User Group Report

18th CleanSeaNet User Group Meeting
Held in Lisbon on 12 March 2019

Date: March 2019

EMSA

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Background

The meeting was chaired by Ms Helena Ramon Jarraud, Head of the Maritime Surveillance Unit..

Delegations from **Albania, Belgium, Bulgaria, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Iceland, Italy, Latvia, Malta, Montenegro, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, The Netherlands, Turkey and the United Kingdom** attended the meeting.

The agenda of the meeting is attached in **Annex 2** and the list of participants is included in **Annex 3**. All documentation (papers and presentations) related to the 18th CleanSeaNet (CSN) User Group meeting may be obtained at: http://www.emsa.europa.eu/csn-menu/csn-user-group.html

1.   Introductions and opening

Ms Helena Ramón Jarraud, Head of Unit C.3: Maritime Surveillance, welcomed participants to the European Maritime Safety Agency (EMSA). The fact that some coastal States were giving presentations to share their experiences was appreciated. Ms Ramón Jarraud stated that this dialogue between users and EMSA was crucial to continuously improve the service provided. Ms Ramón Jarraud then asked the participants who had never been present at a CSN User Group to introduce themselves.

1.1   Approval of the agenda and the list of documents

Mr Pedro Lourenço, Head of Section: Earth Observation Services, also welcomed the participants and proceeded with the introduction, giving a brief overview of the activities planned for the day.

The agenda of the meeting was approved with no further topics to be discussed. A copy of the agenda is attached in **Annex 2**.

1.2   Status of follow-up actions of 17th CSN User Group

Presentation: EMSA (Pedro Lourenço)

Pedro Lourenço summarised the status of follow-up actions. Participants were reminded of each of the action points resulting from the previous User Group and informed of the status of these Action Points. Comments were received, or clarifications given, on the following:

Action Point 1: [Action Points 2(a) and 2(b) from 16th CSN UG)] Feedback from MS on follow-up verifications and on support to ad-hoc requests: EMSA considered this **action point closed**. Users are invited to provide feedback on follow-up activities and top-up imagery requests. Member States (MS) were also asked to provide more detailed information when filling the feedback forms.

Action Point 2: SafeSeaNet Ecosystem Graphical User Interface (SEG) interface transition into operation: EMSA considered this **action point on-going**. Users are encouraged to provide feedback, to detect bugs and malfunctions, as well as to provide suggestions on how to improve the experience.

Action Points 3 and 4: SEG Feedback form: The **action points** were implemented and therefore considered **closed**. Other assets can be included in the list if agreed upon by users.

Action Points 5 and 6: CleanSeaNet service statistics: O**pen action point.** Requested statistics will be implemented as part of two projects – Earth Observation Data Centre (EODC) ORCHESTRA and Qlik – to be made available in 2019. The density maps of planned images are already available upon request. Density maps of delivered images, and density maps of planned versus delivered acquisitions will be available in 2020, after the implementation of EODC ORCHESTRA and Qlik in 2019. The verification results depending on the time of the

observation, and the verification results depending on morning or evening passes will be available from the 1st semester of 2019. In addition, next year a new system will produce reliable and directly accessible statistics.

Action Points 6 and 7: Assessment of feedback mechanism in the IMS mobile app: **Action point open.** The feedback mechanism needs to be stabilized first, and only after can an assessment on how the feedback should/could be deployed in mobile platforms be initiated.

Action Point 8: Spills detection: **Closed action point**. It was addressed with service providers. Member States are invited to report any issues.

Action Point 9: Advanced-CleanSeaNet User Training sessions: **Open action point**. EMSA clarified that the Agency is in the process of upgrading its Alerting and User Management components, as part of the EODC ORCHESTRA and IdM v2. Training in 2019 is not considered efficient : delays to ORCHESTRA implementation will probably push these advanced trainings to 2020, as developments are now scheduled for the second semester of the year.

After the presentation of the action points and their status, there were no comments or remarks from the participants.

2. CleanSeaNet Service Overview

2.1 CleanSeaNet Service Results and Performance

Presentation: EMSA (Sandra Sá)

Sandra Sá, Earth Observation Services Validation Officer for Earth Observation Services & Acquisition Pool, presented the results and performance of the CleanSeaNet service during 2018. The presentation included:

- Near Real Time (NRT) performance
- Detection Trends
- Verification Results
- Size Trends
- Dashboard/Maps

Currently, CSN is used by 23 European Union (EU) Member States, 2 European Free Trade Association (EFTA) coastal States (Norway and Iceland), and 3 candidate countries (Albania, Montenegro and Turkey). The European Neighbourhood Policy (ENP) beneficiary countries continue to be eligible for access under the cooperation programmes SAFEMED IV and BCSEA. Same CSN capabilities can be deployed in the framework of the Copernicus Maritime Surveillance (CMS) Service at the request of EU and EFTA Member States in overseas territories and areas outside Europe.

Concerning 2018 service results, CSN relies primarily on Sentinel-1 A/B; its use increased by 32% from 2017 to 2018. Costs savings from Sentinel-1 enabled an 22% increase in the overall number of Synthetic Aperture Radar (SAR) image services. There was a decrease in the delivery ratio of RADARSAT-2. As the mission is approaching the end of life, anomalies have been increasing, leading to a major outage over two weeks in December.

Regarding TERRASAR-X, there were significant improvements in NRT delivery, from 54% in 2017 to 88% in 2018. Overall, the NRT delivery ratio increased 3% to 94%.

Five optical images were provided in support of oil spill emergencies. Optical images are delivered approximately 30 minutes after the acquisition.

With respect to oil spill detection, 88% of the detections in 2018 were by Sentinel-1. TERRASAR-X also increased in terms of oil spills detected and images delivered.

In Europe, detected spills classified as Class A (with a higher detection confidence level) went up from 2,416 in 2017 to 3,104 in 2018. Class B detected spills (lower detection confidence level) also went up, from 2,374 in 2017 to 3,023 in 2018.

