Technical information sheet

Satellite radar detection

The satellite radar detection service, provided by OSRL in partnership with MDA, offers vital situational awareness during oil spill incidents. Satellite remote sensing, using Synthetic Aperture Radar (SAR), enables all-weather, day-and-night imagery to guide spill response strategies by detecting oil on water and monitoring offshore conditions.

Key Facts

- Satellite-based RADAR provides wide-area coverage up to 250,000 km²
- All-weather, 24/7 operation, including nighttime imaging capabilities
- GIS-ready products, enhancing response coordination and situational awareness
- Access to both historical and current radar and optical satellite imagery

Specifications	
Primary satellites	RADARSAT-1 and RADARSAT-2, in polar, sun-synchronous orbits
Coverage	Standard imaging covers 90,000 km²; extended areas up to 250,000 km²
Environmental detection	Ideal in wind conditions from 3-12 m/s for optimal slick detection
Imagery output	SAR detects surface textures and can identify ships, rigs, and oil slicks

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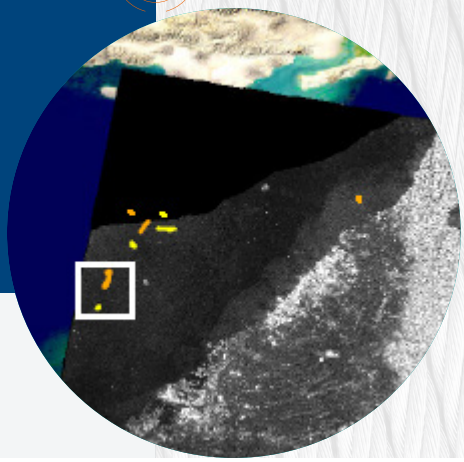
Satellite radar detection



The satellite radar detection service is available globally to OSRL members.

Mobilisation

- Available 24/7, with rapid tasking and acquisition via OSRL's standardised processes. Contact OSRL for mobilisation, and products are generally delivered in near real-time.

Applications

- Supports tactical decision-making for oil spill response, including slick detection, operational planning, and tasking additional surveillance assets.

Benefits

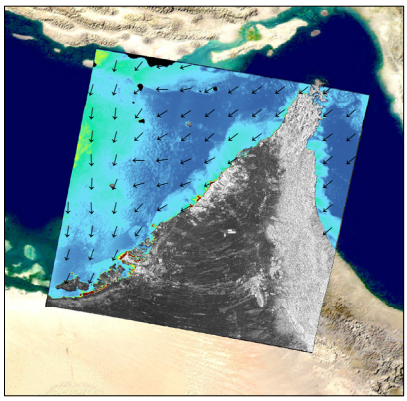
- Provides wide-area coverage, minimises the need for on-site monitoring, and delivers consistent surveillance across varying weather conditions. Widely accepted by regulatory agencies and operational stakeholders.

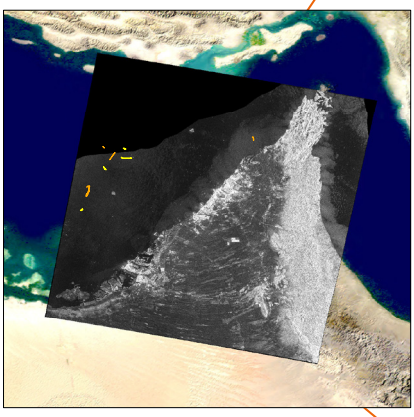
Limitations

- Optimal slick detection occurs in moderate wind conditions (3-12 m/s). Detection may be challenging in very calm or rough seas, and data may require skilled analysis.

Outputs and deliverables

- GIS-compatible data formats: ArcGIS shapefiles, Google Earth KML/KMZ files, and GeoTIFF imagery
- Wind speed and direction analysis, oil on water detection, and identification of offshore assets
- Detailed satellite imagery reports with location-specific data and confidence levels





Id	Latitude	Longitude	Confidence	Area_km	Dist_km
2	25.7129	54.11633	2	0.6	14.98
1	25.80229	55.67153	2	1.4	11.72
3	25.6244	54.20943	2	2.1	14.73
8	25.23177	53.95225	2	8.5	19.91
4	25.70096	54.32707	3	1.4	13.64
6	25.48627	54.12946	3	2	16.98
5	25.59975	54.36366	3	3.3	14.3
7	25.06326	53.88943	3	2	22.79

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