

TECHNICAL SPECIFICATION OF CAMERA SYSTEM FOR DRONE DETECTION

Ser	Subject	BN Requirement	
1.	Name of the item	Camera System for Drone Detection	
2.	Purpose	To detect, track and identify small UAVs during both day and night	
3.	Quantity	04 (Four) complete sets	
4.	Brand	To be mentioned	
5.	Model	To be mentioned	
6.	Country of Origin	USA, UK, Canada, Switzerland, Norway, Turkiye, South Korea, Japan, China and EU Countries (Country to be mentioned)	
7.	Country of Manufacture	USA, UK, Canada, Switzerland, Norway, Turkiye, South Korea, Japan, China and EU Countries (Country to be mentioned)	
8.	Year of Manufacture	2026 or later	
9.	Manufacturer	Name and detail address with email of the Original Equipment Manufacturer (OEM) is to be mentioned	
10.	Supplier	Name and detail address with email of the Supplier is to be mentioned	
11.	Scope of Supply	Item	Quantity
		Camera System for Drone Detection	04 complete sets
		Software	Para 17.k, 17.l
		Tools and Accessories	Para 18
		Cables	Para 19
		Certification and Reports	Para 20
		Drawing and Manual	Para 21
		Training	Para 22
		Installation, Supervision and Setting to Work	Para 23
	Test, Trial and Acceptance	Para 24	
12.	The offered items shall be suitable for continuous (at least 24 hours at a stretch) and trouble-free operation in the environmental condition mentioned beside	a. Temperature	0 ^o C - 50 ^o C
		b. Relative Humidity	Up to 95% RH, non-condensing
13.	Power Supply Requirement	a. 415V, 3 phase, 50 Hz and 220V, 1 phase, 50 Hz shall be available on site. Requirement of system power supply to be mentioned b. The bidder is to provide power supply unit if required to match the available power rating (to be mentioned)	
14.	Technical Parameters		
15.	Daylight/ Lowlight HD Camera		
	a. Image Sensor Type and Size	1/1.8-inch starlight CMOS or better	
	b. Focal Length	12.5-750mm or better	
	c. Focusing	Both manual and auto focus to be available	
	d. Automatic day/night switching with motorized IR-Cut Removable (ICR) filter	To be available	
	e. Optical Zoom	60x or better	
	f. Digital Zoom	To be mentioned	
	g. Pixel Size	1920 x 1080 or better	
	h. Wide Field of View (Horizontal x Vertical)	To be mentioned	

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	j. Narrow Field of View (Horizontal x Vertical)	To be mentioned
	k. IP Rating	IP 65 or better
	l. Performance with 0.3 m x 0.3 m UAV under following conditions- Atmospheric Visibility: Up to 20 km, Relative Humidity: Up to 90% (non-condensing), Temperature Difference <4K	(1) Detection Range: 4 km or better (2) Tracking Range: 3 km or better (3) Recognition Range: 2 km or better
	m. Cooling Type	To be mentioned if applicable
	n. Dimension	To be mentioned
	o. Weight	To be mentioned
16.	Thermal Camera	
	a. Detector type (Cooled/Uncooled, FPA, VOx/ a-Si etc.)	To be mentioned
	b. Spectral Waveband	8-14 μ m to be available, other to be mentioned
	c. Focal Length	30 ~ 180mm or better
	d. Focusing	Both manual and auto focus to be available
	e. Optical Zoom	5X or better (To be mentioned)
	f. Digital Zoom	To be mentioned
	g. Resolution	640 x 512 or or better
	h. Pixel Pitch	To be mentioned
	j. NETD (Sensitivity)	30 mK or better
	k. Wide Field of View (Horizontal x Vertical)	To be mentioned
	l. Narrow Field of View (Horizontal x Vertical)	To be mentioned
	m. IP Rating	IP 65 or better
	n. Performance with 0.3 m x 0.3 m UAV under following conditions- Atmospheric Visibility: Up to 20 km, Relative Humidity: Up to 90% (non-condensing), Temperature Difference < 4K	(1) Detection Range: 3 km or better (2) Tracking Range: 1.5 km or better (3) Recognition Range: 1.5 km or better
	o. Cooling Type	To be mentioned if applicable
	p. Dimension	To be mentioned
	q. Weight	To be mentioned
	r. Requirement of air/Nitrogen charging	To be mentioned
17.	Operator Console	
	a. IP Rating of the console	IP 22 or better
	b. Display Size	24" or larger
	c. Display Type	LCD/ LED or to be mentioned
	d. Display Resolution	Full HD or better
	e. Joystick with zooming and track control facilities	(1) To be incorporated (2) Zooming Capabilities: To be incorporated
	f. Keyboard	To be incorporated.
	g. Controllability	(1) Control Angle for the camera unit: Azimuth (continuous 0° x 360° rotation) and Elevation (0° to +90° or better)- To be mentioned. (2) Slewing Velocity of the camera unit: To be mentioned.
	h. Available features on the operator console	Following or more features to be available: (1) Training, Elevation, Focus, Zoom and Track functions of the Daylight and the Thermal Cameras by