In overseas territories, there were Class A detections in the Indian Ocean near Madagascar, and Class B detections also near Madagascar and in the Atlantic Ocean, in the Caribbean and near French Guiana.

The ratio of verification remained steady in Europe, with just 2% less in 2018. The number of 'Nothing observed' feedbacks increased 19%, possibly due to an increase in the detection of small spills, which could have already disappeared when the verification took place. In overseas territories the trend was the same.

Concerning verification results, in 2018 there was a significant increase in the number of detections and verifications, up 32% in relation to 2017. The number of 'Nothing Observed' verifications increased from 1,009 to 1,606, and the number of 'Mineral oil' verifications decreased to 66 from 356. This shift in the number of verification mineral oil spills is mostly focused in the North Sea oil platform and reflects a change in the operational procedures of Norway regarding which discharges from oil platforms should be monitored.

In terms of the verification by asset type, the category 'Other' was the highest with 38%, followed by 'Fixed wing aircraft' with 24%, and 'Merchant vessels' with 23%. It should be noted that from October 2018 the 'In situ-platform' is a possible source of the spill, so this new functionality led to a decrease in the 'Other' type being reported.

With regard to long-term detection trends, the average size of spills detected is 4.6% smaller in 2018 compared to 2017 (it was 40% smaller in 2017 compared to 2015). Since the spatial resolution of Sentinel-1 enables the detection of much smaller spills, there are more detections as a result.

In oil spill size by classes, the relative percentage of detected oil spills is higher in 2018 for spills smaller than 1 km², whilst for oil spills larger than 1 km² the detection percentage was slightly higher in 2017.

Finally, the CSN Advanced statistics project was presented. Following a proof of concept last year, the project will be initiated in March 2019, encompassing the development of dashboards and maps for geographical visualization of EO data (density maps). There will be the deployment of new automated reports by the third quarter of 2019, and new statistics can also be produced.

After the presentation, interventions from the participants were addressed:

- Germany stated that when it verifies the oil spills on site there are not more oil spills detected than previously, but often natural phenomena are detected. EMSA replied that Sentinel-1 has a higher resolution, so the quality of the image is higher. The size of oil spills detected are smaller; but natural phenomena are also being picked-up in addition to mineral oil. Steps will be taken to address this.

- Norway declared that when the oil spill is inferior to 5 km² and emanating from the oil platforms, there isn't a follow-up, as it is most likely oil in produced water within legal limits. The 5km2 filtration used in 2018 is evaluated at least on a yearly basis and can be changed. The follow up statistics for Norway in 2018 are, as part of this filtering, lower than 2017, as offshore observations are approximately 1/3 of the total observations made in Norwegian waters. The objective is to target the follow up in a more efficient manner. Recognising the quite significant increase number of detections, filtering of observations is an important part of the Norwegian follow up procedures.

- Spain clarified it doesn't send a unit each time it receives reports. Specifically, Spain mentioned that in locations where it is known there are fish farms, the operators know the detections are probably fish oil.

2.2 CleanSeaNet Support to European Neighbourhood Policy (ENP) projects

Presentation: EMSA (Sónia Antunes)

Sónia Antunes, Project Officer for Earth Observation Services & Acquisition Pool, delivered a presentation on the Support to the ENP projects in 2018, containing the service results, the performance and verification results of SAFEMED IV and BCSEA.

The ENP projects are implemented by EMSA through SAFEMED IV and BCSEA (the continuation of TRACECA). This collaboration started in December 2017 and will continue at least until March 2021. SAFEMED IV delivers CleanSeaNet services to Jordan, Tunisia and Morocco. Libya signed the Conditions of Use (CoU) in November 2018 but has not yet begun using the service. BCSEA delivers CleanSeaNet services to Georgia and Azerbaijan. Iran signed the CoU in February 2019 but has not yet begun using the service.

The ENP users have access to the SEG and to specific operations, namely, the European Neighbourhood Instrument (ENI) Integrated Maritime Services (IMS) – which replicates the CSN –, and satellite Automatic Identification System (AIS) – for those countries which have signed the CSN CoU) –, and they share their national terrestrial AIS (if they have signed relevant service level agreements).

Services to SAFEMED IV consisted of Sentinel-1 exclusively. Four images a month are delivered for each country, with a 92% successful delivery ratio (slightly lower than the CSN average). Out of 142 possible spills, 55 were Class A and 87 Class B. Under SAFEMED, there were Class A and Class B detections in the alert areas of Morocco and Tunisia, and Class B detections in Jordan's alert area.

BCSEA uses RADARSAT-2, also with four images a month being delivered for each country, with a 94% successful delivery ratio. Out of 246 possible spills, 133 were Class A and 113 Class B. Under BCSEA, there were Class A and Class B detections in the alert areas of Georgia and Azerbaijan.
In terms of performance, NRT performance is characterised by the delivery time of the alert report. For satellite images covering up to 160 000 km², the NRT service is available within 30 minutes. For larger images, more time is necessary.
With regards to verification results, ENP beneficiary countries do not provide feedback using the standard EMSA feedback mechanism, providing this information by email. Provision of feedback is done by filling a feedback document containing similar fields to those available in the graphical. Nonetheless, some feedbacks on ENP oil spill detections have been provided by the Member States via the standard feedback mechanism.

In conclusion, the service continues to be operational, with a good delivery rate. The NRT for BCSEA should improve in 2019, following the correction of issues linked with alert generation. From July 2019, it is expected that the service will be delivered to Iran (BCSEA) and Libya (SAFEMED IV).

3. CleanSeaNet Support to Operations, Exercises and Emergencies

3.1 CleanSeaNet Support to Operations, Exercises and Emergencies

Presentation: EMSA (Sónia Antunes)

EMSA reported the CleanSeaNet support to operations, exercises and emergencies. During 2018, the service provided support to eleven exercises and six specific operations, as listed in the table below.

