

Meeting: CSN 18th User Group Meeting

Place and date: Lisbon, 12 March 2019

Agenda item: CSN Support to Operations, Exercises and Emergencies

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Submitted by EMSA

Summary	This paper provides summary information on additional activities undertaken in 2018 in reply to requests for support to specific Operations, Emergencies and Maritime exercises.
Action to be taken	The CSN User Group is invited to take note of the information provided.
Related documents	n.a.

1 Background

This paper presents a summary of services delivered in 2018 following specific requests, on top of the regular monitoring activities.

These include:

- Support to specific maritime operations and exercises
- support to oil spill related emergencies following the activation of the EMSA Contingency Plan

The abovementioned services were provided using SAR imagery from RADARSAT-2, SENTINEL-1 and TERRASAR-X missions. Additionally, optical images were provided as well, in support to oil spill emergencies.

2 Support to Operations

In 2018 a total of 6 operations were supported with additional CSN services entailing ad-hoc planning activities. This included:

- 3 requests for Tour D'Horizon operations;
- 2 requests for increased monitoring to account for reduced aerial surveillance;
- support to the Interpol operation '30 Days at Sea'

Table 1 provides a detail list of these request.

Table 1-List of Operations supported in 2018

Date	Operation	Requester
2018/07/02 to 2018/07/05	Tour D'Horizon operation (3 RS2 ScanSAR Wide services ordered and delivered)	Netherlands
2018/08/06 to 2018/08/10	Tour D'Horizon operation (1 RS2 ScanSAR Wide service ordered and delivered)	Belgium
2018/09/24 to 2018/09/27	Tour D'Horizon operation (2 RS2 ScanSAR Wide, 1 Sentinel-1 IWS and 2 TerraSAR-X WS services ordered and all delivered)	Netherlands
2018/07/28 to 2018/08/08	Top Up of the routine planning following reduced air surveillance due to fire-fighting (1 Sentinel-1 and 8 RS2services ordered and all delivered)	Sweden
2018/10/16 to 2018/10/16	Request to support the '30 Days at Sea' operation (1 Sentinel-1 service ordered and delivered)	Denmark
2018/11/28 to 2018/12/08	Top Up of the routine planning (8 Sentinel-1 services ordered and 7 delivered) following reduced air surveillance due to training of aircraft personnel	Sweden

3 Support to Exercises

Member States also request support to the CleanSeaNet service during exercises. This support is usually not a request for real acquisitions, but rather a request for satellite acquisition feasibilities. The scope is to enable all parties to test and fine-tune the emergency procedures, and to gain experience on the possible satellite coverage in such scenarios. Eleven pollution response exercises, listed in Table 2, were supported by CleanSeaNet in 2018.

Table 2-List of Exercises supported in 2018

Month	Exercise Name	Organiser
February	SHEN	United Kingdom
February	MOSPA	Finland
March-April	BALEX DELTA	Poland
May	TROIA	Portugal

Month	Exercise Name	Organiser
May	ADRIATIC	Croatia
June	ATLANTIC-POLEX	Portugal
July	BRAVO/BREEZE	Bulgaria
August	HELCOM BALEX DELTA	Sweden
October	DMS CYPRUS	Cyprus
October	NEMESIS	Cyprus
November	PACE	Several parties

4 Support to Emergencies

During 2018, CleanSeaNet provided support to European coastal States for 11 distinct maritime accident situations. These events entailed the activation of the EMSA contingency plan, triggering emergency tasking of satellite imagery (both radar and optical) to better monitor the accident area. There was a significant increase when comparing with 2017 (6 emergencies supported). Table 3 lists emergencies supported by CleanSeaNet in 2018.

