







OSRL Current Oil Observing Tools

- ▶ Aviation Platforms
 - EO / IR / UV
 - CarteNav
- ▶ Satellite Imagery
- ▶ Tracking Buoy
- ▶ Trained observers



The slide includes four images: a red and white aircraft labeled "e-NOIL" in flight; a person wearing a headset and working at a computer workstation displaying a map; and a white tracking buoy with a circular lens.

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Aviation Platforms

West and Central Africa region (WACAF)

- Bandeirante in Accra, Ghana

UK Continental Shelf

- 2 x Dornier Do228 in Bournemouth
- Island Defender in Aberdeen



Dornier



Islander



Bandeirante

Equipment onboard:

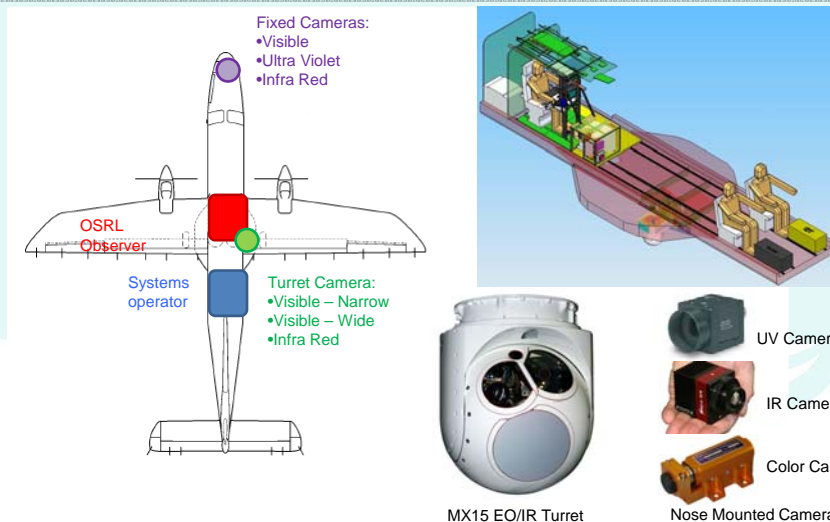
- MX15 EO/IR Turret
- CarteNav



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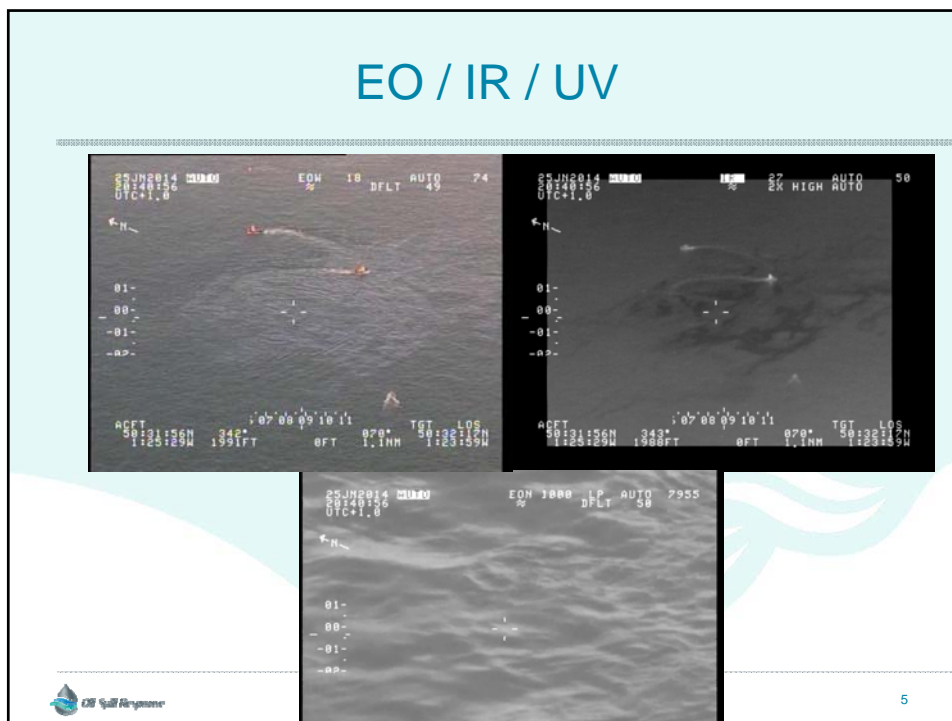
EO / IR / UV



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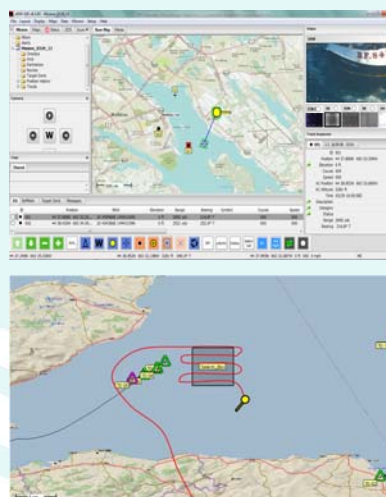
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EO / IR / UV