	Date	Exercise/Operation name	Organiser/Requester
Exercises	February	SHEN	United Kingdom
	February	MOSPA	Finland
	March – April	BALEX DELTA	Poland
	May	TROIA	Portugal
	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
Operations	2-5 July 2018	Tour D'Horizon operation	The Netherlands
	6-10 August 2018	Tour D'Horizon operation	Belgium
	24-27 September 2018	Tour D'Horizon operation	The Netherlands
	28 July – 8 August 2018	Top up of the routine planning following reduced air surveillance due to fire fighting	Sweden
	16 October 2018	Request to support the '30 Days at Sea' operation	Denmark
	28 November – 8 December 2018	Top up of the routine planning following reduced air surveillance due to fire fighting	Sweden

In the same period, support was also provided to eleven emergencies, a significant increase from 2017, as described in the table below.

Month	Emergency Name/Ticket	Requester	Outcome
May to June	Oil Spill Shetland Islands / MSS-206266	United Kingdom	Pollution detected in all delivered services
June	MMSI 224146550 / MSS-206505	Portugal	No pollution detected
August	ICELAND-HRISEY ISLAND-POLLUTION / MSS-210533	Iceland	No pollution detected in area of request
August	HELGOLAND / MSS-211331	Germany	Pollution detected in one service

Month	Emergency Name/Ticket	Requester	Outcome
August	MOPANG 2018 / MSS-211463	Bulgaria	No pollution detected around the incident area.
August	Request Satellite Image / MSS-212135	France	Pollution detected in the service delivered
September	MOPANG 2018 (2) / MSS-211463	Bulgaria	No pollution detected
September	Request for imagery – Marseille area / MSS-213410	France	Pollution detected in the three services
September	Fishing vessel Roymar / MSS-213574	Spain	Pollution detected in the three services
October	France – CSL Virginia / Ulysse	France and Italy	Radar images tracked the spill; optical images located oil patches on-beach and closer to the coast
November	Fishing vessel Hermanos Landrove	Spain	No additional images were requested, as images were already planned over the area. No pollution detected.

With regard to the decrease in the requests to support Tour D'Horizon operations in 2018 relative to previous years, it should be noted that these operations are now planned taking into account existing CSN acquisition plans.

Activations were triggered by different events, such as sinking of vessels, sighting of spills, leaks from wrecks, confirmed CSN detections, underwater pumping operations, fire on board, and collision of vessels.

One example of an emergency request was given in more detail. Following a collision between two vessels (CSL Virginia/Ulysse) north of Corsica on Sunday 7 October 2018, CSN services were requested to monitor the evolution of the oil spill. Twelve services (RS2, Sentinel-1 and TSX) were ordered and eleven delivered. In this case, six optical VHR1 services were ordered and four were delivered, and supported the detection of oil patches on the beach and closer to the coast. The optical products proved to be a very valuable asset supporting cleaning operations on-shore; according to the French authorities' feedback, the services enabled the location of polluted areas and contributed to assess the full extent of the affected area.

EMSA replied to all additional requests issued during 2018 by triggering additional satellite monitoring whenever possible. The number of emergencies increased significantly in relation to 2017. Optical data proved to be a very valuable asset for assessing spills near the coast/on the beach. Consequently, very good feedback was received from the users. EMSA outlined the importance of providing feedback to enable continuous service improvement.

A use case created by Collecte Localisation Satellites (CLS) was then presented, showing two images of the same area separated by four minutes. The first image, by Sentinel-1, detected an intermittent oil spill linked to a vessel. In the second image, of less quality, by RADARSAT-2, there was no detection. The oil spill and the swell were clearly seen in the first image, but not in the second. This had to do with the number of looks, which were much higher in the Sentinel-1 image, thus leading to better noise reduction. Norway reported that it had also compared images from different satellites in one area farther north, where there are many images overlapping, finding similar results.

4. CleanSeaNet data access and distribution

4.1 CSN data access and distribution

Presentation: EMSA (Pedro Lourenço)

EMSA introduced the new procedure to handle external requests for CSN data.

There are a significant number of requests for CleanSeaNet data, focussing primarily on CSN detections, validation information, and satellite image data. These requests come from research institutes and universities, and sometimes even the public (e.g. high school students, teachers). Requests are handled on a case by case basis, causing increased workload for the CleanSeaNet team, and delays in conveying the data.

To increase the efficiency of the process, EMSA proposed that annually all CSN detections could be made available on the public EMSA webpage, including the location (latitude, longitude), the satellite used, and the detection parameters (width, length, etc.). It would also include information on whether the detection was validated, and the outcome of the validation (i.e. mineral oil, natural phenomena, etc.). However, information on the possible source, the validator (e.g. country, entity or user providing the feedback), the asset type used, the time of verification, or other sensitive operational information would not be disclosed.

Germany stated that there would be no need for the publication of all detections, merely the validated ones. EMSA agreed that mineral oil confirmed detections should be used but added that there is value in the raw detection information for development and calibration purposes.

The UK advised EMSA to be careful with the language used, and clearly state what is reported, in order not to generate an impression that there are many oil spills. EMSA replied that it would be clear that the detections would be reported, and that a detection is possibly a mineral oil spill but could also be caused by another feature. EMSA will include a disclaimer in the webpage with this information.

Iceland also expressed concern about publishing such information. EMSA reiterated that the whole feedback would not be included, just the type of detection.

EMSA requested Member States to provide their feedback in writing, as comments to the draft meeting minutes. These comments and statements are detailed in Annex 1 as part of the follow up actions.

5. Presentations from Coastal States

5.1 Bulgaria

Presentation: Veneta Georgieva (BG)

Ms Veneta Georgieva, of the Executive Agency Maritime Administration, Bulgaria, presented on the case of the 'MOPANG' wreck. The MOPANG is a vessel which sank with some heavy fuel oil on board off the Bulgarian coast of the Black Sea near Sozopol, nearly a century ago. The vessel contains nine fuel oil tanks with a total capacity of 650 m³ and lies on its starboard side at a depth of 30 m.

