

संख्या. पी-63013/11/2022/मोड-1/सीसुबल 4232-44

भारत सरकार, गृह मंत्रालय
महानिदेशालय सीमा सुरक्षा बल
(रसद निदेशालय: आधुनिकीकरण सैल)
(Email-comdtord@bsf.nic.in)
(Fax: 011-24367683)

ब्लाक संख्या . 10,
सीजीओ काम्पलैक्स,
लोधी रोड, नई दिल्ली-03
दिनांक ___ दिसम्बर 2022

सेवा में,

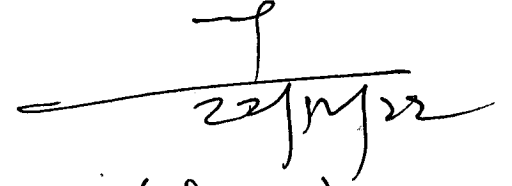
महानिदेशक:- आसाम राईफलस (through LOAR), केन्द्रीय ओद्योगिक सुरक्षा बल,
केन्द्रीय रिजर्व पुलिस बल, भारतीय तिब्बत बोर्डर पुलिस, सशस्त्र सीमा बल,
राष्ट्रीय सुरक्षा गार्ड एवं पुलिस अनुसन्धान एवं विकास ब्योरो

विषय: अनुमोदित गुणात्मक आवश्यकता / परीक्षण निर्देशों का प्रेषण

तकनीकी विशेषज्ञों के उप समूह द्वारा किए गये सूत्रीकरण एवं महानिदेशक सीमा सुरक्षा बल द्वारा अनुमोदित निम्नलिखित उपकरणों के गुणात्मक आवश्यकता/परीक्षण निर्देशों को आपकी अग्रिम कार्यवाही हेतु प्रेषित किया जाता है।

- (i) Anti Drone Gun
- (ii) Light Weight Lumen Torch Light

संलग्न : उपरोक्तनुसार


(जमील अहमद)
उप महानिरीक्षक (रसद/परिवहन)

प्रतिलिपि :-

1. तकनीकी निदेशक : आपसे अनुरोध है कि उक्त उपकरण के गुणात्मक
The Technical Director आवश्यकता /परीक्षण निर्देशों को गृह मंत्रालय की
राष्ट्रीय सूचना-विज्ञान केन्द्र, नोर्थ ब्लाक, वैबसाईट (पुलिस आधुनिकीकरण विभाग- गुणात्मक
गृह मंत्रालय, नई दिल्ली आवश्यकता) पर अपलोड करने का श्रम करें।
NIC, North Block, MHA
New Delhi (द्वारा ई-मेल)
(ई-मेल पता : mpsugandhi@nic.in)
2. SO (IT), North Block, MHA : आपसे अनुरोध है कि उक्त उपकरण के गुणात्मक
(Through E-mail) आवश्यकता /परीक्षण निर्देशों को गृह मंत्रालय की
(E-mail address: soit@nic.in) वैबसाईट (पुलिस आधुनिकीकरण विभाग- गुणात्मक
आवश्यकता) पर अपलोड करने का श्रम करें।
3. तकनीकी विंग, सीमा सुरक्षा बल : आपसे अनुरोध है कि उक्त उपकरण के गुणात्मक
आवश्यकता /परीक्षण निर्देशों को सीमा सुरक्षा बल
की वैबसाईट पर अपलोड करने का श्रम करें।
4. ICT निदेशालय, NIIIE Cell, सीमा : आपके पत्र संख्या 8168 दिनांक 21 सितम्बर 2022
सुरक्षा बल के सन्दर्भ में अनुमोदित Anti Drone Gun के
गुणात्मक आवश्यकता /परीक्षण निर्देशों को प्रेषित
किया जा रहा है।
5. रसद निदेशालय-आयुद्ध अनुभाग : आपके पत्र संख्या 1920 दिनांक 24 मई 2021 के
सन्दर्भ में अनुमोदित Light Weight Lumen Torch
Light के गुणात्मक आवश्यकता /परीक्षण निर्देशों
को प्रेषित किया जा रहा है।

