

GOVERNMENT OF ODISHA
Department of Forest, Environment & Climate Change

OFFICE OF THE DIVISIONAL FOREST OFFICER
REDHAKHOL FOREST DIVISION

Redhakhol, Sambalpur District, Odisha – 768106

Email: dfo.redhakhol@odisha.gov.in

TENDER DOCUMENT
FOR PROCUREMENT OF ENTERPRISE DRONE SYSTEMS

LOT-1 : Dock-Series Multi-Sensor Thermal UAV (48MP×3 + Thermal + LRF) — with 3 Batteries

LOT-2 : Automated Docking Station — IP56, Compressor-AC (paired with LOT-1)

LOT-3 : Multi-Constellation RTK Multifunctional Station (Base/Relay/Rover)

LOT-4 : Standard-Series Multi-Sensor Thermal UAV (48MP Wide + Thermal + LRF) — with 3 Batteries

LOT-5 : Compact Docking Station — IP55, TEC-AC (paired with LOT-4)

LOT-6 : Heavy-Lift Agricultural Spray/Spread/Lift Drone (100 L / 100 kg)

LOT-7 : Compact Standalone Multi-Sensor Thermal UAV (48MP×3 + Thermal) — with 3 Batteries

LOT-8 : Aerial Survey & 3D Reconstruction Software — Flagship Perpetual License (1 Device, Offline)

AND ALL ASSOCIATED ACCESSORIES

Tender Reference	F & E/RKL/012(OFFLINE)/2026-27
Financial Year	2026 – 2027
Tender Mode	Offline – Double Cover System (Sealed Bids)
Bid Availability	17.06.2026 (02:00 PM) to 25.06.2026 (05:00 PM)
Last Date of Receipt	25.06.2026 by 05:00 PM
Date of Opening	29.06.2026 at 11:30 AM
Issued By	Divisional Forest Officer, Redhakhol Forest Division

Redhakhol Forest Division | Odisha Forest Department | www.redhakholforest.com | sambalpur.odisha.gov.in | <https://www.odishaforest.in>

NOTICE INVITING TENDER

Sl.	Name of the Work	Details
1	Purpose	Supply, Delivery, Testing, Commissioning and Demonstration of Enterprise Drone Systems — 8 independent LOTs for Redhakhoh Forest Division 2026-27. Each LOT evaluated and awarded independently.
2	Estimated Cost	Based on fund allocation
3	Bid Availability	17.06.2026 (02:00 PM) to 25.06.2026 (05:00 PM)
4	Last Date	Up to 05:00 PM of 25.06.2026
5	Opening	11:30 hrs on 29.06.2026
6	Issuing Authority	Divisional Forest Officer, Redhakhoh Forest Division, Odisha

PRE-REQUISITE FOR SUPPLY OF MATERIALS

01. Valid GST Registration with competent authority.
02. Permanent Account Number (PAN) registered with competent authority.
03. OEM/Dealer/Firm authorization to supply the goods for the LOT(s) quoted.
04. Valid Bank Account in any scheduled Bank.
05. Operational area/office within the State of Odisha.

TERMS AND CONDITIONS

1. Bid documents available at: www.redhakholforest.com or <https://sambalpur.odisha.gov.in> or www.odishaforest.in.
2. Tender Paper cost is ₹5,000/- flat (non-refundable), uniform for any number of LOTs quoted. Payment must be via Bank Draft / Banker's Cheque favoring the Divisional Forest Officer, Redhakhol Forest Division, payable at Redhakhol.
3. Bid documents available 17.06.2026 (02:00 PM) to 25.06.2026 (05:00 PM).
4. Bids received shall be only through OFFLINE mode on or before 5.00 PM of 25.06.2026 in the Drop Box or through postal/Courier.
5. Bids shall be opened at 11.30 hrs on 29.06.2026. If closed, opened on next working day.
6. This tender has SEVEN (7) independent LOTs: LOT-1 (Dock-series thermal UAV, 3 batteries); LOT-2 (Dock 3-class docking station); LOT-3 (RTK multifunctional station); LOT-4 (Standard-series dock-compatible thermal UAV, 3 batteries); LOT-5 (Compact docking station); LOT-6 (Agricultural spray/spread/lift drone); LOT-7 (Standalone compact thermal UAV, 3 batteries); LOT-8 (Flagship perpetual offline aerial survey & 3D reconstruction software license). Bidders may quote individual LOTs, any combination, or all seven.
7. Submit TECHNICAL BID (Annexure-III) and FINANCIAL BID (Annexure-IV) in two separate sealed covers per LOT. Enclose all covers in one outer cover clearly marked with LOT number(s).
8. The Authority will not be responsible for postal delay or other inconvenience.
9. The Authority reserves the right to cancel any or all bids without assigning any reason.
10. Any Addendum/Corrigendum hosted exclusively on the District Website.
11. Submitted bid valid for 180 days from last date of tender. The Authority has the right to negotiate with bidder/s before issuing work order in public interest.
12. Mere quoting of lowest price will not entitle any bidder to win. Committee has discretionary prerogative to finalize with reference to quality and compliance.
13. Selection on cost-effective basis — lowest price for same specification.
14. Bidders must submit a No-Relationship Certificate (Annexure-V).
15. Bidders must deposit sample/demo unit for quality assurance. For LOT-2 and LOT-5, FAT report may substitute physical sample.
16. Bidders to attend office on date intimated for quality assurance committee inspection.
17. Tender Paper to reach DFO Redhakhol Forest Division by Post/Courier on or before 5.00 PM of 18.06.2026.
18. Tentative requirement subject to availability of funds and Government of Odisha guidelines.
19. Bidder for LOT-2 must provide OEM interoperability certification confirming full compatibility with the UAV model supplied under LOT-1. Bidder for LOT-5 must provide OEM interoperability certification confirming compatibility with the UAV model supplied under LOT-4.
20. Successful bidder will have to deposit the Performance Security/Initial Security deposit (ISD) @5% of tender accepted amount as per OGFR 2023 rule-213 in shape of National Savings Certificate/Kisan Vikash Patra/ Post Office Savings Bank Account/Post Office Time Deposit Account/Term Deposit Receipt/Bank Guaranty from any Nationalized/scheduled Bank in India counter guaranteed by its local branch at BBSR or any place within the state of Odisha with in 7 days of issue of letter acceptance to the bidder.
21. No contract (tender) shall be finally accepted until the required amount of initial security deposit and additional performance security deposit are received by the Engineer-in-Charge/DFO. The performance security will be refunded after One Year of completion of the work and payment of the final bill and will not carry any interest.