In the summer of 2018, the fuel oil started to leak and arrived on the beaches, causing alarm as it is a tourist area. Divers alerted the authorities of the existence oil in the water. A possible oil spill was detected on 13 August by CSN. On site verification found an oil spill above the ship wreck. Samples were taken from both the oil spill and from the tanks in the sunken vessel, by divers. The result established that it was very heavy fuel oil, similar to crude oil.

Bulgarian authorities decided to deploy booms in the area of the ship wreck, to avoid further spreading of the spill and protect the sensitive areas along the coast, particularly the beaches. The authorities also requested EMSA's assistance, to reinforce satellite monitoring of the site with more images, monitor the situation, and assess the

effectiveness of the protective measures undertaken. It was also decided that a technical solution had to be found to pump-out the remaining fuel oil from the sunken vessel.

The booms were deployed on 13 August, and the request to EMSA for further images was made on 20 August. EMSA provided a plan of SAR and optical images for the period requested. Eleven images were delivered, but no further spills were detected on the images. It was estimated that 600 m³ of fuel oil could still be in the tanks. The cracks on the ship were sealed, to stop any further leaks pending a permanent solution. Later, analysis showed that the water near the coastline was clean.

In September, a second request was sent to EMSA to monitor the effectiveness of the pumping-out operation. Two optical images and two SAR images were ordered. The optical images could not be delivered due to cloud cover, but the SAR images detected no oil spills. Due to bad weather, the operation could not be concluded within a week and was postponed to October. The pumping-out of the fuel oil was not finished and is expected to continue in the spring of 2019.

In conclusion, BG emphasised that without the satellites images the authorities would not have been able to monitor the area, and that this case led authorities to look closely at all the sunken ships near the Bulgarian coast, in case a similar crisis might occur again.

The UK then inquired how much oil was recovered. It was replied that about 100 m³ was recovered, but that there should be more diving operations to assess the amount still in the tanks. The UK was also interested in knowing if dispersants would be considered effective in this case. It was explained that authorities in the Black Sea in general consider dispersants detrimental, so it was considered a last resort alternative. Accordingly, authorities opted for a mechanical recovery.

Lastly, The Netherlands wondered why it wasn't possible to attach the hose in a more permanent way to the hole of the vessel, having been replied that there were doubts dealing with the status of the ship's corrosion. It was safer for it to be manually attached, even if less practical.

5.2   United Kingdom

Presentation: Neil Chapman (UK)

Mr Neil Chapman, of the Maritime and Coastguard Agency, began by providing a summary of the country's experience with the CleanSeaNet service. Starting with an overview of the UK Maritime & Coastguard Agency's (UK MCA) scope of work, the speaker presented the means available for marine pollution monitoring and how CleanSeaNet information is used in the operational chain.

The UK then described the Ninian Central case which occurred in May 2018. On 29 May 2018 there was a report of an oil slick observation made by the rig OCEAN GUARDIAN. A standby vessel collected samples and Shetland Coast Guard Operations Group (CGOC) contacted platforms in the vicinity to ascertain if there were any anomalies. Due to thick fog, the aircraft was unable to fly. There was an observation flight on 30 May, even so nothing indicated that the rig was the source of the oil spill.

The Maritime Support Services instructed that the request for satellite images should be made via the Common Emergency Communication and Information System (CECIS), which opened an incident and requested satellite imagery. Radarsat-2 images were offered, but no oil spills were detected due to bad weather. Aerial surveillance on 31 May found that the oil was starting to disperse, and the SAR image on 1 June merely showed weather anomalies.

A sample of the sheen was collected and later the results of the analysis showed that it was GC-MS ion chromatogram similar to that of Ninian crude oil. It was then ascertained that the release came from the Ninian Central Platform, resulting from a processing problem - it was a new well with cold process fluid, which destabilised the production chain by increasing the concentration of oil in produced water. An investigation the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) identified that a produced water release occurred on 28 May between 07:00-11:00, although this was not substantiated until 13 June, as the results were not officially recorded at that time and were only uncovered because of the investigation.

The investigation concluded that there was a failure to follow the CNR company procedure to record, effectively communicate and act upon the reported oil in the water results.

Eventually, the UK Department for Business, Energy & Industrial Strategy (BEIS) issued an Enforcement Notice to address this, and CNR subsequently implemented a new procedure that included the requirement to carry out a risk assessment and put in place a sampling regime.

6. EO Services evolution

6.1 EO Data Centre – Current status and future developments

Presentation: EMSA (Ruben Rodrigues)

Ruben Rodrigues, EODC Technical Project Manager, announced the recent and upcoming developments related to two projects which will replace the old system:

- EODC processing evolution will improve current processing capabilities, improve the performance and capacity, and enhance quality control of EO products;

- EODC ORCHESTRA will improve planning, ordering, tasking and reporting of EO services, as well as improve the system's interaction with stakeholders (EMSA, service providers and users).

With regard to image processor improvements, the new image processing engine is on average 10 times faster than the old one. In the case of bigger products, for example, Very High Resolution (VHR) optical and SAR, the images are processed up to 35 times faster. It is a fully scalable system, able to cope with any increase in the workload (i.e. higher volume of images). Furthermore, the image display in other EMSA's systems, such as the SEG, is much faster.

An example of an optical image processed in the old system compared to the new one was displayed, demonstrating that the quality of the images will improve significantly.

ORCHESTRA will improve the management of EO services, and the existing interfaces will be redesigned in relation to planning and ordering, access management and alerting. It will have the ability to manage a wider range of satellite missions and products, also improving existing system workflows with stakeholders (service providers and users), and the analysis and reporting functionalities.