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		the operator (2) Palette selection, Black/ -White Target selection, White balance control and control of other parameters for target detection by the operator
	j. Operating System	Licensed version with lifetime validity to be provided.
	k. System Software	Licensed version with lifetime validity to be provided.
	l. Backup Software	Backup of Operating System and the System Software, step-by-step installation guide for installing the software and passwords/key/dongle (as applicable- To be mentioned) are to be provided.
	m. Video file format and Compression Technique	To be mentioned
	n. Storage Capacity	(1) Minimum 15 days video backup facility is to be available. (2) SSD capacity, type and RAM size, type are to be mentioned (SSD capability to be suitable for 15 days video storage and the video file format).
	p. File Extraction Method	(1) It shall be possible to extract files onto any memory device such as USB storage (2) The format of the output video files shall be suitable for playing with common players such as Windows Media Player, VLC etc. without any conversion.
18.	Tools, Accessories, and Spares (A distance of 50m between the camera unit and the Operator Console is to be considered)	(1) All accessories and special tools required to operate the system to its full functionality are to be provided (2) List of such accessories and tools are to be submitted with the offer. (3) A list of OEM recommended spares for smooth operation of the items for next 3 years with unit price is to be submitted with the offer.
19.	Cables (A distance of 50m between the camera unit and the Operator Console is to be considered)	(1) Required amount of power, signal/ control cable is to be provided. (2) List of different types of cable with length is to be attached with the offer.

20. **Certificates and Reports.**

a. To be provided with the offer:

- (1) Authorization certificate for the bidder from the OEM
- (2) Supply assurance certificate from the OEM (including assurance of brand-new, unused, genuine, and brand-new product of recent model; and ensuring the continuity of operation and availability of necessary spare parts for at least 15 years in case the offered items become obsolete)
- (3) Guarantee Certificate from the bidder
- (4) Warranty Certificate from the bidder
- (5) After Sales Service Support Certificate from the bidder
- (6) IEEE/IEC/IMO and such certification regarding classification/standard of the offered item
- (7) User List with supporting document such as Contract/ Purchase order/ End user certificate etc.

b. To be provided during delivery:

- (1) Quality Assurance Certificates for each item and their associated equipment and instruments from the OEM
- (2) Supply assurance certificate (including assurance of genuine product and brand-new item of updated model) from the OEM
- (3) Guarantee Certificate from the bidder
- (4) Warranty Certificate from the bidder
- (5) After Sales Service Support Certificate from the bidder

21. **Drawing and Manual/ Documentation.**

a. **Installation Drawings.** Following drawings are to be submitted for buyer's approval prior 03 (Three) months of delivery:

- (1) Layout drawing
- (2) Electrical inter-connection diagram of all equipment
- (3) Cable diagram including cable type and cable grouping
- (4) List of works (facility work support) those are needed from BN

b. **Manuals/ Document** 04 (Four) sets of following manuals and documents are to be provided as per defense standard in English at the time of delivery:

- (1) Category 1 - Purpose and Planning Information; Summary of Data.
- (2) Category 2-Operating Information; Operation Description; Drill.
- (3) Category 3 - Technical Description; System and Equipment Levels.
- (4) Category 4 - Installation; Preparations for Acceptance; Trials Schedules.
- (5) Category 5 - Maintenance Information and Instruction.
- (6) Category 6 - Planned Maintenance Schedules.
- (7) Category 7 - Parts Catalogue.

22. **Training.**

a. **Duration.** Online training shall be provided to 20 BN personnel in Haiti for 10 (Ten) working days by OEM engineers after completion of installation.

b. **Training Objective.** The objective of the training shall be to learn about the operation, functionality and maintenance of the systems.

c. **Training Contents.** The contents of the training shall include following (but not limited to):

- (1) Operation of the system.
- (2) System composition, configuration, principle of operation and troubleshooting.
- (3) Data format and protocol of sensor, processors and control console.
- (4) Software installation, operation and configuration for smooth conducting of all the tests.
- (5) Theoretical concept and procedure of tests (practical).
- (6) Repair and maintenance.

23. **Installation, Supervision and Setting to Work (STW).**

a. **Installation Site.** Haiti.

b. **Installation Materials and Accessories.** All materials related to the installation of the systems, including junction boxes, brackets, nuts, bolts, securing tie clips, slips, channels, sealing material etc. (not limited to) shall be provided by the supplier. **A list of the installation materials**, which shall be provided by the supplier, is to be submitted with the offer.

c. **Supplier's Responsibilities during Installation.**

- (1) The systems shall be installed in Haiti inside the BN contingent area by BN personnel under live online supervision of the OEM engineers and the supplier's representative. Installation includes Setting-to-Work with associated equipment and test-trial in Chattogram Naval Area.
- (2) The supplier shall do any modification/ alteration required to install the offered items at no additional cost to BN.

