



NATIONAL INSTITUTE OF TECHNOLOGY

ROURKELA-769008 (ODISHA)

An Institute of National Importance under Ministry of HRD, GOI

NOTICE INVITING TENDER

Tender Notification No: NITR/PW/ID/2018/32

Dated: 12/06/2018

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **Components to build an unmanned aerial vehicle for precision agriculture applications**, NIT Rourkela.

Last date of Submission of Bid : 03/07/2016 at 11:00 AM

Opening date of Technical and Financial Bid : 04/07/2018 at 11:00 AM

For Details: http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx

Contact: Prof. B.B.V.L.Deepak dept. (Industrial Design); Ph. No: 0661-2462855; Email: bbv@nitrkl.ac.in.

Bidding through: <https://eprocure.gov.in/eprocure/app>

sd/-
REGISTRAR



NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA-769008, ODISHA

(TENDER NOTICE NO: NITR/PW/ID/2018/32

dated: 12/06/2018)

(Components to build an unmanned aerial vehicle for precision agriculture applications)

Sl. No.	Description of Goods/Service	Quantity
1.	First Person View Camera (Model 1)	02
2.	First Person View Camera (Model 2)	02
3.	Action & sports camera	01
4.	Arduino Nano Micro Controller	10
5.	Carbon Fiber Frame (Octa Copter)	01
6.	RC Transmitter & Receiver (Model 1)	02
7.	RC Transmitter & Receiver (Model 2)	01
8.	APM Flight Controller & kit	02
9.	Brushless DC Motor (Model 1)	20
10.	Brushless DC Motor (Model 2)	10
11.	Electronic Speed Control (Model 1)	20
12.	Electronic Speed Control (Model 2)	20
13.	Gimbal	02
14.	Pressure Pump	01
15.	Telemetry	02
16.	Video Signal Transmitter and Receiver (Model 1)	03
17.	Video Signal Transmitter and Receiver (Model 2)	02
18.	Video Signal Transmitter and Receiver (Model 3)	02
19.	Carbon fiber propeller	20
20.	First person view goggle	02
21.	GPS Module with Compass & Kit	03
22.	Ultrasonic Sensor	06
23.	Bullet connectors (male & Female)	40 pairs
24.	Lock nuts for motors	05 Packets
25.	LIPO battery T connectors (Model 1)	10
26.	LIPO battery T connectors (Model 2)	20
27.	LIPO battery charger (Model 1)	02
28.	LIPO battery charger (Model 2)	02
29.	LIPO battery checker (Model 1)	05
30.	LIPO battery checker (Model 2)	02
31.	Sprinkle Tank	01
32.	Digital Single Lens Reflex Camera	01
33.	Quad Kit	01
34.	APM power module (current sensor)	04
35.	Screw set	03 packets
36.	Quad Frame (model 1)	01
37.	Quad Frame (model 2)	02
38.	Small backup parts	03

- **Quantity required** : as mentioned above (All information of technical specification provided in Annexure I)
- **Delivery** : Within **120 days** from the date of purchase order
- **Last Date of submission of Bid** : **03/07/2018** at **11:00 AM**
- **Date of opening of Technical and Financial bid** : **04/07/2018** at **11:00 AM**
- The firm should not have been black listed at any time.
- The submission of following bids by the tenderer should be through <https://eprocure.gov.in/eprocure/app>
- Please follow the guidelines as per the portal.

Purchase of Components to build an unmanned aerial vehicle for precision agriculture applications (Tender Notice No: NITR/PW/ID/2018/ 32 dated: 12/06/2018) due on 03/07/2018 at 11:00 AM

- Liquidated damage clause will be charged for any delay in supply of goods.
- The validity of the tender shall be **120 days** from the date of opening of the bids.
- Detailed advertisement including all tender documents is also available in our website at http://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx
- NIT reserves the right to qualify or deny prequalification of any or all applicants without assigning any reasons.

(REGISTRAR)
NIT, Rourkela
Fax No- 0661-2462022
Ph. No -0661-247202

Components to build an unmanned aerial vehicle for precision agriculture applications:

Specification:

