Pondicherry University
School of Life Sciences,
Department of Ecology & Environmental Sciences
Puducherry – 605 014, India

In collaboration with

Throttle Aerospace Systems pvt ltd (TAS),
Bangaluru, Karnataka, India.

Organized a

Capacity Building program on Drone Data Collection

on
20 July 2022

The capacity building on Drone was organized at Pondicherry University on 20 July 2022 in collaboration with Throttle Aerospace Systems pvt ltd (TAS), Bangaluru, Karnataka, India. A team of three members from TAS gave a training to the students and scholars of Pondicherry Uiversity.

The team from TAS
Mr. Vishal Parasuram – Senior Engineer
Mr. Rishab Kashi – Drone pilot

The capacity building started with a presentation from TSA. Mr. Vishal Parasuram gave a presentation to the scholars and faculty about the Drone. During the presentation he covered the following aspects.

1. What is drone and its history of development
2. How drone is being used in India in various fields (Agriculture, Urban, Forests, etc.)

3. What are the guidelines of Directorate General of Civil Aviation (DGCA), Govt. of India.

4. What is Unique Identification Number (UIN)?

5. How does DGCA classify the area in three zones (red, yellow and green)

6. What are the different parts in each Dron?

7. How to do the check before drone deployment?

8. How to fly a drone?

9. What are the software tools available for drone flying?

10. How to automate the drone data collection and what are the different parameters to be considered for drone data collection?

11. How to trouble shoot?

12. What are the general mistakes that we generally make during drone data collection?

13. What are the field parameters that need to be considered before drone flying?

14. What is photogrammetry?

15. How to prepare a stereo pair from drone data?

16. What are the different fields in which drone data can be useful?

17. What are the different analyses that can be performed with the drone data?

Participants from Pondicherry University

Prof. S. Jayakumar – Faculty
Ms. Neha Jaiswal – Research Scholar
Mr. Shovasish Karna – Research Scholar
Ms. Ankita Roy Chawdhary – Research Scholar
Mr. Zaki Ahmed – Research Scholar
Mr. Shankar Thamburan – Research Scholar
Mr. Atheesh – Research Scholar
Ms. Aafreen – Research Scholar

URGENT

Co-funded by the
Erasmus+ Programme
of the European Union

After the presentation the team took the participants to field for the demonstration. They team from TAS gave the demonstration with the help a drone – Model Dopo.

URGENT

Co-funded by the
Erasmus+ Programme
of the European Union

It has the following features.

Co-funded by the
Erasmus+ Programme
of the European Union

SPECIAL FEATURES

SENSOR OPTION

Sensor:	CMOS 1/3"
Effective Pixels:	4M
Lens:	10x optical zoom f4.9-49mm
Image Format:	JPEG
Video Format:	MP4
Resolution:	1920x1080 30fps
Min. Illumination:	0.05Lux/F1.6

PPK ENABLED

L1/L2/L5
NTRIP and VRS, works with RTCM3
RINEX at an update rate to 10Hz
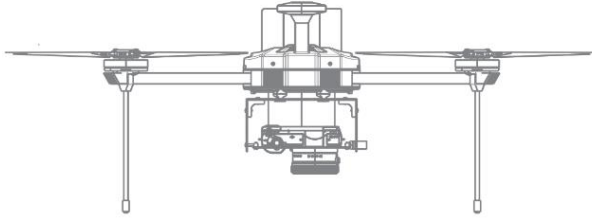16GB of internal storage

ROBUST C2 LINK

Ultra portable highly intuitive GCS
Transmission Range upto 5 Km+
Minimum Latency 110ms
Video Resolution 1080p@30/60fps
Sunlight readable 5.5 inch touch screen
Software TAS_GCS_V2

Co-funded by the
Erasmus+ Programme
of the European Union

TECHNICAL SPECIFICATION

RPA Details

• RPA category	Small category
• RPA Type	Quad copter
• Max all up weight including payload	4.5kg approx.
• Overall Dimension (mm)(l×b×h)	825 x 825 x 290 mm
• Compatible	Payload Fixed 24mp RGB /Multispectral*/ IR camera*

Power Plant Details

• Engine/Motor	BLDC Motor
• No of Motors	4 Nos
• Battery capacity	30000 mAh
• Propellers details	18-inch Diameter

Equipment Details

• GNSS	Yes
• Autonomous Flight Termination System or RTL	Yes
• Flashing anti-collision strobe light	Yes
• NPNT Compliant	Yes
• Flight controller with flight data logging capability	Yes
• Barometric equipment (with capability for remote sub- scale setting	Yes
• Geo fencing capability	Yes

Remote Pilot Station

• Ground control station	Robust C2 Link based with >5 kms Comm. range
GCS app version	Lookout_VGCS_v2.0

C2 Link

• Equipment detail	2.4 GHz (FHSS) transceiver
• Communication Range	5km default, can be extended Upto 10 km

Performance details

• Max Endurance	Up to 55 Mins
• Max Range	25km
• Cruise Speed	10 m/s
• Max Speed	24 m/s
• Area Coverage	Up to 1.5 Sq km
• Max ceiling height	4500 m AMSL
• Operating Altitude	120 m AGL default/ can be unlocked upto 1000m
• Operating Envelope	VLOS flight only (BVLOS Ready*)

URGENT

Co-funded by the
Erasmus+ Programme
of the European Union

The team demonstrated the assembling of drone in the field. They also demonstrated the automatic data collection mode and manual mode with the help of controller and flight plan.

Co-funded by the
Erasmus+ Programme
of the European Union

Pondicherry University, India

After feeding all the data into the controller, the team from TAS stated data collection for 2 hours.

After data collection, the Team from TAS also clarified the doubts/questions raised by the participants.

The capacity building on Drone ended at 4:00 pm. It was a most useful program to scholars and faculty. Prof. S. Jayakumar thanked the team members from TAS for the capacity building program in collaboration with Pondicherry University as part of the URGENT project.