Sd /-Divisional Forest Officer,
Redhakhol Forest Division.

ANNEXURE-I — LIST OF ARTICLES TO BE PROCURED

LOT STRUCTURE

LOT-1: Dock-series Compact Multi-Sensor Thermal UAV (48MP Wide f/1.7 + 48MP MedTele + 48MP Tele + Thermal + LRF) — 3 Batteries & accessories. Qty: 1 Set

LOT-2: Automated Docking Station — IP56, Compressor-AC, ≤27-min charge, O4 Enterprise. Qty: 1 No. [Interoperability cert with LOT-1 UAV mandatory]

LOT-3: Multi-Constellation RTK Multifunctional Station — Base/Relay/Rover, O4 Enterprise. Qty: 1 No.

LOT-4: Standard-series Compact Multi-Sensor Thermal UAV (48MP Wide f/1.7 + 48MP MedTele + Tele + Thermal + LRF) — 3 Batteries & accessories. Qty: 1 Set

LOT-5: Compact Docking Station — IP55, TEC-AC, ≤32-min charge, O3 Enterprise. Qty: 1 No. [Interoperability cert with LOT-4 UAV mandatory]

LOT-6: Heavy-Lift Agricultural Spray/Spread/Lift Drone — 100 L spray, 150 L spread, 100 kg lift. With generator, smart charger, D-RTK AG, relay. Qty: 1 Set

LOT-7: Compact Standalone Multi-Sensor Thermal UAV (48MP Wide f/1.7 + 48MP MedTele + 48MP Tele + Thermal + LRF) — 3 Batteries & accessories. Qty: 1 Set

LOT-8: Aerial Survey & 3D Reconstruction Software — Flagship Perpetual Offline License (DJI Terra Flagship or equivalent). Qty: 1 License

(Note: All the UAV must be supplied with Multi battery charging hub and Price of extra batteries per unit, other the quantities mentioned in the specification shall be provided below the concerned LOT for need based purchases)

LOT-1 — Dock-Series Compact Multi-Sensor Thermal UAV (3 Batteries & Accessories)

Sl.	Parameter	Specification
A. Aircraft & Flight Performance		
1	Takeoff Weight	~1,850 g (std); Max Takeoff Weight ≤2,090 g
2	Dimensions (without propellers)	~378×416×213 mm (L×W×H)
3	Max Flight Time	≥54 min (windless, 12 m/s forward, sea level, no payload)
4	Max Hovering Time	≥47 min (windless, sea level)
5	Max Operating Radius	≥10 km (round-trip, 15% safe battery)
6	Max Flight Distance	≥43 km
7	Max Speed — Sport	≥21 m/s fwd; ≥19 m/s back; ≥15 m/s sideways
8	Max Speed — Normal + obstacle sensing	≥15 m/s fwd; ≥12 m/s back; ≥10 m/s sideways
9	Max Wind Resistance	≥12 m/s (operation and takeoff/landing)
10	Max Takeoff Altitude	≥6,500 m AMSL
11	Operating Temperature	-20°C to +50°C
12	IP Rating	IP55 or better
13	Batteries Supplied	THREE (3) intelligent flight batteries
B. Navigation, GNSS & Obstacle Sensing		
14	GNSS	GPS + BeiDou + Galileo + GLONASS + QZSS (multi-constellation)
15	Built-in RTK	H ±0.1 m, V ±0.1 m (RTK); ±0.5 m GNSS; vision H ±0.3 m / V ±0.1 m