1. TS5828 5.8 GHz 600mW 48 Channels Wireless AV transmitter + 700TVL / 1000TVL FPV Camera for quad copter FPV Combo System Kit, Transmitting unit weight: 7.3g, video format supported: NTSC/PAL, Working frequency: 5645-5945 MHz, Power input: 7-24V, Transmitting current: 190mA 12V, Video band width: 8M, Audio coding: 6.5M, Dimension: 30*20*8mm.
2. Ready to sky 5.8G 48CH 25MW VTX 1000TVL FPV Camera Built-in Transmitter for FPV RC Mini QX 95 110 80 Q100 Quad copter Indoor, Sensor: 1/3" COMS, Lens: 1000TVL, Angel: 170°, Format: PAL, Power consumption:200mA@5V, Power: Connect to 5V Stable power supply, Lens Mirror Diameter: 2.9mm.
3. 12MP, 4K30 / 1080p120, Touch Screen, Voice control, 33ft (10m), Sports and action camera.
4. Arduino Nano V3.0 controller ATMEGA328P original CH340 +USB cable.
5. Shaft diameter: 1050MM, Propeller: 15 ", Length / arm: 106G, Center board diameter: 338MM, Landing gear height: 391MM, Battery Specifications: 15C, 22.2V, 10000-2000MHA, 6S brushless ESC: 40A, MAX Power Consumption: 4000W, Hovering Power Consumption: 1500W (9.5KG), Hovering Time: 15MIN, Weight: 2.7KG.
6. Bandwidth: 500 KHz, RF power: Less Than 20dBm, 2.4 GHz System: AFHDS 2A and AFHDS, Code type: GFSK, Sensitivity: 1024, Low voltage warning: less than 4.2V, Power: 6V 1.5AA x 4, RF power: Less than 20dBm, RF. receiver sensitivity: -105dBm, 2.4 GHz system: AFHDS 2A, Code type: GFSK.
7. Mode 2: left hand throttle, mode 1: right hand throttle, Channels: 9 Channels , RF range: 2.40-2.48GHz, Bandwidth: 500Hz, Band: 160, RF power: less than 20DB, 2.4G system: AFHDS, Code type: GFSK, Sensitivity: 1024, Low voltage warning: yes, DSC port: yes, Charger port: yes, Power: 12V DC , Weight: 670g, ANT length: 26mm, Size: 185 x 220 x 110mm, Color: black,
8. Arduino Compatible, Includes 3-axis gyro, accelerometer and magnetometer, barometer, Onboard 4 MB Data flash chip for automatic data logging, Optional off-board GPS, uBlox LEA-6M module with Compass, 6 DoF Accelerometer/Gyro MPU-6000, Barometric pressure sensor upgraded to MS5611-01BA03, Atmel's ATMEGA2560 and ATMEGA32U-2 chips.
9. Type: 2212, KV: 920 rpm/v, Motor Size: 28*25mm/1.1*1", Stator Size: 22*12mm/0.9*0.5", Support Lithium: 3S-4S LIPO, Fit for DJI F330 F450 F550 X525 Quad copter Multi rotor, CCW,CW Brushless Motor.
10. DJI Phantom original Brushless Motor 2212 920kv DJI-PTM07 Silver, Model: DJI-PTM07, 2212 920KV, Replacement Brushless motor for the Dji Phantom Quad copter.
11. 30A/40A 2-4S Brushless ESC Speed Control, Simonk, Version 30A: Continuous current: 30A, Burst current(10sec): 40A,BEC: 5V 3A, Input Voltage: 2-4S Li-Po Battery, Signal Frequency Compatible: 30Hz - 500Hz, Size: 40x25x8mm,Weight: 25g, Version 40A: Continuous current: 40A, Burst current(10sec): 50A, BEC: 5V 3A, Input Voltage: 2-4S Li-Po Battery, Signal Frequency Compatible: 30Hz - 500Hz, Size: 63x25x8mm, Weight: 35g.
12. 30AMP 30A SimonK Brushless ESC Firmware w/ 3A 5V BEC for RC Quad Multi Copter, Max cont. current: 30A, Peak current: 40A (10s), Voltage: 2-3S lixx, BEC: 5V/3A, Item size: 50 * 25 * 8mm / 2.0 * 1.0 * 0.3in, Net weight: 25 g
13. Color: black, Axis: 3 axis gyro, Flight controller: Storm32, Motor: 2 pcs 2204 260kv & 1 pc 2805 140kv, Battery plug: JST, Weight: 177.5±2 g, Compatible camera: Gopro 4, 3 camera, compatible frame: DJI Phantom 1 2.