Another project is linked with a new technology for file transfer between EMSA and the satellite ground stations. This new project has three objectives: to be fast, secure and reliable. There will be an end to end encryption of data transfers between service providers and EMSA, with the latter having full control of the transfer process. As a result of the use of this new technology, the transfer of larger files will be up to 90% faster from May 2019.

The Netherlands questioned the reason for the late communication of the planning information for April. EMSA responded that this had nothing to do with EODC developments but was due to the transition of Earth Observation services contracts (that takes place every 4 years), which caused this delay. The information about the CSN April planning was published on the 12 March and in the future EMSA will inform Member States if it is anticipating any delays.

7. Copernicus Maritime Surveillance (CMS) Service

7.1 CMS Service overview

Presentation: EMSA (Michela Corvino)

Michela Corvino, Earth Observation Data Acquisition Officer for Earth Observation Services & Acquisition Pool, gave an overview of the CMS Service. The presentation comprised an introduction to the Copernicus programme, the function areas within the scope of the CMS, as well examples demonstrating the support of the CMS to users within each function area. The evolution of services delivered in 2018 and the list of current users was then displayed.

The CMS Product Catalogue is a good source of information in case potential users require more information on the service and how it can be accessed. Copernicus Maritime Surveillance webpage includes an overview of the service and main products (http://emsa.europa.eu/copernicus) and EMSA is available to answer any questions about the CMS through the contact: copernicus@emsa.europa.eu

The UK had a question related to the distinction between the CSN and the CMS, given that all CMS users who employ the Marine Environment (Pollution Monitoring) function area are European. EMSA clarified that this function area complements CSN, as it can be used in areas of European interest outside Europe.

8. CleanSeaNet in SEG

8.1 Overview, expected developments and feedback from users

Presentation: EMSA (Sónia Antunes)

EMSA provided the updated timeline for the transition of the service to the SEG interface, and an overview of the following steps and coming functionalities.

The cut-off day of the Geographic Information System Viewer on 1 October 2018 was met. However, the release of SEG version 1.8, which was scheduled for November, was considerably delayed, and should be in production by the end of March. The next releases (1.9.0 and 1.9.1) will in production in late May and late June. Finally, there will be a later release (1.10) in Q4 of 2019.

The improvements included in version 1.8 are:
- The 'Affected Alert Areas' column is now filled, enabling the filtering of services intersecting an alert area;
- There is the possibility of uploading shapefiles, making the imported area visible in 'Layers' and 'Areas';
- It is possible to search for oil spills through Oilspill ID, although the direct search of feedbacks will still be missing;
- Activity detection will be available and visible, usually performed on optical images (detection pollution, skiffs on beach, etc.); there will be icons for each activity;
- The feedback parameter for oil spills is now working;
- The alert level is now visible;
- EO Feedback will not allow insertion/creation of oils spills with incomplete information;
- Polygon coordinates are now available in the Tables, Thumbnails and Timeline (TTT) panel.

Notwithstanding, there are still the following pending issues:
- Edit button of Brightness and Contrast adjustment is missing from EO command and information (C&I) window; to be prioritised in the next release;
- The use of polygons as an area search returns more spills than expected (the bounding box of the polygon is being used as opposed to the polygon itself);

- The total activities value is incorrect; to be corrected in May;
- The drift model display is not correct;
- The button 'Possible Source' in the C&I window is not active, should be corrected in September;
- The Exclusive Economic Zone (EEZ) layer will be reintroduced.

The developments in version 1.9.0 and 1.9.1 will be:
- Export as kml will be possible;
- Edit button will be inserted in EO C&I window;
- Missing functionalities in feedback:
  - visualisation/deletion of EO feedbacks will be possible,
  - mandatory parameters will be enforced, and the type of data validated,
  - there will be supplementary options for no verification, and the window will close after submission.

In version 1.10 to be released in Q4, the developments are:
- The polygon search issue will have been resolved (the search will provide results in the polygon alternatively to the bounding box);
- Performance improvement in search functions;
- Improvements in the display of the information, for example, in the alignment of the nomenclature between different tabs in C&I windows;
- Application of several filters in the TTT will be possible, as well as the export of those filter configurations;
- An 'Area search' around the Vessel Detection System (VDS) will be implemented, similar to that which already exists for an oil spill search;
- The display of new satellite products, such as wake detection, feature detection, and time slider for change detection.

To be expected in 2020:
- The display of coverage requirements;
- A dynamic list of satellites, sensor modes, and operations;
- The search of feedbacks;
- The possibility to configure speed units, which are currently always in m/s.

In conclusion, the transition to the SEG in 2018 was successful, despite the significant delay of version 1.8.

Suggestions for improvement and reporting of bugs are welcomed, to the email MaritimeSupportServices@emsa.europa.eu with cleanseanet@emsa.europa.eu in CC, including 'SEG' in the beginning of the subject, and indicating the user account, a detailed description of the issue identified and, if possible, screenshots of the issue.

Iceland requested that the area search around the VDS targets be implemented, since there are many uncorrelated detections which should be correlated. EMSA replied that it's in the pipeline to have a re-correlation function, and with that in mind, it is questionable whether it makes sense to have an area search around the correlation. IS counterposed that sometimes the detection is not exactly where it's supposed to be (due to system inaccuracy) resulting in EMSA's algorithms not being capable of making the correlation. To this end, an automatic or standardized area search function would make the necessary manual analysis process less time consuming.

Norway asked about the alert rule settings, specifically regarding the parameters related to the connection between the spill and the possible polluter. There is a pending issue to be addressed in the EODC.

Finally, Denmark required an option for free text in the C&I window of EO feedbacks, to provide the reasons for not undertaking further investigation.

