

# Industry Technical Advisory Committee

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## Oil Spill Response Ltd Oil on water exercise 2017

*Sarah Hall*  
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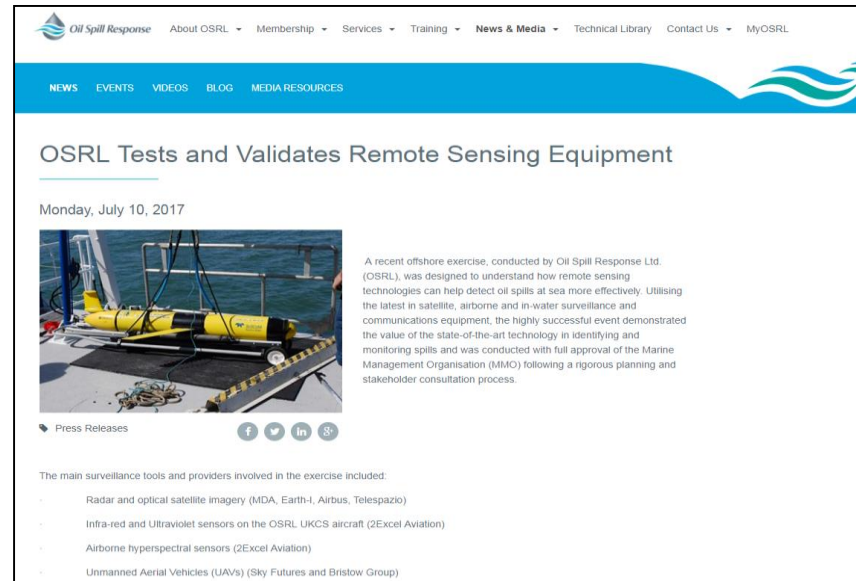
# Content

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- 💧 Why an oil on water exercise?
- 💧 Exercise objectives
- 💧 Stakeholders
- 💧 Events on the day
- 💧 Technology tested
- 💧 Next steps

# Why an oil on water exercise?

- 💧 Validate, test and showcase surveillance technologies
- 💧 Demonstrate OSRL is proactively monitoring and testing technology on behalf of its Members - known and fast moving
- 💧 Act to reinforce the positive perception of oil on water exercising in the UK



# Exercise Objectives

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- Test and validate the chosen surveillance technologies on real oil
- Practice the delivery of accurate, relevant and timely information to;
  - Improve situational awareness
  - Tactically support operational assets to improve encounter rates

# Stakeholders

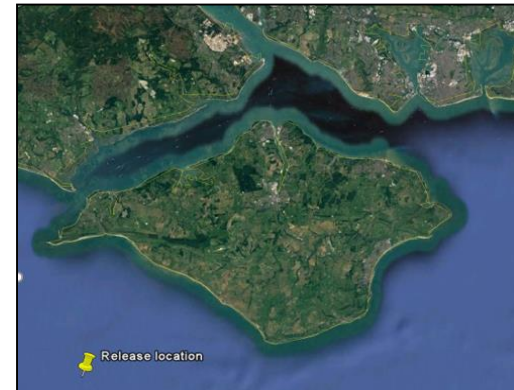
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# Key Exercise Information

