



International Centre for Free and Open Source Software

Swatantra,
South Pavilion, Sports Hub, Karyavattom,
Trivandrum - 695 581
Kerala, India.
Phone No: +91 471 2700013
Email: info@icfoss.in

NOTICE INVITING TENDER

For the supply of Drone Development Modules
Tender No: **ICFOSS/172/2022-TC4(IT)** dated 13/09/2023

Name of the material	Drone Development Modules
Delivery time	Within 4 weeks
Availability of Tender documents	Can be downloaded from the website http://icfoss.in up to 20-09-2023, 03:00 PM
Date of Publishing	13-09-2023
Last date & time of submission of bids	20-09-2023 at 04:00PM
Date & time of opening of bids	20-09-2023, 05:00PM
EMD (Earnest Money Deposit) Amount	1 % (rounded to the nearest rupees) of the total Quoted amount or Rs.1,500/- whichever is maximum.
Tender Fee	Rs. 400/-



All communications shall be addressed to the Secretary & Registrar, ICFOSS, Swatantra, South Pavilion, Sports Hub, Karyavattom, Trivandrum - 695 581 Kerala, India.

The bid documents and other details may be downloaded from the website <http://icfoss.in/tenders>. All bid documents along with EMD and Tender fee are to be submitted as **hard copy** and in the designated covers/envelops on the below address. The EMD amount and non-refundable Tender fee of Rs. 400.00/- shall be remitted only as Demand Draft separately in favour of “**ICFOSS**” and payable at Thiruvananthapuram. Bidder should ensure that Tender fees and EMD are remitted as separate transactions/DDs, such that EMD should be a separate DD and Tender Fee shall be separate DD. Combined remittance for Tender fee and EMD shall be treated as invalid transaction. Only manual submission shall be entertained. Late submissions will not be considered

Secretary & Registrar
Swatantra,
South Pavilion, Sports Hub,
Karyavattom, Trivandrum - 695 581
Kerala, India.
Phone No: +91 471 2700013
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A handwritten signature in blue ink that reads 'Chitra' with a horizontal line underneath.

Place: Trivandrum
Date: 13-09-2023

Procurement Officer
ICFOSS

Note: - If the date of opening of bids happens to be a holiday; the actual date for the same will be the next working day. No separate intimation in this regard will be issued.



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TENDER DOCUMENT

Tender No: ICFOSS/172/2022-TC4(IT) dated 13/09/2023
(e-Procurement)

Item required

Drone Development Modules			
Sl. No	Items	Quantity	Technical Details
1	Flight controller	2	Processor: 32bit ARM® STM32H753 Cortex®-M7 400 Mhz H7 SOC with 1MB ram(2MB flash) 32 bit STM32F103 failsafe co-processor Sensors: Three redundant IMUs (Invensense ICM42688 IMU) Two Barometers(MS5611 Sensor) One Magnetometer Interfaces: 14x PWM servo outputs (8 from IO, 6 from FMU) S.Bus servo output R/C inputs for CPPM, Spektrum / DSM and S.Bus Analogue / PWM RSSI input 5x general purpose serial ports, 2 with full flow control 2x I2C ports SPI port 2x CAN Bus interface 3x Analogue inputs (3.3V and 6.6V) Optional carrier board for Intel Edison Features: 2 sets of IMU are vibration-isolated mechanically, reducing the effect of frame vibration to state estimation IMUs are temperature-controlled by onboard heating resistors, allowing optimum working temperature of IMUs Integration of uAvonix ADS-B IN Receiver on Serial 5 Built-In ADS-B Antenna

			Attachments: Safety Switch Power Brick with Connector(up to 8s 30A) Telemetry Cable Safety Switch I2C Cable Parallel I2C Connector
2	UAV GPS	2	Receiver Type: u-blox high precision GNSS modules (M8P-2) Satellite Constellation: GPS L1C/A, GLONASS L1OF, BeiDou B1I Positioning accuracy: 3D FIX: 2.5 m / RTK: 0.025 m Processor: STM32H757 IMU sensor: ICM42688,RM3100 Navigation Update Rate: 8 hz Communication Protocol: DroneCAN 8Mbit/s
3	Airunit with Ground unit	1	AIRUNIT Processor: SOC - 4 *Cortex A53, 2.2GHz GPU - 4 Core, Mali-T860 SDR - A7 + DSP Power: 5-12V Memory: LPDDR3 1GB Storage: 4GB Image resolution: 720p@30fps 1080p@30/60fps Frequency Band: 2.4GHz ISM Receive sensitivity: -99dBm@20MHz BW Recovery: < 1s Ports: 2 MicroHDMI(Video input), Micro USB Interface: 3.3V UART Dual RCout , S.bus1 and S.bus2 Range: 20 km CONTROLLER Processor: 4 * Cortex A53, 1.4GHz Screen: 5.46", 1080p, 16 millions color, capacitive touch screen Antennas:

			<p>Directional 4.5dBi (x1) - omni 2dBi (x1)</p> <p>Connectivity: WiFi, Bluetooth, GPS</p> <p>Compact with: Herelink air unit</p>
4	Air unit	1	<p>Processor: SOC - 4 *Cortex A53, 2.2GHz GPU - 4 Core, Mali-T860 SDR - A7 + DSP</p> <p>Power: 5-12V</p> <p>Memory: LPDDR3 1GB</p> <p>Storage: 4GB</p> <p>Image resolution: 720p@30fps 1080p@30/60fps</p> <p>Frequency Band: 2.4GHz ISM</p> <p>Receive sensitivity: -99dBm@20MHz BW</p> <p>Recovery: < 1s</p> <p>Ports: 2 MicroHDMI(Video input), Micro USB</p> <p>Interface: 3.3V UART</p> <p>Dual RCout , S.bus1 and S.bus2</p> <p>Range: 20 km</p>
5	BLDC Motor	4	<p>Motor Specification: KV : 340 Stator diameter : 50mm Stator height : 8mm Motor shaft : 4mm Dimension : Φ58.5x35mm Mounting : 25mm x 25mm LiPo : 6S Idle current (A)@25.2V : 1.1A</p> <p>Package Includes: 1x Propeller adapter 4x M3 x 8mm socket hex screw 4x M3 x 8mm button-head screw</p>
6	ESC	4	<p>Lipo:2-6S Cont.Current:40A Firmware : Hobbywing Xrotor 40A</p>

7	UBEC	4	<p>Specs: Input voltage range: 7~26V (2~6S LiPoly battery) Out-1: 5V, 6V, 7.2V, 12V (adjustable), 0~4A, Max 6A, inbuilt Aux control switch Out-2: 5V, 0~4A, Max 6A Input cable: 20cm (Silicone 20 AWG) Output cable: 30cm (2pairs, Silicone, 22AWG) Features: Switch-mode buck regulator Two output channels Built-in Aux control (On/Off) function Output Short-circuit protection Low input voltage alarm & threshold setting</p>
8	Propeller	4 pair	<p>Series: TL2848 Specification: Carbon fiber propeller (CW) x1 Carbon fiber propeller (CCW) x1 Weight: 36.6g/PCS Hole diameter: 4mm (main), 3mm (side) Distance from hole to hole: 12mm 100% carbon TORAY 3K pure carbon fiber applied</p>
9	Fpv Camera with Airunit	1	<p>AIRUNIT Specification: Live View Quality and End-to-End Latency: 810p/120fps Video Transmission Quality: The latency is lower than 28 ms. 810p/60fps Video Transmission Quality: The latency is lower than 40 ms. 1080p/100fps Video Transmission Quality: The latency is as low as 30 ms. 1080p/60fps Video Transmission Quality: The latency is as low as 40 ms.” Channels: Supports auto mode Supports manual mode: 40 MHz: 1 channel; 20 MHz: 3 channels; 10 MHz: 3 channels Video Transmission Range: 10 km (FCC), 2 km (CE), 6 km (SRRC) Supported Goggles: DJI Goggles 2 and DJI FPV Goggles V2 Supported SD Cards: microSD (up to 256 GB) Communication Frequency: 2.400-2.4835 GHz (RX only) 5.725-5.850 GHz (RX and TX) Channels Info: FCC/SRRC/CE: 40 MHz:</p>



