



**Sponsored Research, Industrial Consultancy and Continuing Education
NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA – 769 008,
ORISSA**

Advertised Tender Enquiry

Department: Industrial Design

Enquiry No: NITR/PW/ID/2018/32

Date: 12/06/2018

IMPORTANT DATES

Event	Date	Time
Pre-bid Conference	NA	NA
Last Date of submission of Bid	03/07/2018	11:00 AM
Opening Date of technical and financial bid	04/07/2018	11:00 AM

Through

CPP Portal

(E-Procurement)

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly send, your offer with prices and complete terms within the time mentioned above.

For any clarification:

Attention:

Dr. B. B. V. L. Deepak
Principal Investigator
Project (SR/17/ID/005)
DEPARTMENT OF INDUSTRIAL DESIGN
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ORISSA

Yours sincerely,

Dr. B. B. V. L. Deepak
Principle Investigator,
Project (SR/17/ID/005)
Department of Industrial Design
NIT Rourkela-769008

Enclosures:

- 1) Schedule of requirement, specifications, dates etc.
- 2) Bid document with terms and conditions.

1. Schedule of requirements

SI. No.	Description of Goods/Service	Quantity
01.	<u>Component to build an unmanned aerial vehicle for precision agriculture applications.</u> Detailed Specification as per attached Annexure - I	1 Unit

2. Specifications and allied Technical Details

- Provide user's list along with the quotation

3. Format of Quotation (tick appropriate box)

It is a single cover (One-part bid); please give all technical specifications and price bid in one envelope.

OR

~~It is a two-part bid with separate techno-commercial and price bid.~~

4. The bid should be submitted through with e-procurement: <https://eprocure.gov.in/eprocure/app>

5. Quotations should be valid for a period of **120 days** from the closing date of the bid.

6. Some important dates:

- i. Pre-bid conference: Date: **NA** Time: **NA**
- ii. Last date for receipt of Quotation: Date: **03/07/2018** Time: **11:00 AM**
- iii. Opening of Technical and Financial bid: Date: **04/07/2018** Time: **11:00 AM**

7. GST: GST should be charged according to applicable rates.

8. Bid Security: Not Applicable

9. Performance Security: Not Applicable

10. Please go through the enclosed "bid document" carefully for other bidding instructions.

11. For technical details, you may contact

Dr. B. B. V. L. Deepak
Principal Investigator
Project (NITR/SR/17/ID/005)
DEPARTMENT OF INDUSTRIAL DESIGN
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ORISSA**

BID DOCUMENT

1. Instructions to the bidders

- 1.1 Bids are invited on behalf of the Director, National Institute of Technology (NIT), Rourkela – 769 008, Orissa, from the intending bidders for supply of the goods/stores/equipments for the Institute as detailed in the enquiry letter.
- 1.2 The bidders should quote their offer/rates in **BOQ** in clear terms without ambiguity.
- 1.3 In case of any discrepancy between the rates in figures and that in words, the rate in words will be accepted as correct.
- 1.4 The last date for receipt of the bid is marked in the enquiry.
- 1.5 The bids should be uploaded in <https://eprocure.gov.in/eprocure/app> Please follow the guidelines of the site.
- 1.6 If a prospective bidder requires any clarification in regard to the bidding documents, he may make a request the concerned officer or faculty member at least 15 days before the deadline for receipt of bids.
- 1.7 Bids received after the deadline of receipt indicated in para 1.4 above, shall not be taken in to consideration.
- 1.8 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered non-responsive.
- 1.9 (In respect of high value plant, machinery etc. of a complex and technical nature). The bids may be submitted in two parts, viz., technical bid and financial bid.
- 1.10 The bidder has to sign in full at all pages of the scanned part of the bidding document. No over-writing in those pages is acceptable.
- 1.11 If any bidder does not fulfill technical specification, his/her eligibility will be cancelled even if his/her price got L1 status.

2. Conditions of the bid

- 2.1 The rates quoted should preferably be net, inclusive of packing, forwarding, freight, Insurance and all other incidental charges excluding taxes. In case these charges are quoted extra in addition to the quoted rates, the amount thereof or Ad Valorem rate must be specified. Packing, forwarding, freight, entry tax etc., when quotes separately are reimbursable at actual. If external agencies are employed, their receipts must be enclosed with the invoice.
- 2.2 Duties and Taxes are to be quoted separately. Ad Valorem rates thereof should be clearly indicated with reference to the relevant Acts and Rules.

It may be noted that the Institute is exempt from paying Excise Duty vide Government Notification No. 10/97 dated 01.03.1997 [Registration No.: TU/V/RG-CD (227)/2011, dated 10.10.2011. The Institute is not authorized to issue C or D forms. GST may be charged at applicable rates.

- 2.3 The goods are required to be delivered at the indenting Department of NIT, Rourkela, and must be reached within **120 days** from the date of placement of the supply of order under the risk and arrangement of the bidder and offers with delivery beyond the above period shall be treated as unresponsive. In case the delivery time is higher, the same must be mentioned clearly in the quotation.
- 2.4 The bid should remain valid for a period of **120 days** from the date of opening. In case your offer has a different validity period that should be clearly mentioned in the quotation.
- 2.5 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.
- 2.6 The goods offered should strictly conform to the specification and technical details mentioned in **Annexure - I**.
- 2.7 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.
- 2.8 Period of guarantee/warranty, where applicable, should be specified in the bid.
- 2.9 If the successful bidder, on receipt of the supply order, fails to execute the order within the stipulated period, in full or part, it will be open to the Director, NIT, Rourkela to recover liquidated damage from the firm at the rate of 1 percent of the value of undelivered goods per month or part thereof, subject to a maximum of 5 percent of the value of undelivered goods. Alternatively, it will also be opened to the Director, to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.
- 2.10 The successful bidder may be required to execute a contract, where applicable.
- 2.11 The bidder has to furnish up to date GST and Income Tax Clearance Certificate along with the bid.
- 2.12 Payment (*100 percent*) will be made by Account Payee Cheque/Bank Draft, within 30 days from the date of receipt of the goods in good condition or receipt of the bill, commissioning of the equipment, where applicable, whichever is later/latest.
- 2.13 In case of Advance payment, the payment will be made on either in Foreign Demand Draft or Wire Transfer only. The pro forma invoice copy needs to be sent for advance payment.
- 2.14 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, NIT, Rourkela shall be final.
- 2.15 The bid document/resultant contract will be interpreted under Indian Laws.

ANNEXURE – I

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.

2. Others

- Warranty: **6-12 months** of standard warranty for the product from the date of deliver.
- Bidders may provide user details of at least 5 national level premier institution of repute where similar instruments were supplied in last 2 years
- Scanned copy of technical brochure and website reference of the same must be included in the bid.

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