

# OctoPod

OPTimare<sup>®</sup>  
A Member of Aerodata Group

**aerodata**  
[precision in special mission]

## The All-in-One Airborne Surveillance Pod

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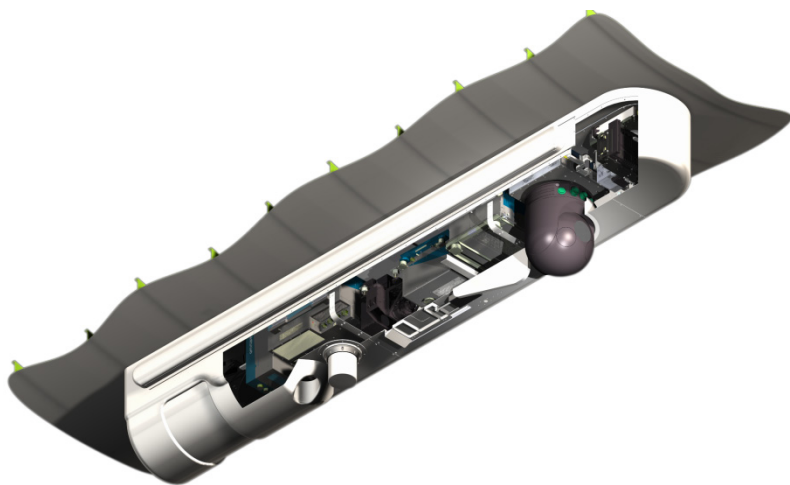
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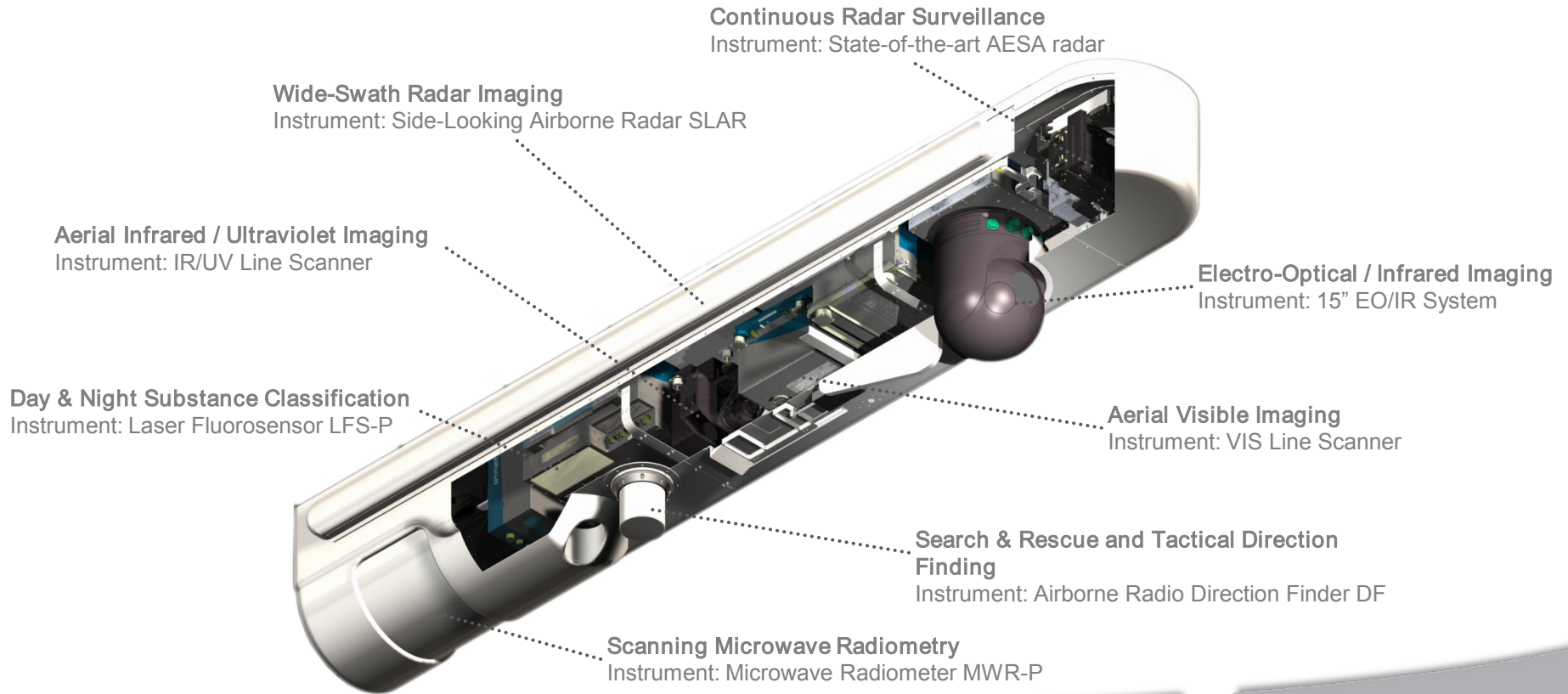
## Missions

