

## Oil Spill Detection Service

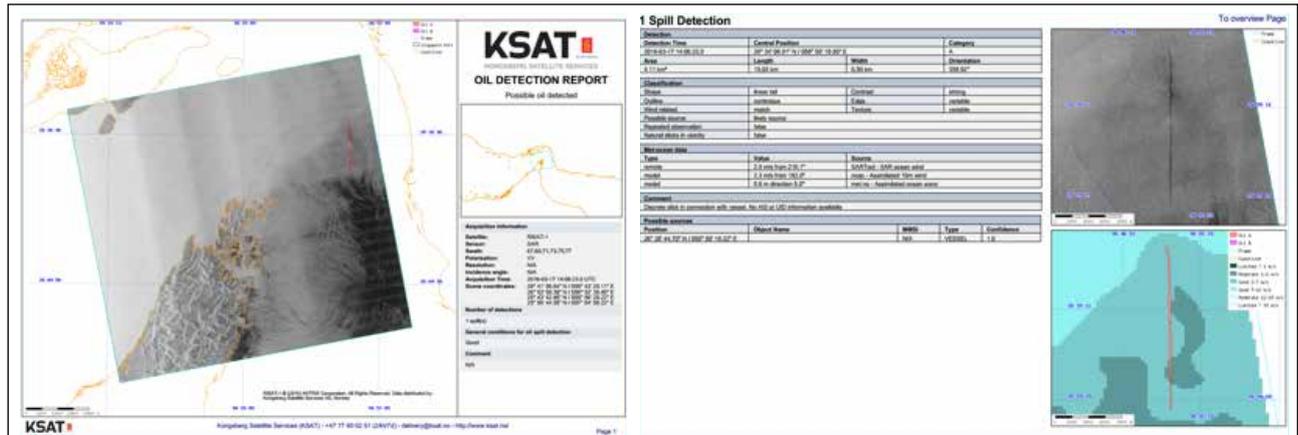
**20 years ago KSAT pioneered the use of Synthetic Aperture Radar (SAR) satellites as part of the world's first Near Real-Time oil spill detection service.**

Detecting pollution as early as possible, reducing both cleanup cost and environmental impact, is the primary objective of the service. The key factors in delivering it successfully are having highly experienced analysts, assessing near-real time information collected from maritime areas anywhere on earth, by the most comprehensive portfolio of satellites available. Reports are then derived from the acquired imagery, which contain detailed information about detected slicks, or verify a clean sea state. KSAT analysts are standing by to perform this work on a 24/7/365 basis.

The service is based mainly on Synthetic Aperture Radar (SAR) satellite imagery which images the sea surface regardless of daylight, cloud cover, or other occlusions. (Supplementary imagery from optical satellites can also be used where conditions permit.) The SAR satellites can efficiently scan large areas in only one image. Whether they originate from vessels, installations, or natural seeps, satellite monitoring is therefore the best available tool for detecting oil slicks on the sea surface, in terms of both cost and operational effect.

KSAT provides proactive monitoring for spills or leakage from offshore oil platforms, FPSOs, pipelines and related infrastructure and can contribute in all phases in the lifecycle of a field. This spans from detection of natural seeps for exploratory purposes, to support during drilling activities and critical testing, through production and eventual de-commissioning and abandonment.

Use of satellite monitoring is also very useful in supporting those involved in clean-up operations and the key decision-makers who manage them. It is also an excellent tool to document the chain of events in any spill scenario, and can also prove that the end customer was not responsible for a particular pollution event.



KSAT service report: Oil spill detected in the satellite image by manual expert analysis, supported by met-ocean information from models and satellite data. Suspected source is a vessel identified by correlating detection with AIS data.

Our service chain is end-to-end, with every link executed in-house. This includes satellite planning across all possible options, data acquisition and processing using the world's most extensive, and best-positioned, antenna network, and finally, expert interpretation of the imagery. KSAT has therefore been able to optimize every one of these steps provide the information, to those who need it most, quickly enough for it to be genuinely actionable. This means delivering fully analyzed reports in between 20 and 120 minutes from the moment the imagery is acquired by the satellite.

### Source identification

Correctly identifying the source of detected slicks is a critical priority. This is done in part by developing an in-depth knowledge of the locations of all oil and gas related infrastructure, and natural seepage activity, in the Area of Interest. However, oftentimes oil slicks are caused by passing vessel traffic. By correlating detected slicks with the Automatic Information System (AIS) data transmitted by vessels, KSAT is able to identify those responsible for the oil spills detected. This is the service concept underpinning Clean Sea Net (CSN), provided by KSAT on a daily basis to the European Maritime Safety Agency (EMSA).

### Oil spill detection report

The analyzed reports are distributed in Near Real-Time by e-mail as a PDF attachment, in a secure customer web-space, by FTP download, and are also pushed in standard GIS formats for easy ingestion of the data into oil spill trajectory modelling applications such as OILMAP.

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