



UNIVERSITY OF LISBON
INTERDISCIPLINARY STUDIES
ON SUSTAINABLE ENVIRONMENT AND SEAS



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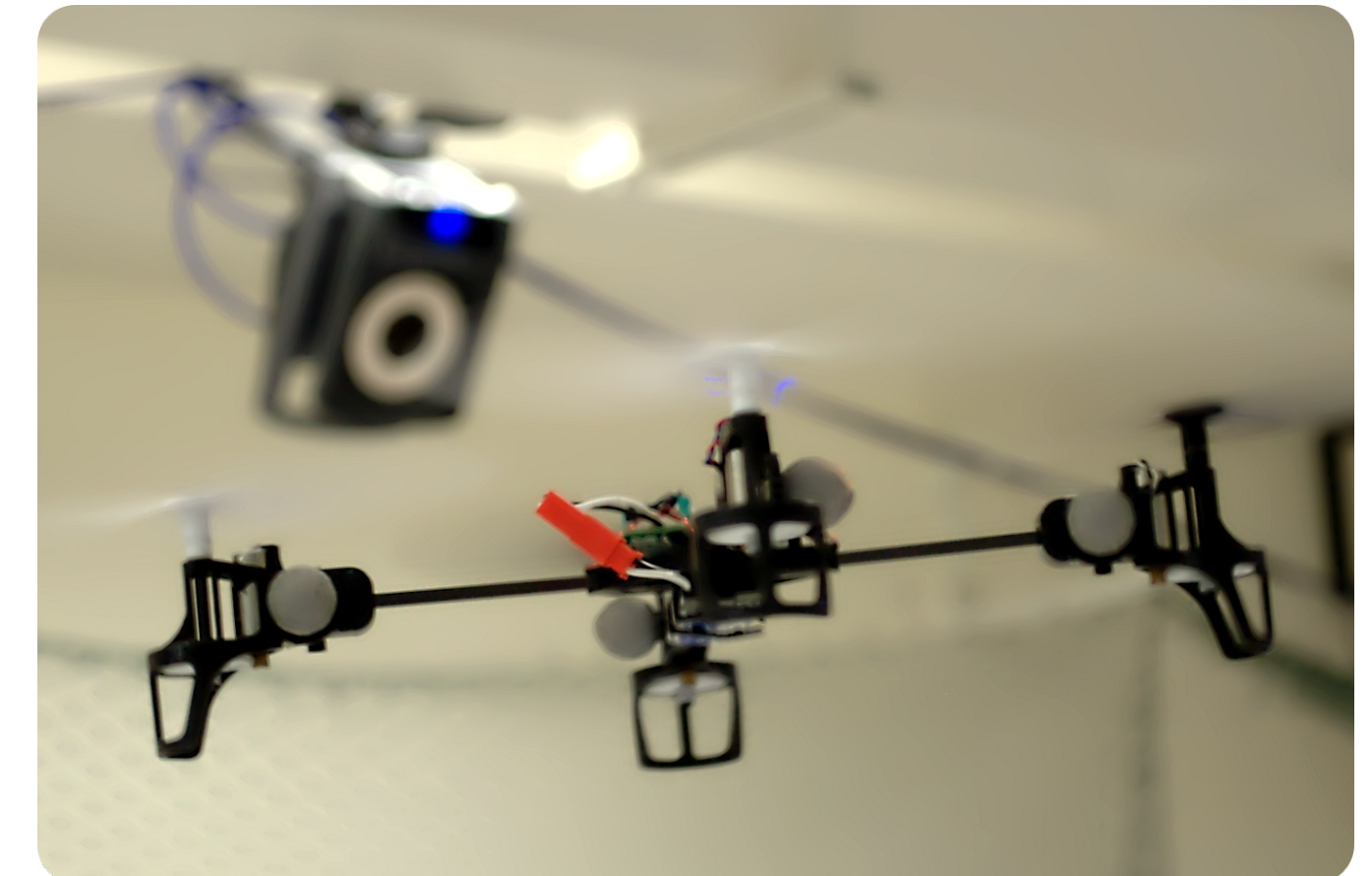
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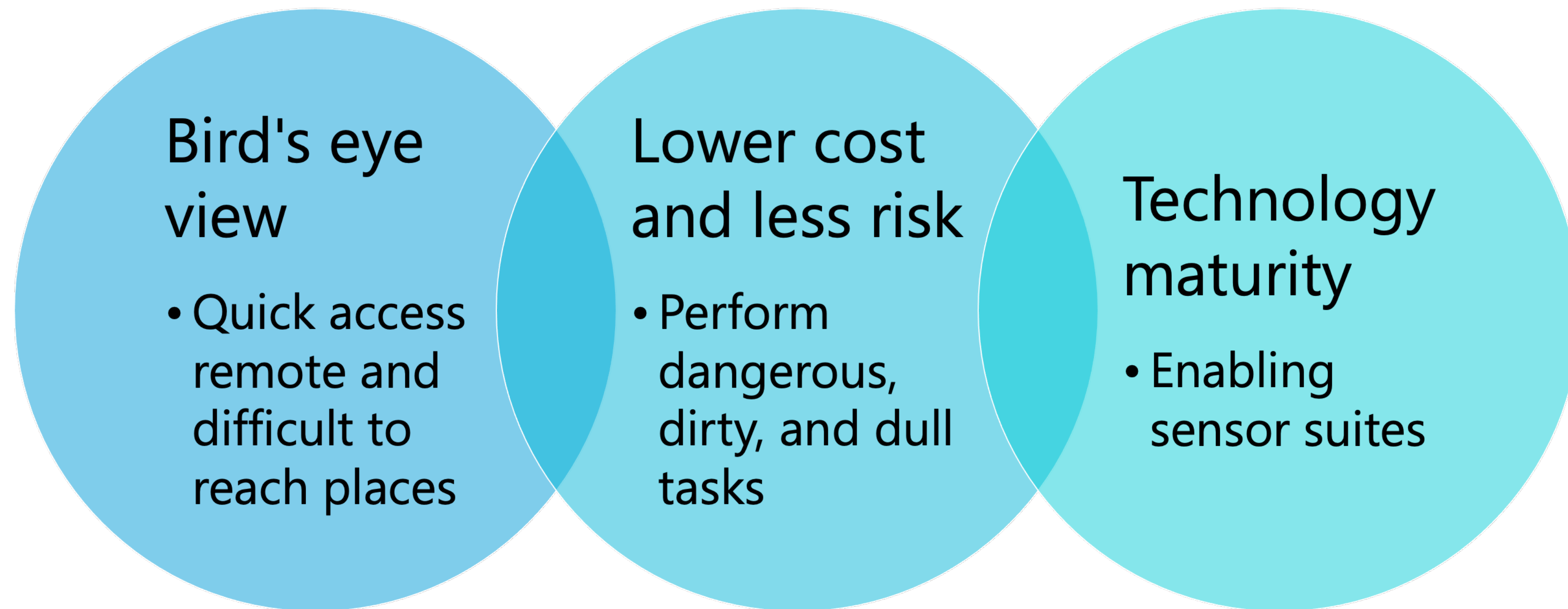
Aerial Vehicles for missions at sea