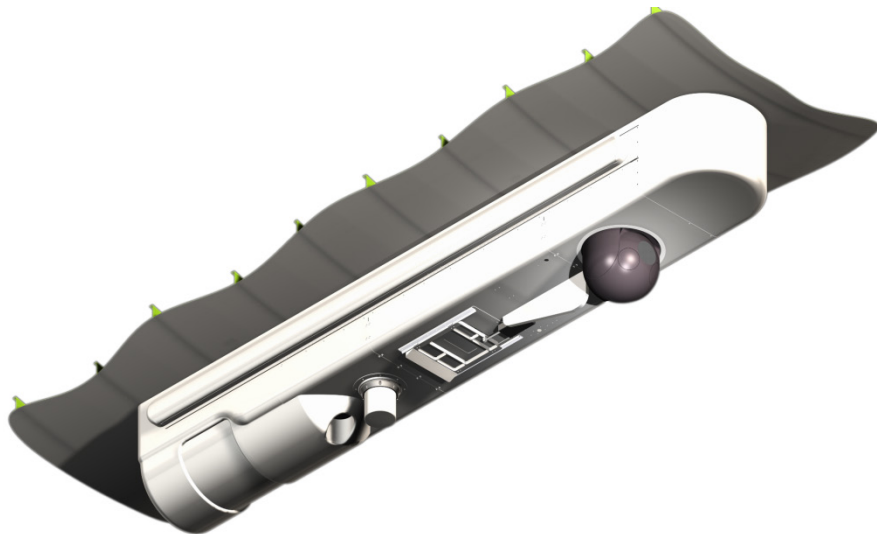
- Airborne maritime surveillance
- Airborne oil spill remote sensing
- Search & Rescue
- Airborne land surveillance



## Core Features

- **Multi-Functional**
  - Eight core functionalities based on eight selected sensors
  - Supports more than 20 different mission tasks
- **Belly-Mounted**
  - Low effort for aircraft modification & certification
  - Low impact on the aircraft's cabin
- **Multi-Platform**
  - The vertical pod dimension stays within the ground clearances of the most prominent surveillance platforms
- **Modular**
  - Individually configurable from subset to full configuration
  - Removable
  - Low effort for aircraft reconfiguration
- **Fully Integrated**
  - Full mission system integration

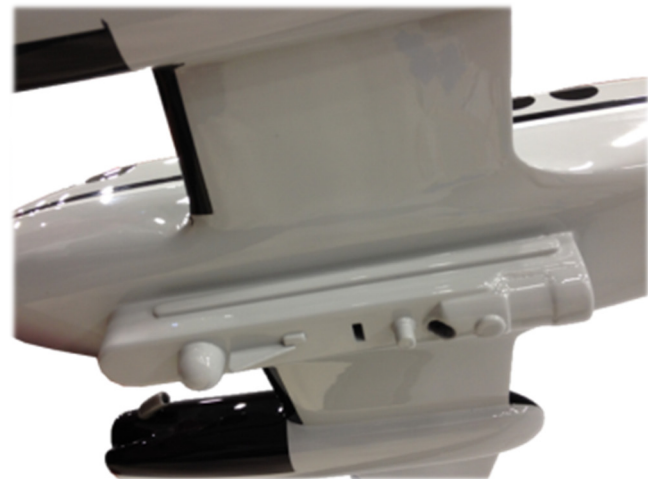




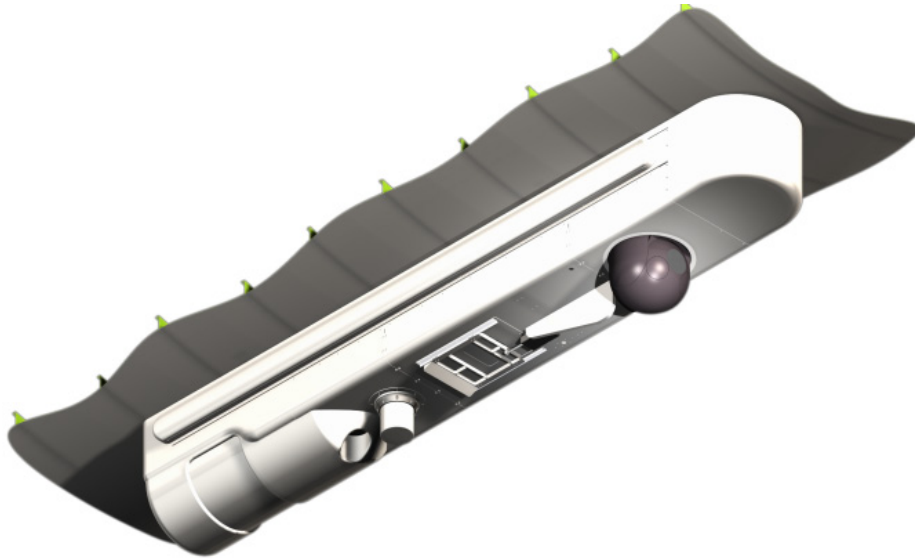
## Basic Engineering Data

- **Dimensions:** L: 4020 mm x W: 720 mm x H: max. 780 mm
- **Mass:** max. 400 kg, depending on pod configuration
- **Altitude:**
  - Operation: max. 15.000 ft for operating all sensors (may be higher in a different configuration, optimum altitude depends on sensor type)
  - Ferry: max. 41.000 ft
- **Airspeed:** max. 400 kts, may be limited by EO/IR type
- **Designed to fit to (among others):**
  - King Air B200, 250, 350
  - Dash 8 (Q200, Q300, Q400)
  - Challenger 605
  - Saab 340
  - Twin Otter
  - ERJ140, ERJ145

Typical example of a carrier system: Beechcraft King Air 350ER



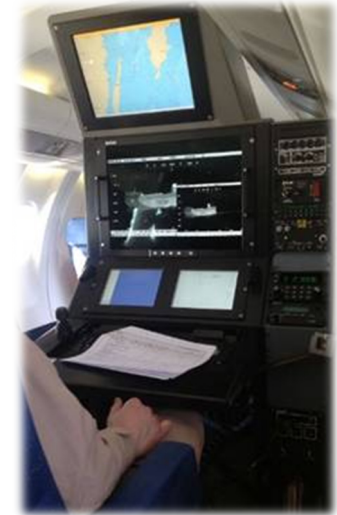




The OctoPod interfaces to the mission systems  
**AeroMission<sup>®</sup>** and **MEDUSA<sup>®</sup>**