QRs and Trial Directives of Anti Drone Gun

S/No	Technical Specification	Procedure suggested for trial	Result expected/desired
A	GENERAL PARAMETERS		
1.	Anti-Drone Gun should be Hand Held/Backpack or combination of both as well as mountable on tripod, easily transportable and operable in day and night environment. The System should be easily deployable, designed for one hand/two hand operation.	To be physically checked by the BOO for its feasibility for Hand Held/Backpack or combination of both, mounted on tripod, easy to carry and operate in day and night environment.	The System must as per Specification mentioned in QRs.
2.	Weight: Category 1: \leq 10 Kgs for 02 Km (minimum jamming range) including backpack Category 2: \leq 06 Kgs for 01 Km (minimum jamming range)	Measure the weight of the system with the help of weighting machine.	Weight of the system must as mentioned in the QRs.
3.	The system should be able to cut off communication between the target UAS and the remote controller by jamming data links as mentioned at Srl No.18.	To be physically checked by the BOO.	The System as per the requirement mentioned in the QRs.
4.	The system should be able to Jam the all-operating GNSS/standard remote-control Frequency of the UAS as mentioned at Srl No.18.	To be physically checked by the BOO.	The System as per the requirement mentioned in the QRs.
5.	The system should be capable to neutralize the UAS (like Copters, Fixed wing UAVs and Radio-Controlled UAVs etc) in different categories in specified range of Radio Frequency spectrum.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.

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S/No	Technical Specification	Procedure suggested for trial	Result expected/desired
6.	The system should be effective on all available UAS operating in all frequency bands mentioned at Srl No. 18.	The firm has to submit OEM certificate in confirmation to the parameter.	The System must as per the requirement mentioned in the QRs.
7.	The system should be able to control disruption on multiple RF frequency bands (as mentioned srl No.18) simultaneously.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
8.	The system should be provided with radio frequency status indicator.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
9.	The system should provide a safe passive countermeasure against a wide range of UAS models.	OEM to provide safety certificate against harmful radiation for the User.	The System must as per the requirement mentioned in the QRs.
10.	When disruption is triggered, UAS will either come down or stay stand still or follow return path.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
11.	Once RF disruption get activated, system should immediately cease video transmission back to the UAS operator. (If the module for telemetry & Radio link is same)	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
12.	The system should feature an intuitive control panel user interface to select and engage of jamming frequencies for target defeat.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
13.	The system should have featured a robust compact design with a control panel user interface, allowing operators to select and engage RF disruption frequency modes.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.

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S/No	Technical Specification	Procedure suggested for trial	Result expected/desired
14.	The system should have voice guidance/prompt on triggering jamming operation. The system should also have the option to mute the audio prompt if required.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
B. OPERATIONAL CAPABILITY			
15.	Neutralized/Jamming range:- capable to neutralize the UAS or group of UAS (Swarm attack) from a distance of 01 Km (Min) and 02 Km (Min) depending on the category of System.	To be physically checked by the BOO by activating the UAS or multiple UAS (minimum four UAS in different directions) from the specified ranges at unknown locations. UAS distance v/s jammer should be maintained in the ratio of 1:2 or better.	The System must as per the requirement mentioned in the QRs.
16.	Cone of the jamming- 30° or more	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
17.	Neutralization Time- Capable to neutralize the UAS by jamming its radio and GNSS links at its place of operation within 10 seconds after pressing of jamming system.	To be physically checked by the BOO by operating one UAS at the specified distance.	The System must as per the requirement mentioned in the QRs.
18.	Neutralization Frequency- The system should be capable to simultaneously disrupt all typical UAS Operating Bands of: 433.05-434.79 MHz 902-928 MHz 2.4000-2.4835 GHz 5.725-5.875 GHz and GNSS frequency bands of: L1: 1575.42 - 1609.3125 MHz L2: 1227.06-1251.6875 MHz L5: 1176.45 MHz	The BOO will also verify that the video link got jammed during the time through GCS display. Operating band will checked by the spectrum analyzer. The OEM should provide certificate in respect of upgrading the system to frequency between 20 MHz to 8 GHz.	The System must as per the requirement mentioned in the QRs.

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S/No	Technical Specification	Procedure suggested for trial	Result expected/desired
	<p>Frequencies may be selected out of above frequencies as per user requirement or additionally added any other frequency for specific user requirement. [Like 1561.098 Beidou (B-1)/ 850-870 MHz]</p> <p>In addition to above the system should have capabilities of jamming and to:-</p> <p>Jam the UAS which are operating with integrated comn link (i.e. video link and RC link 2.4 GHz band) in FHSS technology.</p>		
19.	<p>The system should operate in autonomous operation (continuous jamming) for at least 01 Hour in case of backpack and easily swappable batteries in case of handheld (Ensuring continuous jamming even while swapping of the batteries).</p>	<p>To be physically checked by the BOO.</p>	<p>The System must as per the requirement mentioned in the QRs.</p>
20.	<p>Ruggedized (Anti Drone Gun & its components) as per JSS 5555/Mil Std 810 H or better in respect of temperature (high & low), dust, humidity, rain impact. bump, drop and vibration tests.</p>	<p>The Firm should submit national/international accredited lab certificate/report in respect of the same.</p>	<p>The System must as per Specification mentioned in QRs.</p>
21.	<p>Operating Temp: -20° C to +50° C Storage Temp: -30° C to +50° C OR Operating Temp:- 30° C to +50° C Storage Temp:- 30° C to +50° C (user may decide at the time of tender)</p>	<p>The firm should submit national/international accredited lab certificate/report in respect of the same.</p>	<p>The System must as per the requirement mentioned in the QRs.</p>

