

## GOVERNMENT OF ARUNACHAL PRADESH OFFICE OF THE DIRECTOR GENERAL OF POLICE DIRECTOR GENERAL OF POLICE: ITANAGAR

Dated Itanagar, the 10th December, 2024.

## **TENDER NOTICE**

On behalf of the Governor of Arunachal Pradesh, Director General of Police, Arunachal Pradesh, Itanagar invites Sealed Tenders under two Bid systems (Technical & Financial Bid) from the manufacturers, authorized agents/ dealers/suppliers of reputed firms for entering into contract for supply of Micro Drones for Crowd Monitoring & Surveillance Crime Scene, Live Events etc., for Arunachal Pradesh Police during 2024-25. For details, please visit our web site - www.arunpol.nic.in. and website - arunachaltenders.gov.in.

Sd/-Director General of Police Police Headquarters, Itanagar Arunachal Pradesh

(Not to be published)

Memo No. PHQ (Prov) 01/ 2023-24. Copy to :-

Dated Itanagar the 12<sup>th</sup> December, 2024.

Copy to: -

- 1. The Director of Information and Public Relations Govt. of Arunachal Pradesh, Naharlagun for information and wide Circulation. He is also requested to pass necessary order for publication of the above Tender Notice in two leading Newspaper of Arunachal Pradesh published from Itanagar namely "Arunachal Times" and "Arunachal Front".
- 2. The In-charge, Computer Cell, PHQ, Itanagar. The tender notice along with list of items with specifications may be uploaded in the website of Arunachal Pradesh Police (arunpol.nic.in).
- 3. Office copy

Asstt. Inspector General of Police (E), Arunachal Pradesh

Itanagar.

Asstt. Inspector General of Police(E)
Arunachal Pradesh
Itanagar

## GOVERNMENT T OF ARUNACHAL PRADESH OFFICE OF THE DIRECTOR GENERAL OF POLICE POLICE HEADQUARTERS: ITANAGAR

No. PHQ (Prov) 01/2023-24.

Dated Itanagar, the 10th December, 2024.

## TENDER NOTICE - CUM - TERMS AND CONDITIONS

On behalf of the Governor of Arunachal Pradesh, Director General of Police, Arunachal Pradesh invites Sealed Tender under two Bid systems (Technical Bid & Financial Bid) from the manufacturers, authorized agents/ dealers/suppliers of reputed firms for entering into contract for supply of Micro Drones for Crowd Monitoring & Surveillance Crime Scene, Live Events etc., for Arunachal Pradesh Police during 2024-25. For details, please visit our web site-www. arunpol.nic.in. and website - arunachaltenders.gov.in.

1.

SI. No.	Description of items to be procured	Approx. Cost of tender	Earnest money required	Tender Fee (Nonrefundable)
1.	Procurement of Micro Drones for Crowd Monitoring & Surveillance Crème Scene, Live Events etc., for Arunachal Pradesh Police during 2024-25.	Rs. 50,00,000/-		Rs. 1,000/-
	(Detail Specifications attached at Annexure -A)			

#### 2. Critical date sheet:

SI.	Particulars	Date	Time
1.	Date of publication of Tender	12/12/2024	
2.	Bid submission start date	From the date of publication onward	
3.	Bid submission end date	13/01/2025	1100 hrs.
4.	Physical submission of earnest Money deposit/Bid Money and cost of Tender Documents (Tender fee).	With technical bids. However, the tenderer who want to obtain tender document from PHQ, Itanagar, tender fee (Bank Draft in favor of AIGP (E), PHQ, Itanagar payable at SBI, Itanagar) may be furnished at the time of obtaining the tender documents.	
5.	Date of Technical bid opening	13/01/2025	1130 hrs.

- 3. The Tender documents must be provided in two (02) covers:
  - 1. Cover-1: It shall contain scanned copies of eligibility information as under.
  - a) Tender fee should be attached, in case the documents downloaded from website tender fee in form of BD/DD should be attached along with Technical Bid.