AeroMission console  
in King Air B200

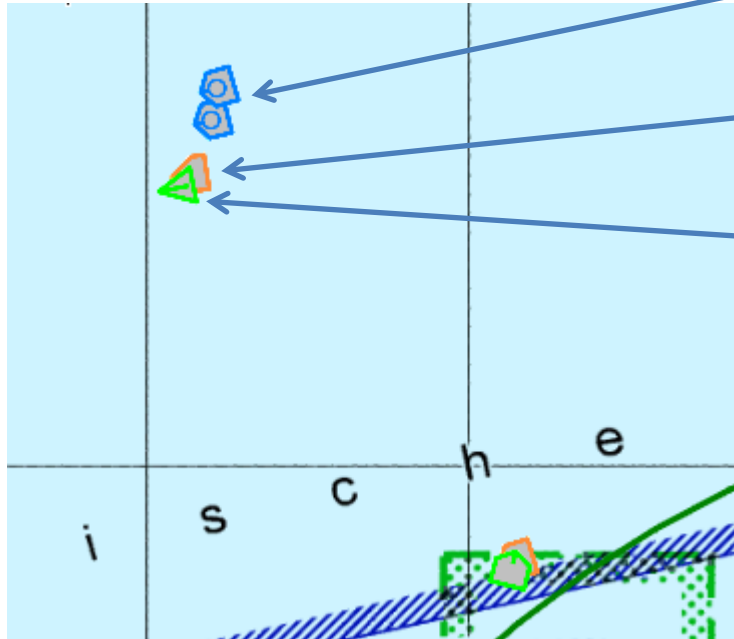


MEDUSA console  
in Saab 340

## Continuous Radar Surveillance

- Selex Seaspray 5000E
- Active Electronically Scanned Array (AESA) technology
- Continuous detection & tracking of
  - maritime targets
  - moving targets on land, sea and in the air
- Dedicated small target mode and priority track mode
- Target classification using ISAR
- Spot and Strip SAR Imaging
- Search and Rescue beacon detection (SART)
- Weather and turbulence detection mode
- Dual mode capability





Fused Tracks  
(blue)

AIS Track  
(orange)

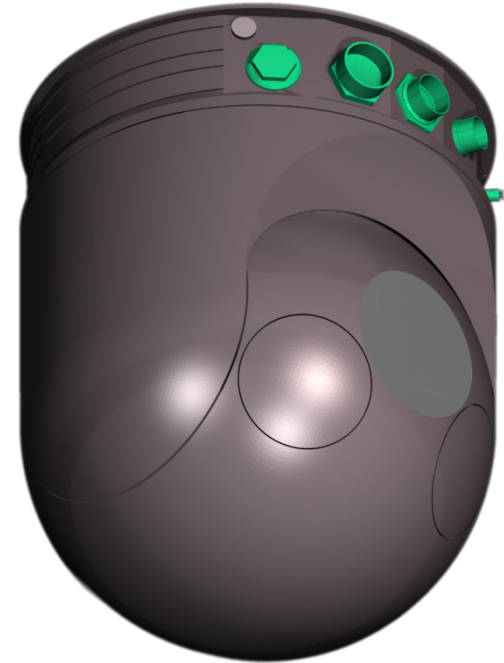
Radar Track  
(green)

- Radar tracks integrated into situational awareness display
- Manual and automatic fusion of tracks
- Correlation with AIS provides link to the vessel data base
- Integration allows cross-linking of Radar with all other sensors and geographic information