8.2   CleanSeaNet Training in SEG

Presentation: EMSA (Sónia Antunes)

EMSA communicated the outcome of the Train-the-Trainer sessions delivered at EMSA, which comprised four sessions of 1.5 days. The training took place on 4-7 and 11-14 September 2018 and was attended by 43 participants from 25 countries. 43 evaluation reports were filled, with an overall assessment of 95%. However, there were twelve issues identified and reported, and lack of performance was a major issue.

An outlook on the training activities scheduled for 2019 was then presented to the participants.

The next CleanSeaNet training will be delivered on the SEG version 1.8 interface. Each training session will be 1.5 days, and open to a maximum of 14 participants. It will include an overview on Copernicus Maritime Surveillance for Pollution Monitoring, support to ENP projects, and updated exercises. Each coastal State will be able to send two participants in total. The training dates scheduled for 2019 are:

- April 2 (all day) and 3 (morning)
- April 4 (all day) and 5 (morning)
- April 9 (all day) and 10 (morning)
- April 11 (all day) and 12 (morning)

Additionally, two one-hour CSN webinars are already scheduled for 21 and 28 May 2019, and two new videos addressing the oil spill feedbacks have been published in EMSA's website.

As for the webinars, these live interactive sessions will be announced on EMSA's webpage, in the events section. Users are free to register if there are places available. They will be conducted on 'Skype' or Google 'Hangouts' (Google Chrome is needed for Hangouts – not for Skype). A camera on the computer is optional, as it is not required for participation. It should also be noted that participation with Skype has no limitations, but on Google Hangouts there is a maximum of three users.

The UK queried whether it would be possible to have a session to test the communication links before the webinar, due to compatibility problems in the connection, to which EMSA replied in the affirmative.

8.3   User Requirements (Iceland)

Presentation: Snorre Greil (IS)

Mr Snorre Greil, of the Icelandic Coast Guard, presented three potential requirements for discussion:
- How oil spills are displayed;
- Feedback report;
- Oil spill query.

First requirement: The IS participant observed that oil spills (OS) are not automatically displayed on the chart, despite being available in the TTT for the last 3 days. Therefore, in the CleanSeaNet operation, a potential requirement would be for the OS to be displayed automatically on the chart for a certain number of days. For example, for the same period as the frame/EO scene. EMSA replied that this point will be added in the meeting minutes and included as a future requirement.

Germany inquired about the filtering on TTT, so that only the German alert area were to be visible. EMSA replied that saving filters on the TTT is not currently possible but will be when version 1.8 is in production.

Then the UK asked if OS will be displayed with black or red drops, and EMSA explained that it will depend on the symbology selected by the user.

Second requirement: Possibility to insert free text in a user comment box, to add information in the 'Reason for no verification' field of the Feedback Report. The text field should be in addition to the existing drop-down list. Moreover, the drop-down list should also include the option 'Other', and this section of the feedback report should also be exportable in pdf, or in another format.

IS added that the user comments entered earlier in the GIS Viewer are not fully accessible in the SEG, because only three lines can be read due to the scroll and enlargement functions being inactive. EMSA replied that this is a bug and will be fixed.

<u>Third requirement</u>: Queries about possible OS should cover a full one-year interval. Currently, these are limited to six months, as such, more than one search is necessary. Likewise, query results include OS outside the polygon, and the icons are rather small.

EMSA noted that the six months limit exists to avoid overloading the system, but this comment will be considered. Possibly, it will entail a maximum number of OS returned.

Denmark asked if it is possible to reset all the settings, since their users only use the SEG occasionally, and would like to have a reset button, or a default option. EMSA responded that there is such an option in the layers, and that it will be included in the training.

9.   Any other business

Catrin Egerton, Project Officer for Earth Observation Services & Acquisition Pool, asked participants about the extent to which they had been involved in the Interpol/Europol operation '30 Days at Sea' across October 2018.

Germany replied that at national level there had been considerable interest in the operation, which was coordinated by the police forces. For the German CSN user, operation in October continued as normal, with routine monitoring using CSN. The UK added that – from a CSN perspective – the contribution to 30 Days at Sea consisted of the usual routine monitoring. The Dutch participant informed the group that Maritime Police had been involved in the operation but did not have details available to share. Bulgaria also used the routine CSN monitoring service during their participation in '30 Days at Sea', but during the period of the operation there were only three detections, none of which was pollution. France stated that following the post-operational meeting at the end of March, it might be possible to share more results.

EMSA concluded by reiterating that feedback on such operations – or any other type of feedback related to follow-up of CSN detections, is always valued.

10.   Conclusions and follow-up actions

The meeting concluded by wishing participants a safe onwards journey. The follow-up actions have been noted in the relevant paragraphs of the minutes, and a summary of the follow-up actions can also be found in Annex 3.

Annexes

Annex 1 – List of follow-up actions resulting from the 18th CleanSeaNet User Group

Annex 2 – Meeting Agenda

Annex 3 – Attendance List

Annex 4 – Acronyms and abbreviations

Annex 1 – List of follow-up actions resulting from the 18th CleanSeaNet User Group