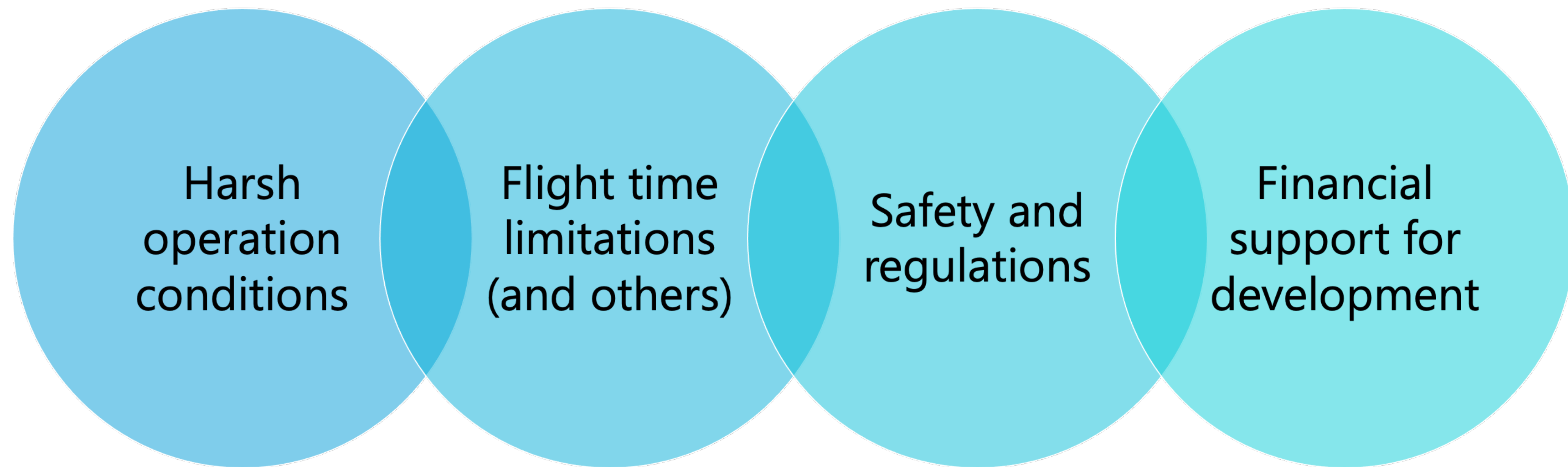
Rita Cunha

Lisboa, May 2020

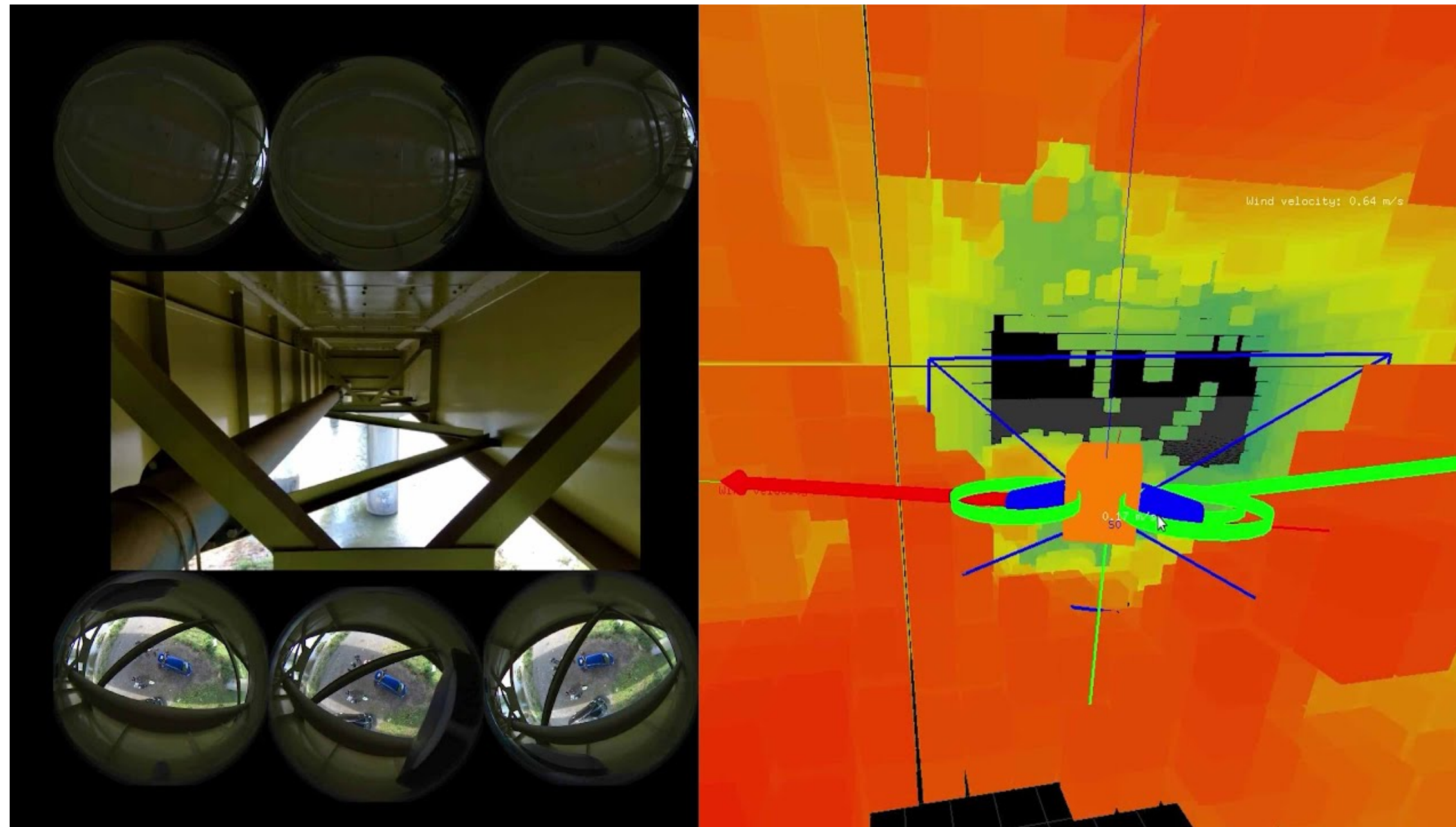
Why focus on drones for applications at sea?