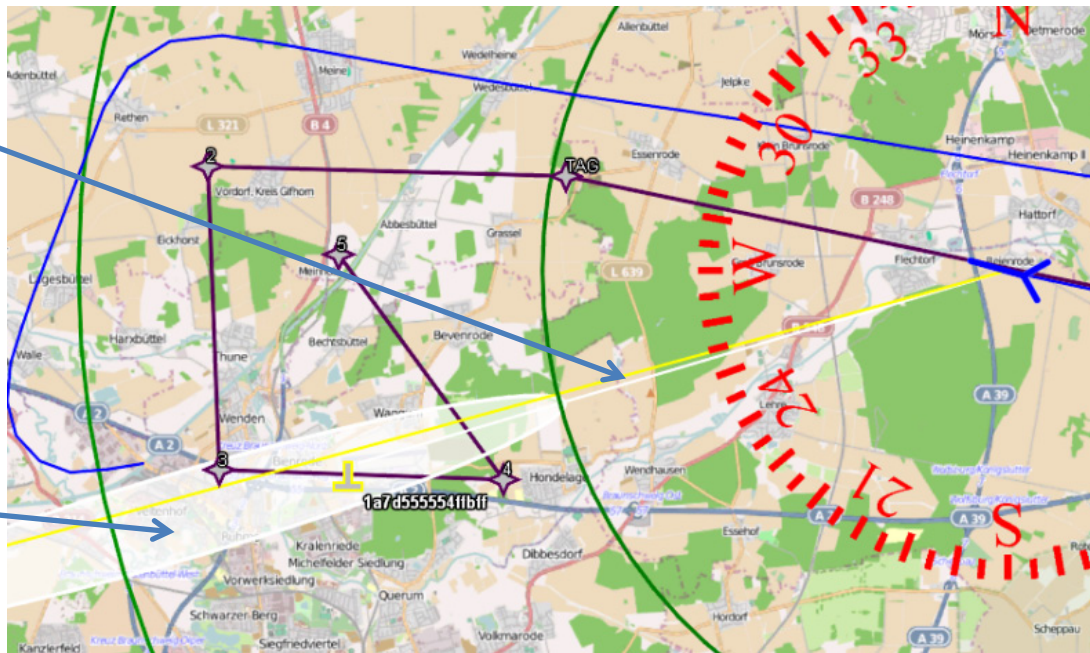
## Electro-Optical / Infrared Imaging

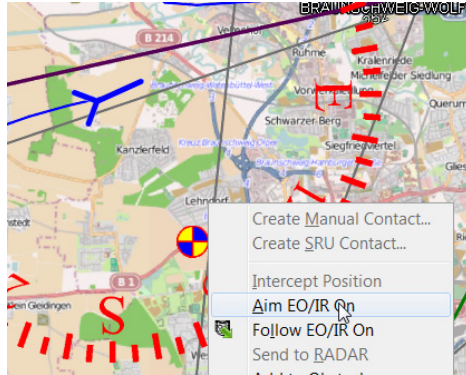
- Designed for installation of systems from several suppliers, e. g. L-3 Wescam and FLIR Systems
- Maximum 15" turret size
- Configurable payloads for:
  - Optical target identification
  - Target tracking
  - Image enhancement
  - Laser ranging
  - Evidence gathering



EO/IR Line of Sight  
(white)

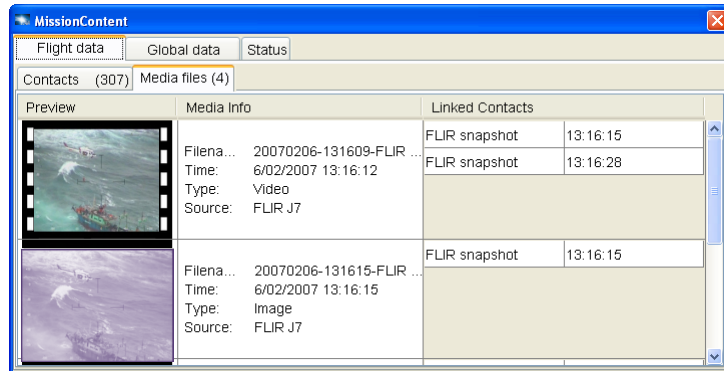
## EO/IR Field of View (white)





## EO/IR System fully integrated in AeroMission and MEDUSA<sup>®</sup>

- Two channels displayed in parallel
- Control via
  - hand control unit
  - mission system, allowing cross cueing with all other sensors
- Snapshot function
- Parallel video recording of multiple channels
- Timestamp and position meta data

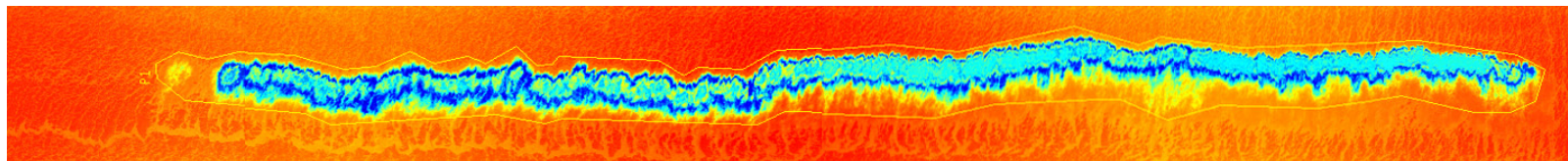
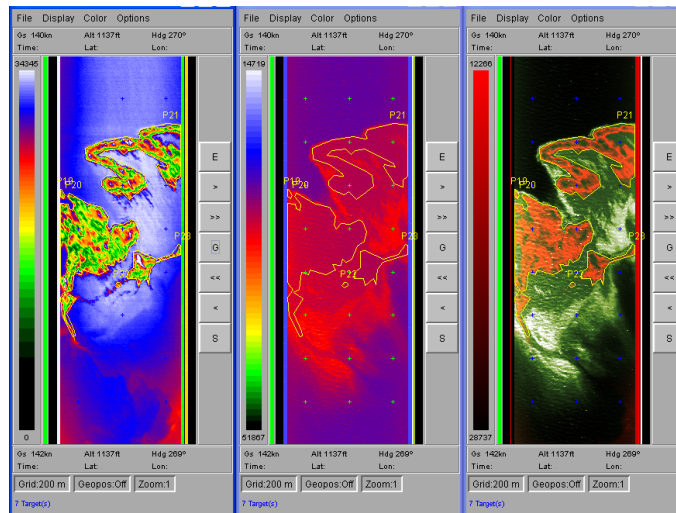


## Wide-Field-of-View Aerial IR/UV Imaging

- Close-range analysis
- Mapping of relative oil spill thickness
- Thermal mapping
- Day and night spill detection
- Sensitive to all layer thicknesses above 0.01 micron



# IR/UV line scanner



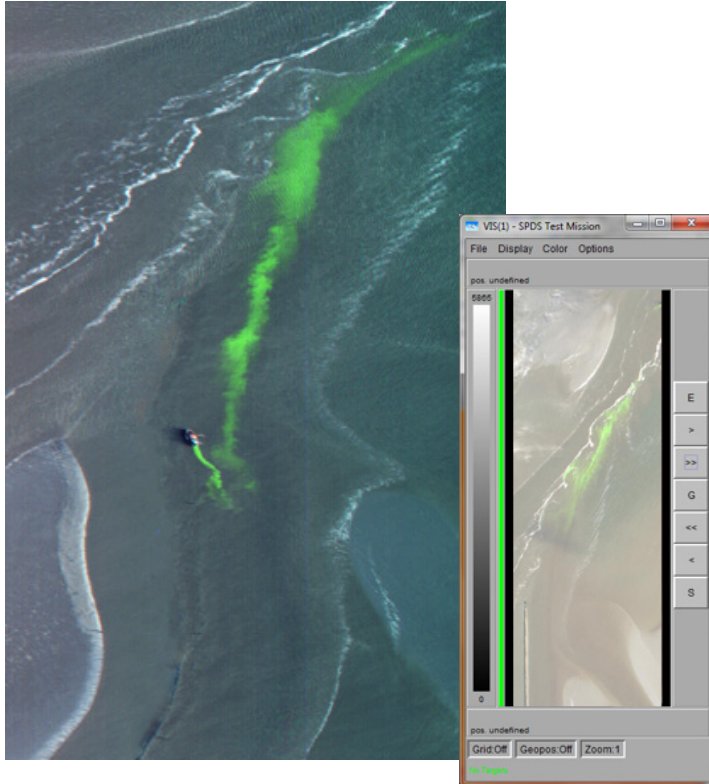
IR data visualised by MEDUSA<sup>®</sup>

