



UNIVERSITY OF LISBON
INTERDISCIPLINARY STUDIES
ON SUSTAINABLE ENVIRONMENT AND SEAS



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Unmanned Aerial Vehicles for Environmental Monitoring

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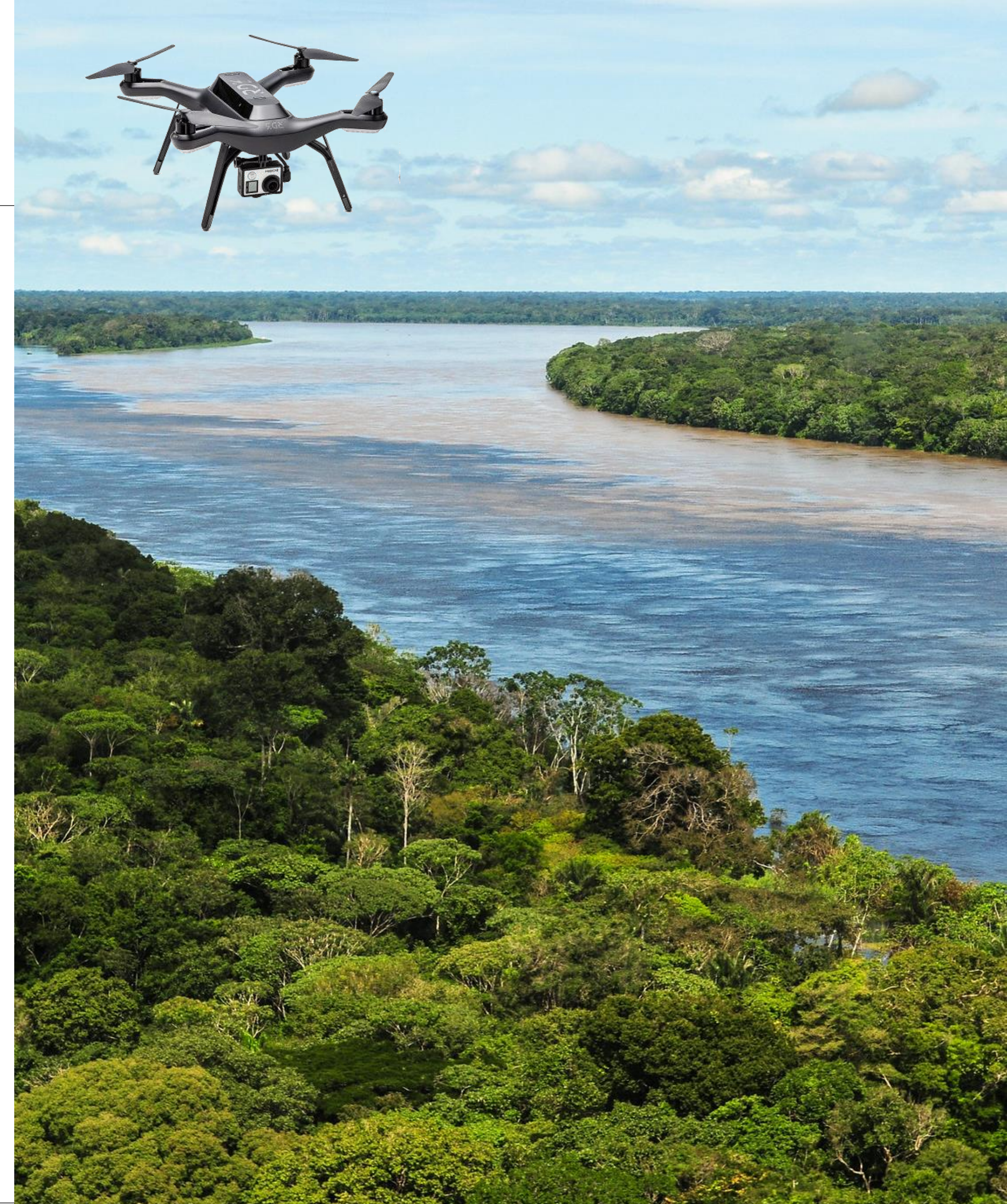
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Module contents