- b) Valid attested copy of Trading license / Company / Firm Registration Certificate issued by competent authority for the tendered items.
- c) Attested copy of firm GST Registration.
- d) Attested copy of PAN Card.
- e) Approval of DGCA and NPNT compliant for Drone should be attached.
- f) Original letter of authority in respect of authorized distributors / dealership or Original Equipment Manufacturer (OEM) certificate.
- g) Technical bid along with its specification and original leaflets, brochure, catalogue / literature, if any of each tendered item.
- h) Latest financially soundness certificate / Bank Solvency Certificate/ CA. Certificate.
- i) Technical compliance statement should be enclosed along with technical bid clearly specifying deviation, if any for all specifications mentioned in the tender
- j) Undertaking letter about non-blacklisting of the firm/ Original Equipment Manufacturer.
- k) 7 (Seven) years service & spare parts support after expiry of warranty period should be provided on payment basis. In this regard, an undertaking must be submitted by the participating firm.
- Year of firm's registration. Firm should be in business for minimum three years (Declaration certificate should be attached.
- m) Tender documents duly completed and signed BUT without indication of the rates "Quoted".
- n) Earnest Money Deposit (EMD) must be attached in form of TDR/ FDR/ Demand Draft/ NSC/ KVP etc. of Nationalized Bank/ Post offices duly pledged in favour of Asstt. Inspector General of Police (E), PHQ, Itanagar. However, NSIC / SSI / UAM- MSME certificate, applicable to those who are seeking exemption from EMD.
- o) The bidder or its Original Equipment Manufacturer must be a manufacturer of the item. An undertaking to this effect must be given.
- p) The tenderer (Agent/ Dealer) should furnish full name and clear address of the manufacturing unit vis-a-vis the product they intend to supply. In case of failure to do so, their bid/ offer is liable to be rejected.
- q) The tendering firms should enclose with technical offer, users list if any organization/ Department etc. to whom the equipment have already been supplied. Satisfactory performance certificate issued by the user department should be attached.
- 2. Cover-2: It shall contain documents on "Financial Bid / Price Bid".
- a) Rates must be clearly written in figures as well as in words, Showing GST separately.



- b) Offers with such stipulation like "as applicable" will be treated as vague and are liable to be ignored.
- c) Financial bids shall be opened only of those bidders who have been declared technically qualified and whose product found suitable in demonstration.

#### GENERAL INSTRUCTION:

- 1. The tenders received after scheduled date & time will not be entertained. The tenderers or their representative may remain present at the time of opening of tenders.
- 2. There should not be any cutting / over writing.
- 3. The Tenderer / Firms who fail to fulfill the eligibility conditions will be summarily rejected.
- 4. The firms will have to submit all required documents (as mentioned in cover-1) including EMD, cost of Tender documents in the office of Assistant Inspector General of Police (E), Police Head Quarter, Itanagar, Arunachal Pradesh on 13/01/2025 at 1100 hrs.
- 5. In case tender opening day is declared as holiday or bandh call at Itanagar, the tenders shall be received up to next working day till 1100 hrs. and opened on the same day at 1130 hrs.

## 6. The details of Earnest Money Deposit (EMD):

- A. Earnest Money Deposit.
- a) The Earnest Money Deposit shall be retained by the purchaser till submission of Security Deposit.
- b) No interest will be payable for the EMD and Security Deposit by the purchaser.
- c) The EMDs of unsuccessful bidders will be returned after opening the financial bids.
- B. Forfeiture of Earnest Money Deposit:
- a) If the bidder withdraws the bid after Bid opening during the period of bid validity.
- b) In case of a successful bidder, if the bidder fails within the specified time limit to sign the Contract Agreement; or
- c) A successful bidder fails to furnish the 5% of Supply Order value as Security Deposit at the time of signing the Contract Agreement.

#### 7. Security Deposit: -

- a) Successful tenderers will be required to deposit 5% of the total value of the Supply Order as Security Deposit within 15 days from the date of issue of letter of acceptance of tender for the warranty period. The Security Deposit has to be drawn in the name of Asstt. Inspector General of Police (E), PHQ, Itanagar payable to SBI, Itanagar, O/o the Director General of Police, Arunachal Pradesh. The same Security Deposit will be returned only after completion of the Warranty Period.
- b) **Conditions**: If the tenderer who fails to supply the material / perform the task assigned to him in the purchase order, within the period prescribed for such delivery specified above, the AIGP (E) or other competent authority, shall be entitled at his discretion to the actions as under:
- i) Graded liquidated damages for delay in delivery of all or any good or performance of services will be liable for as under:
- a. For first 30 days @ 1% of the value of the goods.