Action Point	Topic and Action	Resp.	Status	Comments
1	SEG interface transition into operation (Carried over from 2018)	Member States	Ongoing	Users continue to be invited to provide feedback on bugs and malfunctions, as well as to provide suggestions on how to improve the experience.
2	Improvements to SEG a) Possibility to insert free text in a user comment box, to add information in the 'Reason for no verification' field of the Feedback Report b) Area search around VDS targets c) Alert rule settings (connection between the spill and the possible polluter) d) OS to be displayed automatically on the chart for a certain number of days e) Queries about possible OS should cover a full one-year interval	EMSA	Open	EMSA will analyse the requests. Some are pending issues for correction in the EODC, others may be taken into consideration for implementation as future requirements. Norway provided written comment stating the alert matrix and associated rules / algorithms are of the utmoast importance for their operational activities and therefore existing issues should be addressed as soon as possible. EMSA reply to Norway's comment: A completely new EODC component managing the CleanSeaNet alerts is currently being implemented. Besides additional functionalities, this will address issues existing with the current system. It is expected that early 2020 this can be deployed in production.
2	CleanSeaNet service statistics (Carried over from 2018) The group continues to express interest in receiving the following statistics: a) Density maps of planned images b) Density maps of delivered images c) Density maps of planned versus delivery acquisitions d) Verification results versus the time of the observation e) Verification results versus morning or evening passes f) Other statistics	EMSA	Open	Requested statistics will be implemented as part of two projects (EODC orchestra and Qlik) – These will be made available in 2019. 5 a) AIready available upon request 5 b) EODC ORCHESTRA and Qlick: to be implemented in 2019 (and available for 2020) 5 c) EODC ORCHESTRA and Qlick: to be implemented in 2019 (and available for 2020) 5 d) Available from S1 2019 5 e) Available from S1 2019 Users are welcome to provide further suggestions in terms of calculations for statistics.
3	Mobile app evolution	EMSA	Ongoing	Efforts so far in terms of CSN have been put on the SEG. Therefore the feedback mechanism needs to be stabilized in the SEG first and only after that can an assessment of how the feedback should/could be deployed in mobile platforms be initiated.

4	Advanced-CleanSeaNet User Training sessions	EMSA	Open	EMSA clarified that is in the process to upgrade its Alerting and User management components as part of the EODC ORCHESTRA and IdM v2. At this stage a training would not be efficient during 2019 hese new interfaces will be deployed in production. Delays to ORCHESTRA implementation will probably push these advanced trainings to 2020, as developments are now scheduled for the second semester of the year.
6	CSN detections to be made available on the EMSA public website	Member States	Open	It was proposed that annual CSN detections could be made available on the public EMSA webpage, including the location (latitude, longitude), the satellite used, and the detection parameters (width, length, etc.). It would also include information on whether the detection was validated, and the outcome of the validation (i.e. mineral oil, natural phenomena, etc.). However, information on the possible source, the validator (e.g. country, entity or user providing the feedback), the asset type used, the time of verification, or other sensitive operational information would not be disclosed. Member States were invited to send feedback regarding this proposal by May 24 2019. In addition to the comments received during the meeting (UK, DE, IS – see section 4.1), feedback was received as follows: • DK informed EMSA that this issue would have to be discussed with another national authority, so a formal response could take some time. • PL agreed with Germany that only statistics or information about validated detections should be available in publication. • SE requested a more concrete suggestion on how the information will be presented and more details about what the information will contain. • NO support making CSN data publicly available but emphasise the importance of a good explanation of the dataset limitations and use. There is a need to make and enclose accurate metadata to the datasets.

Annex 2 – Meeting Agenda

Lisbon, EMSA Meeting Room -1.11, 12 March 2019

Tuesday, 12 March 2019		
Time	**Agenda Item**	**Speaker**
09.00 – 09:30	Registration	
09:30 – 10:00	Opening/Introduction ■ CSN 18.1.1 Approval of the agenda and the list of documents ■ CSN 18.1.2 Status of follow-up actions of 17th CSN UG	Helena Ramón Jarraud (EMSA) Pedro Lourenço (EMSA)
10:00 – 10:30	CleanSeaNet regular service overview ■ CSN 18.2.1 CSN Service results and performance ■ CSN 18.2.2 CSN Support to ENP countries	Sandra Sá (EMSA) Sónia Antunes (EMSA)
10:30 – 11:00	CleanSeaNet support to operations, exercises and emergencies ■ CSN 18.3.1 Support to operations, exercises and emergencies	Sónia Antunes (EMSA)
11:00 – 11:30	*Coffee break*	
11:30-11:45	CleanSeaNet data access and distribution ■ CSN 18.4.1 CleanSeaNet data access and distribution	Pedro Lourenço (EMSA)
11:45 – 12:30	Presentations from Coastal States ■ CSN 18.5.1 Bulgaria ■ CSN 18.5.2 United Kingdom	BG: Veneta Georgieva UK: Neil Chapman
12:30 – 14:15	*Lunch break*	
14:15 – 14:45	EO Services evolution ■ CSN 18.6.1 EO Data Centre – Current status and future developments	Ruben Rodrigues (EMSA)
14:45 – 15:15	Copernicus Maritime Surveillance Service ■ CSN 18.7.1 Copernicus Maritime Surveillance Service overview	Michela Corvino (EMSA)
15:15 – 15:45	*Coffee break*	
15:45 – 16:45	CleanSeaNet in SEG ■ CSN 18.8.1 SEG: Overview, expected developments and feedback from users ■ CSN 18.8.2 CSN training in SEG ■ CSN 18.8.3 Potential User Requirements (Iceland)	Sónia Antunes (EMSA) IS: Snorre Greil
16:45 – 17:00	AOB and meeting closure	Catrin Egerton (EMSA) Pedro Lourenço (EMSA)