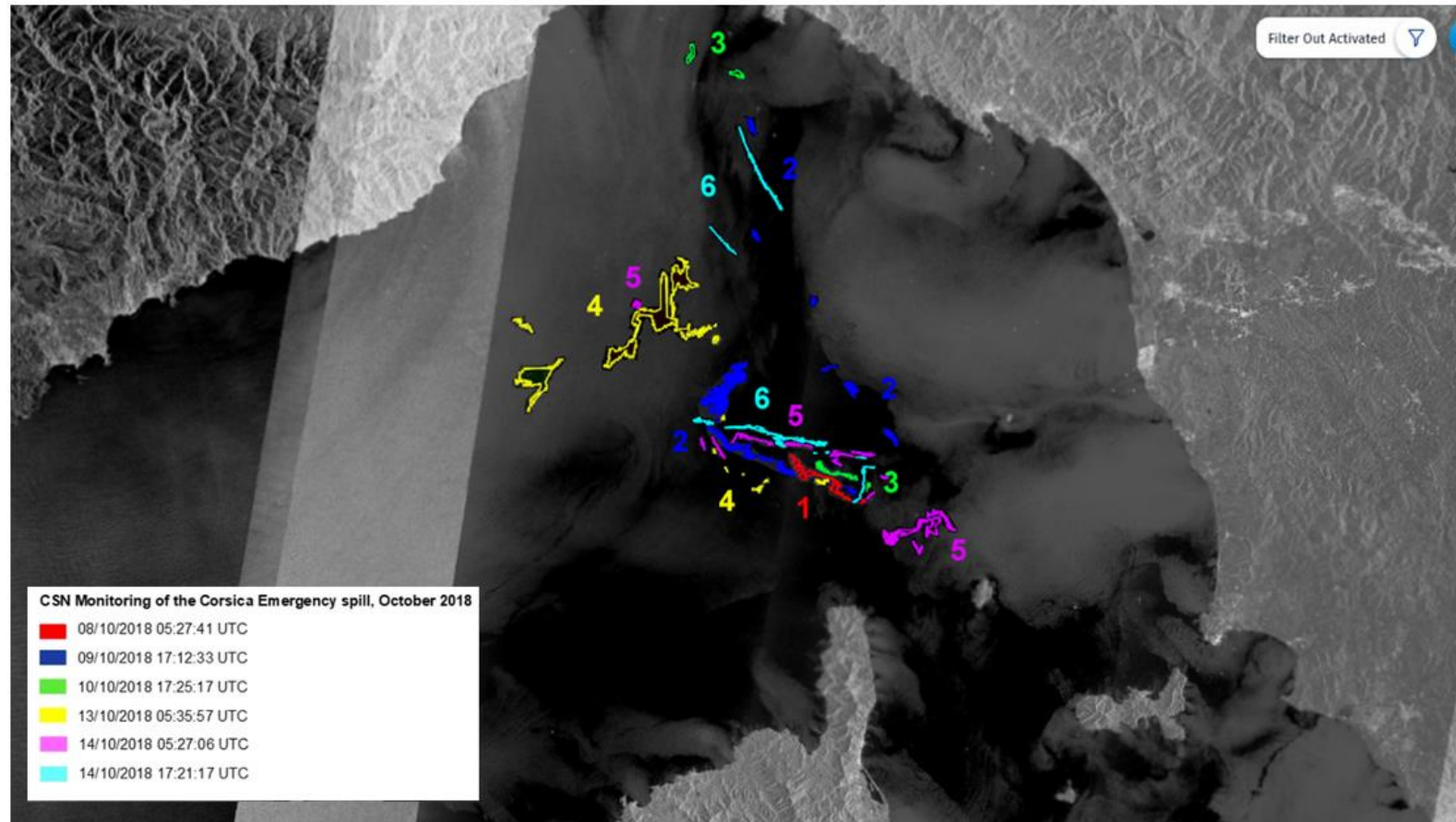
Table 3-List of emergencies supported in 2018