CarteNav - AIMS

- ▶ Mission control software
 - Overlay key information to assist in tasking
- ▶ Perimeter mapping
 - Record and quantify extent of oil slick
- ▶ Real time information relayed to ground stations
- ▶ Replay mission data following overflight



CarteNav - AIMS

► Perimeter mapping



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CarteNav - AIMS

► Real time information relayed to ground stations

- Real time aircraft position
- Still images
- Reference marks
- Perimeter mapping
- Camera field of view
- Link to FTP site



► Replay mission data following overflight

- Capture additional video and still images as needed post mission
- Replay to client or regulator to show findings of mission



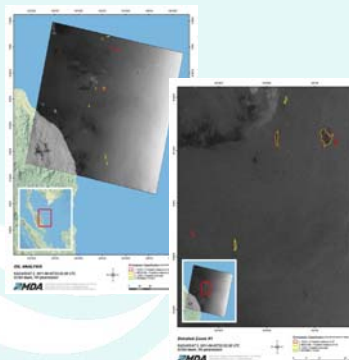
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Satellite Imagery

► Satellite Imagery Agreement between OSRL and MDA since 2012

- Radar imaging capability and optional visual capability
- On average 2 overpasses globally per day
- Surveillance data in various formats



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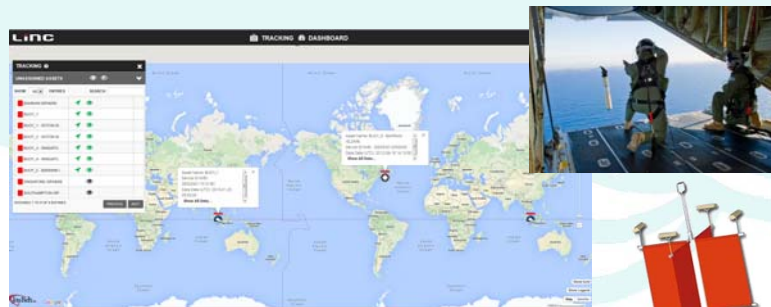
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Tracking Buoys

► Track and monitor surface oil using the bi-directional iridium satellite system



iSphere



iSLDMB

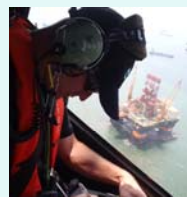


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Trained Observers

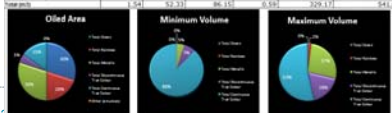
- ▶ Conventional and basic approach to surveillance
- ▶ Simple tools using camera and GPS
 - Geo-referencing software to link photos with location
- ▶ Quantification tools
 - Bonn Agreement Oil Appearance Code



OIL SPILL RESPONSE		AERIAL SURVEILLANCE OBSERVER LOG	
Observer	Mark Williams	Date	06th June 2015
Observer Title	SRP	Start Time	08:00
Observer Start Time	08:00	End Time	10:00
Observer End Time	10:00	Observer Station	SRP
Observer Name	SRP	Observer Name	SRP
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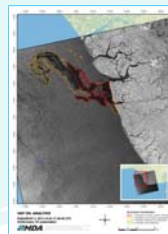


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Combined Outputs

- ▶ Combining different technologies to add credibility in the visual observation reports:
 - Oil Spill Modelling
 - Satellite Imagery
 - Remote Sensing Technology
 - Digital Mapping



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AirSAR Exercise 2014



G-MAFI GPS Track



Tracking the trajectory on CARTENAV



IR image of oil release



Colour image from turret



IR image of dispersant application

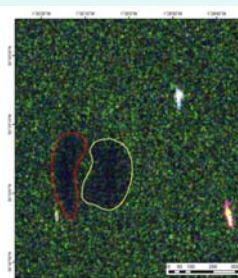


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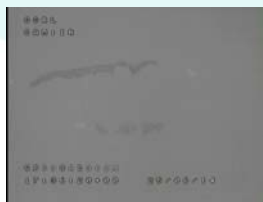
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Oil release after 10mins

Oceaneye – tethered aerostat (400ft)



MAFI dedicated surveillance aircraft



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Oil Release after 1hr 30 mins



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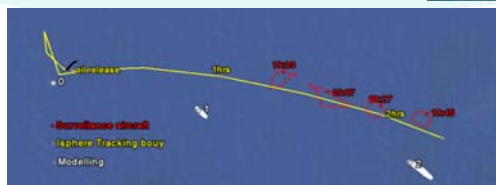
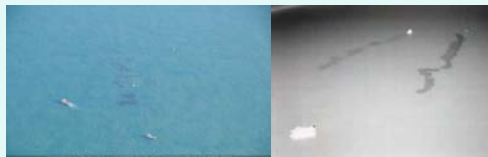
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Surveillance Lessons



► Integrating numerous data sources into useful intelligence is extremely valuable but requires significant planning to ensure it is timely and that data is compatible.

► Surveillance and modelling are essential for effective containment and dispersant operations



► The modelling, tracking and surveillance corresponded to the oil behaviour during the exercise.



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