16	Obstacle Sensing	Omnidirectional binocular vision + 3D infrared at bottom; range 0.5–20 m (meas.), 0.5–200 m (detect.)
C. Video Transmission		
17	System	O4 Enterprise or equivalent; 2.4/5.2/5.8 GHz
18	Max Range (weak interference)	≥15 km (FCC); ≥12 km (SRRC); ≥8 km (CE)
19	Max Download Speed	≥20 MB/s (with compatible dock or RC)
D. Integrated Multi-Sensor Payload		
20	Wide Camera	1/1.3-inch CMOS; 48 MP; FOV 82°; EFL 24 mm; f/1.7; 1 m–∞
21	Medium Tele Camera	1/1.3-inch CMOS; 48 MP; FOV 35°; EFL 70 mm; f/2.8; 3 m–∞
22	Telephoto Camera	1/1.5-inch CMOS; 48 MP; FOV 15°; EFL 168 mm; f/2.8; 3 m–∞
23	Thermal Sensor	Uncooled VOx; DFOV 45°±0.3°; EFL 53 mm; f/1.0; 5 m–∞
24	Thermal Resolution	1,280×1,024@30fps (super-res); 640×512@30fps
25	Thermal Range	High Gain: -20°C to 150°C; Low Gain: 0°C to 550°C
26	Gimbal Tilt Range	-140° to +113° (tilt); ±52° (roll); ±65° (pan)
27	Laser Rangefinder	≥1,800 m at 20% reflectivity; ±(0.2+0.0015D) m; blind zone 1 m
28	NIR Auxiliary Light	Integrated near-infrared illuminator
29	Video	4K 3840×2160@30fps; FHD 1920×1080@30fps; H.264/H.265
E. LOT-1 Mandatory Accessories		
30	Intelligent Flight Batteries	3 No. — compatible (included in LOT price)
31	Multi-Battery Charging Hub	1 No. — simultaneous ≥3 batteries + rated charger
32	Enterprise RC	1 No. — ≥7-inch display, ≥1000 cd/m ²
33	Spare Propeller Sets	2 sets
34	Hard-shell Transit Case	1 No. — IP54+
35	Landing Pad	1 No. — ≥100×100 cm
36	Cables	Complete data & power cable set
37	microSD Card	128 GB+ V30+: 2 Nos.

LOT-2 — Automated Drone Docking & Charging Station (IP56, Compressor-AC, LOT-1 Compatible)

Sl.	Parameter	Specification
A. General & Mechanical		
1	Weight (without aircraft)	≤55 kg
2	Dimensions — Closed	~640×745×770 mm
3	Dimensions — Opened	~1760×745×485 mm
4	Input Voltage	100–240 V AC, 50/60 Hz
5	Max Input Power	≤800 W
6	Operating Temperature	-30°C to +50°C

7	IP Rating	IP56 or better
8	Max Landing Wind	≥12 m/s
9	Max Operating Altitude	≥4,500 m AMSL
10	Deployment	Fixed ground AND vehicle-mounted (mobile)
B. Power, Charging & Climate		
11	Output Voltage	35 V DC
12	Charging Time (15%→95%)	≤27 min (25°C, aircraft off)
13	Backup Battery	≥12 Ah lead-acid; >4 hrs; 12 V
14	Air Conditioning	Compressor-based; 48 V DC
C. Transmission, Network & RTK		
15	Transmission	O4 Enterprise; 2.4/5.2/5.8 GHz; ≥9 antennas, 2T4R
16	Ethernet	10/100/1000 Mbps adaptive
17	Cellular	4G/LTE via compatible cellular dongle
18	RTK Module	GPS L1C/A,L2,L5; BeiDou B1I–B3I,B2a,B2b,B1C; GLONASS F1,F2; Galileo E1,E5a,E5b,E6; QZSS L1,L2,L5
19	Cloud	FlightHub 2 or equivalent; Cloud API
D. Sensors, Security & Protection		
20	Sensors	Wind speed, rainfall, ambient/cabin temp, cabin humidity, water immersion
21	Security Cameras	External & Internal: 1920×1080; FOV ≥151°; white auxiliary light each
22	Lightning — AC	20 kA; EN 61643-11 Type 2 / IEC Class II
23	Lightning — Ethernet	10 kA; EN/IEC 61643-21 Category C
E. LOT-2 Mandatory Accessories		
24	Cellular Dongle	1 No. — compatible 4G/LTE
25	Mounting Kit	1 Set — ground anchor hardware
26	Vehicle Mount Bracket	1 Set — mobile deployment
27	Fleet Mgmt. Software	Flight Hub 2 - Annual License: 1 year
28	Power Cables	Complete 230 V AC connection set
29	Interoperability Cert	OEM/factory cert confirming compatibility with LOT-1 UAV

LOT-3 — Multi-Constellation RTK Multifunctional Station (Base/Relay/Rover, O4 Enterprise)

Sl.	Parameter	Specification
A. GNSS & Accuracy		
1	Frequencies	GPS L1C/A,L2C,L5; BeiDou B1I–B3I,B1C,B2a,B2b; Galileo E1,E5a,E5b,E6; GLONASS L1,L2; QZSS L1C/A,L2C,L5; L-Band
2	RTK Fixed (Rover)	H: 0.8 cm+1ppm; V: 1.5 cm+1ppm (RMS)
3	Network RTK Calibration	H: 1.0 cm+1ppm; V: 3.0 cm+1ppm (RMS)

4	Tilt Survey (Rover)	0°–60°; accuracy <2 cm within 30° tilt
5	PPP/Satellite Differential	Convergence 20 min; H: 30 cm; V: 40 cm RMS
6	Initialization Reliability	>99.9%
7	Data Formats	RTCM v3.0–3.3 (MSM3–MSM7); DAT raw observation
B. Modes, Transmission & Power		
8	Base Station (Green)	RTK corrections for multiple drones simultaneously
9	Relay Station (Blue)	Range extension relay; 3×–5× improvement (obstructed); 1×–3× (mild)
10	Rover Station (Yellow)	Handheld GCP survey; BLE pairing with mobile device
11	Transmission System	O4 Enterprise; 4× directional antennas (2T4R); RP-SMA
12	Frequency	Relay: 2.4/5.2/5.8 GHz; Base: 2.4/5.8 GHz; Rover: BLE 2.4 GHz
13	Max Range (Base→Aircraft, FCC)	≥15 km (unobstructed)
14	Max Range (Relay, FCC)	Aircraft–relay ≥25 km
15	Power Consumption	Relay ≤14.5 W; Base ≤7 W; Rover ≤6.2 W (without heating)
C. LOT-3 Mandatory Accessories		
16	Survey Pole	1 No. — 32 mm dia, 1.25–2 m adjustable
17	Tripod	1 No. — compatible dual-lock
18	Carrying Case	1 No. — hard-shell protective
19	USB-C Charger	1 No. — compatible rated
20	Software	Compatible mapping post-processing; RINEX v2.1x/v3.0x export

