

**Department of Architecture Town and Regional Planning**  
Indian Institute of Engineering Science and Technology, Shibpur  
Howrah-711 103

Enquiry No. 002/IIEST/ATRP/WEB TEND/2019

Date: January 1<sup>st</sup>, 2019

To,

All the Enlisted Suppliers/Dealers/Manufacturers

Sealed quotations are invited for supply of the following Equipment for the Dept. of Architecture Town and regional Planning, IIEST, Shibpur. The sealed quotations should be addressed to the Head of the Department indicating enquiry no. with date on the top of the sealed envelope. The sealed quotations should be submitted to the office of the Department on any working day within 16/01/2019 till 4.00 P.M.

**1) Real Time Aerial Data Mapping Equipment – Drone**

**Technical Specification:**

• **AIRCRAFT**

Weight (Battery & Propellers Included)	1368 g
Diagonal Size (Propellers Excluded)	350 mm
Max Ascent Speed	S-mode: 6 m/s;P-mode:5 m/s
Max Descent Speed	S-mode:4 m/s;P-mode:3 m/s
Max Speed	S-mode: 45 mph (72 kph);A-mode: 36 mph (58 kph);P-mode: 31 mph (50 kph)

Max Tilt Angle	S-mode:42°;A-mode:35°;P-mode:25°
Max Angular Speed	S-mode: 250°/s;A-mode: 150°/s
Max Service Ceiling Above Sea Level	19685 feet (6000 m)
Max Wind Speed Resistance	10 m/s
Max Flight Time	Approx. 30 minutes
Operating Temperature Range	32° to 104°F (0° to 40°C)
Satellite Positioning Systems	GPS/GLONASS
Hover Accuracy Range	Vertical: ±0.1 m (with Vision Positioning); ±0.5 m (with GPS Positioning) Horizontal: ±0.3 m (with Vision Positioning); ±1.5 m (with GPS Positioning)

- **VISION SYSTEM**

Vision System	Forward Vision System; Downward Vision System
Velocity Range	≤31 mph (50 kph) at 6.6 ft (2 m) above ground
Altitude Range	0 - 33 feet (0 - 10 m)
Operating Range	0 - 33 feet (0 - 10 m)
Obstacle Sensory Range	2 - 98 feet (0.7 - 30 m)
FOV	Forward: 60°(Horizontal), ±27°(Vertical) Downward: 70°(Front and Rear), 50°(Left and Right)

Measuring Frequency	Forward: 10 Hz Downward: 20 Hz
Operating Environment	Surface with clear pattern and adequate lighting (lux>15)

- **REMOTE CONTROLLER**

Operating Frequency	2.400 - 2.483 GHz
Max Transmission Distance	2.400 - 2.483 GHz (Unobstructed, free of interference) FCC: 4.3 mi (7 km) ;CE: 2.2 mi (3.5 km) SRRC: 2.5 mi (4 km)
Operating Temperature Range	32° to 104°F (0° to 40°C)
Battery	6000 mAh LiPo 2S
Transmitter Power (EIRP)	2.400 - 2.483 GHz; FCC: 26 dBm; CE: 17 dBm; SRRC: 20 dBm MIC: 17 dBm
Operating Current/Voltage	1.2 A@7.4 V
Video Output Port	GL300E: HDMI; GL300C: USB
Mobile Device Holder	GL300E: Built-in display device (5.5 inch screen, 1920×1080,; 1000 cd/m <sup>2</sup> , Android system, 4 GB RAM + 16 GB ROM) GL300C: Tablets and smart phones

- **INTELLIGENT FLIGHT BATTERY**

Capacity	5870 mAh
Voltage	15.2 V
Battery Type	LiPo 4S

Energy	89.2 Wh
Net Weight	468 g
Charging Temperature Range	41° to 104°F (5° to 40°C)
Max Charging Power	160 W

- **GIMBAL**

Stabilization	3-axis (pitch, roll, yaw)
Controllable Range	Pitch: -90° to +30°
Max Controllable Angular Speed	Pitch: 90°/s
Angular Vibration Range	±0.02°

- **CAMERA**

Sensor	1" CMOS Effective pixels: 20M
Lens	FOV 84° 8.8 mm/24 mm (35 mm format equivalent) f/2.8 - f/11 auto focus at 1 m - ∞
ISO Range	Video: 100 - 3200 (Auto) 100 - 6400 (Manual) Photo: 100 - 3200 (Auto) 100- 12800 (Manual)
Mechanical Shutter Speed	8 - 1/2000 s

Electronic Shutter Speed	8 - 1/8000 s
Image Size	3:2 Aspect Ratio: 5472 × 3648 4:3 Aspect Ratio: 4864 × 3648 16:9 Aspect Ratio: 5472 × 3078
PIV Image Size	4096×2160(4096×2160 24/25/30/48/50p) 3840×2160(3840×2160 24/25/30/48/50/60p) 2720×1530(2720×1530 24/25/30/48/50/60p) 1920×1080(1920×1080 24/25/30/48/50/60/120p) 1280×720(1280×720 24/25/30/48/50/60/120p)
Still Photography Modes	Single Shot Burst Shooting: 3/5/7/10/14 frames Auto Exposure Bracketing (AEB): 3/5 bracketed frames at 0.7 EV Bias Interval: 2/3/5/7/10/15/20/30/60 s
Video Recording Modes	H.265 C4K:4096×2160 24/25/30p @100Mbps 4K:3840×2160 24/25/30p @100Mbps 2.7K:2720×1530 24/25/30p @65Mbps 2.7K:2720×1530 48/50/60p @80Mbps FHD:1920×1080 24/25/30p @50Mbps FHD:1920×1080 48/50/60p @65Mbps FHD:1920×1080 120p @100Mbps HD:1280×720 24/25/30p @25Mbps HD:1280×720 48/50/60p @35Mbps HD:1280×720 120p @60Mbps  H.264 C4K:4096×2160 24/25/30/48/50/60p @100Mbps 4K:3840×2160 24/25/30/48/50/60p @100Mbps 2.7K:2720×1530 24/25/30p @80Mbps 2.7K:2720×1530 48/50/60p @100Mbps FHD:1920×1080 24/25/30p @60Mbps FHD:1920×1080 48/50/60 @80Mbps FHD:1920×1080 120p @100Mbps

