



UNIVERSITY OF LISBON
INTERDISCIPLINARY STUDIES
ON SUSTAINABLE ENVIRONMENT AND SEAS



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Technology and Engineering



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

Unmanned Aerial Vehicles for Environmental Monitoring

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unite!

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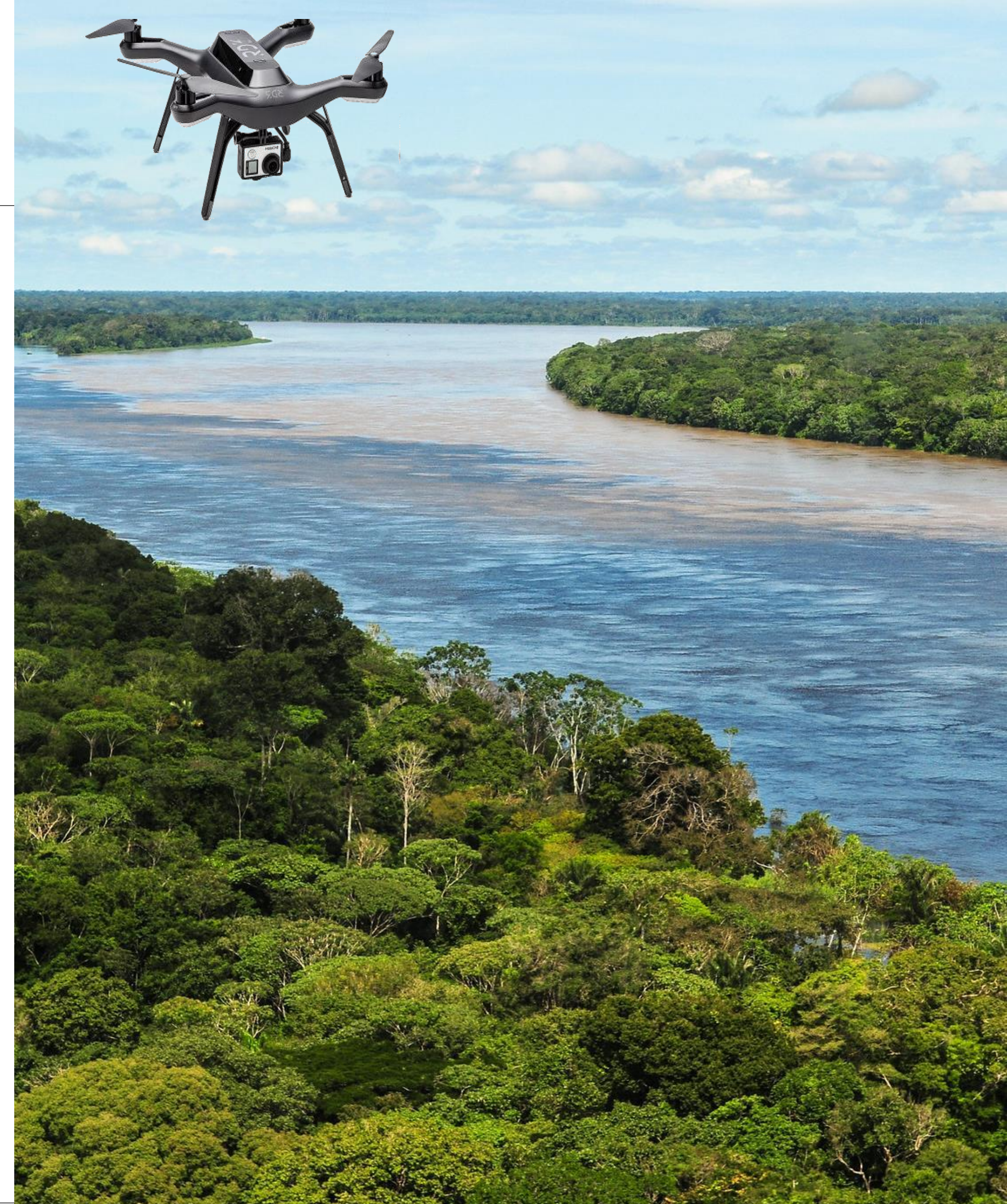
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Module contents

1. Introduction to Unmanned Aerial Systems
2. UAVs payload: sensors for environmental monitoring
3. UAVs operation
4. Examples of application of UAVs for environmental monitoring