LOT-4 — Standard-Series Compact Multi-Sensor Thermal UAV with Dock Capability (3 Batteries & Accessories)

Sl.	Parameter	Specification
A. Aircraft & Flight Performance		
1	Takeoff Weight	~1,410 g (std); Max Takeoff Weight ≤1,610 g
2	Dimensions (without propellers)	~335×398×153 mm (L×W×H)
3	Diagonal Wheelbase	~463 mm
4	Max Flight Time	≥50 min (windless, forward flight, sea level)
5	Max Hovering Time	≥40 min (windless, sea level)
6	Max Operating Radius	≥10 km (round-trip, 25% safe battery)
7	Max Flight Distance	≥43 km
8	Max Speed — Sport	≥21 m/s fwd; ≥18 m/s back; ≥16 m/s sideways
9	Max Speed — Normal + obstacle sensing	≥15 m/s fwd; ≥12 m/s back; ≥10 m/s sideways
10	Max Wind Resistance	≥12 m/s (operation); ≥8 m/s (takeoff/landing)

11	Max Takeoff Altitude	≥4,000 m AMSL
12	Operating Temperature	-20°C to +50°C
13	IP Rating	IP54 or better
14	Batteries Supplied	THREE (3) intelligent flight batteries
B. Navigation, GNSS & Obstacle Sensing		
15	GNSS	GPS + BeiDou + Galileo + GLONASS + QZSS; integrated RTK module
16	RTK Accuracy	H ±0.1 m; V ±0.1 m (RTK mode)
17	GNSS Accuracy	H ±0.5 m; V ±0.5 m
18	Obstacle Sensing	Omnidirectional binocular vision; detect. 0.5–200 m
C. Video Transmission		
19	System	O3 Enterprise or equivalent; 2.4/5.8 GHz
20	Max Range (FCC, weak interference)	≥15 km; CE/SRRC/MIC ≥8 km
D. Integrated Multi-Sensor Payload		
21	Wide Camera	1/1.3-inch CMOS; 48 MP; FOV ~82°; EFL 24 mm; f/1.7; 1 m–∞
22	Medium Tele Camera	1/1.3-inch CMOS; 48 MP; FOV ~35°; EFL 70 mm; f/2.8; 3 m–∞
23	Tele Camera	1/2-inch CMOS; ≥12 MP; EFL ~162 mm; mechanical shutter
24	Thermal Sensor	Uncooled VOx microbolometer; integrated; 640×512@30fps or better
25	Laser Rangefinder	Integrated; range ≥1,500 m
26	Gimbal	3-axis motorized stabilized
27	Video	4K or FHD; H.264/H.265
E. LOT-4 Mandatory Accessories		
28	Intelligent Flight Batteries	3 No. — compatible
29	Charging Hub	1 No. — ≥2 batteries simultaneous + charger
30	Enterprise RC	1 No. — ≥7-inch display
31	Spare Propellers	2 sets
32	Hard-shell Case	1 No. — IP54+
33	Landing Pad	1 No. — ≥100×100 cm
34	Cables	Complete set
35	microSD Card	128 GB+ V30+: 2 Nos.

LOT-5 — Compact Automated Drone Docking & Charging Station (IP55, TEC-AC, LOT-4 Compatible)

Sl.	Parameter	Specification
A. General & Mechanical		
1	Weight (without aircraft)	≤34 kg

2	Dimensions — Closed	~570×583×465 mm (incl. mounting brackets)
3	Dimensions — Opened	~1228×583×412 mm
4	Input Voltage	100–240 V AC, 50/60 Hz
5	Max Input Power	≤1,000 W
6	Operating Temperature	–25°C to +45°C
7	IP Rating	IP55 or better
8	Max Landing Wind	≥8 m/s
9	Max Operating Altitude	≥4,000 m AMSL
B. Power, Charging & Climate		
10	Output Voltage	28 V DC
11	Charging Time (20%→90%)	≤32 min (25°C, aircraft off)
12	Backup Battery	≥12 Ah lead-acid; >5 hrs; 12 V
13	Air Conditioning	TEC (Thermoelectric Cooler); 28 V DC
C. Transmission, Network & RTK		
14	Transmission	O3 Enterprise; 2.4/5.8 GHz; ≥4 antennas, 2T4R
15	Ethernet	10/100/1000 Mbps adaptive
16	RTK Module	GPS L1C/A,L2; BeiDou2/3 B1I,B2I,B3I; GLONASS L1,L2; Galileo E1,E5B; H: 1 cm+1ppm; V: 2 cm+1ppm
17	Cloud	FlightHub 2 or equivalent; Cloud API
D. Sensors & Safety		
18	Sensors	Wind, rainfall, ambient/cabin temp, cabin humidity, water immersion
19	Security Cameras	External & Internal: 1920×1080; FOV ≥151°; white light each
20	Lightning — AC	20 kA; EN 61643-11 Type 2
21	Lightning — Ethernet	10 kA; EN/IEC 61643-21 Category C
E. LOT-5 Mandatory Accessories		
22	Mounting Kit	1 Set — ground anchor hardware
23	Power Cables	Complete 230 V AC connection set
24	Interoperability Cert	OEM/factory cert confirming compatibility with LOT-4 UAV