			<p>Channel 1: 5794.5 MHz 20 MHz/10 MHz: Channel 1: 5768.5 MHz Channel 2: 5804.5 MHz Channel 3: 5839.5 MHz Transmission Power (EIRP): FCC: < 33 dBm CE: < 14 dBm SRRC: < 30 dBm Input Voltage: 7.4-26.4 V FPV CAMERA Specification: Lens: FOV: 155° Equivalent Focal Length: 12.7 mm Focal Length: 2.34 mm Aperture: f/2.8 Focus Mode: FF Focus Range: 0.6 m to ∞ Video Resolution: 4K@50/60fps 2.7K@50/60/100fps 1080p@50/60/100fps Sensor: 1/1.7-inch CMOS ISO Range: 100-6400 (Auto) 100-25600 (Manual) Shutter: Rolling Shutter Effective Pixels: 48 MP Video Format: MP4 Supporting Goggles: DJI FPV 2 and V2</p>
10	FPV Goggles	1	<p>FPV Goggles Specifications: Screen Size: 2-inch × 2 Screen Resolution (Single Screen): 1440 × 810 Screen Renew Rate: 144 Hz Communication Frequency: 2.400 – 2.4835 GHz*; 5.725-5.850 GHz Transmitter Power (EIRP) : 2.400 – 2.4835 GHz FCC/MIC: ≤28.5 dBm; CE: ≤20 dBm; SRRC: ≤20 dBm; MIC: ≤20 dBm 5.725-5.850 GHz FCC/MIC: ≤31.5 dBm; CE: ≤14 dBm; SRRC: ≤19 dBm Video Format: MP4 (Video format: H.264)(MOV, MKV Supported) FOV: Adjustable from 30° to 54°. Adjustable image size from 50%-100%</p>



			Live View Mode: Low Latency Mode (810p/120fps) High-Quality Mode (810p/60fps) Supported Storage Card: microSD cards with capacities of up to 256GB Includes: Goggles Battery Power cable Headband × 1 USB-C cable ×1 Sleeve × 1
11	Receiver	1	Specification: Operating Voltage Range: 4V-10.0V Operating Current: 100mA@5V Operating Range: >1.5km (Full Range) RSSI Output: Analog Voltage Output (0~3.3V) 1~8ch conventional channel outputs 1~16ch SBUS port
12	Antenna	3	Features: 5G/4G Adhesive Mount Antenna Covering Sub 6GHz 5GNR Bands Covering Worldwide 5G Bands 3G/2G Backward compatible Low profile for easy installation Cable: 1m RG-174 / Connector: SMA(M) Supported to herelink airunit

Terms & Conditions

- **Eligibility Criteria:**

Should be a Firm/Company Incorporated in India.



- **Submission of bids**

The Tender should be submitted with the following documents. The documents shall include the following:

1. **Company registration details**
2. **Copy of Permanent Account Number (PAN)**
3. **Copy of GST Registration Documents**
4. **Signed Tender document with Tender form.**
5. **Financial bid in format given in Annexure I (BOQ Template)**
6. **Detailed specification of the item quoted**
7. **Previous work orders supplied to any Government departments if any**

- **Earnest Money Deposit (EMD)**

The Tender should submit an EMD amount of 1 % (rounded to the nearest rupees) of the total Quoted amount or Rs.1,500/- whichever is maximum. The EMD amount should only be remitted as Bank Drafts in favour of “**ICFOSS**” payable at Thiruvananthapuram and shall be enclosed with the bid.

Forfeiture of EMD

EMD of a tenderer shall be forfeited, if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. Further, if the successful tenderer fails to furnish the required performance security within the specified period, its EMD shall be forfeited.

Refund of EMD

EMD furnished by all unsuccessful tenderers shall be returned to them without any interest whatsoever, at the earliest after expiry of the final tender validity period but not later than 30 days after conclusion of the contract. EMD of the successful tenderer shall be returned, without any interest whatsoever, after receipt of performance security from it as called for in the contract.

- **Tender Fee**

The Tender should submit a non-refundable Tender Fee of Rs.400/- . The Tender Fee should only be remitted as Bank Drafts in name of “**ICFOSS**” payable at Thiruvananthapuram and shall be enclosed with the bid.

- Item offered must be standard, proven product and already available in the market.



- Items offered must follow the required technical specifications
- Tender Documents shall be available only on the Internet and shall not be available for sales elsewhere.
- No price rise except Govt. levies will be allowed once order has been placed during the validity of the claim.
- Materials must be properly packed against any damage and insured except where hand delivery is proposed.
- Delivery / installation (If applicable) at the store should strictly be completed within the stipulated period of delivery
- Supplier will have to pay penalty on non-delivery after expiry of delivery date @ 1% of quoted price per week subject to maximum of 10%.
- Stores should be supplied to the “The Director, ICFOSS, Swatantra, South Pavilion, Sports Hub, Karyavattom, Trivandrum - 695 581 Kerala, India”.
- Technical literature/ hand book /data sheets must be sent along with the materials as and when supplied.
- If any equipment or part thereof is lost or rendered defective during transit, the supplier shall immediately arrange for the supply of the equipment or part thereof as the case may be.
- Purchaser reserves the right to cancel the order without any liability in case the materials are not supplied within the stipulated period or non - fulfillment of contractual obligations.
- **Payment:** The payment shall be made against completion of the entire supplies. The complete payment shall only be made against successful checking of the items supplied. In case of any defects the L1 bidder shall replace the item prior to the payment
- **Quoted rate:** The quoted rates shall be **inclusive** of all taxes and also the bidder shall include charges like duties, freight, handling, loading, unloading, insurance premium along with the quoted rate.

