

INTEGRATED MARITIME SERVICES

Supporting maritime monitoring





Building maritime awareness

EMSA operates maritime information systems to support the maritime monitoring activities of the Commission and Member States.

These systems are able to:

- monitor ship positions and movements
- exchange additional vessel information
- detect oil pollution and vessels through satellite images.



OIL SPILL AND VESSEL DETECTION FROM SPACE

EMSA operates the European oil spill and vessel detection service CleanSeaNet.

This service analyses satellite radar images to detect possible oil spills on the sea surface. Oil spills appear as dark shapes on the image. When a spill is detected, EMSA sends an alert to coastal State authorities.

Analysed images are available within 30 minutes of the satellite passing overhead. The coastal authority then decides how to follow up, e.g. send an aircraft to check the spill and intercept the polluter, or to clean up the spill.

Users can also access a wide range of supplementary information such as:

- oil drift modelling
- optical satellite images
- wind, wave, sea surface temperature and current data.

Radar satellite images can detect vessels, which appear as bright dots on the image. If a vessel detected in an image is a suspected polluter, its identity can be checked using vessel traffic information.

Optical satellite images can also be used to detect vessels. These images are now part of EMSA's portfolio and can be delivered through CleanSeaNet.

VESSEL INFORMATION, MONITORING AND TRACKING

Member States and EMSA operate SafeSeaNet, the vessel traffic monitoring and information system covering the waters in and around Europe.

It acts as a platform for maritime data exchange, linking together maritime authorities from across the continent. It works by tracking Automatic Identification System (AIS) radio signals transmitted by ships. These provide identity details, latest positions and other status information in near-real-time for around 17,000 vessels operating in and around EU waters.

This data can be enriched with information on:

- hazardous goods
- the number of people on board
- past positions of ships
- ships with high risk profiles
- accidents and incidents
- estimated or actual arrival and departure times in ports.

One of the main users of SafeSeaNet is the THETIS system. THETIS supports Port State Control inspections. It indicates which ships have priority for inspection and allows results to be recorded and shared. Information on ship arrivals and departures from ports in SafeSeaNet enables inspections to be planned efficiently.

Tracking vessels outside the range of AIS coastal networks requires the use of satellites.

Long-Range Identification and Tracking (LRIT) is a mandatory international system to track ships around the world. Vessels send signals via telecommunication satellites, which are received by Data Centres in flag States.

EMSA operates the EU LRIT Cooperative Data Centre, covering over 35 countries. The Agency also hosts the International Data Exchange, for the exchange of ship positions between Data Centres around the world.

Emerging technologies now enable AIS signals to be received by satellite. This will progressively extend the geographical range of the AIS system. EMSA is at the forefront of exploring how this can support the European vessel traffic monitoring community.

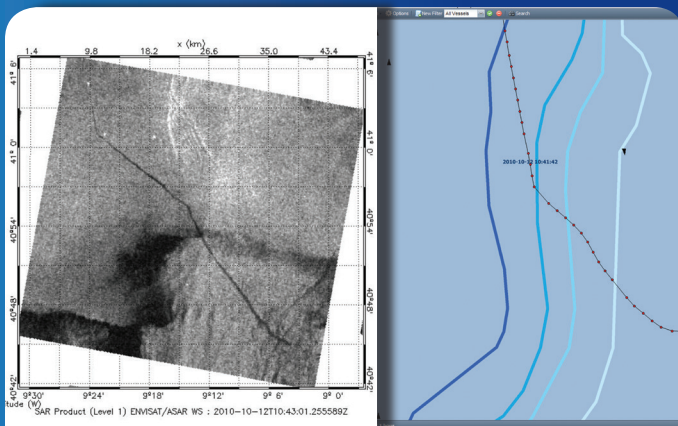


EMSA can also process data from external sources, e.g. fisheries vessel monitoring systems (VMS) data, on board ship AIS data, etc.

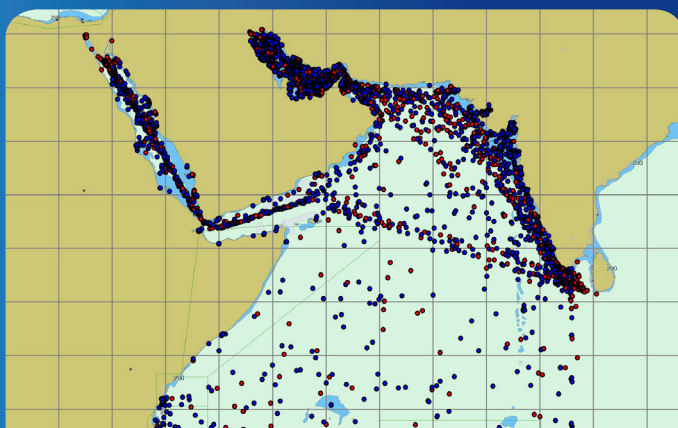
MARITIME DOMAIN AWARENESS

'Maritime Domain Awareness' is the understanding of any maritime activity that could have an impact on security, safety, the economy or the environment. EMSA has developed an ICT platform to ensure the performance, availability and reliability of all the maritime information systems it hosts. This platform can also integrate and combine different types of data, including data provided by the end user, to produce customised services tailored to user requirements. In line with data access rights, EMSA makes sure that Member States and EU institutions can access the best maritime domain awareness information available.