24. **Test, Trial and Acceptance.**

a. **General.** 04 (Four) sets of Camera System for Drone Detection shall be installed in Haiti. However, test-trial of the systems shall be carried out in Chattogram Naval Area. Engineers from the supplier organization or the OEM shall be physically present and demonstrate the capabilities

of the systems as specified. If the OEM engineers are not physically present during the test-trial, they are to remain available for live online support.

b. **Acceptance.** On completion of satisfactory test-trial, an acceptance certificate shall be provided by BN. Final acceptance shall be given by CINS.

25. **Warranty, Guarantee and After Sales Service.**

a. **Warranty.**

(1) 12 (Twelve) months manufacturer's warranty for trouble-free operation shall be provided for the item from the date of acceptance by the purchaser. If any component and submit of the supplied items becomes defective during the warranty period, the overall warranty shall be extended automatically for the period of subject component remains defective.

(2) For warranty repair/ replacement, the supplier shall collect the defective item from NSDChittagong/ NSSDDhaka and re-supply the same to the collecting place after warranty repair or replacement, within 90 (ninety) days from the date of defect at no cost to the purchaser.

b. **Guarantee.** The supplier shall provide continued supply of spares for at least 10 (Ten) years at a reasonable price (not exceeding 3% per year) even if the supplied products are discontinued by the OEM or become obsolete.

c. **After Sales Service.** After sale service shall be provided online as and when required for at least 15 years after the installation. If any system, equipment etc becomes obsolete or out of production during or after the warranty period (at least up to 15 years), the supplier shall submit alternatives(same/ upgraded version)to BN for selecting a suitable replacement.

26. **Delivery.**

a. **Delivery Time.** 02 (Two) months from the date of issuing purchase order.

b. **Place of Delivery.** NSD Chattogram.

c. In case of CFR/CPT, the supplier shall carry the items from the seaport/airport to NSD Chattogram at the cost and responsibility of the supplier.

27. **Shipment.**

a. **Source of Supply.** To be mentioned (Preferably from the country of origin or manufacture).

b. **Port of Shipment:** To be mentioned(Preferably from the country of origin or manufacture).

c. **Consignee.**

The Commanding Officer
Naval Stores Depot
New Mooring, Chattogram
Bangladesh
BIN-002349278-0503

or Officer In Charge
Naval Stores Sub Depot Dhaka
Naval Unit Khilkhet
Namapara, Dhaka-1229
Bangladesh

d. All items shall be brand-new and be delivered in sea/airworthy packing to ensure safe transit. Certificates in this regard are to be provided during delivery.

e. All packages shall have packing notes showing their contents in detail and all packages shall be marked with the name and address of the consignee and gross weight.

28. **Validity of Offer.** The offer shall remain valid till 30 June 2027.

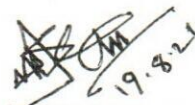
29. **Price.** If the items are imported against this tender, price is to be quoted without import duties.

30. **Terms of Payment.** 100% payment shall be made in local currency after final acceptance by BN.



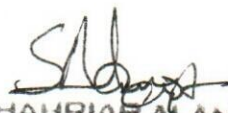
31. Compliance Statement.

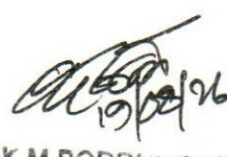
- a. The compliance statement shall have product brochure/ datasheet containing all necessary data and drawing relevant to this tender.
- b. If the offered item has any mismatch with the specification, the deviation is to be clearly marked and explained.
- c. The compliance statement is to contain definite statements with specific data.

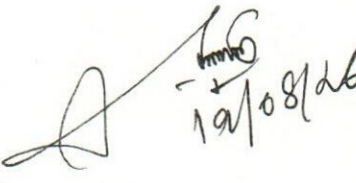

19/08/26
SYED ASHRAFUZZAMAN
Lt Commander BN
Staff Officer (Electrical)
Directorate of Naval Weapons
and Electrical Engineering
NHQ, Banani, Dhaka-1213
Member


19/08/26
M SAMI
Lt Commander BN
Staff Officer (NS-1)
Naval Headquarters
Banani, Dhaka-1213
Member


19/08/26
KAISER MAHMUD
Lt Commander BN
Staff Officer (Plans-II)
Naval Headquarters
Banani, Dhaka-1213
Member


MD SHAHRIAR ALAM
Captain BN
Director of Naval Armament
Inspection and Supply
NHQ, Banani, Dhaka-1213
19.08.26
Member


19/08/26
AKM BODRUL QADIR
Captain BN
Director of Naval Info & Tech
Naval Headquarters
Banani, Dhaka-1213
Member


19/08/26
SM MONIRUZZAMAN
Commodore BN
Director of Naval Weapons
and Electrical Engineering
NHQ, Banani, Dhaka-1213
Member


23/08/26
MD. SHAHIDULLAH AL FARUK
Commodore BN
Director of Naval Engineering
Naval Headquarters
Banani, Dhaka-1213
President