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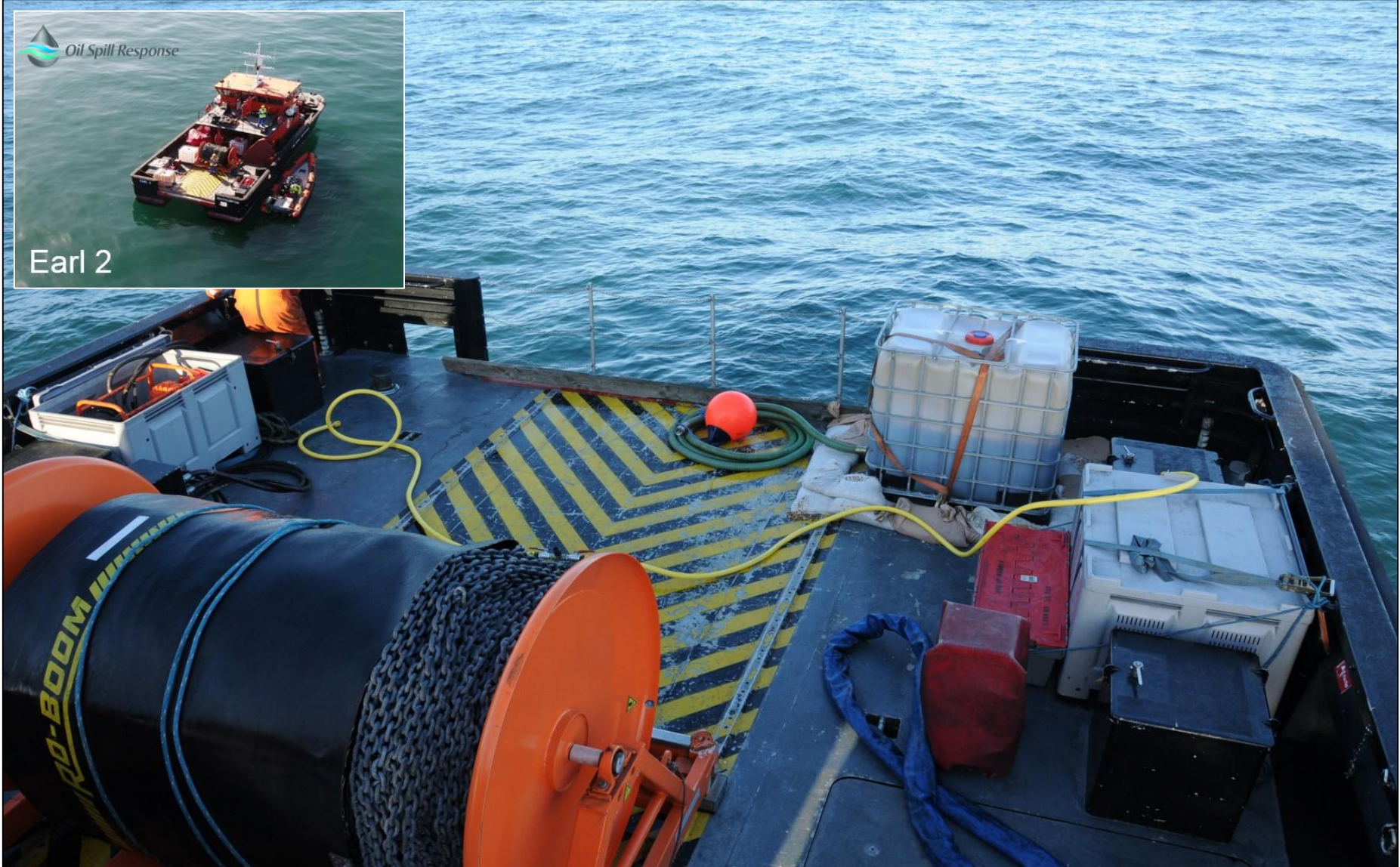
- 💧 Marine Management Organisation marine license
- 💧 Practice exercises
- 💧 SW of the Isle of Wight, UK
- 💧 13<sup>th</sup> June 2017
- 💧 0650 BST oil release
- 💧 500 litres weald basin crude oil
- 💧 Vessel dispersant spraying with standby containment & recovery equipment + prop washing