Note: ICFOSS holds the DSIR certificate which makes ICFOSS eligible for tax exemptions, Seller is responsible for cross checking the category codes and HSN numbers and apply appropriate exemptions



The Taxes may include (excise duty, sales tax, service tax, entry tax etc), duties, levies, freight, handling, loading, unloading, insurance premiums etc complete and shall remain firm throughout the contract period. No compensation will be paid in case of any upward revision in the statutory taxes and levies or introduction of new taxes and levies.

- **Special Conditions:** The supplier is requested to submit all the items mentioned during the technical evaluation of the bid. There should not be any change in the make/specs in the final supplied items from the items submitted during the evaluation unless the technical evaluation committee recommends for the same.

I / We hereby declare that I/We have read and understood the above instructions for the guidance of tenders.

Place :

Date :

Name, Signature and seal of Tenderer

Please submit the hardcopy of this document duly signed by the authorized signatory to the following address:

**Secretary & Registrar
ICFOSS
Swatantra,
South Pavilion, Sports Hub,
Karyavattom,
Trivandrum - 695 581
Kerala, India.**



TENDER FORM

To,
Secretary & Registrar
Swatantra,
South Pavilion, Sports Hub,
Karyavattom,
Trivandrum - 695 581
Kerala, India.

Dear Sir,

Sub: Bid form

Ref: **ICFOSS/172/2022-TC4(IT)** dated 13/09/2023

1. Having examined the conditions of tender contract, the receipt of which is hereby duly acknowledged. I/We undersigned, offer to supply all hardware & software and execute all works in conformity with tender specifications referred above and also to the said terms & conditions from the sum shown in the commercial bid(s) attached herewith and made part of this bid.
2. I / We undertake, if our Bid is accepted to complete delivery & commissioning of all Items specified in the contract within 4 weeks calculated from the date of issue of your purchase order/LOI.
3. We understand that you are not bound to accept the lowest or any bid, you may receive.
4. I / We affirm that I / We have enclosed the acceptance of all terms and conditions and also all brochures detailing the technical specification of the items quoted by me/us.
5. I / We hereby confirm that all the items supplied are in proper working condition and tested successfully.
6. The tender document for the works mentioned above have been obtained by me from the URL: <http://icfoss.in/tenders>, the official website of ICFOSS and I / we hereby certify that I / we have read the entire terms and conditions of the tender document, which shall form part of the contract agreement and I / we shall abide by the conditions / clauses contained therein.
7. My /our GST & PAN Numbers are as follows.
8. GST Registration Number.



9. PAN Number.

10. Date DD/MM/YYYY/...../.....

11. Signature of the bidder

12. Designation

13. Witness 1.

14. Signature

15. Witness 2.

16. Signature

ANNEXURE I (BOQ TEMPLATE)

Date:

Tender Inviting Authority: ICFOSS					
Name of Work: Drone Development Modules					
Contract No: <u>ICFOSS/172/2022-TC4(IT)</u> dated 13/09/2023					
Bidder Name :					
<u>PRICE SCHEDULE</u>					
<u>(This BOQ template must not be modified/replaced by the bidder and the same should be submitted after filling)</u>					
SI No.	Items	Quantity	Units	BASIC RATE Per Kit (inclusive of all Taxes)	TOTAL AMOUNT (inclusive of all Taxes)
1	Flight controller	2			
2	UAV GPS	2			
3	Airunit with Ground unit	1			
4	Air unit	1			
5	BLDC Motor	4			
6	ESC	4			
7	UBEC	4			
8	Propeller	4 pair			
9	Fpv Camera with	1			

	Airunit				
10	FPV Goggles	1			
11	Receiver	1			
12	Antenna	3			
Grand Total (Inclusive of all Taxes)					
Quoted Rate in Words					

Authorized Signature
(With Signature and Seal)

*Envelope should be marked with the heading 'For the supply of Drone Development Modules '