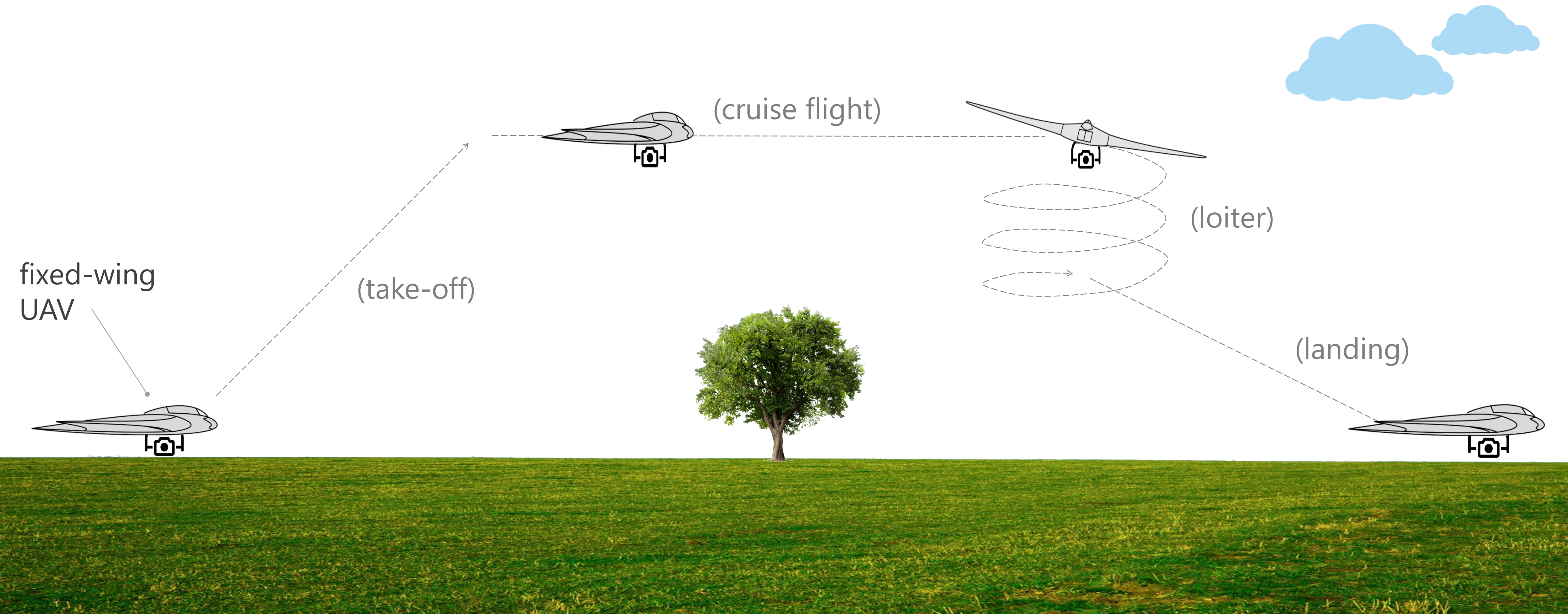
1. Introduction to Unmanned Aerial Systems
 - a) How do drones work?
 - b) Comparison of UAVs for environmental monitoring**
2. UAVs payload: sensors for environmental monitoring
3. UAVs operation
4. Examples of application of UAVs for environmental monitoring