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Air frame



fixed-wing

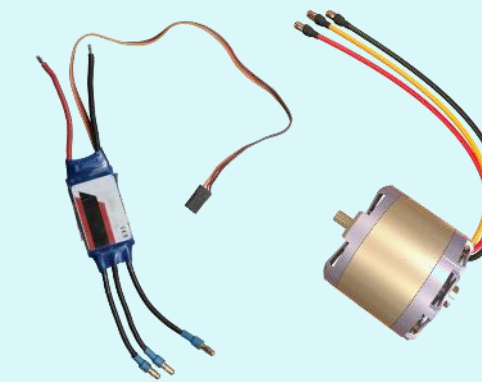


multi-rotor

Propulsion and avionics



battery



ESC +
motor



propeller



flight controller
+ frame sensors

Communications and control station



radio
command



radio
telemetry



ground
control station

Payload



gimbal



visual band
camera



multispectral
sensor



LiDAR
sensor

Air frame



fixed-wing

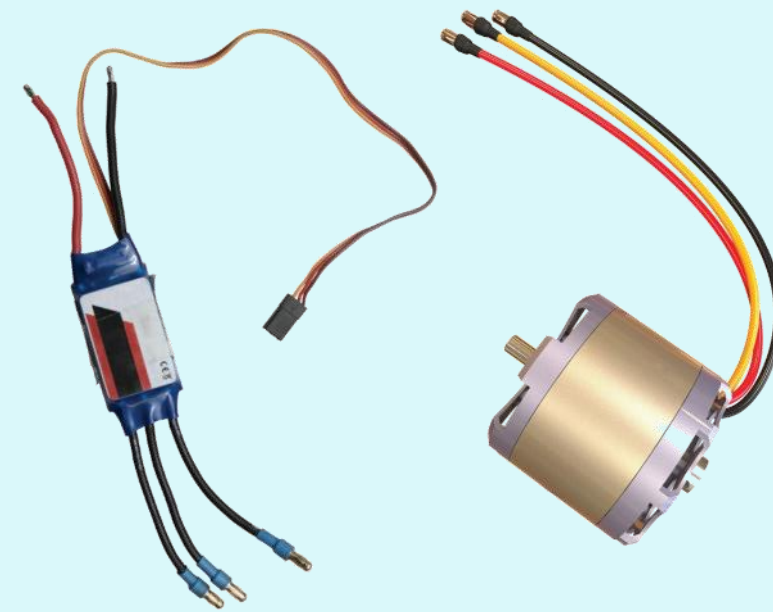


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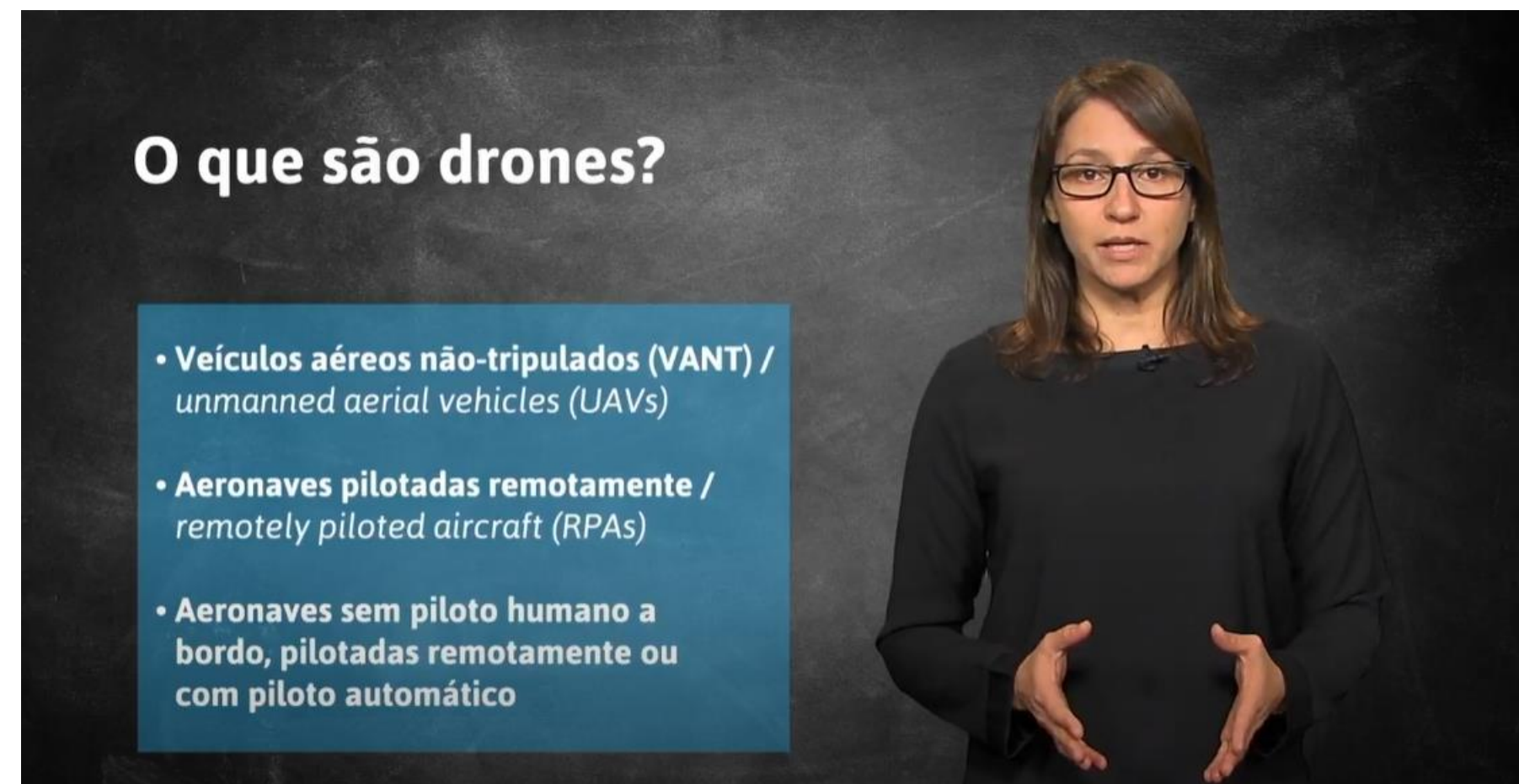
visual band
camera



multispectral
sensor



LiDAR
sensor



Video “What are drones?” (please activate the captions in the video)

Credits to MOOC Técnico course “Simulation and Control of Drones”

Alexandra Moutinho, José Raul Azinheira

courses.elearning.tecnico.ulisboa.pt

An underwater scene with a sea turtle swimming towards the left. The water is filled with various types of plastic pollution, including bags, bottles, and a pink cap. A school of fish is visible in the background. The overall color palette is blue and teal.

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