## Wide-Field-of-View Aerial Visible Imaging

- Close-range analysis
- Mapping of visual appearance of oil spills
- Aerial RGB composite imaging of water & land surfaces
- Scene documentation
- “More standardised” use of oil appearance codes due to defined observation geometry



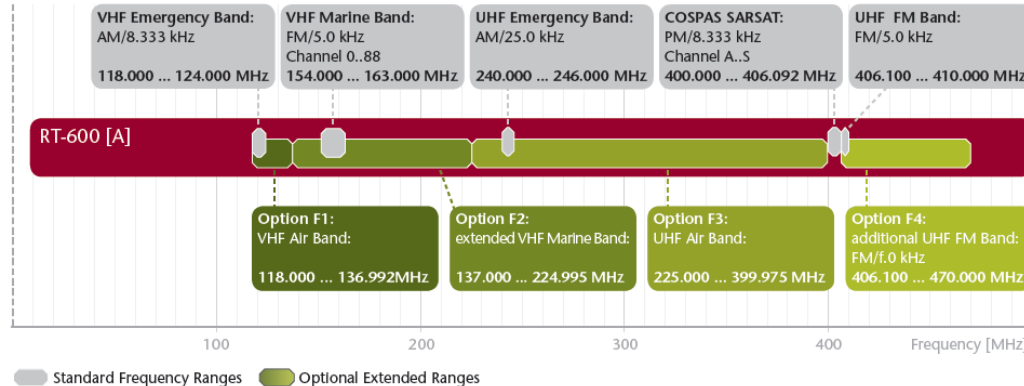




- Airborne VIS Line Scanner image showing a plume of fluorescent dye carried along by freshwater exiting a tidal outlet
- VIS image visualised by MEDUSA®

## Search & Rescue and Tactical Direction Finder

- Rhotheta RT-600
- Scanning of Search & Rescue frequencies
- COSPAS / SARSAT
- Broadband capability in VHF/UHF band

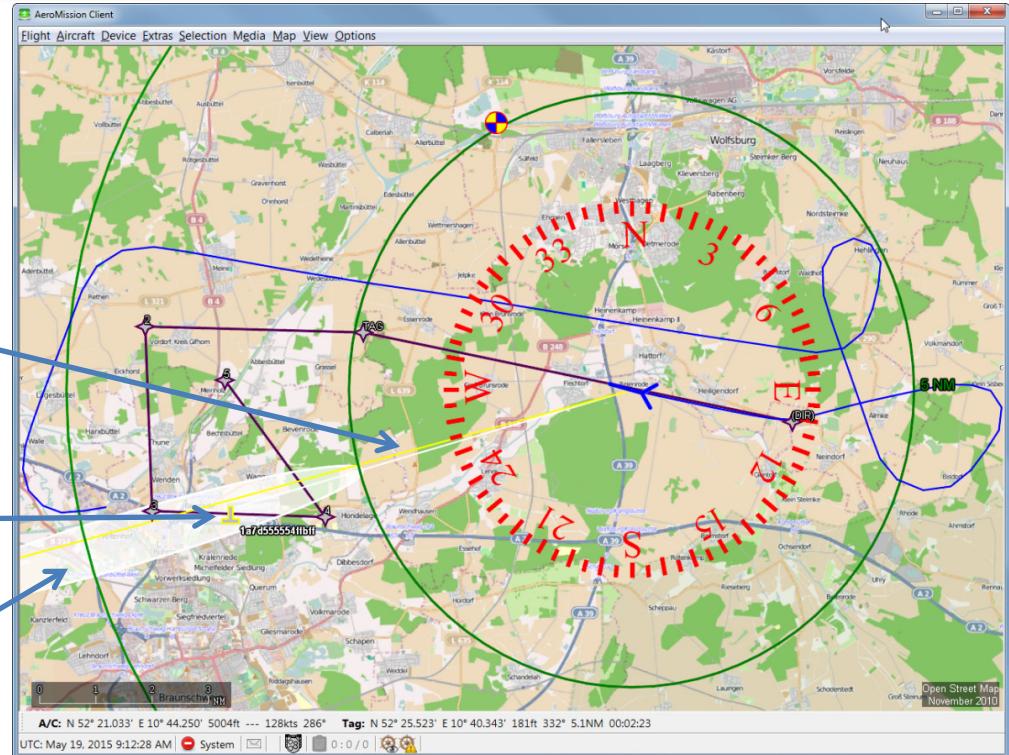


## AeroMission – Situational Awareness Display

Line of Bearing  
(yellow)

COSPAS / SARSAT  
Beacon  
(yellow)