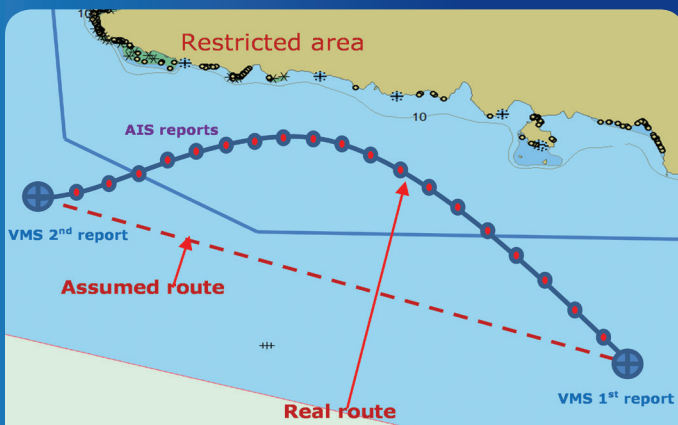
Different types of data can be combined to great effect



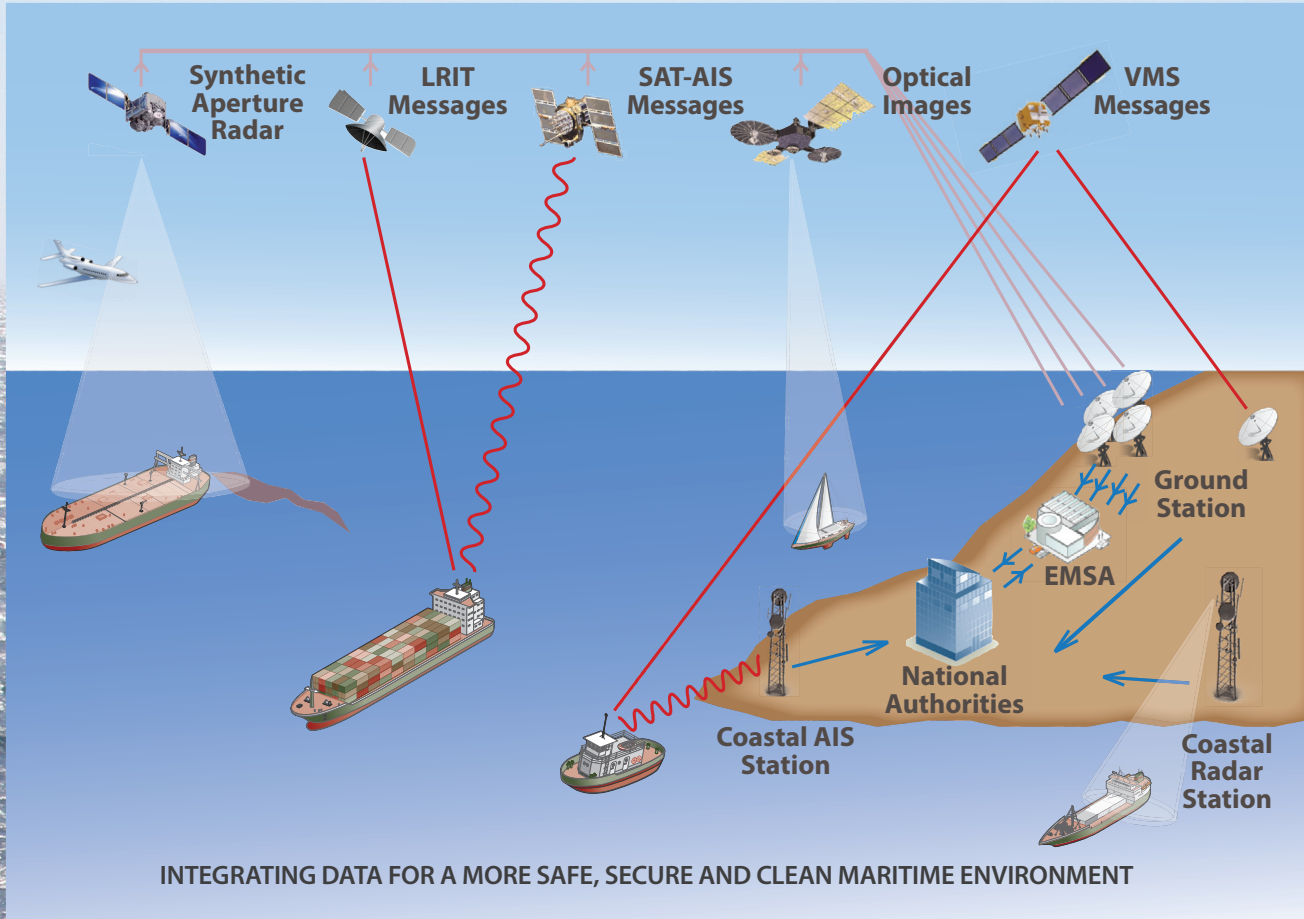
Vessel tracks from SafeSeaNet help identify a possible polluter detected on a CleanSeaNet satellite image



Combining LRIT and satellite AIS data provides a more complete picture of vessels transiting the Horn of Africa



Routes can be monitored more accurately when AIS data and fisheries VMS data are combined



ABOUT THE EUROPEAN MARITIME SAFETY AGENCY

The European Maritime Safety Agency is one of the EU's decentralised agencies.

Based in Lisbon, the Agency provides technical assistance and support to the European Commission and Member States in the development and implementation of EU legislation on maritime safety, pollution by ships and maritime security.

It has also been given operational tasks in the field of oil pollution response, vessel monitoring and in long range identification and tracking of vessels.

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