Challenges to overcome - missions at sea



Applications



Inspection and mapping
(Skydio)

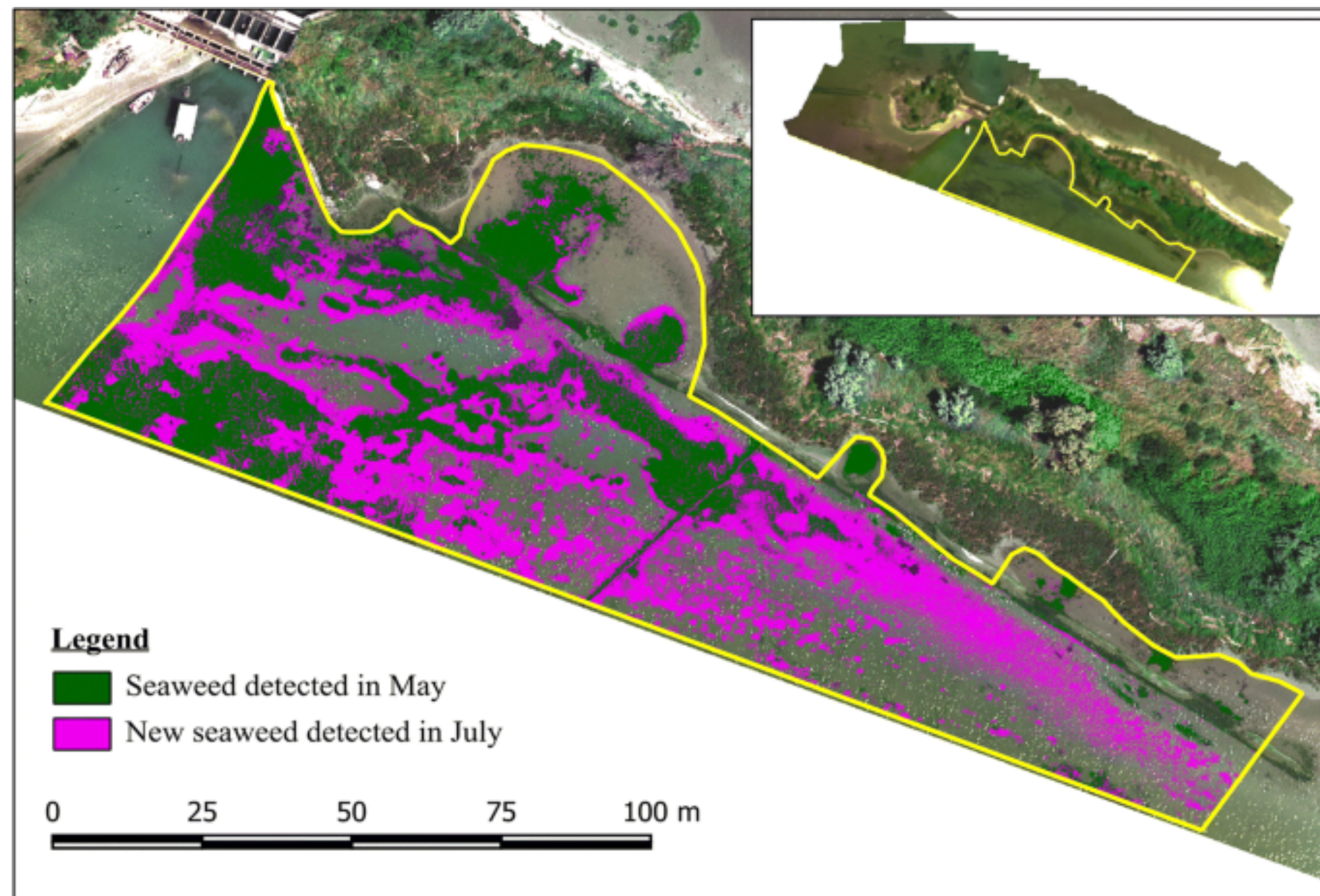
More info:

<https://www.youtube.com/watch?v=ncZmnfIRIWE>



Smoke plume monitoring
(Nordic Unmanned)

