

NATIONAL INSTITUTE OF ADVANCED STUDIES
Indian Institute of Science Campus
Bengaluru – 560 012

Supply, Installation & Commissioning of Drone with accessories (Or Unmanned Aerial System-UAS) -TWO Sets

Bid No. NIAS/ANRF-UAS/01/2026

Date: 01 October 2026

The institute invites quotations for **Supply, Installation and Commissioning of Drones** along with stated accessories (UAS) under Two Stage Bid system comprising technical and Commercial bids. 2) You have to submit two separate bids in two separate envelopes, and you may keep both the bid envelopes in an envelope for sending to NIAS.

Part-I Technical Bid.

Part-II Commercial Bid

Both the bids addressed to:-

The Director
NATIONAL INSTITUTE OF ADVANCED STUDIES
Indian Institute of Science Campus
Bengaluru – 560 012

i. Scope of the work

The scope of supply includes:

- Supply of the main equipment along with all standard and listed accessories.
- Delivery, installation, and commissioning at site (consignee address above).
- On-site demonstration of working without any additional cost to NIAS, whatsoever.
- Standard training to staffs.
- Comprehensive on-site warranty for one year from the date of installation and Comprehensive maintenance contract (CMC) for additional one year post warranty.
- Submission of Operation & Maintenance manuals (either digital or hard copy), calibration certificates, and any statutory compliance certificates as applicable as per the GFR 2017 rules.
- Bidder should quote total cost along with individual breakup under (A), (B) and (C) as per specification.

ii. Technical Bid

- Bidders shall submit the technical bid and price bid in two separate sealed envelopes, both of which shall be enclosed in a third sealed envelope for submission to this office.
- The first envelope should contain only the TECHNICAL SPECIFICATIONS of the indented equipment.
- Please indicate page nos. on your quotation ex. If the quotation is containing 25 Pages, please indicate as 1/25, 2/25, 3/25 -----25/25.
- Bidders must quote against every parameter in Table (A, B, C) in the technical bid compliance or non-compliance. Deviations must be explicitly stated; unstated deviations will be read as non-compliance.

iii. Commercial Bid

1. The second envelope should contain only the financial bid in which price, maintenance, CMC, etc. and any other information, which has financial implications, should only be given as per the technical bids clearly under (A), (B) and (C) and total. The cost should be mentioned on per unit UAS basis.
2. The quotation asked for is for Two units of DAS. However, NIAS reserves the right to choose whether to procure one set or two sets of UAS. Any cost implication (discount or acceleration) on per unit cos should be stated clearly, if NIAS decides to procure only one set and part thereof.
3. Prices must be quoted on a Delivered Duty Paid (DDP) basis, i.e., FOR Destination, inclusive of packing, forwarding, freight, insurance, loading/unloading, installation, and commissioning at the consignee site.
4. GST/applicable taxes must be indicated separately as per applicable rates.
5. The bid should be clearly typed and signed legibly giving details of full address of the bidder. The rate should be quoted both in words and figures.
6. All the pages of the bid should be duly signed by the authorized person affixing the seal.
7. All corrections and overwriting should be initialed otherwise the quotation notice shall be invalidated.
8. The main envelope (3rd), which should contain both the bids, should be super scribed with our tender enquiry No. _____ due on _____.

iv. SPECIFICATIONS:

(A) DRONE / An Unmanned Aerial System (UAS) baseline	
Parameter	Specification
Configuration	4-rotor autonomous multirotor / quadcopter
Construction	All-composite; carbon-fiber frame
Empty weight	~1.6 kg
Battery weight	~1.3 kg
Maximum payload	~1.0 kg
Maximum take-off weight	~4.0-5.0 kg
Endurance, no payload	60 min hover
Endurance @ 0.7 kg payload	40 min
Endurance @ 1.0 kg payload	30 min
Speed	Up to 10 m/s
Operational range	10 km or more
Rate of climb / descent	3 / 2 m/s
Operational altitude	Up to 500 m AGL
Maximum launch altitude	3,000 m AMSL
Operating temperature	0–55 °C
Propulsion	380 W motors; 16-inch folding propellers
Battery	LiPo, 22.2 V / 11 Ah
Flight mode	Fully autonomous
Transport dimensions	~Ø338 mm × 433 mm
Ready-to-fly dimensions	~Ø708 mm × 400 mm
Payload precedent	EO and/or IR camera
IMAGING Sensor	≥1/1.3-inch CMOS (BSI or stacked) ≥ 20MP
Video resolution	4K (3840×2160) at ≥30 fps and 1080p at ≥60 fps; H.264/H.265 encoding at ≥100 Mbps in 4K
Ground sample distance	≤3cm/px@30 m altitude in 1080p mode. Bidder to state horizontal field of view
Shutter	Mechanical or global shutter, or rolling shutter with sensor readout time stated.
Lens	Fixed focal length (no digital zoom during capture), aperture f/2.8 or wider. Lens distortion profile to be supplied