- b. For next 60 days @ 2% of the value of the goods.
- c. For delay of 2 month/over & up to 4 mts @ 4% of the value of the goods.
- d. Beyond 4 months and up to 6 months @ 5%, of the value of the goods & on expiry of 6 months the contract would automatically get nullified and Bank Guarantee would be invoked.
- ii) If the tenderer fails to deliver the material as per terms and conditions of Supply Order within the stipulated period, the Supply Order will be cancelled and will forfeit the EMD/ Security Deposit. Further, the successful tenders will have to enter into a "DEED OF AGREEMENT" stipulating the Terms and Conditions of the contract with the AIGP (E), PHQ, Itanagar.
- 8. **Guarantee** / **Warranty**: The Supplier shall provide 3 (three) years Warranty for the equipments mentioned in the Contract from the date of installation as specified in the tender schedule.
  - a) During warranty period, in case of local service centers complaints should be attended within 05 days and in case of out-station service centers complaints should attended within 10 days.
- 9. Tendering firms should mention names and addresses of the authorized service centers in India from where quoted equipments can be serviced. However, preference will be given to firms having Service Centers in Arunachal Pradesh.
- 10. The tenderer (Agent/ Dealer) should furnish full name and clear address of the manufacturing unit vis-a-vis the product they intend to supply. In case of failure to do so, their bid/ offer is liable to be rejected.
- 11. Delay in the Suppliers performance: Delivery of the Goods and performance of services shall be made by the supplier in accordance with the time schedule specified by the purchaser in its Schedule of Requirement. All unexcused delay by the supplier in the performance of its delivery obligations shall render the supplier liable to forfeiture of its Security Deposit, imposition of liquidated damages and or termination of the contract for default.
- 12. The buyer will not pay for transit insurance. The bidder will be responsible until the entire consignment reaches the location as mentioned in the Supply Order in good condition.
- 13. In case of any breach of contract, Terms of Agreement and Purchase Order and its conditions, the decision of the Director General of Police, PHQ, Itanagar (AP) is final and binding on the bidder. In case of any dispute, the matter can be referred to competent Court at Itanagar only and not anywhere else.
- 14. The bidders should keep checking the website for any added / corrigendum to the notice / bidding documents till the date of submission of bids and the bidder should incorporate the same in his bid documents.
- 15. Conditional bids and the bids not meeting the qualifying criteria on the date of receipt of bids shall be summarily rejected.
- 16. The department will not be responsible for delay in submission due to any reason(s).



- 17. The tender papers containing full details with specifications and terms and conditions can be obtained from Dy. Superintendent of Police (Provisioning), PHQ Itanagar, on payment of tender fee of Rs. 1000/- (Non-refundable through a bank draft in favour of the Asstt. Inspector General of Police (E), PHQ, Itanagar, Arunachal Pradesh payable at S.B.I. Itanagar on any working day from 0930 hrs to 1600 hrs w.e.f. 12/12/2024 to 12/01/2025. The tender documents may also be download from our website. The tenderers downloading the documents from website are also required to submit a Bank Draft of Rs. 1000/- as tender fees. No other mode of payment will be accepted.
- 18. Rate should be quoted F.O.R Central Store, PHQ, Itanagar. Rates quoted other than F.O.R Central Store, PHQ, Itanagar shall not be accepted. No packing or forwarding charges will be allowed. The rate of GST (as applicable) may be charged / quoted by the tenderers and the amount be clearly mentioned for all items. The rate should be quoted in Indian currency both in figure and words clearly. Tenders must be eligible and clear in all respect else the tenders shall be liable to be rejected.
- 19. Tenders should be addressed to the undersigned by designation and not by name. The separate sealed envelope containing the tender should be subscribed as "Tender for supply of Micro Drones for Crowd Monitoring & Surveillance Crème Scene, Live Events etc., for Arunachal Pradesh Police and sent by Registered Post/Speed Post/Courier Service or put in the Tender Box kept in the office of the undersigned (Provisioning Branch) on any working day from 0900 to 1700 hrs. The tenders received after scheduled date & time will not be entertained.
- 20. Delivery of the stores will have to be completed within 90 days from the date of issue of Supply Order. In case of failure to supply the items in time, violation of any provision of Deed of Agreement, the firm is liable to be blacklisted.
- 21. If any item is found damaged or otherwise unacceptable at the time of delivery/inspection, the supplier will be required to remove the same from Central Store, PHQ, Itanagar, Arunachal Pradesh at their own cost within 15 days.
- 22. Payment will be made to the supplier directly only after receipt, installation and acceptance of items by the Board.
- 23. The Director General of Police, PHQ, Itanagar (AP) reserves the right to reject the lowest or all or any of the tenders without assigning any reason thereof.
- 24. All the technically qualified firms should have to demonstrate their Drones for final selection before opening of price bids. The date for demonstration will be intimated in due course of time.
- 25. The detail specifications of Micro Drone for Crowd Monitoring & Surveillance Crime Scene, Live Events Video Streaming/ Unmanned Aerial Vehicle (UAV) to PHQ are enclosed at Annexure- A. The quantities mentioned in the enclosure are all approximation and subject to variation as per actual availability of funds.
- 26. Tenders will remain valid up to 31-03-2025.