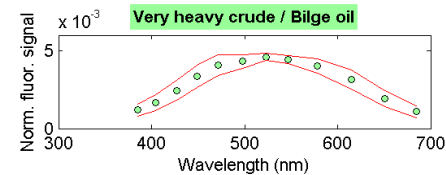
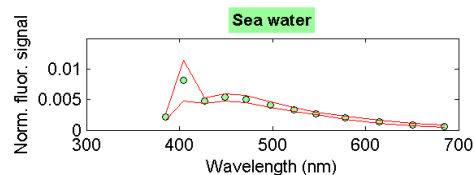
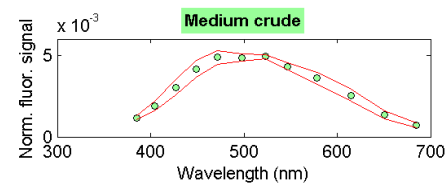
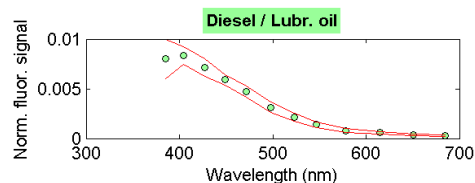
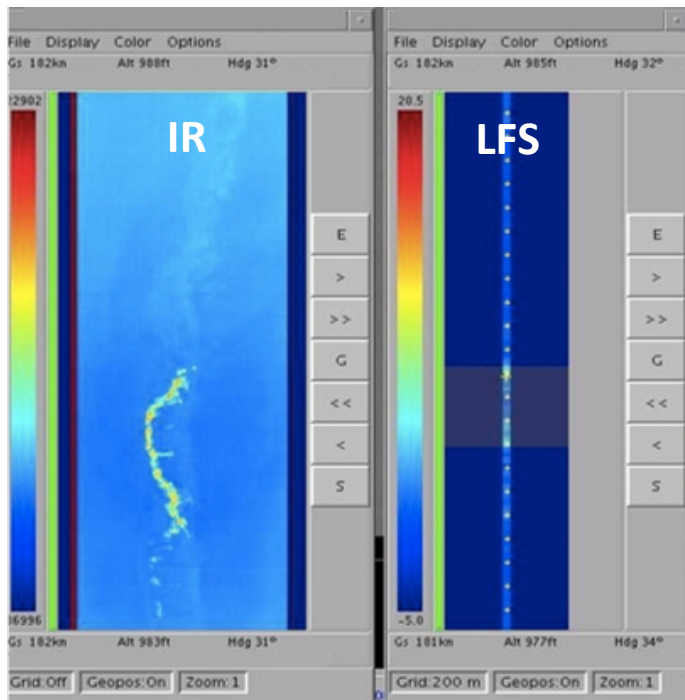
EO/IR Field of View  
(white)



## Day & Night Laser-Based Substance Classification

- Close-range analysis
- Reliable day & night discrimination between oil & water
- Classification of crude and refined oils
- Detection of attenuating and fluorescing substances
- Rough classification (pollution / no pollution)
- Fine classification (type of crude / refined oil)
- Hydrographic monitoring

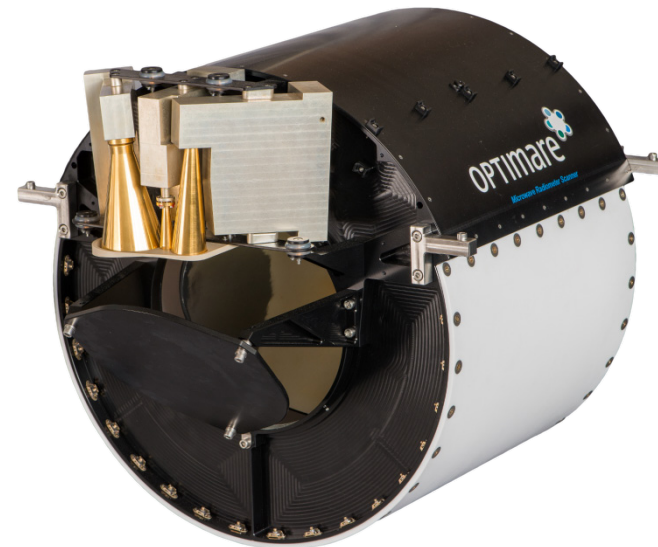




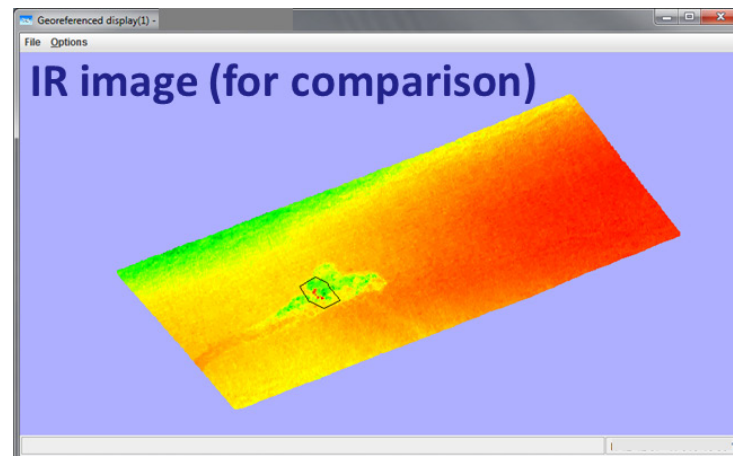
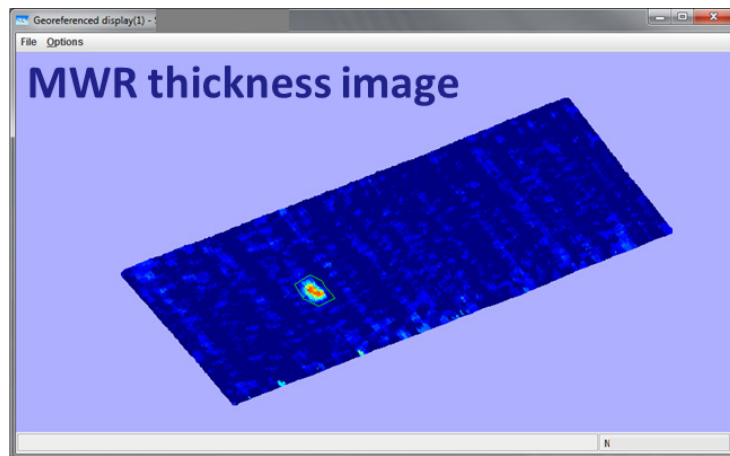
IR and LFS data of an oil spill visualised by MEDUSA<sup>®</sup>