Video Metadata	UTC time, lat/long, altitude, heading and gimbal angles for every frame or at ≥ 10 Hz, embedded or as a separate file
Gimbal	3-axis stabilized; tilt from -90° (straight down) to $\geq +20^\circ$
Live view	1080p to the controller, delay ≤ 300 ms
GNSS	GPS, GLONASS, Galileo and BeiDou; RTK-ready
Position hold	$\leq \pm 1.5$ m horizontal, $\leq \pm 0.5$ m vertical in GNSS hold
Storage	Removable microSD supporting ≥ 256 GB (card supplied); raw export without transcoding
Wind resistance	≥ 12 m/s sustained
Flight Software	Waypoint /mission planning with autonomous flight
Remote control devices	Remote Controller (With screen & smartphone support) spare propellers & carry case. One additional LiPo, 22.2V/11Ah battery & charging hub

(B) Accessories:

AQ Sensor payload: Payload mass: 600–800 g target; hard maximum 1.0 kg; Form factor: Vibration-isolated underside pod; target $\leq 200 \times 150 \times 100$ mm; Primary pollutants PM1, PM2.5, PM10, NO₂, O₃; Environmental sensors; Temperature, RH, barometric pressure; Positioning: GNSS latitude/longitude/altitude; synchronized timestamps; Sampling: Continuous; raw acquisition preferably ≥ 1 Hz; configurable reporting; Dedicated regulated rail; 12 V nominal recommended, 5 V secondary power; Industrial flash or microSD; raw data + calibration + GNSS metadata; Interfaces: UART/RS485/CAN preferred; Air inlet: Low-pressure-drop inlet with dust/hydrophobic protection; minimize rotor-wash effects

O₃ monitoring sensor: Electrochemical, 4-electrode oxidising-gas sensor or equivalent technology; Published combined range: 0–20 ppm O₃ / 0–20 ppm NO₂; Published OX-B431 O₃ sensitivity -225 to -750 nA/ppm at 1 ppm; Published T90 < 80 s typical; minimum 2 years' operating life; O₃ calculation: Calibrated oxidant response minus calibrated NO₂ contribution; Temperature/RH compensation required; Calibration: Zero + multi-point O₃ calibration; reference-analyser collocation recommended

NO₂ monitoring sensor: Published range; 0–20 ppm NO₂; Target ambient range: Approximately 0–500 ppb primary AQ operating range; Published sensitivity: -200 to -650 nA/ppm at 2 ppm; Published T90: < 80 s; Operating life: 24m; Interference control: Filtered NO₂ sensor; characterize O₃/NO/other cross-sensitivities; AFE: Low-noise potentiostat / electrochemical sensor interface; Temperature/RH compensation: Required; Calibration: Zero + multi-point span; field collocation against reference analyser recommended.

PM monitoring sensors: PM1, PM2.5 and PM10 optical channel.

Electronics and communications: Sensor AFE: Dedicated low-noise potentiostat / electrochemical interface; ADC: ≥ 16 -bit effective resolution; low-noise acquisition; Industrial-grade MCU with timestamping and diagnostics; GPS + preferably NavIC/Galileo/GLONASS; ≥ 8 GB industrial flash storage; Aircraft battery $\rightarrow$ protected DC/DC $\rightarrow$ 12 V / 5 V payload rails; Payload voltage/current monitoring Power telemetry; Firmware: Warm-up, calibration, compensation, diagnostics, buffering and data-quality flags.

Data-quality and sampling: Raw electrochemical acquisition; Prefer ≥ 1 Hz; AQ reporting: 1–60 s configurable averaging; GNSS metadata: Latitude, longitude, altitude, ground speed, UTC timestamp; Environmental metadata; Temperature, RH, pressure; Diagnostics: Raw working/auxiliary electrode channels where available; calibration age/status; Quality flags: Warm-up, saturation, low battery, missing GNSS, environmental excursions, calibration status; Time synchronization: GNSS UTC or network synchronized clock Repeatable inlet geometry; avoid direct propeller wash; Calibration: Laboratory multi-point calibration + field collocation.

