



**The Gambia - EU
Cooperation**



This Project is co-funded by the European Union

TERMS OF REFERENCE FOR THE PURCHASE OF A DRONE

Reference	Purchase of a drone
Procuring organisation	European Research Institute (ERI)
Project	ENV/2018/400-378 - CONNECTING - Coastal Observer Network for moNitoring the EffeCTs of cllmate chaNge along the Gambia River

Introduction

The European Research Institute (ERI) in partnership with Sahel Wetland Concern (SWC) and Makasutu Wildlife Trust (MWT) are seeking a supply of a drone to be used in field research on the coastal ecosystems of the Gambia River within the framework of the project “Coastal Observer Network for moNitoring the EffeCTs of cllmate chaNge along the Gambia River” (CONNECTING).

The CONNECTING project is co-funded by NAOSU - National Authorising Officer Support Unit, Ministry of Finance and Economic Affairs, The Gambia, within the framework of the GCCA+ Climate Resilient Coastal and Marine Zone Project for The Gambia. The project started in September 2021 and lasts 12 months. The overall objective of the project is to enhance effective collection and transmission of data on environmentally significant events and biophysical parameters to the National Environment Agency in order to help coastal communities along the Gambia River to adapt to impacts of climate change. In order to achieve this, the CONNECTING project aims at establishing a community-based Coastal Observer Network to enhance the monitoring of the sheltered coast along the Gambia River. The project will identify four priority geo-referenced cells to be monitored and build the capacity of community based organizations and individual coastal observers. The CONNECTING project is being implemented in the West Coast Region and Lower River Region, targeting 24 adult residents and two community based organizations. The final beneficiaries of the project are coastal communities located along the Gambia River, local authorities such as the Alkalou (Village Head) and the Village Development Committee (VDC).

The main purpose of the purchase of a drone is to enhance the mapping of the riverine coast in order to identify four coastal cells to be monitored during the project.

Objective

The objective of purchasing a drone is to improve the mapping of the southern bank of the final section of the Gambia River. The drone will provide a unique perspective on the landscape and ecosystems of the Gambia River, facilitating the mapping of the coast.



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Tasks

The selected supplier shall perform the following tasks:

- Deliver a brand new drone to ERI office in Torino;
- Ensure that the drone is in its best condition at the time of purchase.

Technical Specifications

- The purchased drone will include controller, camera, two batteries and a hard case;
- Fly in winds up to 45 mph;
- Take Off Weight Diagonal: 520mm/ 20in (w/o rotor blades)
- Size: 520x457x310 mm;
- Flight Time: 25 - 30 minutes;
- Maximum Horizontal Speed (Manual Mode): 17m/s (38mph);
- Maximum Horizontal Speed (Angle Mode): 13.5 m/s (30mph);
- Max Ascent Speed: 4 m/s;
- Maximum Descending Speed: 2.5m/s;
- Max Flight Height: 500m;
- Maximum Rotation Rate: 120 deg/s;
- Max Angular Velocity: 120 degrees/ s;
- Maximum Roll Angle: 35°;
- Battery: 4S 6200mAh LiPo;
- Motors: 720 KV;
- Charger: SC4000 - 4H;
- Operating Temperature: 0°C - 40°C / 32°F - 104°F;
- Storage Temperature: -10°C - 50°C / 14°F - 122°F;
- Obstacle Avoidance System:
 - Sensor: Ultrasonic;
 - Flight Speed: 4 m/s;
 - Operating Environment: Height > 1.5m / 5ft. Distance to Obstacles < 5m / 16ft;
- Transmitter: ST16E Personal Ground Station;
- Operating System: Android;
- Channels: 16;
- Transmission Distance: Up to 3.5km - 7km (2.1 miles - 4.3 miles);
- Battery: LiPo
- Battery Capacity / Voltage: 5250mAh 4S/15.2V (79.8Wh);
- Built-In Li-ion Battery Voltage / Capacity: 3.6V 8700mAh 31.32Wh Li-ion;
- Frequency: 2.4Ghz;
- Videolink Frequency: 2.4 Ghz;
- Videolink: HD 720 p;
- Screen: 7";
- Operating: 0°C - 40°C / 32°F - 104°F;
- Temperature Video: HDMI;



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- Flight Controller and adding functions: M7 Process at 2x the speed for easy 'add on' functions;
- Video and Telemetry Link: 2.4 GHz OFDM for an extended range of 3 km and increased reliability;
- Battery Connector: 12 pin for greater stability;
- Autonomous Flights: with façade or wall mode for 3D modelling of buildings;
- Airframe Weight (with Battery): 1645g;
- Control Transmission Distance/Range (Optimum Conditions): FCC Compliance: Up to 1.6km/1 mile CE Compliance: Up to 1.6km/1 mile;
- Video Transmission Distance/Range (Optimum Conditions): FCC Compliance: Up to 1.6km/1 mile CE Compliance: Up to 1.6km/1 mile;
- Flight Systems Telemetry Data On Screen Display (OSD): yes;
- Camera:
 - Weight: 300g / 0.6lbs;
 - Operating Temp.: -10°C - 40°C / 14°F - 104°F;
 - Mount: Detachable Quick Release;
 - Max Angular Velocity: Tilt: 30°/s Pan:120°/s;
 - Controllable Range: Tilt: +30° to 120° Pan:±165°;
 - 1" CMOS Effective Pixels: 20MP: 1" CMOS Effective Pixels: 20MP;
 - Lens: FOV 91° F/2.8 23mm format equivalent;
 - Photo Resolutions: 3:2 5472 x 3648, 4:3 4864 x 3648, 16:9 5472 x 3080;
 - Video Resolutions: H.264;
 - Photo Formats: JPG, JPG+DNG;
 - Video Formats: MP4;
 - Photography Modes: Single Shot, Time Lapse;
 - Exposure Mode: Auto Exposure, Manual Exposure;
 - Exposure Compensation: ±3.0;
 - Metering Mode: Spot Metering, Center Metering, Average Metering;
 - Electronic Shutter: 4 - 1/8000s;
 - White Balance: Auto, Incandescent, Sunrise, Sunset, Cloudy, Fluorescent, Lock;
 - ISO Range: 100 - 6400.
 - Camera Interface: 30 pin X connector with USB and CAN interfaces for more compatibility.

Warranty

A warranty of at least one year is expected.

Time frame



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The deadline for submission of bids is 5th November, 2021. The successful bidder will be contacted within five days of the deadline to make the buying order and after that, the vehicle is expected to be delivered within 14 days.

Maximum budget

The maximum budget for this purchase is 8,500 EUR.

Quotations

Bidders shall submit a quotation to the European Research Institute (ERI) with the title: "Supply of drone for the CONNECTING Project" Quotations should include:

- supply of a drone including accessories;
- delivery costs;
- indication of delivery time;
- indication of warranty;
- indication of after-sales support.

Selection of Proposals

The proposal that will get the highest score will be selected. Award of the contract will be based on the following criteria:

Award Criteria	Maximum Points
Price	30
Compliance with the required TS	20
Warranty	20
After-sales support	20
Completeness of the proposal	10
Total	100