# Response At Sea

## Earl 2 deck preparation

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# Response At Sea

## Marine Mammal Observer

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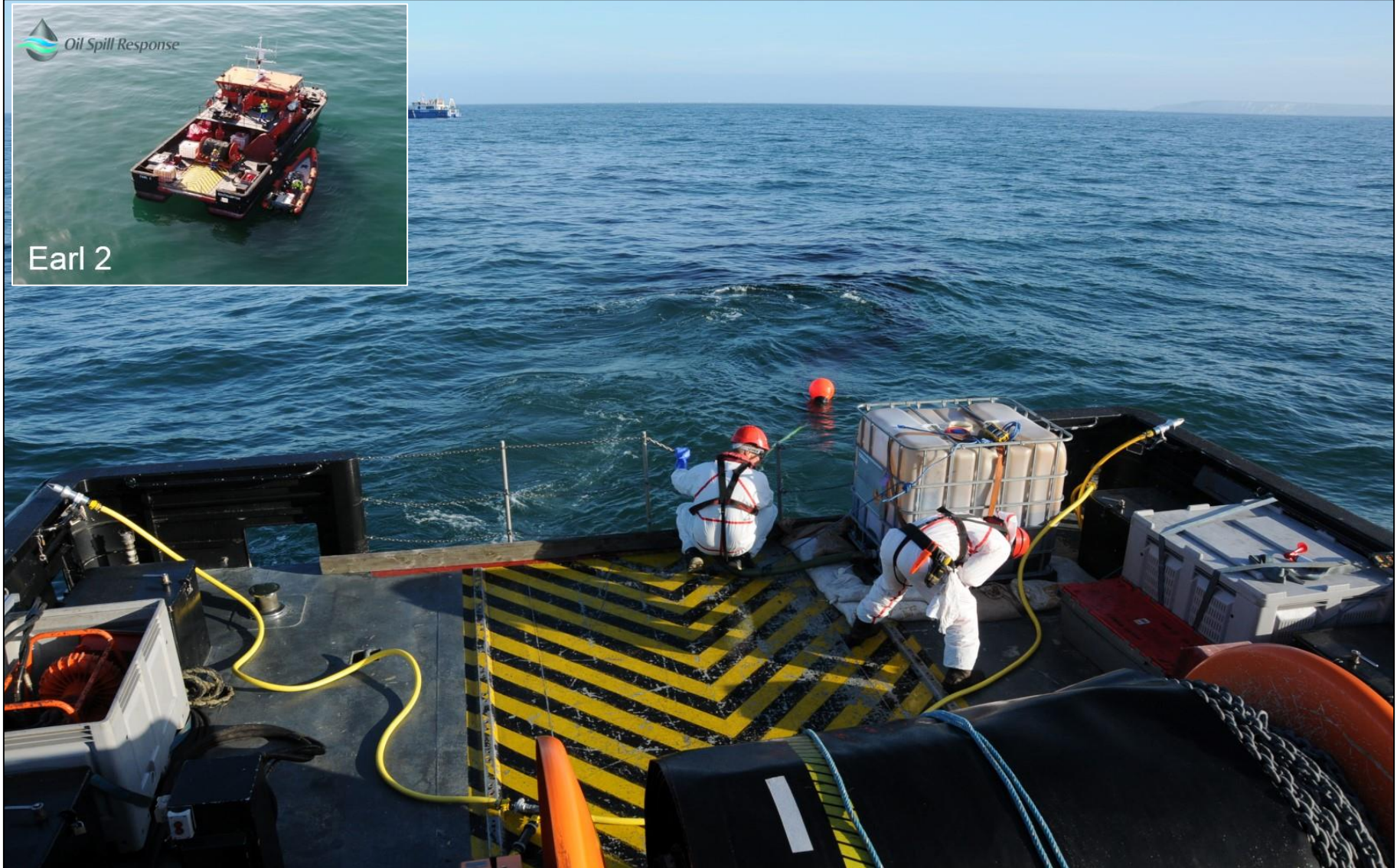




# Response At Sea

## Release of the oil @0650

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# Response At Sea

## Oil chemically dispersing

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# Shoreline Clean-up Assessment Technique (SCAT)

