ports for data transfer to external	Board will check
		secondary storage devices	practically
1.6		VGA/HDMI, USB, 10/100/1000	Board will check
		Ethernet.	practically
1.7	Capability	a) Transmit control commands to	Board will check
		UAV.	capability of the system
		b) Receive UAV flight and	practically according the
		propulsion parameters.	mentioned parameters.
		c) Receive, display and record real	mentioned parameters.
		time day and night video from UAV.	
		d) Capability to control UAV while	
		on the move.	

SN	Parameter	Specifications	Trial directives
4.8	GCS	a) Geographic Map along with UAV	Board will check it
	Application	location, UAV trajectory, camera view	practically and ensure
	Software	polygon, waypoints and flight plan.	that all application is
			working properly.
		b) Real-time video from the UAV with	Board will check it
		on-screen display of important	practically and ensure
		parameters like:-	that all application is
		i. Coordinate of target	working properly.
		ii. Ground altitude of target	
		iii. UAV Position	
		iv. Height of UAV above ground label	
		v. Distance of UAV from GCS	
		vi. Bearing (Azimuth) of UAV from GCS	
		vii. Ground speed of UAV	
		viii. UAV Heading/ True North	
		indication	
		ix. Mission time	
		c) Geographic map and real-time video	
		should be displayed at all times during	
		the flight.	
		d) Geographic map and real-time video	
		views window should be resizable	
		and/or switchable to allow user to	1
		switch between big map/small video	
		and small map/big video views through	
		a single click/button input.	
		e) Artificial Horizon indicating UAV	
		altitude.	
4.9	Mon	a) Should have the capability to	Board will check
4.9	Map Formats	integrate geo-referenced raster maps	capability of the system
	Tormats	provided in at least one of the	practically according the
		commonly used digital map formats	mentioned parameters.
		(GIF, TIFF, DTED and SRTM etc.)	
		b) Should be able to work with Google	
		Maps, application should have the	
1		capability to download maps automatically after specifying location	
		GPS co-ordinates.	

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S.N	Parameter	Specifications	Trial directives
	Payload	a) Selection and switch	Board will check capability of
	Controls	on/off of payload	the system practically
		b) Pan/tilt/Zoom Controls	according the mentioned
		c) Recording on/off	parameters.
		d) Switch on/off Night	
		Recovery Beacon	
4.11	Joystick	i. Full Camera Control-	Board will check practically.
	Controls	a).Pan/ tilt	1
5		b). Zoom In/Out	
		c).Black/White Hot(only in	
		case of TI)	
		ii. RPV Mode	
1 10	Video	iii. Altitude Control	
+.12	video	a) Video should be recorded	or supersity of
		in any commonly portable	
		video formats (AVI/MPEG/MP4 etc)	according the mentioned
		b) Video of the full flight	parameters.
		should be recorded	
		c) Should have capability to	
		take image snapshots at any	
		time during flight	
		d) Software should be	
		provided that will facilitate	
		extraction of imagery from	
		the recorded video post	
1 10	D 0:1.	flight	
	Pre-flight	Self-test of UAV system,	Board will check capability of
	checks	Output: go/no go	the system practically
			according the mentioned
			parameters.
	Communicatio		
	communication	,	Board will check capability of
li	nk equipment	commands from GCS to UAV	the system practically
c	apability	ii) Transmit parameter of	according the mentioned
		UAV and payload to GCS	parameters
		iii) Transmit day and night	
		video from UAV to GCS	
2 '	Type of link	Secured digital uplink &	Firm will produce OEM
	-JF	downlink with AES	
		encryption.	certificate.
2	Fraguerar		
.3	Frequency	System should operate on S	Firm will produce OEM
	Band	& C frequency Band uplink	certificate.
		and down link, preferably on	
		license free band i.e 2.4 GHz	
		or 5.8 GHz.	

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SN	Parameter	Specifications	Trial directives
6.	General Syste	em requirements:-	
6.1	Weight	The maximum all up weight (including payload) should be ≤ 250 gms.	UAV birds with the help of
6.2	Assembly/ Disassembly time	≤5 minutes.	Board will check practically.
6.3	Life of Nano UAV	The total technical life of Nano UAV should not be less than 750 flights (250 flying hours).	certificate.
6.4	Environmental Conditions for Operation and Storage	The UAV and associated systems should be certified for operation and storage for following environment conditions. i) Damp Heat: 40 °C at RH not less than 95% ii) Operating temperature & Storage temp: -10°C to +55°C iii) Ability to withstand dust, drizzle and humid conditions	Govt. Lab. or NABL or ILAC accredited laboratory.
6.5	Portability and Operation	The Nano UAV should be battery operated portable, light in weight, compact, for day and night surveillance, capable of being carried and operated by two men.	system is operated by battery and being carried out and operated by
5.6	Battery of AV	The intelligent standard battery pack should have the backup of minimum 20 minutes.	Board will check practically and firm will produce OEM certificate for chemistry of battery.
5.7	Life of AV	Minimum 250 charging	Firm will produce OEM certificate
	Battery	cycles.	
5.8	Battery Charger of AV battery	Suitable universal battery charger to charge the batteries within two hours.	Board will check practically by charging battery and will ensure that it is capable to charge battery within two hours.

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SN	Parameter	Specifications	Trial directives
6.9	Accessories	a) Water proof Back Packs	Board will check
		IP66: 1 set	physically and firm will
		b) Field Repair kit: 1 No's	submit certificate of
		c) Battery packs; 3No's	Govt. Lab. or NABL
		d) Spare propeller Sets: 2 No's	accredited or ILAC
		e) Associated Cables &	accredited laboratory for IP66.
		Mountings: 1set	 00.
		f) Hard transportation boxes:	
		1set	-
		g) User, Technical &	
		Maintenance Manual: 1set	
		h) Log book: 1 set	
7	Miscellaneous :-		
7.1	Training: 5	working days training will be	Firm will submit
	provided to 04 pilots.		undertaking certificate in
			this regard.
7.2	Nano UAV	must complied all relevant	
	parameters	as per DGCA F.No.05-13/2014-	
	AED Vol.IV	lated 27.08.2018	

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