27. In case of any query tenderers may contact at following phone no./mail ID.

Officers	Telephone	E-mail ID
Asstt. Inspector General of Police (E), PHQ, Itanagar	9436040005 (Mobile)	Arpolice@rediffmail.com.
Dy. Superintendent of Police (Prov), PHQ, Itanagar	8119086994 (Mobile)	arpolice@rediffmail.com.

Note: - In view of the Govt. policy of "Vocal for Local and Atma Nirbhar Bharat" to encourage local entrepreneurs vide No. FIN/E-30/2017/675 dated 19/08/2020, the registered within Arunachal Pradesh can only participate in the tender process.

Asstt. Inspector General of Police (E)

Police Head Quarter Itanagar

Asstt. Inspector General of Police(E)
Arunachal Pradesh

Itanagar

# Specifications of MICRO Drone for Crowd Monitoring & Surveillance Crime Scene, Live Events Video Streaming/ Unmanned Aerial Vehicle (UAV).

## Quantity of Drone to be procured – 2 Nos.

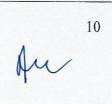
SI.	Parameter	Specifications	
1	Micro UAV system should consist of the following sub-systems: -		
1.1	UAV Bird with battery pack		
1.2	Ground Control station with data link equipment		
1.3	Daylight Camera F		
1.4	Night Camera Pay	rload	
1.5	Universal Battery	Charger with Power Supply System	
2	Micro UAV Chara		
2.1	Role	Surveillance, reconnaissance and detection during day and night	
2.2	Launch and Recovery mode	<ul> <li>i) Vertical Take Off Landing (VTOL) from within an area of 25mX25m clearing or less.</li> </ul>	
	recovery mode	ii) Payload should not damage during recovery of UAV.	
2.3	Aural Signature	≥40dbs at 300 meters Above Ground Level.	
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)	
2.5	Flight Modes	a) Fully Autonomous Vertical Take Off	
	, iight modes	b) Fully Autonomous Vertical 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	
2.6	Endurance	60 minutes or more with all payloads at Mean Sea level.	
2.7	Operating Altitude	400m AGL (Above Ground Level) or more	
2.8	Launching Altitude	2000m AMSL (Above Mean Sea Level) or more	
2.9	Range of Operation	Minimum 5 km line of sight	
2.10	Cruise Speed	25 km/h or more	
2.11	Operating Wind	a) Take off: 20 km/h or more	
	Conditions	b) Landing: 20 km/h or more	
		c) Operate: 20 km/h or more	
2.12	Failsafe features	a) Automatic Return to Home on communication failure	
		b) Automatic Return to Home/ Land on low battery	
		c) Multiple GPS on-board for GPS failure redundancy	
2.13	Propulsion system	Electrical with rechargeable batteries	