LOT-6 — Heavy-Lift Agricultural Spray / Spread / Lift Drone (100 L Spray | 150 L Spread | 100 kg Lift)

Sl.	Parameter	Specification
A. Aircraft — General		
1	Aircraft Weight (spraying)	~75 kg (2 nozzles std); ~77 kg (4 nozzles optional)
2	Max Takeoff Weight (spraying)	≤175 kg (2 nozzles); ≤177 kg (4 nozzles)
3	Max Diagonal Wheelbase	~2,330 mm
4	Dimensions (folded)	~1,105×1,265×975 mm

5	Propellers	8 pairs; 62-inch carbon fibre; folding
6	Max Wind Resistance	<6 m/s
7	Max Flight Radius	2 km configurable
8	Hovering Accuracy (RTK)	±10 cm H; ±10 cm V
9	Hovering Accuracy (GNSS)	H ±0.6 m; V ±0.3 m
10	Operating Temperature	0°C to +40°C
B. Spraying System		
11	Spray Tank	100 L (HDPE)
12	Spray Operating Payload	100 kg
13	Nozzles	2 standard (expandable to 4 optional)
14	Max Flow Rate	30 L/min (2 nozzles); 40 L/min (4 nozzles)
15	Droplet Size	50–500 µm
16	Effective Spray Width	5–13 m
C. Spreading System 4.0		
17	Spreading Tank	150 L
18	Spreader Type	Centrifugal disc; screw feeder discharge
19	Max Flow Rate	400 kg/min (compound fertilizer)
20	Max Spreading Payload	100 kg
21	Effective Spread Width	3–10 m (3 m height, 1100 rpm)
D. Lifting System		
22	Lifting Capacity	100 kg (single-battery); 80 kg (dual-battery)
23	Lifting Cable Length	10 m std; recommended 10–15 m
24	Emergency Escape	Cable fuse disconnection (dual-battery version)
E. Safety System 3.0		
25	Sensor Suite	LiDAR (272°V×60°H) + mm-wave front radar (360°H,±45°V) + downward radar + quad vision (360°H,180°V) + FPV
26	Measurement Range	≤60 m
27	Safe Obstacle Avoidance Speed	≤13.8 m/s
28	Safe Braking Distance	2.5 m from obstacle after hover
F. Remote Controller		
29	Display	7-inch LCD; 1920×1200; 1400 cd/m ²
30	Battery Runtime	≥3.8 hrs internal; ≥3.2 hrs external
31	Charging Time	~2 hrs (USB-C 65 W)
G. Intelligent Flight Battery		
32	Capacity	≥41,000 mAh
33	Voltage	52 V nominal
34	Weight	~14.7 kg

35	Quantity Supplied	TWO (2) batteries
H. Smart Charger (Grid Power)		
36	Input	3-phase 175–520 V or single-phase 200–264 V AC
37	Rated Power	12,000 W (3-phase); 3,000 W (single-phase 220 V)
38	Output Voltage	62 V
I. D-RTK AG Base Station (Bundled)		
39	GNSS	GPS/BeiDou/Galileo/GLONASS/QZSS/L-Band; IP67
40	Positioning Accuracy	Network RTK: H 0.8 cm+1ppm; V 1.5 cm+1ppm; PPP: H 30 cm, V 40 cm
41	Operating Time	≥7 hrs on internal battery
42	Range	≥15 km (FCC); ≥12 km (SRRC)
J. Communication Relay (Bundled)		
43	IP Rating	IP55
44	Battery	6,500 mAh; ≥5 hrs operating
45	Effective Range	≥8 km (FCC); ≥5 km (SRRC); ≥4 km (CE)
K. LOT-6 Mandatory Accessories		
46	Flight Batteries	TWO (2) — compatible (incl. in LOT price)
47	Smart Charger (grid)	1 No. — 12,000 W 3-phase or 3,000 W single-phase
48	D-RTK AG Base Station	1 No. — IP67, L-Band capable
49	Communication Relay	1 No. — IP55, 5-hr battery
50	Remote Controller	1 No. — 7-inch 1400 cd/m ²
51	Spray Rod & Nozzle	2-nozzle std set; optional 4-nozzle upgrade: 1 No.
52	Spreading Feeders	Extra-large + medium auger: 1 set each
53	Lifting System (basic)	1 No. — 10 m cable, hooks, 100 kg rated
54	Carrying/Transport Trolley	1 No.
55	SmartFarm App Subscription	1 year, activated at delivery

LOT-7 — Compact Standalone Multi-Sensor Thermal Enterprise UAV (3 Batteries & Accessories)

Sl.	Parameter	Specification
A. Aircraft & Flight Performance		
1	Takeoff Weight (std propellers)	~1,219 g; Max Takeoff Weight ≤1,420 g
2	Dimensions — Folded	~261×114×138 mm (L×W×H)
3	Dimensions — Unfolded	~307×388×150 mm (L×W×H)
4	Max Payload	≥200 g
5	Propeller Size	~10.8 in; folding
6	Max Flight Time	≥49 min (std propellers, windless, no payload)