14. Nozzle with 20mm tube clamp * 4 pcs, 12V 45W brush water pump * 1, 12mm to 8mm connector * 1 pcs, 8mm to 6mm T connector * 1 pcs, Water pipes * 1 set (8mm, 6mm).
15. 3DR 100mW 915 / 433 Radio Telemetry 433Mhz / 915Mhz Air and Ground Data Transmit Module with OTG cables for APM 2.6 2.8 Pixhawk flight controller, Frequency: 915MHz / 433MHz, Receiving sensitivity: -117dBm , Transmitted power: Up to 20dBm, Antenna Connector: RP-SMA , Connector output power: 100mW, Sensitivity can be adjusted between 1-20dBm , Sensitivity interface: Standard TTL UART .
16. 1 x RX and TX Antenna, 1 x TS832 transmitter, 1 x RC832 plus receiver, Video format supported: NTSC/PAL, Antenna connection: RP-SMA, jack, Power input: 12V, Rx sensitivity -90dBm, Videobandwidth:8Mhz, Audio bandwidth : 6.5Mhz, 48 channels: Cover A, B, E,F,H bands and L bands.
17. Brand Name: for Fly sky, Item Name: FS-ia6 receiver, Channels: 6, Frequency Range: 2.4-2.48 GHz, Number of Band: 140, Input Power: 4.0-6.5V DC, Receiver Sensitivity:-105dBm, Cable length: 180mm, Net Weight: 8g.
18. Boscam 5.8Ghz 2000MW Transmitter (with antenna and cables), Boscam RC805 Receiver (with antenna and cables), 700TVL 150 degree Camera (with fpv cable) , HD 7 inch 1024x600 no blue Monitor, 7 inch monitor Sun hood, Monitor holder for Remote controller, T or XT60 plug power cable for the monitor and receiver.
19. Size:10*4.5 inch, Weight:28g, Color :Black, Model Number:1045 Prop, Material: Carbon fiber
20. Screen size: 5.0 inch, resolution: 800*480, brightness: 600cd/m2, View Angle: 140/120 degree, Built-in 3.7V/2000mAh battery, Accepts 5V power banks, Dimension: 180x145x82mm, Weight: 349g with 3.5hr 2000mAh battery, Belt: three-ways adjustable belt.
21. Bblox- 7M GPS with Compass and Shell with Sticker x1, 7M GPS Foldable Stand Black x1, 10cm Servo Extension Lead Wire Cable MALE to MALE x 5, APM 2.6 main board x1, Minim OSD x 1, Power Module x1 .
22. With a power indicator LED, Auxiliary 3-pin anti-reverse cable, Operating voltage: 5V; working current: 16mA.
23. Internal Diameter: 3.5mm, Male Connector Length: 0.50" (12mm), Female Connector Length: 0.53" (13.5mm)
24. 4X DJI Phantom Brushless Motor 2212 920kv DJI-PTM07 Propeller Prop fixer Adapter. Model: DJI-PTM07-01.
25. Type: XT60 Male plug to T Female plug, Length: 32 mm, Male plug outer size: 16 mm (W) x 9 mm (H), Female plug outer size: 15 mm (W) x 9 mm (H).
26. Male Connector: T-Plug / Deans Style, Female Connector: XT60.
27. Voltage range: DC11.0-18.0 Volt / AC to DC adaptor, Circuit power: Max. Charge power 50W / 80W / Max. Discharge power 5W, Charge Current Range: 50W/ 80W, Discharge current range: 50W 0.1-1.0A / 80W:0.1-2.0A, Current drain for balancing Li-po: 300mAH/cell, NiCd/NiMH cells: 1-15, Pb battery voltage: 2~20v.
28. Input voltage: 110-240V AC, Output Current: 3x 700mA, Max. Charging Current: 3x 850mA, Power plug: EU, Item size: 100mm*60mm*35mm, Weight: 180g.
29. Precision :(+/-) 0.005V, Weight: 6g, RC 1S-6S Lipo Battery Voltage Indicator Checker Tester.
30. Cell Meter 8, Discharge Current: 1A, Balance Current: 1A, Battery Voltage Test Precision: 0.001V, Battery Type: Can test Li-Po/Li-Ion/Li-Fe (2-8S), NiCd/NiMH (4-8S) battery, Servo Test Range: 1000-2000us or 500-2500us.
31. Capacity: 10L, Weight: 850g, Dosing opening diameter: 45mm, A water outlet specifications: A three bit tooth, A four bit tooth, At the bottom of the embedded teeth snail: M4, Battery mounting location: M5.

- 32.** Digital Camera Kit (Black) + Lens AF-P DX, 18-55mm f/3.5-5.6G VR + AF-P DX, 70-300mm f/4.5-6.3G ED VR + 16 GB Class 10 SD Card + DSLR Bag, 3 inches, EN-EL14a rechargeable Li-ion battery (with terminal cover), MH-24 battery charger, DK-25 rubber eyecup, BF-1B body cap, AN-DC3 strap, 24.2 megapixels, CMOS, Zoom : 1.5x, MAIN-85308.
- 33.** F450 Quad copter Frame x1, APM2.6 Flight Control x1, 7M GPS x1, ESC Connect Board x1, LHI 2212 920kv Brushless motor x4, Brushless 30A ESC x4, FS I6 Remote controller(include the FS-IA6 receiver) X1set, motor cover x4pcs, 915mhz x1set, 9443 Propeller x4PCS (2Pairs CW&CCW), 3.5mm gold bullet plug x12 (12pcs male + 12 pcs female), Heat shrink tube x2 (50cm red + 50cm black) (color of the random), Not assembled, just a kit.
- 34.** XT60 Plug, Max input voltage: 30V, Max current sensing: 90A, Dimension (mm): 25 x 21 x 9, Weight (g): 17g.
- 35.** Quantity: 100 Pcs, Size: Hex M2.5*10mm, For: DIY DJI F450 F550 RC Quad copter, Drone, Multi Copter.
- 36.** Wheelbase: 500mm, S500 quad copter frame kit with carbon fiber landing gear, PCB Center plate with solder point, Frame only, no electronic parts
- 37.** Wheelbase: 17.7in/450mm, Net weight: 272g, ESC section board × 1, Black landing gear × 1.
- 38.** Length: 21.5cm, Width: 2.3-4.0cm, Color: Red, Black, White.

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