SI.	Parameter	Specifications	
3	Payload characte		
3.1	Payloads required	a) Electro Optic (EO) for day (colour) b) Thermal Imager (TI) for night Or c) Integrated day & night payload (as per user requirement)	
3.2	Payload and	a) All payloads should be gimbals stabilized on-board	
	Video	b) Video output should be digitally stabilized at all zoom levels	
	Stabilization	c) Quality of video should not be affected by UAV vibrations	
3.3	Electro Optic (EO) Daylight	a) Colour Camera with 360° pan and 90° tilt control during flight.	
		b) Resolution: 1280X720 pixel or better	
	Payload	c) Optical Zoom: 10X zoom with minimum FOV ≥v5°, maximum	
		FOV ≥ 45° (side field), Digital zoom- 4X	
		d) Should be able to detect human size target at 750-meter slant or more	
3.4	Thermal Imager (TI) Night	a) Thermal Cameria with 360° Camera pan and 90° tilt conrol during flight.	
	Payload	b) Resolution: 640 X 480 pixels or better	
		c) White/ Black Hot modes	
		d) Digital Zoom: 4X or more	
		e) Should be able to detect human size target at 400-meter slant	
		or more	
	Night Recovery	Switchable (from GCS) LED light when operating with Night Payload	
3.5	Beacon	Switchable (from GGG) LED light when operating with Night Payload	
3.5 4. 4.1	Beacon Ground Control S	Station characteristics: - buld have MIL-STD-810G or better and IP51 or better, semi rugged	
4.	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged Hould have MIL-STD 810 G or better and IP65 or better, rugged Seer requirement.)	
4.	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged Hould have MIL-STD 810 G or better and IP65 or better, rugged Seer requirement.)	
<b>4.</b> 4.1	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged Hould have MIL-STD 810 G or better and IP65 or better, rugged Seer requirement.)	
<b>4.</b> 4.1	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Rould have MIL-STD 810 G or better and IP65 or better, rugged  Ser requirement.)  are: - Intel Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB	
<b>4.</b> 4.1	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Hould have MIL-STD 810 G or better and IP65 or better, rugged  Seer requirement.)  Are: -  Intel Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB  2 GB or more	
<b>4.</b> 4.1	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory Display	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Rould have MIL-STD 810 G or better and IP65 or better, rugged  Ser requirement.)  are: - Intel Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB	
<b>4.</b> 4.1	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Hould have MIL-STD 810 G or better and IP65 or better, rugged	
<b>4.</b> 4.1	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory Display	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Rould have MIL-STD 810 G or better and IP65 or better, rugged  Ser requirement.)  Pare: - Intel Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB  2 GB or more  Minimum 10 inch – 1024 X 768 X GA sunlight readable screen, antiglare	
4.1	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory Display Keyboard & input	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Hould have MIL-STD 810 G or better and IP65 or better, rugged  Hould have MIL-STD 810 G or bet	
4.2	Beacon Ground Control S Option-1: GCS sholaptop.  Option-2: GCS sholaptop. (As per us Computing Hardway CPU Storage Memory Display  Keyboard & input Battery Operation  Battery Charging	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Ser requirement.)  Dare: -  Intel Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB  2 GB or more  Minimum 10 inch – 1024 X 768 X GA sunlight readable screen, antiglare  Touch screen  Minimum 02 hours at peak utilization	
4.2 4.3 4.4	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory Display Keyboard & input Battery Operation Battery Charging time of GCS	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB  2 GB or more  Minimum 10 inch – 1024 X 768 X GA sunlight readable screen, antiglare  Touch screen  Minimum 02 hours at peak utilization  Should be less than 3.5 hours.	
4.1 4.2 4.3 4.4 4.5	Beacon Ground Control S Option-1: GCS sho laptop.  Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory Display  Keyboard & input  Battery Operation  Battery Charging time of GCS Data portability	Station characteristics: - buld have MIL-STD-810G or better and IP51 or better, semi rugged  ser requirement.)  are: -  Intel Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB  2 GB or more  Minimum 10 inch – 1024 X 768 X GA sunlight readable screen, antiglare  Touch screen  Minimum 02 hours at peak utilization  Should be less than 3.5 hours.  Ports for data transfer to external secondary storage devices	
4.2 4.2 4.3 4.4 4.5 4.6	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory Display Keyboard & input Battery Operation Battery Charging time of GCS Data portability Interface	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould Ser requirement.)  Brould Core i5 v Pro Processor, 2.3 GHz or better  Minimum 500 GB  2 GB or more  Minimum 10 inch – 1024 X 768 X GA sunlight readable screen, antiglare  Touch screen  Minimum 02 hours at peak utilization  Should be less than 3.5 hours.  Ports for data transfer to external secondary storage devices  VGA/ HDMI, USB 10/ 100/ 1000 Ethernet  a) Transmit control commands to UAV. b) Receive UAV flight and propulsion parameters.	
4.2 4.2 4.3 4.4 4.5 4.6	Beacon Ground Control S Option-1: GCS sho laptop. Option-2: GCS sh laptop. (As per us Computing Hardwa CPU Storage Memory Display Keyboard & input Battery Operation Battery Charging time of GCS Data portability Interface	Station characteristics: - Dould have MIL-STD-810G or better and IP51 or better, semi rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Brould have MIL-STD 810 G or better and IP65 or better, rugged  Bround Brou	