Annex 3 – Attendance List

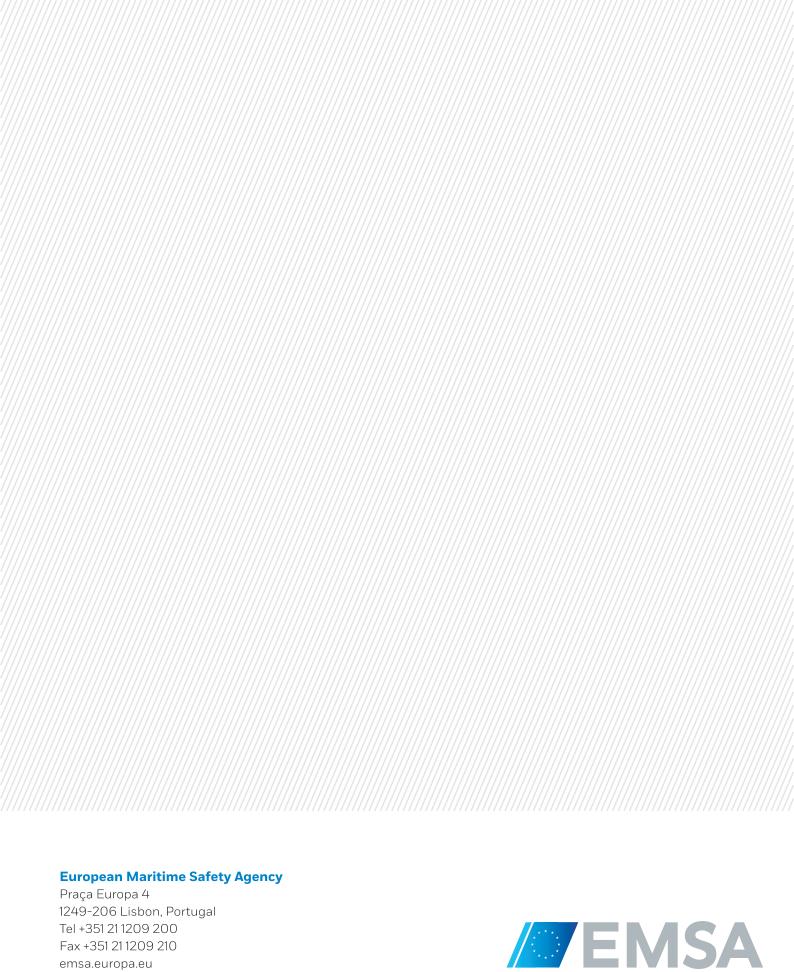| Name	Organization	Country
Tomor Harizi	General Maritime Directorate	Albania
Guido Fidlers	FPS Health	Belgium
Veneta Georgieva	Executive Agency Maritime Administration	Bulgaria
Zlatko Carevic	MRCC Rijeka	Croatia
Edo Sarunic	MRCC Rijeka	Croatia
Stelios Kyriacou	Shipping Deputy Ministry to the President	Cyprus
Lise Hoejriis	Joint Defence Command Denmark	Denmark
Soeren Moenster	Joint Defence Command Denmark	Denmark
Kasper Korshoej	Joint Defence Command Denmark	Denmark
Martin Viecherts	Joint Defence Command Denmark	Denmark
Märt Orro	JRCC Tallinn	Estonia
Joel Preobraženski	JRCC Tallinn	Estonia
Teemu Salminen	The Finnish Border Guard	Finland
François Amaudric du Chaffaut	Centre régional opérationnel de surveillance et de sauvetage Jobourg	France
Dirk Reichenbach	Havariekommando	Germany
Snorre Greil	Icelandic Coast Guard	Iceland
Dario Cau	Ministry of Transport	Italy
Pantaleo Dell'Olio	Italian Coast Guard	Italy
Uldis Bethers	University of Latvia	Latvia
Laura Mazmaca	State Environmental Service	Latvia
Shaun Ciantar	Armed Forces of Malta	Malta
Mevric Zammit	Authority for Transport in Malta	Malta
Agim Spuza	Maritime Safety Department of Montenegro	Montenegro
Ove Njøten	Norwegian Coastal Administration	Norway
Jaroslaw Bomba	Maritime Office in Gdynia	Poland
Joana Jerónimo	National Maritime Authority Directorate General – Sea Pollution Response Directorate	Portugal
Diana Pinheiro	National Maritime Authority Directorate General – Sea Pollution Response Directorate	Portugal
Paul Neicu	Romanian Naval Authority	Romania
Primož Bajec	Slovenian Maritime Administration	Slovenia
Boris Laganis	Slovenian Maritime Administration	Slovenia
Berta Blanco Meruelo	SASEMAR	Spain
Maria Evangelina Díaz Delgado	SASEMAR	Spain
Anders Litzén	Swedish Coast Guard	Sweden
Fredrik Tyrén	Swedish Coast Guard	Sweden
Bert Hollanders	Netherlands Coastguard	The Netherlands
Marco de Bruijn	Rijkswaterstaat Z&D	The Netherlands
Ömer Doğruer	Ministry of Transport and Infrastructure	Turkey
Neil Chapman	Maritime and Coastguard Agency	United Kingdom

Helena Ramón Jarraud	European Maritime Safety Agency (EMSA)	
Pedro Lourenço	European Maritime Safety Agency (EMSA)	
Sónia Antunes	European Maritime Safety Agency (EMSA)	
Sandra Sá	European Maritime Safety Agency (EMSA)	
Catrin Egerton	European Maritime Safety Agency (EMSA)	
Michela Corvino	European Maritime Safety Agency (EMSA)	
Ruben Rodrigues	European Maritime Safety Agency (EMSA)	
Ricardo Vicente	European Maritime Safety Agency (EMSA)	

Annex 4 – Acronyms and abbreviations

Acronym	Description
AIS	Automatic Identification System
BCSEA	Black and Caspian Sea
BEIS	UK Department for Business, Energy & Industrial Strategy
CECIS	Common Emergency Communication and Information System
CGOC	Coast Guard Operations Group
C&I	Command and information
CLS	Collecte Localisation Satellites
CMS	Copernicus Maritime Surveillance
CoU	Conditions of Use
CSN	CleanSeaNet
EEZ	Exclusive Economic Zone
EFTA	European Free Trade Association
EMSA	European Maritime Safety Agency
ENI	European Neighbourhood Instrument
ENP	European Neighbourhood Policy
EO	Earth Observation
EODC	Earth Observation Data Centre
EU	European Union
GIS	Geographic Information System
IMS	Integrated Maritime Services
MS	Member States
NRT	Near Real Time
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
OS	Oil Spill
SAR	Synthetic Aperture Radar (satellite sensor)
SEG	SafeSeaNet Ecosystem Graphical User Interface
TTT	Tables, Thumbnails and Timeline
UK MCA	UK Maritime & Coastguard Agency
VDS	Vessel Detection System
VHR	Very High Resolution