7	Max Speed — Sport	≥21 m/s fwd; ≥18 m/s back; ≥19 m/s sideways
8	Max Wind Resistance	12 m/s
9	Max Altitude (no payload)	≥6,000 m AMSL
10	Max Altitude with Accessories	≥4,000 m AMSL
11	Operating Temperature	-20°C to +50°C
12	IP Rating	IP54 or better
13	Batteries Supplied	THREE (3) intelligent flight batteries
B. Navigation & Obstacle Sensing		
14	GNSS	GPS + BeiDou + Galileo + GLONASS (multi-constellation)
15	Obstacle Sensing	Omnidirectional binocular vision + 3D IR bottom; meas. 0.5–20 m; detect. 0.5–200 m
16	Vision Accuracy	H ±0.3 m; V ±0.1 m
17	GNSS Accuracy	H ±0.5 m; V ±0.5 m
C. Video Transmission		
18	System	O4 Enterprise or equivalent; 2.4/5.2/5.8 GHz multi-frequency
19	Max Range (FCC, weak interference)	≥21 km
D. Integrated Multi-Sensor Payload		
20	Wide Camera	1/1.3-inch CMOS; 48 MP; FOV 82°; EFL 24 mm; f/1.7; ISO up to 409,600 (Night)
21	Medium Tele Camera	1/1.3-inch CMOS; 48 MP; FOV 35°; EFL 70 mm; f/2.8
22	Telephoto Camera	1/1.5-inch CMOS; 48 MP; FOV 15°; EFL 168 mm; f/2.8; ISO up to 819,200 (Night)
23	Thermal Sensor	Uncooled VOx; DFOV 45°±0.3°; EFL 53 mm; f/1.0; 5 m–∞
24	Thermal Resolution	1,280×1,024@30fps (super-res); 640×512@30fps
25	Thermal Range	High Gain: -20°C to 150°C; Low Gain: 0°C to 550°C
26	Thermal Palettes	White Hot / Black Hot / Tint / Iron Red / Hot Iron / Arctic / Medical / Fulgurite / Rainbow 1 / Rainbow 2
27	Gimbal Tilt Range	-140° to +50° (tilt); ±52° (roll); ±65° (pan)
28	Laser Rangefinder	≥1,800 m at 20% reflectivity; ±(0.2+0.0015D) m; blind zone 1 m
29	NIR Auxiliary Light	Integrated
30	Video	4K 3840×2160@30fps; FHD 1920×1080@30fps; H.264/H.265
E. LOT-7 Mandatory Accessories		
31	Intelligent Flight Batteries	3 No. — compatible
32	Charging Hub	1 No. — ≥3 batteries + charger
33	Enterprise RC	1 No. — ≥7-inch, ≥1000 cd/m ²
34	Low-Noise Propeller Sets	2 sets spare

35	Hard-shell Case	1 No. — IP54+
36	Landing Pad	1 No. — $\geq 100 \times 100$ cm
37	Cables	Complete set
38	microSD Card	128 GB+ V30+: 2 Nos.
LOT-8 — Aerial Survey & 3D Reconstruction Software — Flagship Perpetual License (1 Device, Offline)		
Sl.	Parameter	Specification
A. License Type & Validity		
1	License Tier	Flagship (perpetual, no expiry, no annual renewal fee); replaces former Electricity/Pro tier
2	License Validity	Perpetual — no time limit; valid from date of activation/redemption
3	Upgrade & Maintenance	No upgrade or maintenance fees from v5.0.0 onwards; future version updates free of charge
4	Authorization Mode	Offline version — device-bound; fully functional without internet connection after initial binding
5	Devices	1 (one) device binding per license
6	Device Unbinding	Permitted once per calendar year; all bound devices unbound simultaneously per operation
7	License Format	Software license key/certificate (activation code or offline exchange code to be delivered at time of supply)
8	Platform	Windows 10 or later, 64-bit only; licensed software installed by supplier and activated at delivery
B. Minimum System Requirements (Workstation to be sourced by Purchaser)		
9	Operating System	Windows 10 or later (64-bit); macOS not supported
10	RAM (Minimum)	32 GB
11	RAM (Recommended)	≥ 64 GB (every additional 10 GB RAM supports $\sim 4,000$ additional photos)
12	GPU (Minimum)	NVIDIA discrete GPU; ≥ 4 GB VRAM; Shader Model 6.1 or above
13	GPU (Recommended)	NVIDIA GeForce RTX 2070 or higher; AMD and integrated GPUs not supported
14	Storage	SSD with sufficient free space for project data (≥ 500 GB recommended for large datasets)
C. Standard Features (included in both Standard and Flagship)		
15	2D Reconstruction	Orthomosaic, DSM, DEM generation from visible-light aerial imagery
16	3D Photogrammetric Reconstruction	Oblique and nadir 3D mesh + textured model generation
17	LiDAR Point Cloud Processing	Import and process point cloud data from compatible LiDAR payloads; includes point cloud accuracy optimization and advanced output results