## Proving absence of oil



# Exercise Showcase

## Visualisation Centre, OSRL Southampton

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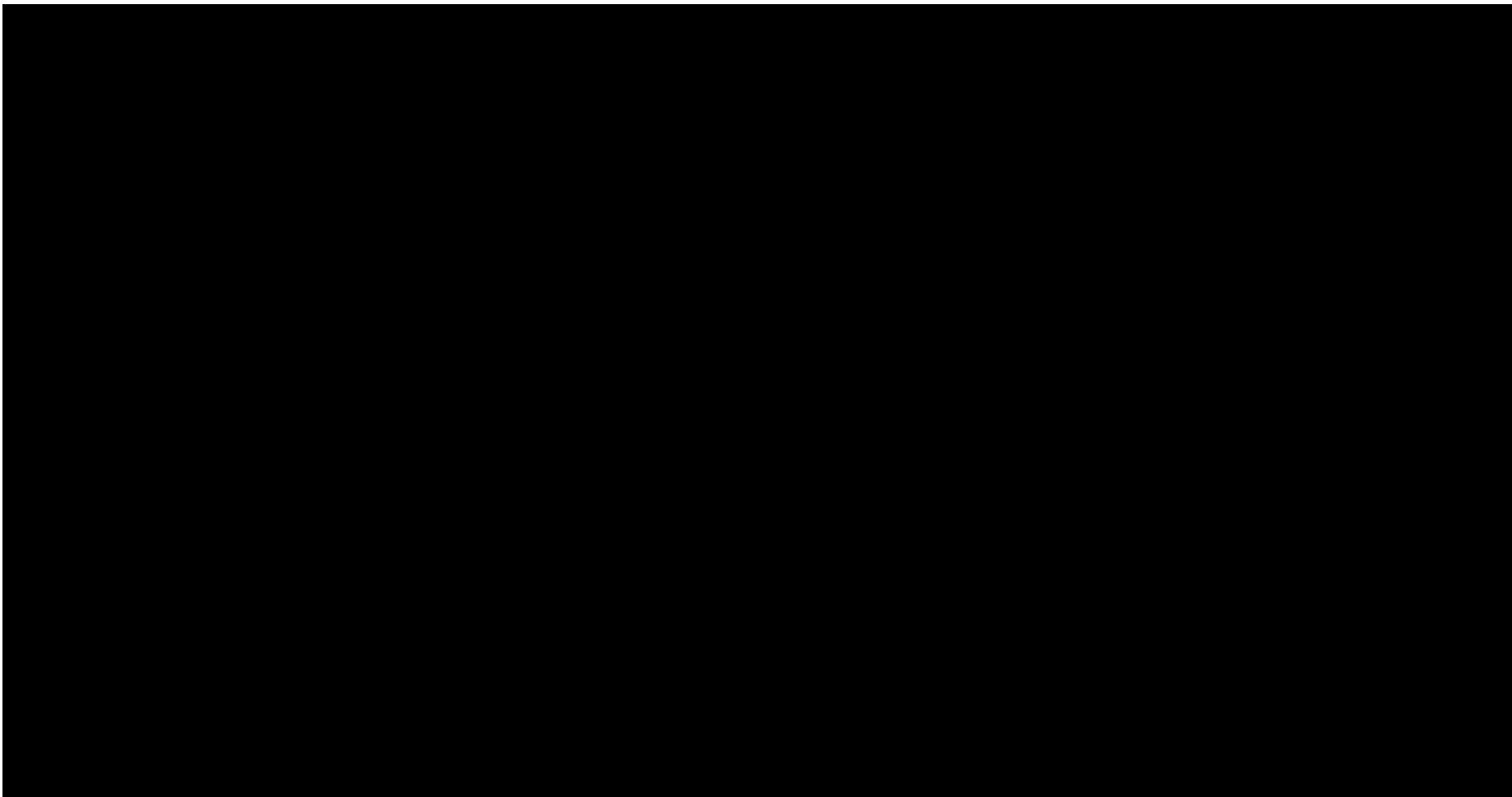
- 💧 Technology stations
- 💧 Live video feeds
  - Body/fixed cameras
  - Surveillance kite
- 💧 Near real time data in the BP visualisation platform
- 💧 Live video interviews



# Exercise Showcase

## Visualisation Centre, OSRL Southampton

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# Technology validated/tested