## Multi-Frequency Scanning Microwave Radiometry

- Close-range analysis
- Day & night / all-weather oil spill thickness measurement
- Thickness measurement (0.05mm ... 3mm)
- Used to analyse hot spots of oil spills
- Fire detection
- Monitoring of moisture penetration of dikes







Polygon

	Area [km²]	Sum	Center	Cov. [%]	Orient. [°]	Dim. [NM]				Vol. [l(a.)]		Vol. [l]	Oil type(a.)		Oil type	Status	Area type	
P5	0.0080	0	N 42° 00' 00" W 00° 00' 00" E	84	329	0.042 / 0.062	Delete	Modify	Transfer	Export	0	<<	3111	Undefined	<<	not available	<div></div>	undefined

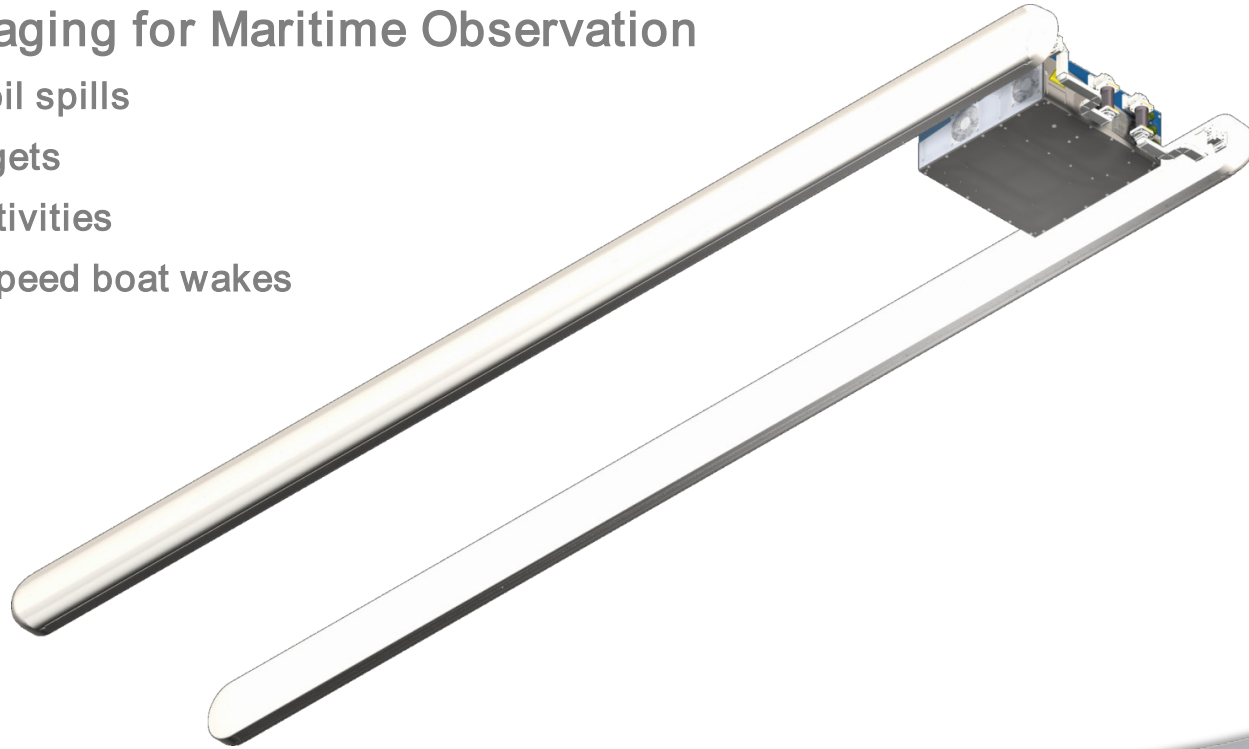
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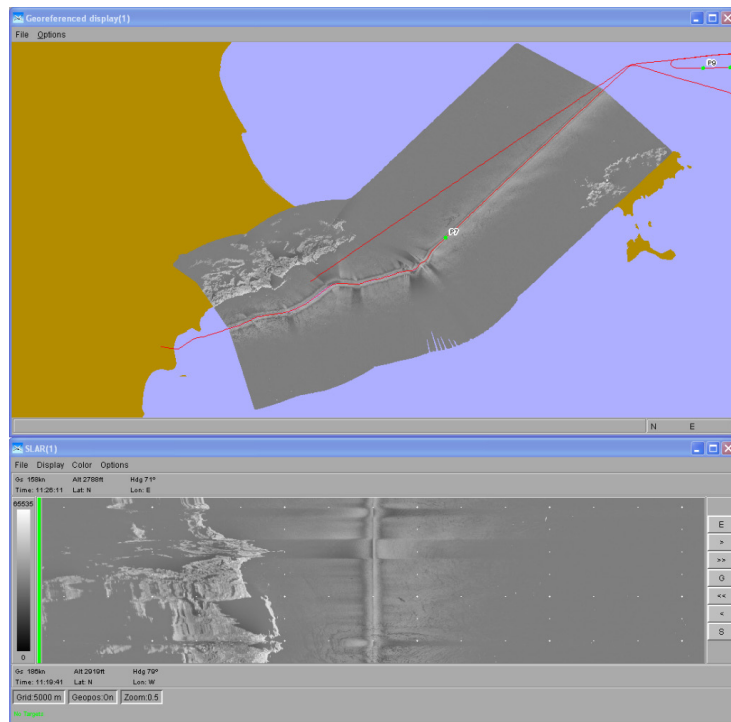
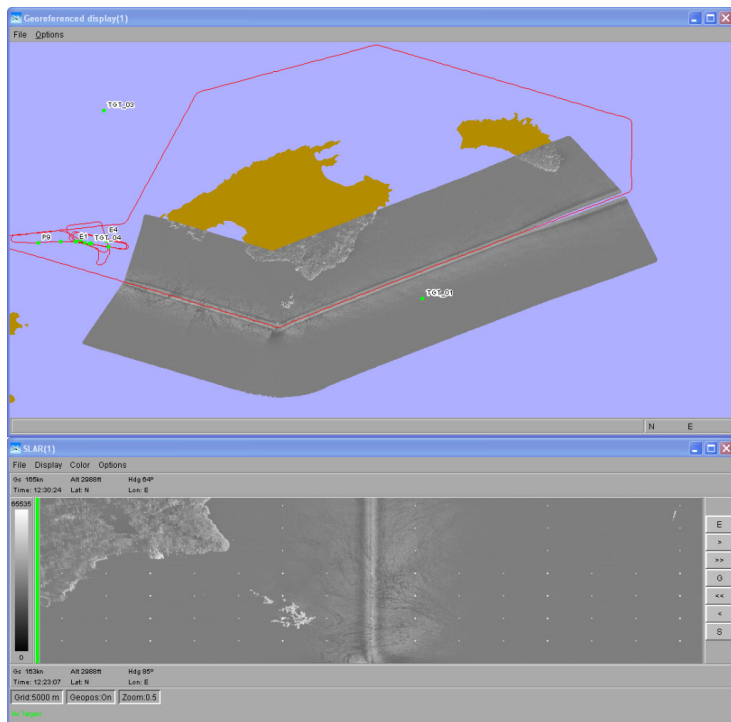
Close