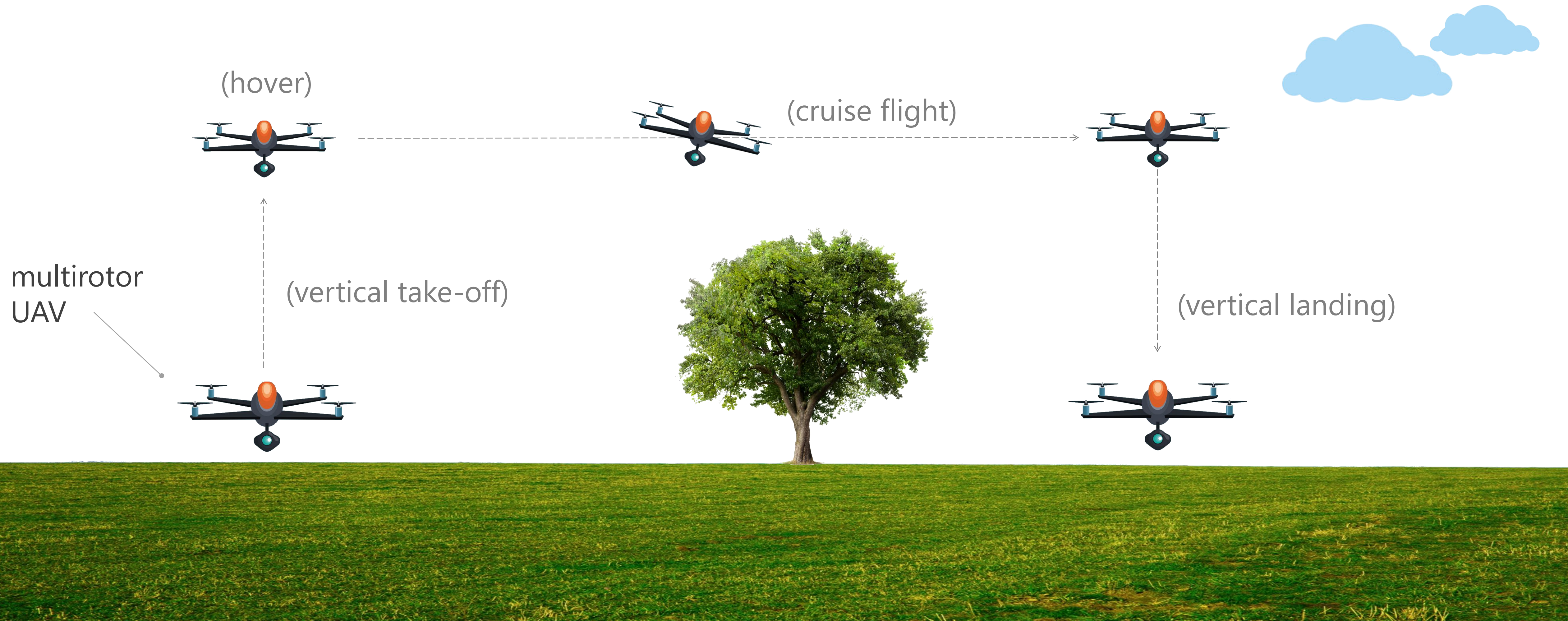








Flight stages





Drone	Advantages	Disadvantages
	<ul style="list-style-type: none"> + Long endurance + Large area coverage + Fast flight speed + Great stability + Safer recovery from motor power loss 	<ul style="list-style-type: none"> – High price – Large take-off/landing zone is required – No VTOL/hover – Challenging to fly; training is needed
	<ul style="list-style-type: none"> + Low price + High accessibility + Great manoeuvrability + Ease of use + Vertical take-off and landing (VTOL) + Good camera control 	<ul style="list-style-type: none"> – Short flight times – Small payload capacity – Low stability in the wind

Video “Tail sitter VTOL drone”

Credits to Wingtra YouTube channel



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An underwater scene with a sea turtle swimming towards the left. The water is filled with various types of plastic waste, including bags, bottles, and a pink cap. Several fish are swimming around the turtle and the debris. The overall color palette is blue and teal.

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