# Satellite Imagery

## Optical and Radar

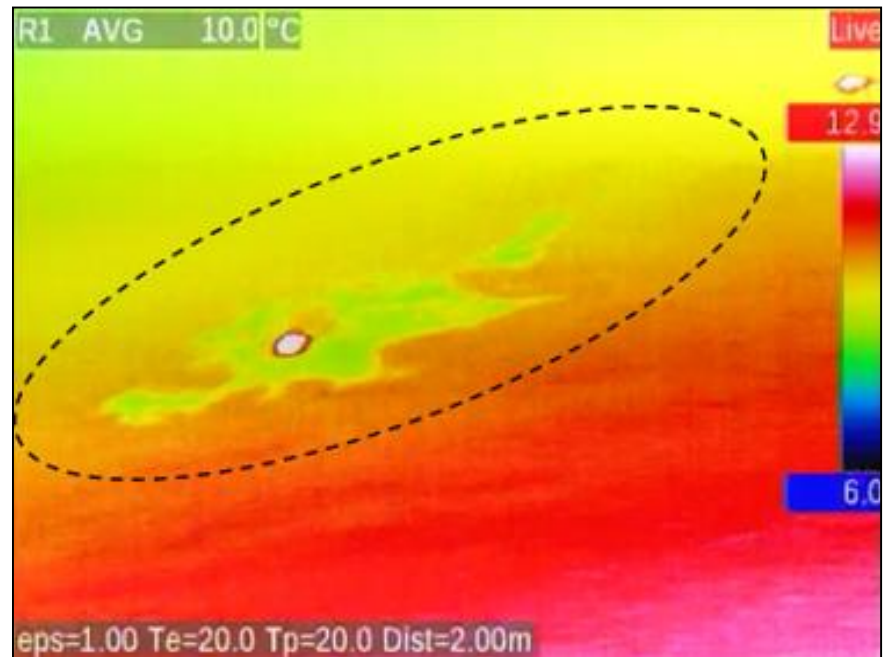
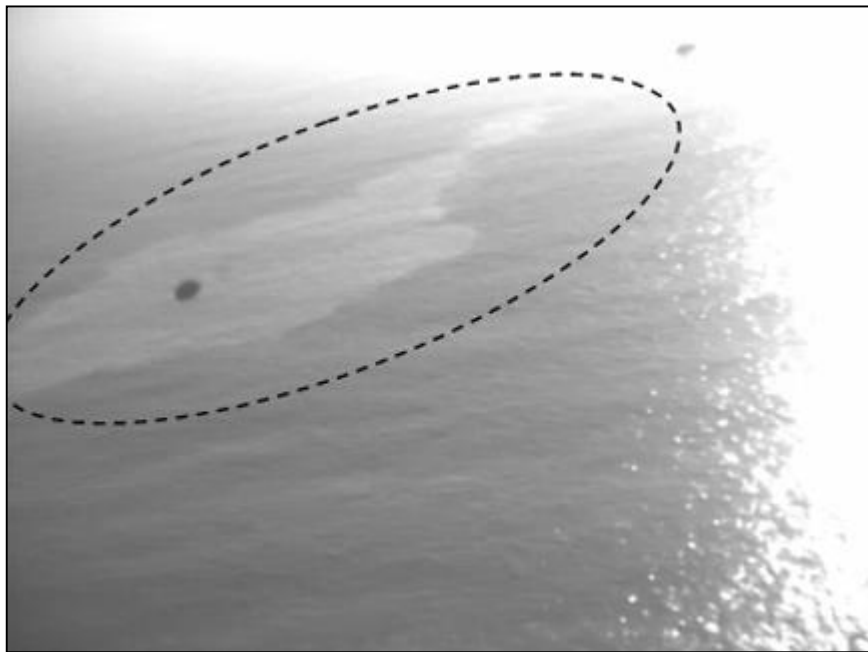
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- 💧 Compare technical outputs and build relationships
- 💧 Optical Imagery
  - low resolution imagery – unable to detect
  - Small volume of oil, spread out quickly, overpass after dispersant spraying
- 💧 Radar imagery
  - Early images did not detect oil on the water due to good weather conditions
  - Later images captured a low-medium confidence anomaly

## Sensor validation

- UV/IR sensors on the UKCS aircraft have been used in real spills but it was an opportunity to validate the sensors in slow time by the sensor manufacturers