MWR and IR image of an oil spill visualised by MEDUSA®

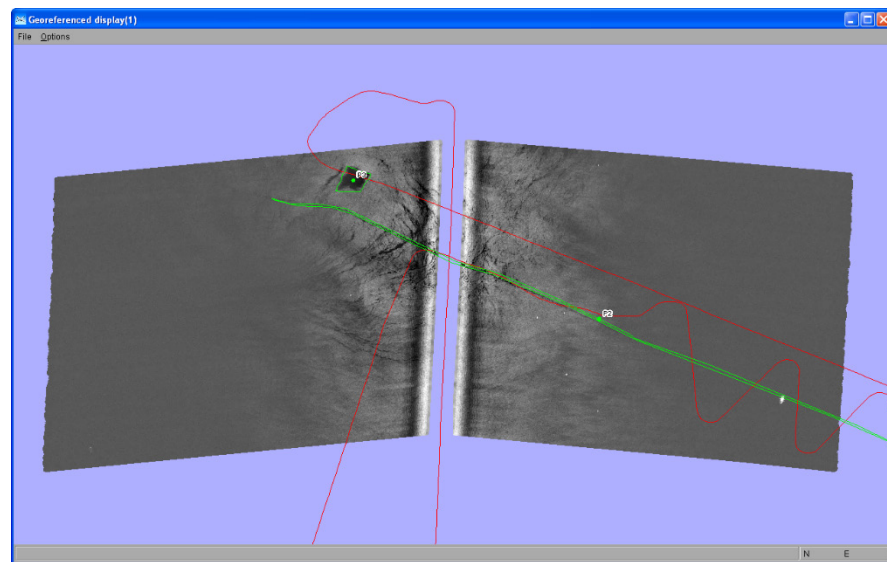
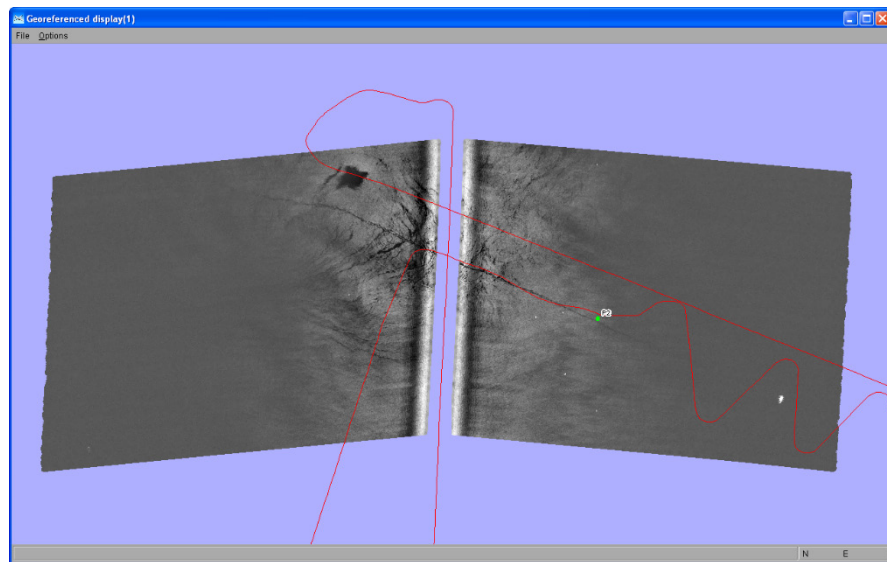
## Wide-Swath Radar Imaging for Maritime Observation

- Long-range detection of oil spills
- Detection of maritime targets
- Surveillance of fishing activities
- Detection & mapping of speed boat wakes





SLAR data visualised by MEDUSA<sup>®</sup>



SLAR data visualised by MEDUSA<sup>®</sup>



Thank You!