[Signatures and dates including: 6 Dec 2022, 6/12/22, and other illegible signatures]

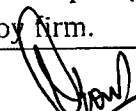
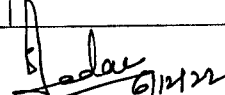
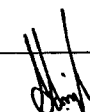
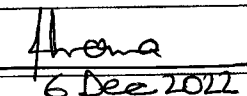
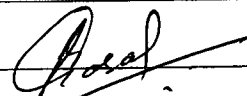
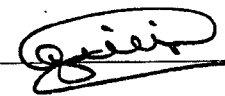

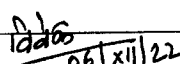
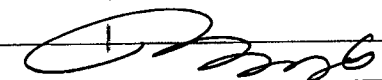
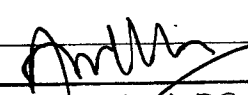
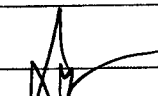
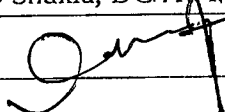
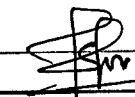
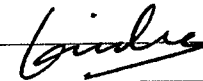
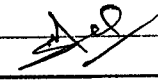
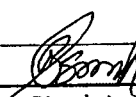
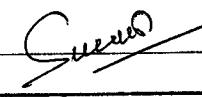
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22.	Life of equipment- 05 Years.	The OEM should submit undertaking in this regard.	The OEM should submit undertaking in this regard.
C	POWER SOURCE		
23.	The system should operate on Lithium based rechargeable battery.	To be physically checked by the BOO.	The System must as per the requirement mentioned in the QRs.
24.	Battery/backup:- i) Supplied batteries should have warranty of 03 years or 500 cycles (after 500 cycles battery should not be less than 70% of its original initial capacity) Batteries should have the backup of minimum 1 hour for continuous operation (Neutralization/Jamming).	To be physically checked by the BOO by verifying the certificate/warranty of OEM. The system should also be operating independently on battery backup for specified time.	The System must as per the requirement mentioned in the QRs.
25.	Suitable battery charger: ii) Suitable battery charger to work with in the range of AC (110 V to 270V, 50 Hz). charging time max 06 Hrs for fully charging of battery with full charge indication.	Switch 'ON' the charger on 50 Hz variable AC mains supply and check the out-put voltage by varying the In-put voltage from 110 V to 270 Volts. Check the charger for 'Charger ON' and 'Charge complete' indications. Charge a fully discharged battery with charger and charge the battery within 06 Hrs.	The System must as per the requirement mentioned in the QRs.
D	MISCELLANEOUS:		
26.	Should have ruggedized IP 67 carrying cases to make eqpt safe against damage during transportation.	The firm submit the certification in this regard.	The System must as per the requirement mentioned in the QRs.
27.	Operating manual user/operator will be provided by firm.	To be physically checked by the BOO.	The requirement must provide by the OEM/Firms.
28.	Technical manual for minor repair/maintenance will be provided by firm.	To be physically checked by the BOO.	The requirement must provide by the OEM/Firms.
29.	List of spare parts (if any) for minor repair will be	To be physically checked by the BOO.	The requirement must provide by

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	provided by the firm.		the OEM/Firms.
30.	Tools for minor repair (if any) and maintenance will be provided by firm.	To be physically checked by the BOO.	The requirement must provide by the OEM/Firms.
	 (Pankaj Goomer), ADG (Log), BSF	 (S C Yadav), DIG(SIW) (Now IG), BSF	 (S S Rathore, Comdt (NIIE Cell) BSF
	 (Happy Verma, Comdt Ord, BSF	 (Dr. M M Gosal), SSO, BPR&D	 (R. Yadagiri, Sc 'F', DLRL, DRDO, Hyderabad
	 (Jaspreet Singh), 2IC, ITBP	 (Vivek Kumar Gupta), JAD, DCPW	 Sh Anoop Shukla, DC/AJA, BSF
	 (Anil Kumar Rajput), DC, NIIE Cell. BSF	 (Lalit Saxena), DC/Comn, CRPF	 (Vikrant Yadav), Sqn Cdr, NSG
	 (Kapil Kamdi), DC, CISF	 (Ph. K K Sharma, AC, SIW, BSF	 (Inspr/RM, Ashwani Kumar), SIW, BSF
	 (Sub Balwan Singh), LO Assam Rifles	 (ASI/Comn Bhatt Shekhar), SSB	

✓
Approved / Not approved


Director General
Border Security Force