



The Copernicus Maritime Surveillance (CMS) service provides Maritime Safety and Security authorities with additional means to monitor locations of interest, follow the development of accidents and incidents, track objects at sea, and locate and identify vessels.

CMS SUPPORTS MARITIME SAFETY AND SECURITY THROUGH:

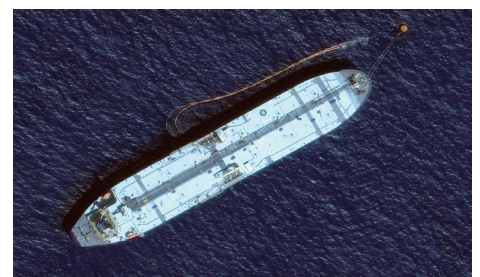
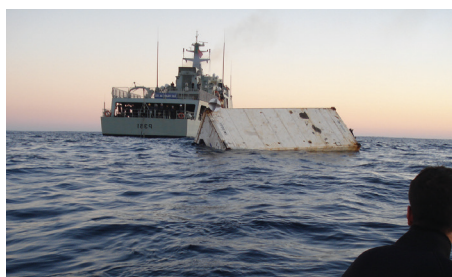
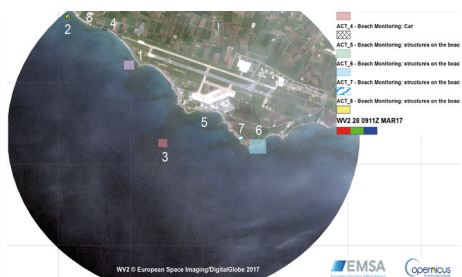
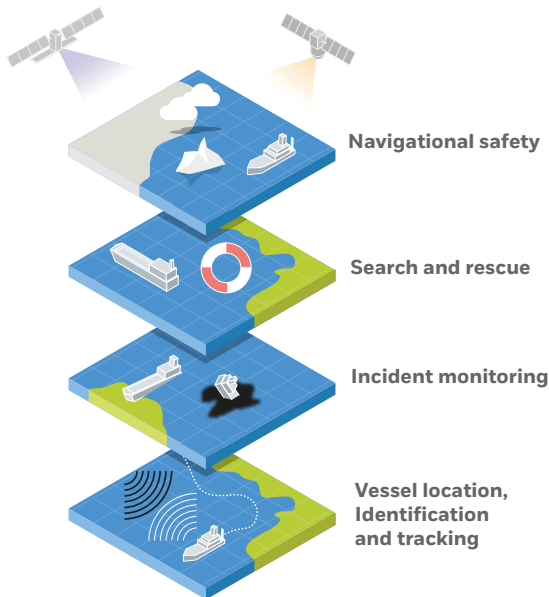
- tracking objects at sea
- monitoring incidents and accidents
- vessel locating and identifying.

Maritime safety and security operations include prevention of accidents and collisions, search and rescue, vessel traffic routing, and port security. The CMS service supports authorities in their efforts to ensure the safe transit of vessels, people and goods in European waters, and European flagged vessels worldwide, and to provide assistance in the most timely and effective way possible when accidents or incidents occur.

Floating objects at sea can pose a serious threat to vessels, endangering lives and the environment. Satellites can help prevent collisions by tracking objects, such as icebergs and containers lost at sea, allowing vessel traffic authorities to issue warnings to ship operators, agents, and masters.

When a safety or security threat arises, authorities need as much information as possible to swiftly mobilise the best means available to monitor the situation. In remote areas or in poor weather conditions, where it may be dangerous to deploy people and difficult to send traditional assets, satellite images are often the best and only option for monitoring.

CMS is also used for vessel locating and identifying. If a vessel known to be transmitting in an area loses contact and is thought to be adrift, SAR radar satellite images can help search for the vessel over large areas based on the last known coordinates.



USE CASE: SHORT NOTICE REQUEST TO ASCERTAIN LOCATION OF A DRIFTING VESSEL

On 25 October 2017, the La Réunion Maritime Rescue Coordination Centre (MRCC)¹ began a search and rescue operation to rescue 17 crew members aboard the 24 metre, 91 gt fishing vessel *Ming Maan Shyang 18*, flagged to Taiwan, which had suffered fire damage. At 05:00 local time Taipei MRCC alerted La Réunion MRCC of the incident and asked them to provide assistance to the vessel which was in distress 320 nautical miles south of La Réunion island.

A fishing vessel was diverted and managed to rescue 15 crew who had escaped to life rafts, and to transfer them to Mauritius Island; one seriously injured seaman required an emergency medical evacuation. However, on 26 October it was confirmed by the master of *Ming Maan Shyang 18* that two crew had been trapped in the engine room by fire, unable to escape. A safety message was sent to alert all ships in the vicinity, reporting the last position of the *Ming Maan Shyang 18* and providing drift forecasting.

La Réunion MRCC wanted to provide the possibility to Taiwanese authorities to deviate a vessel to tow the stricken ship with two deceased seamen, and in addition it was feared that the drifting vessel could be a danger to safety of navigation in the area. On 29 October La Réunion MRCC sent a short-notice request for the activation of CMS, requesting synthetic aperture radar (SAR) imagery to try and locate the drifting wreck. The first image was delivered on 1 November 2017 (see right).

On 4 November the wreck of the vessel was identified by a merchant vessel, the *M/V STI OCHARD*, and the updated position was sent to the Taiwanese authorities.

Copernicus, the European Union's Earth Observation Programme, delivers operational data and information services to support a broad range of environmental and security applications. The European Maritime Safety Agency (EMSA) is responsible for implementing the Copernicus Maritime Surveillance Service.



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REFERENCES

¹ Centre Regional Operationnel de Surveillance et de Sauvetage (CROSS, or MRCC) La Réunion is managed by French authorities as one of the Overseas Territories.

CREDITS

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Image credits in order of appearance: CNES (2018), Distribution Airbus DS, Portuguese Navy, European Space Imaging/DigitalGlobe (2018), Master of the ship *M/V STI OCHARD* (2017), EMSA