Applications



Multispectral monitoring of algal bloom

More info:

Taddia, Y., Russo, P., Lovo, S. *et al.* Multispectral UAV monitoring of submerged seaweed in shallow water. *Applied Geomatics* 12, 19–34 (2020)



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Study of marine species (Snotbot)

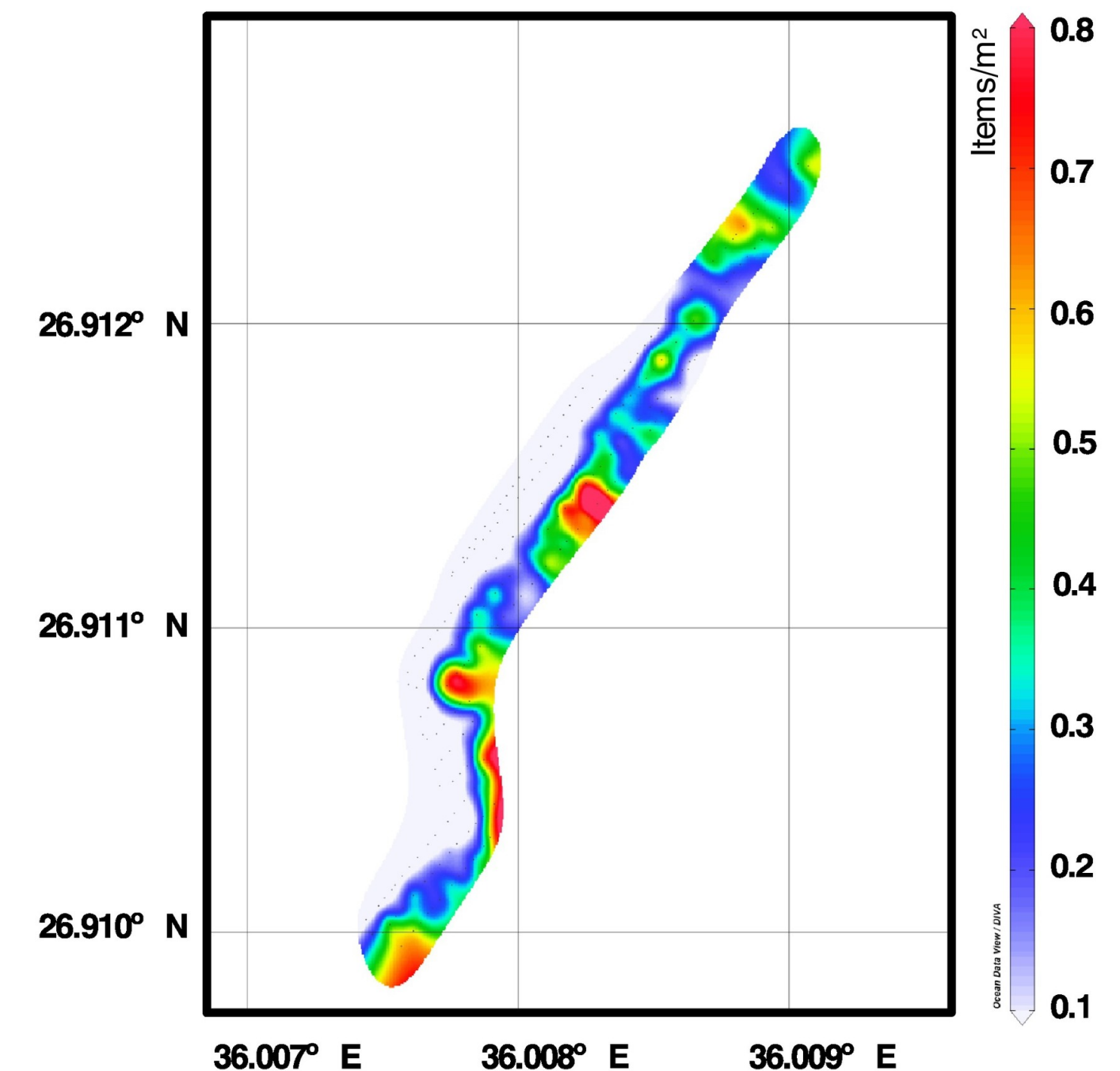
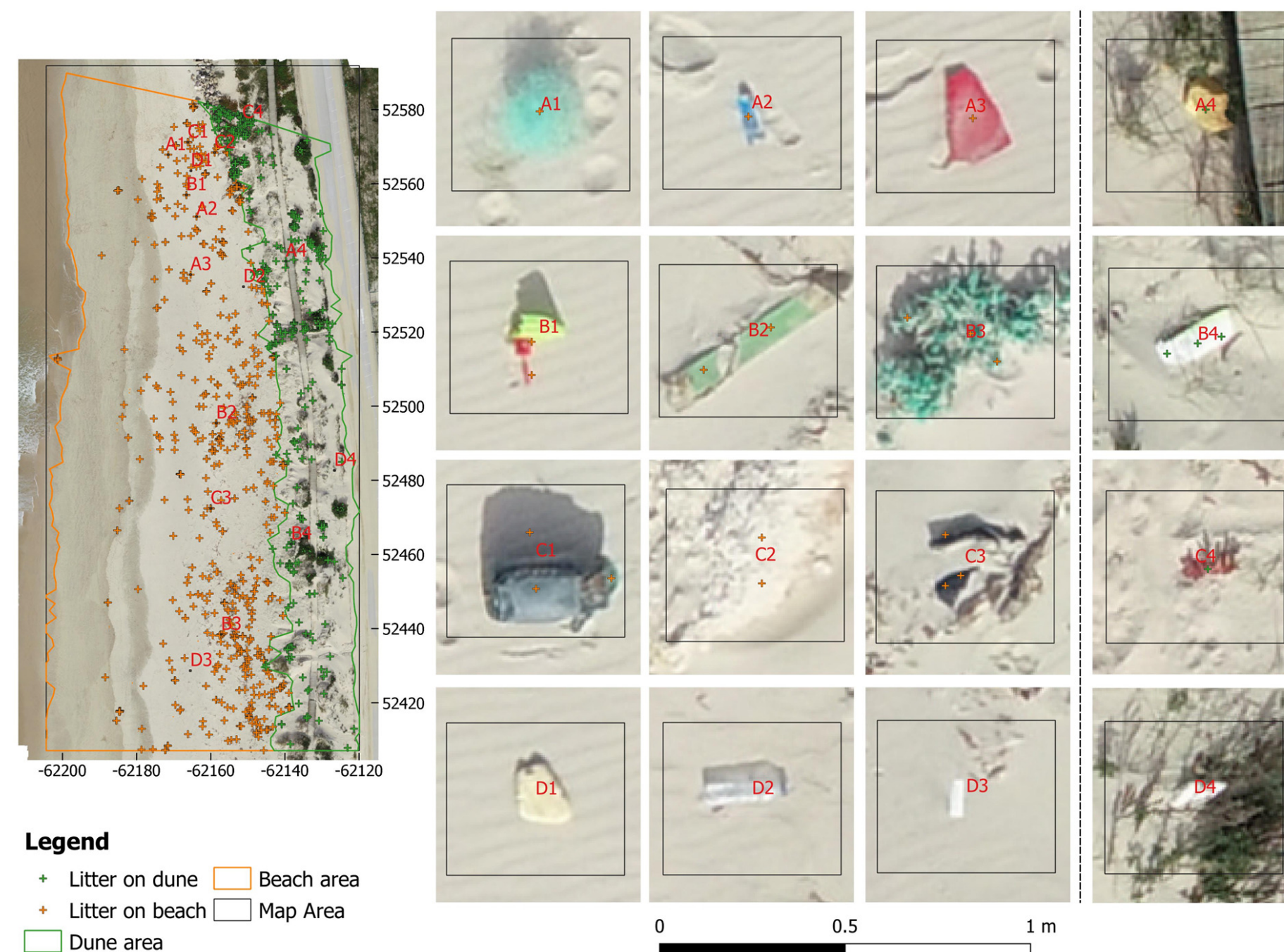
More info:

<https://www.parley.tv/#fortheoceans>



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of the European Union

Applications



Detection, identification, and mapping of marine litter

Litter density map (litter objects per m²)

G. Gonçalves et al., Mapping marine litter using UAS on a beach-dune system: a multidisciplinary approach, Science of The Total Environment, 2020.

C. Martin et al., Use of unmanned aerial vehicles for efficient beach litter monitoring, Marine Pollution Bulletin, 2018.

Drones on the news



Global News, Mar. 2021
Iceland Volcano near Reykjavik



Forbes, Mar. 2021
Self-flying drones are helping speed deliveries of COVID-19 vaccines in Ghana

The quadrotor as a control system