Validation requirements: Electrochemical sensors should not be treated as equivalent to reference-grade analyzers without calibration and field validation. Validation should quantify linearity, repeatability, zero/span drift, temperature/RH dependence, cross-sensitivity, response time, sensor-to-sensor variability and effects of vibration and airflow. For NO₂/O₃, independently vary the two gases during validation to establish the differential measurement model.

Procurement acceptance criteria with minimum target:

Regulatory: Current Research Grade/Non-DGCA Certificate for exact production model/configuration

Payload capacity: ≥ 1.0 kg

Payload endurance: ≥ 25 min at 0.8 kg payload

Preferred endurance: ≥ 30 min at 0.8 kg payload NO ₂ : ppb-level ambient monitoring capability after calibration O ₃ : ppb-level ambient monitoring capability after calibration PM: PM1, PM2.5 and PM10 optical channel Autonomy: Waypoint mission + RTH + required safety functions Data integrity: Local buffering during link loss Payload operating range: Prefer at least 0–50 °C Calibration: Factory calibration + documented field-collocation protocol	
(C)	CMC: Comprehensive Maintenance Contract /extended warranty for additional 2 years (quote per year wise) after expiry of the standard one year warranty period.
(D)	Optional (OPERATION): Bidder should also quote cost of providing certified pilot (per day (8hrs) or per month basis) for Bengaluru plus all desired permissions to fly in Bengaluru city district.

v. Payment Terms:

- (a) 80% against delivery of complete set of equipment(s),
- (b) 10% after completion of installation, commissioning and acceptance.
- (c) 10% against Bank Guarantee from Indian nationalized bank for 10% of total order value or considered as deposit with NIAS until one year after successful commissioning and installation.

vi. Terms and conditions and Eligibility Criteria

1. The rates should be quoted in rupees along with all applicable taxes and charges. No claim for escalation of the rate will be considered after opening of the bid.
2. At any time, prior to the last date of receipt of bids, the Institute may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the quotation notice by an amendment.
3. The Bidder should be a manufacturer or /authorized representative of a manufacturer who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the specification. The bidder quoting on behalf of OEM shall furnish documentary evidence obtained from OEM to demonstrate that they have minimum three years of experience and supplied such instruments or part thereof to reputed institutions.
4. The Bidder should possess valid GST and PAN. Attested copies of PAN and GST shall be submitted.
5. The Bidder shall necessarily be a legally valid entity either in the form of a Limited Company or a Private Limited Company registered under the Indian Companies Act, 1956. Copy of certificate of incorporation issued by Registrar of firms/companies is to be submitted in support of this.
6. The bidder shall furnish documentary evidence to demonstrate that the bidder satisfies the bidders' eligibility criteria. The self-attested copies of past 3 years of IT>Returns should be submitted.
7. Delivery should be made within 45 days of receiving Purchase Order. Liquidated damages (LD) will be recovered from a contractor for late delivery or delay in service execution as per GRF rules.
8. The Institute reserves the right to accept in part or in full any quotation notice(s) or reject any or more quotation notice(s) without assigning any reason or to cancel the quotation noticing process and reject all quotation(s) at any time prior to the award of contract, without incurring any liability, whatsoever to the affected bidder or bidder(s).
9. Bidder should provide comprehensive on-site warranty of minimum 12 months from date of installation, covering parts, labor, and preventive maintenance visits including any spares. Bidder to indicate extended warranty / Comprehensive Maintenance Contract (CMC) rate for 2 subsequent years post-warranty.
10. During the warranty period, the supplier shall provide all labor, travel, replacement parts, software updates (where applicable), and preventive maintenance visits at no additional cost to the purchaser.
11. Bidder should not be blacklisted or under a holiday-listing by any Central/State Government department or PSU as on the bid date (self-declaration required).
12. The bidder shall have an established service support with qualified and factory-trained service engineers and reasonable response time for service calls.
13. All the pages of the bid should be duly signed by the authorized person affixing the seal. All corrections and overwriting should be initialed otherwise the quotation notice shall be treated as invalid.

14. An undertaking (self-certificate) is to be submitted that the Organization has not been blacklisted during last 3 years by any Central / State Government Department/ Organization.
15. Bidder quoting on behalf of OEM or other supplier should submit a certificate of authorization from them or certified copy of an Agreement between both the parties.
16. The Bidder /OEM should furnish the information on all past supplies and satisfactory performance during past two years in the Performance Statement Form.
17. Bidders or their OEM shall invariably furnish documentary evidence (Client's certificate) in support of the satisfactory operation of the equipment / system.

The sealed quotation should reach the Head-Administration at the above address on or before 16th October 2026, by 04:00 P.M.

Sd/-
Head-Administration
National Institute of Advanced Studies,
IISc-Campus, Bengaluru – 560012