Month	Emergency Name/Ticket	Requester	Area	Description	Ordered Images	Outcome
May to June	Oil Spill Shetland Islands/ MSS-206266	United Kingdom	Between the Shetlands (UK) and Norway	Requested following reported sighting of oil near the semi-submersible rig Ocean Guardian	4 RS2 ScanSAR Narrow services ordered and 3 delivered	Pollution detected in all delivered services
June	MMSI 224146550/ MSS-206505	Portugal	Approx. 663 nautical miles to Ponta Delgada	Following EPIRB alert received from the MRCC Ponta Delgada	1 RS2 Extra Fine service ordered and delivered	No pollution detected
August	ICELAND-HRISEY ISLAND-POLLUTION/ MSS-210533	Iceland	East of the Hrisey island	Following the reporting of an oil slick in the north of Iceland, Eyjafjörður, by the Environment Agency of Iceland	1 Sentinel-1 IWS service ordered and delivered	Pollution has been detected in the delivered service
August	HELGOLAND/ MSS-211331	Germany	West of Island HELGOLAND	Requested after aerial surveillance detected	3 RS2 ScanSAR Wide services	Pollution detected in one service. The third

Month	Emergency Name/Ticket	Requester	Area	Description	Ordered Images	Outcome
				an oil spill west of the island of Helgoland	ordered and 2 delivered	service was cancelled following no further sightings from reconnaissance flights
August	MOPANG 2018/MSS-211463	Bulgaria	Six nautical miles from the port of Sozopol	Oil was leaking from a sunken wreck off the Bulgarian coastline	6 Sentinel-1 IWS services ordered and 6 delivered; 2 RS2 ScanSAR Narrow services ordered and 1 delivered 3 optical VHR1 images ordered and delivered	No pollution in the area of the incident detected
August	Request Satellite Image/ MSS-212135	France	In the vicinity of an ecologically sensitive area, South France	A CleanSeaNet report on 27 August triggered follow-up by French authorities on a possible pollution, which was confirmed by nautical means	1 RS2 ScanSAR Narrow service ordered and delivered	Pollution was detected in the service delivered
September	MOPANG 2018 (2)/ MSS-211463	Bulgaria	Six nautical miles from the port of Sozopol	To monitor an underwater operation to pump-out the remaining oil from the the M/V Mopang, following the sealing of the hull	1 RS2 ScanSAR Narrow and 1 Sentinel-1 IWS services ordered and 1 delivered	No pollution detected

Month	Emergency Name/Ticket	Requester	Area	Description	Ordered Images	Outcome
					2 optical VHR2 images ordered and 1 delivered	
September	Request for imagery – Marseille area/ MSS-213410	France	15 nautical miles off the coast of Marseille	Following the discovery of a 45 km long pollution	1 RS2 ScanSAR Wide and 2 Sentinel-1 IWS services ordered and delivered	Pollution was detected in the 3 services
September	Fishing vessel Roymar/ MSS-213574	Spain	the north-west coast of Spain	Emergency triggered after the fishing vessel caught fire and was adrift, with risk of sinking and/or pollution	1 Sentinel-1 IWS and 2 RS2 ScanSAR Narrow services ordered and delivered	Pollution was detected in the 3 services
October	France – CSL Virginia / Ulysse	France and Italy	Corsica	To monitor the spread of oil following a collision between two vessels north of Corsica on Sunday 7 October	A total of 12 services (RS2, Sentinel-1 and TSX) ordered and 11 delivered 6 optical VHR1 services ordered and 4 delivered	Radar images tracked the overall development of the spill Optical images located oil patches on-beach and closer to the coast
November	Fishing vessel Hermanos Landrove	Spain	North Spain	Following the sinking of the fishing vessel <i>Hermanos Landrove</i> , to monitor the sinking site	No additional imagery ordered, as routine coverage was adequate	-

With regards to optical imagery services during an emergency, the Corsica incident in October was a relevant use-case to be outlined. While SAR imagery was primarily used to monitor the pollution in open water (see Figure 1), optical products proved to be a very valuable asset supporting cleaning operations on-shore. According to French authorities' feedback, the services enabled the location of polluted spots and contributed to the assessment of the full affected area extent.



© EMSA (2018); © Copernicus Sentinel data (2018) and RADARSAT-2 Data and Products (2018), overlaid with polygons of service analysis

Figure 1: Drift of possible spills detected in SAR imagery to support Corsica emergency