A.8   GCS Application   a) Geographic Map along with UAV location, UAV trajectory, camera view polygon, waypoints and flight plan.	SI.	Parameter	Specifications
Software    Camera view polygon, waypoints and flight plan.	4.8	GCS Application	
b) Real-time video from the UAV with onscreen display of important parameters like: i) Coordinate of target. ii) Ground altitude of target. iii) UAV Position. iv) Height of UAV above ground level. v) Distance of UAV from GCS. vii) Ground speed of UAV viii) UAV from GCS. vii) Ground speed of UAV viii) UAV Heading/ True North indication. ix) Mission time. c) Geographic map and real-time video views should be displayed at all times during the flight. d) Geographic map and real-time video views should be resizable and/ or switchable to allow user to switch between big map/ small video and small map / big video through a single click/ button input. e) Artificial Horizon indicating UAV altitude f) Switchable between 2D/3D views, capability to tilt/ rotate 3 D map as per user input.  4.9 Map Formats  A.9 Map Formats  A.9 Map Formats  A.9 Map Formats  A.9 Payload controls  a) Selection and switch on/off by coordinates 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 capacity to download maps automatically after specifying location GPS co-ordinates. 4.10 Payload controls a) Selection and switch on/off of payload b) Pan/Tilt/zoom Controls c) Point payload to ground co-ordinate function d) Recording on/off e) Switch on/off Night Recovery Beacon i) Full Camera Control Pan/Tilt Zoom In/Out Black/White Hot ii) RPV Mode iii) Altitude Control a) Video should be recorded in any commonly portable video formats (AVIMPEG/MP4 etc.) b) Video of the full flights should be recorded c) Should have capacity to take image snapshoots at any time during flight. d) Software should be provided that will facilitate extraction of imagery from the recorded video post flight.  4.13 Pre-Flight checks Self-test of UAV system, Output: go/no go			
important parameters like: - i) Coordinate of target. ii) Ground altitude of target. iii) UAV Position. iv) Height of UAV above ground level. 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 views should be displayed at all times during the flight. d) Geographic map and real-time video views should be resizable and/ or switchable to allow user to switch between big map/ small video and small map / big video through a single click/ button input. e) Artificial Horizon indicating UAV altitude f) Switchable between 2D/3D views, capability to tilt/ rotate 3 D map as per user input. 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 capacity to download maps automatically after specifying location GPS co-ordinates.  4.10 Payload controls a) Selection and switch on/off of payload b) Pan/Tilt/zoom Controls c) Point payload to ground co-ordinate function d) Recording on/off e) Switch on/off Night Recovery Beacon i.) Full Camera Control Pan / Tilt Zoom In/Out Black/White Hot ii) RPV Mode iii) Altitude Control a) Video of the full flights should be recorded c) Should have capacity to take image snapshoots at any time during flight.  d) Software should be provided that will facilitate extraction of imagery from the recorded video post flight.  4.13 Pre-Flight checks Self-test of UAV system, Output go/no go Should Link: -			b) Real-time video from the UAV with onscreen display of
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5. Communication Link: -	SI.	Parameter	
i) Transmit control commands from GCS to UAV		Communication L	
	5.1		i) Transmit control commands from GCS to UAV



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	Communication	ii) Transmit parameter of UAV and payload to GCS
	link equipment capacity	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 Bank uplink and down link, preferably on license free Band i.e. 2.4 Ghz or 5.8 Ghz.
6	General Systems	Requirements: -
6.1	Weight	The weight complete Micro UAV bird including battery pack and one payload should ≤ 6kg.
6.2	Assembly / Disassembly time	Less than 10 minutes each.
6.3	Life of Micro UAV	The total technical life of Micro UAV should not be less than 500 landings.
6.4	Environmental Conditions for operation and	The UAV and associated system 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° to +55°C
	storage	iii) Ability to withstand dust, drizzle and humid conditions
6.5	Portable and Operation	The Micro UAV should be battery operated portable, light in weight, compact, for day and night surveillance, capable being carried and operated by two men.
6.6	Battery of AV	The intelligent standard lithium-based battery pack should have the back up of minimum 60 minutes.
6.7	Battery Charger of AV Battery	Suitable universal battery charger to charge the batteries within two to three hours.
6.8	Accessories	a) Water proof Back packs IP66: 1 Set
		b) Field Repair Kit: 1 No's
		c) Lithium based Battery packs: 3 No's
		d) Spare propeller Sets: 2 No's
		e) Spare Landing Gear Sets: 2 No's
		f) Associated Cable & mountings: 1 Set
		g) Hard transportable boxes: 1 Set
		h) User, Technical & Maintenance manual; 1 Set i) Log book: 1 Set
7	Training	i) Log book: 1 Set The force personnel shall be imparted onsite training for proper
	•	handling/ operation/ minor repair of the UAV.

Asstt. Inspector General of Police (E),
Police Headquarters, Itanagar,
Arunachal Pradesh.

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