	HD:1280×720 24/25/30p @30Mbps HD:1280×720 48/50/60p @45Mbps HD:1280×720 120p @80Mbps
Max Video Bitrate	100 Mbps
Supported File Systems	FAT32 (≤32 GB); exFAT (>32 GB)
Photo	JPEG, DNG (RAW), JPEG + DNG
Video	MP4/MOV (AVC/H.264; HEVC/H.265)
Supported SD Cards	Micro SD Max Capacity: 128GB Write speed ≥15MB/s, Class 10 or UHS-1 rating required
Operating Temperature Range	32° to 104°F (0° to 40°C)

- **CHARGER**

Voltage	17.5V
Rated Power	100 W

- **APP / LIVE VIEW**

Mobile App	DJI GO 4
Live View Working Frequency	2.4 GHz ISM
Live View Quality	720P @ 30fps
Latency	Phantom 4 Advanced: 220 ms (depending on conditions and mobile device)

	Phantom 4 Advanced + : 160 - 180 ms
Required Operating Systems	iOS 9.0 or later Android 4.4.0 or later

- 2) **Tablet compatible with DJI Phantom 4 pro/ DJI Phantom 4 Advanced with minimum 3 quad-core processor, and 32 GB minimum memory capacity, 1280X800 resolution and up to 300 hours of standby time**


• **Terms and conditions:**

- 1) All rates quoted should include all taxes, levies & duties. Request for inclusion of any tax/levy at later stage will not be entertained.
- 2) Transportation, Packing, Forwarding, installation, training and Insurance Charges if any to be charged should be specifically indicated.
- 3) Delivery place: Department of Architecture, Town and Regional Planning, IEST, Shibpur
- 4) GST applicable will be 5% for research facility of the Institute. The certificate will be provided by the Institute with the Purchase Order
- 5) The Institute reserves the right to accept or reject all or any of the quotation without assigning any reason whatsoever. The decision of the Institute shall be final in case of any dispute.
- 6) The items must be delivered by 2 weeks from the date of issue of Purchase Order.
- 6a) The items must be installed/ commissioned and free demonstration need to be arranged.
- 7) Bills in Triplicate should be presented for payment within 07 days of completion of work.
- 8) The Order no. is to be noted on both challan & Bill. All bills are to be accompanied with the order copies and challans. Payment will be made within 60 days from Submission of proper bills; challans etc. by Alc payee cheque.

- 9) No Cash payment will be made under any circumstances. No advance payment can be Made. All payments are subjected to statutory deductions as and when applicable.

For Foreign Purchase (This clause is applicable only for foreign purchase and not applicable for Indian purchase)

- 10) SELECTION WILL BE MADE PURELY ON ESSENTIAL TECHNICAL DOCUMENTS. IIESTS authority will evaluate and compare the quotations (the gross amount i.e. inclusive of all taxes, other charges etc.) determined to be substantially responsive i.e. which- (a) meet the qualification criteria specified in the tender, (b) Are properly signed, and (C) Conform to the terms and conditions, specifications without deviations.
- 11) Only one best quality item (according to our specification) should be quoted against each item. On no account should different qualities e.g. A, B, & C of items be quoted. Those items that have been quoted as per different qualities (In contravention to the specifications) will not be considered at all and will be summarily rejected.
- 12) Based on our specifications, image/drawing of item to be provided and Model Name/No. (if applicable) and Brand must be clearly mentioned in the quotation, without which quotation will not be considered.
- 13) All the equipment and accessories will carry a guarantee for a period of minimum 12 months from the date of commissioning. Guarantee for all the items supplied will be on 'all comprehensive' basis, i.e., including repairs, replacements, maintenance etc. Calibration / Test Certificate must accompany along with the equipment. Supply of equipment shall include installation, erection, commissioning and demonstration. Indian Institute of Engineering Science and Technology, Shibpur, Howrah reserves the right to accept/ reject all or any of the bidders without assigning any reason whatsoever.
- 14) Scanned copy of Manufacturer's catalogue of the items must be provided with the quotation without which the bid will be rejected.
- 15). **The bidder must submit photo copy of valid Trade License, GST certificate, Professional tax certificate and PAN card along with the quotation.**

 01/11/19  
(Prof. Parthasarathi Mukhopadhyay)

Head  
Dept. of Arch. T & RP

Copy forwarded for information to:

Institute Website, IIEST, Shibpur, Howrah-711103

Dr. Parthasarathi Mukhopadhyay  
Professor and Head  
Department of Architecture,  
Town and Regional Planning  
Indian Institute of Engineering Science & Technology  
Shibpur, Howrah-711 103, West Bengal, India

For details the vendors may contact Ar. Sankhanil Das (Mobile No. 9477528826) during working hours.