18	Multispectral Reconstruction	2D multispectral map reconstruction; vegetation index maps (NDVI, NDRE etc.); prescription map generation for compatible drones
19	Ground Control Points (GCPs)	Import, mark and use GCPs for visible-light and LiDAR reconstruction; PPK data support; auto-GCP (v5.x feature)
20	POS Data Processing	Import and process IMU/GNSS POS data for improved accuracy
21	Mission Types Supported	Mapping Mission, Oblique Mission, Corridor Mission, Detailed Inspection Mission (note: route planning removed from v5.0.0+)
22	Outputs	Orthomosaic (GeoTIFF), DSM, DEM, Dense Point Cloud (LAS/PLY/PCD), 3D Textured Mesh (OBJ/B3DM/OSGB), 2D Multispectral Map
23	Coordinate Systems	≥8,500 built-in coordinate systems; custom coordinate system support; 7-parameter transformation
24	Measurement & Annotation	Point, line, area and volume measurement on reconstructed models; camera position viewer
25	Data Compatibility	Compatible with all DJI Enterprise drones and LiDAR payloads (Zenmuse L1, L2, L3, P1 etc.)
D. Flagship-Exclusive Features		
26	3D Gaussian Splatting (3DGS)	Photorealistic ultra-high-detail 3D model generation from drone imagery; excels at fine structures, transparent/reflective surfaces, dense vegetation; significantly better than traditional oblique photogrammetry for visual fidelity
27	LiDAR + Photogrammetry Fusion	Seamless integration of visible-light data with DJI LiDAR point cloud data; produces rich, high-accuracy 3D point clouds and mesh models by fusing both data types
28	Cluster Reconstruction	Distributed multi-node cluster computation for large-scale datasets exceeding single-workstation capacity
29	Electricity / Powerline Application	Dedicated visible-light powerline modeling and inspection tools; corridor modeling for power infrastructure (relevant for utility/forest boundary surveys)
30	Advanced Output Processing	LiDAR self-calibration, advanced point cloud optimization, LiDAR point cloud classification and extraction
E. Software Delivery & Activation Requirements		
31	Delivery Format	Activation code or offline license certificate file (for offline version); delivered by email or physical certificate at time of supply
32	Activation Procedure	Supplier to assist with offline license exchange and device binding at time of commissioning; one visit for installation, binding and demonstration
33	Installation	Latest version of DJI Terra installed on Purchaser's designated workstation by Supplier at time of delivery
34	Training	Min. 4 hours hands-on software training to be provided by supplier at DFO office; covering: activation, data import, 2D/3D reconstruction, LiDAR processing, GCP workflow, output export

35	Post-Supply Support	Minimum 3 months of technical support by email/phone/remote desktop for software issues; response within 2 working days
36	Version	Latest stable release of DJI Terra v5.0.0 or above at time of supply
37	Qty	ONE (1) Flagship Perpetual Offline License

Sd /-

Divisional Forest Officer
Redhakhol Forest Division

ANNEXURE-II — AMC (ANNUAL MAINTENANCE CONTRACT) SERVICES

AMC terms apply independently to each LOT.

Clause	Subject	Description
AMC-1	Warranty Period (Free AMC)	Free comprehensive AMC throughout entire warranty (min. 1 year per LOT) from date of acceptance.
AMC-2	Enterprise Care Plan	Firms can quote Enterprise care plan for additional two years of Warranty for the UAV.
AMC-3	Extended AMC	By mutual written agreement ≥ 30 days before expiry.
AMC-4	Scope of AMC	(a) Preventive: min. 2 visits/year (hardware LOTs only; LOT-8 software — see AMC-4S below); (b) Corrective: full hardware repair/replacement for all LOT components including UAV (airframe, motors, gimbal, cameras, thermal, LRF, batteries, RC), docking station (cover, AC, charging, sensors, cameras, network), RTK station (GNSS, antennas, IMU), agricultural drone (tank, pump, nozzles, propulsion, RTK, safety sensors); (c) All firmware/software updates; (d) Acknowledgement ≤ 4 hrs, engineer ≤ 24 hrs; (e) Critical resolution ≤ 72 hrs; (f) Temporary replacement if > 72 hrs.
AMC-5	Spare Parts	Genuine OEM spares guaranteed. Consumed spares included in AMC rate. Accidental damage at actual cost with prior written DFO approval.
AMC-6	Service Documentation	Signed Service Report within 3 working days of each visit: date, engineer, work, parts (serial nos.), system health, calibration, next service date. Physical register at DFO office.

ANNEXURE-III — TECHNICAL BID

Note: Submit one Technical Bid form per LOT quoted. Clearly mark the LOT number(s) on the envelope.

Sl.	Particulars	Details / Document Reference
01	Name of the Bidder / Vendor / Firm	
02	Address for communication	
03	Permanent registered address	
04	Mobile No. (WhatsApp enabled)	
05	Valid Email ID	
06	Aadhar Card No. (Copy enclosed)	
07	PAN (Copy enclosed)	
08	Income Tax Returns — last 3 years	
09	GST Returns — last 3 years	
10	GSTIN (Copy enclosed)	
11	Certificate of No Relationship (Annexure-V)	
12	Previous Govt. supply orders for similar items (if any)	
13	LOT(s) quoted (tick: LOT-1 / LOT-2 / LOT-3 / LOT-4 / LOT-5 / LOT-6 / LOT-7/ LOT-8)	
14	Interoperability Certificate (mandatory if quoting LOT-2 or LOT-5 independently) (Self Declaration or OEM Certification)	

Signature with seal of the
Proprietor / Vendor / Supplier

ANNEXURE-IV — FINANCIAL BID

Note: Quote the LOTS as per below provided Sheet as applicable. Submit Financial Bid in a separate sealed cover from Technical Bid. Price inclusive of all taxes, delivery, installation, training.

Note: For the safety of inter-operability for LOT 1 and LOT 2, and LOT 4 and 5 authority has the right to combinedly award these as two products single firms on L1 basis if the vendor not satisfactorily provided compatibility certificate.

Note: Firms shall mandatorily mention the brand name and model name of all the products.