# Unmanned Aerial System (UAS)



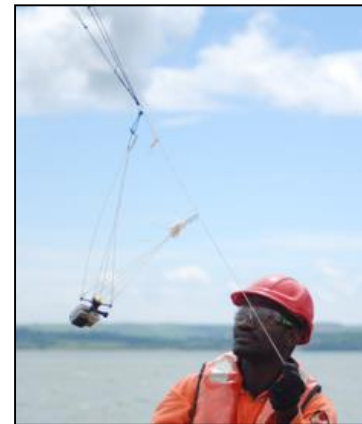
## Improving encounter rates



- Tactical tool
- 'Enhanced bridge'
- Rotary Falcon 8
- Visual/IR
- Screen/viewing goggles
- Comms
- Flight time
- Return to home function
- UAV vs Aerostat

# Surveillance Kite

## Improving encounter rates

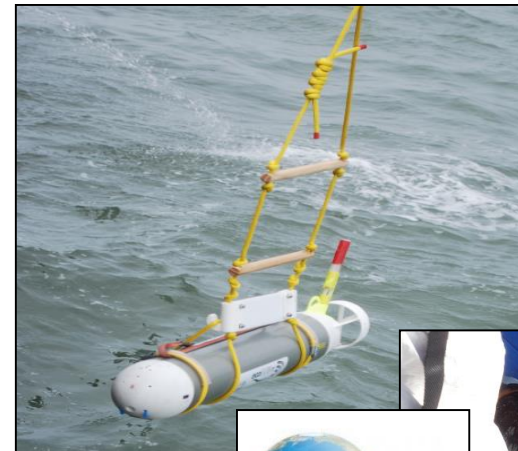
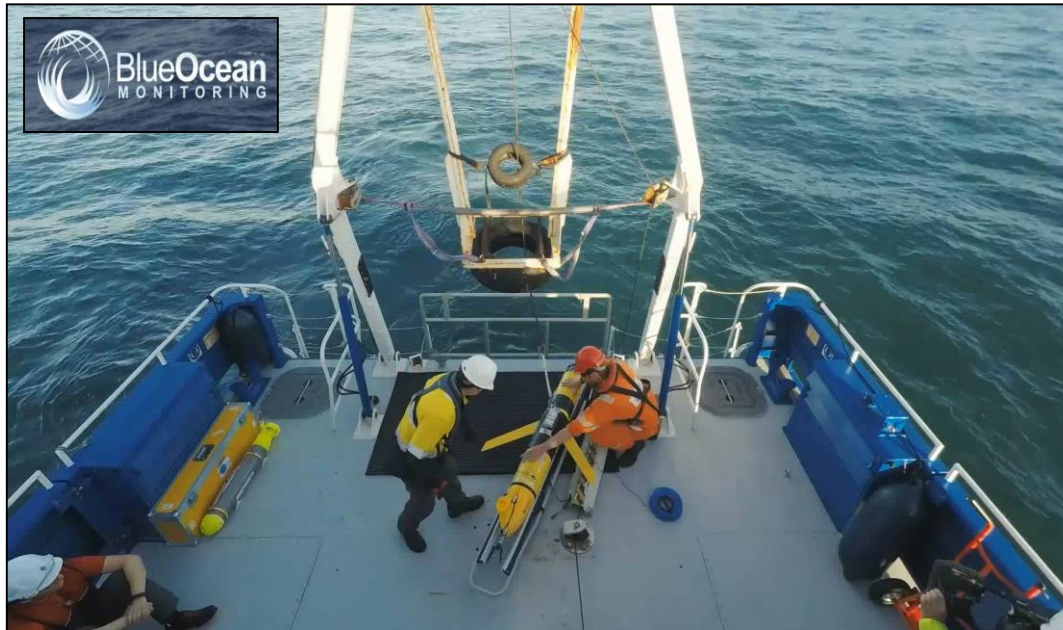


- 💧 Tactical tool
- 💧 Low cost, simple solution
- 💧 Permissions/transport
- 💧 Wind conditions (effectiveness)

# Autonomous Underwater Vehicles

## In-water surveillance

- Two AUV models, two practice exercises
- Testing the effectiveness of surface dispersant using fluorometry sensors in AUVs
- Operational insight – LAR, mission planning, comms, success?



# Next steps

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- External report
- Publicise to our Members and other stakeholders
- Further proof of concept demonstrations
- Continue to develop relationships with service providers
- Continue to keep a watching brief on technology

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