LOT	Sl.	Item	Spec Ref.	Unit Rate (Rs.)	Taxes (Rs.)	Total/Unit (Rs.)
LOT-1	1	Dock-series Multi-Sensor Thermal UAV with 3 batteries & accessories (Annexure-I, LOT-1)	Annexure-I LOT-1			
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
	3	Fleet Mgmt. Software	Flight Hub 2 - Annual License: 1 year			
LOT-1 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC						
LOT-1 Amount in words: Rupees _____ only						
LOT-2	1	Automated Docking Station (IP56) + accessories & interoperability cert (Annexure-I, LOT-2)	Annexure-I LOT-2			
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
LOT-2 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC						
LOT-2 Amount in words: Rupees _____ only						
LOT-3	1	RTK Multifunctional Station + survey pole, tripod & accessories (Annexure-I, LOT-3)	Annexure-I LOT-3			
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
LOT-3 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC						
LOT-3 Amount in words: Rupees _____ only						
LOT-4	1	Standard-series Dock-compatible Multi-Sensor Thermal UAV with 3 batteries &	Annexure-I LOT-4			

		accessories (Annexure-I, LOT-4)				
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
	LOT-4 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC					
	LOT-4 Amount in words: Rupees _____ only					
LOT-5	1	Compact Docking Station (IP55) + accessories & interoperability cert (Annexure-I, LOT-5)	Annexure-I LOT-5			
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
	LOT-5 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC					
	LOT-5 Amount in words: Rupees _____ only					
LOT-6	1	Agricultural Spray/Spread/Lift Drone + 2 batteries + generator + charger + D-RTK AG + relay + accessories (Annexure-I, LOT-6)	Annexure-I LOT-6			
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
	LOT-6 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC					
	LOT-6 Amount in words: Rupees _____ only					
LOT-7	1	Compact Standalone Multi-Sensor Thermal UAV with 3 batteries & accessories (Annexure-I, LOT-7)	Annexure-I LOT-7			
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
	LOT-7 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC					
	LOT-7 Amount in words: Rupees _____ only					
LOT-8	1	Flagship Perpetual Offline Aerial Survey & 3D Reconstruction Software License — 1 device, offline, incl. installation & training (Annexure-I, LOT-8)	Annexure-I LOT-8			
	2	AMC post-warranty Enterprise Care Plan additional two years Warranty	Annexure-II			
	LOT-8 GRAND TOTAL (incl. taxes, delivered & commissioned): Excl. AMC					

LOT-8 Amount in words: Rupees _____ only
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Signature with seal of the Proprietor / Vendor / Supplier

ANNEXURE-V — CERTIFICATE OF NO RELATIONSHIP

I/We hereby certify that I/we am/are related / not related (*) to any Forest Officer of the Forest, Environment & Climate Change Department, Government of Odisha. I/We am/are aware that, if this declaration is subsequently proved to be false, my/our contract will be rescinded and the Security Deposit will be forfeited, and I/we shall be liable to compensate for any loss or damage resulting from such cancellation.

I/We also note that non-submission of this certificate will render my/our tender liable for rejection.

() – Strike out whichever is not applicable*

Place: _____

Date: _____

Signature with seal of the Proprietor / Vendor / Supplier

ANNEXURE-VI — AMC SERVICE AGREEMENT PROFORMA (per LOT)

This AMC Service Agreement is entered into between:

Party A (Purchaser): Divisional Forest Officer, Redhakhol Forest Division, Odisha – 768106

Party B (Supplier): M/s _____ having its registered office at _____

in respect of the equipment supplied vide Purchase Order No. _____ dated _____, for LOT: _____, on the following terms:

Cl.	Subject	Terms & Conditions
1	Equipment Covered	All equipment supplied under the quoted LOT per PO No. _____ (specify LOT and all items).
2	AMC Period	Effective from _____ to _____
3	AMC Charges	Rs. _____ (Rupees _____ only), incl. all taxes.
4	Preventive Maintenance	Min. 2 scheduled visits/year. Each visit: full system inspection, firmware updates, sensor calibration, battery health, propulsion/structural check (UAV, agricultural drone), dock cover/AC/charger/camera check (dock), GNSS/antenna/IMU calibration (RTK).
5	Corrective Maintenance & SLA	Acknowledgement ≤4 hrs; engineer ≤24 hrs; critical resolution ≤72 hrs.
6	Spare Parts	OEM spares for wear-and-tear included in AMC rate. Accidental damage at actual cost with prior written DFO approval. Essential spares supplied within 15 days.
7	Firmware & Software	All updates applied free during AMC period.
8	Documentation	Signed Service Report within 3 working days: date, engineer, work done, parts (serial nos.), health, calibration, next service. Physical register at DFO office.
9	Exclusions	(a) Misuse damage; (b) Natural calamities; (c) Normal-use consumables; (d) Third-party accessories not in original order.
10	Renewal	Either party initiates ≥30 days before expiry by mutual written addendum.
11	Termination	30 days written notice. Supplier-default termination: proportionate AMC refund within 15 days.
12	Governing Law	Laws of India and State of Odisha. Jurisdiction: Courts at Redhakhol, Sambalpur, Odisha.

<p>For Party A (Purchaser): Signature: _____ Name: _____ Divisional Forest Officer Redhakhoh Forest Division, Odisha Office Seal: Date: _____</p>	<p>For Party B (Supplier): Signature: _____ Name: _____ Designation: _____ Company Seal: Date: _____ Place: _____</p>
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