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# User Group Report

## 17th CleanSeaNet User Group Meeting
## Held in Lisbon on 28 June 2018

**Date: July 2018**

EMSA

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# Background

The meeting was chaired by Mr Pedro Lourenço, Head of the Earth Observation Services sector.

Delegations from **Albania, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Germany, Iceland, Italy, Latvia, Malta, Montenegro, the Netherlands, Poland, Slovenia, Spain, Sweden, 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 as **Annex 3**. All documentation (papers and presentations) related to the 17th CleanSeaNet User Group meeting may be obtained at: http://www.emsa.europa.eu/operations/cleanseanet.html#

# 1. Introductions and opening

Mr Leendert Bal, Head of Department C: Operations, welcomed participants to EMSA. The fact that a number of coastal States were giving presentations to share their experiences was appreciated. Mr Bal stated that this dialogue between users and EMSA was crucial to further and continuously improve the service provided.

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.

## 1.1   Approval of the agenda

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

## 1.2   Approval of the 16th User Group minutes and status of follow-up actions

Presentation: EMSA (Pedro Lourenço)

The status of follow-up actions was summarised. Participants were reminded of each of the action points resulting from the previous User Group and informed on the corresponding status. Comments were received, or clarifications given, on the following:

Action Point 1: Presentation of verification results: EMSA considered this action point open as it is still assessing how these statistics can be generated and which improvements to the system are required. The participants were informed that a full presentation was dedicated to this action point (Agenda Items CSN 17.2.1 and 17.2.2).

Action Point 2(a) and 2(b): Feedback from MS on follow-up verifications and on support to ad-hoc requests: These action points were considered as ongoing activities. In fact, EMSA reinforced the importance of receiving feedback from users on follow-up activities and top-up imagery requests. It is crucial to understand if the images are properly delivered to users, according to the service quality standards. Moreover, MS were asked to provide more detailed information when completing the feedback forms.

Action Point 3: Link between CleanSeaNet and THETIS, and POLREP incident reports: EMSA considered this action point closed as the new SEG interface will provide the requested link. However, the participants were reminded that only users with specific SafeSeaNet profiles will have access to it.

Action Point 4: Update on coverage requirements: In total, six MS replied with comments to EMSA's request for feedback on the new planning approach/image density. The comments received resulted in a dedicated presentation (Agenda Item CSN 17.5.1). Furthermore, EMSA informed Member States that coverage requirements adjustments can be performed at any stage, and that these discussions can take place with each country individually.

Action Point 5(a) and 5(b): SEG interface volunteer testers: EMSA noted that the coastal states Sweden, Greece and France had volunteered to participate in the tests of the new SEG interface. EMSA explained that the full

transition and launch of the interface was postponed in order to ensure that the oil spill feedback mechanism was implemented correctly before the launch.

Action Point 5(c): SEG interface Quick-start Guide: The participants were reminded that the SEG interface Quick-start Guide was distributed along the draft minutes of the previous User Group meeting and that a more recent version is now available online (dated 25 June 2018). EMSA also assured the users that the document will be continuously updated with new information on the interface.

Action Point 5(d): SEG functionalities: EMSA informed users that in the latest release of the SEG it is already possible to perform 'Advanced Search' based on geographical (alert) areas. The participants were also informed that the filtering of image footprints for each national alert area upon log in is intended to be included in SEG release 1.8 (scheduled for production in Q4 2018).

Action Point 5(f): Additional requirements for SEG and EODC:

- Notification to users (via email) when new vessel detection system (VDS) data is available. It was stated by EMSA that this should be available to the users, linked with the ORCHESTRA project, in S1 2019.

- Notification of non-correlated targets linked with specific EO products. It was stated by EMSA that this requirement needs to be further investigated as it entails changes and/or new functionalities in multiple EMSA systems.

- Assess the impact of decreasing the AIS vessel display refresh rate from 6 minutes to 1 minute. EMSA informed users that there is already a proof of concept test underway with first results expected in autumn 2018. The results of this test will be communicated to the Integrated Maritime Services Member States (IMS MS) as well as to the Unit C.2 (managing SafeSeaNet and regional servers).

Related with the SEG action points (5a, 5b, 5c and 5d), users were once again encouraged to report any issue detected in the SEG (i.e. bugs and malfunctions), as well as to provide suggestions on potential improvements and additional functionalities.

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, Project Officer for Earth Observation Services, presented the results and performance of CleanSeaNet service during 2017. The presentation included:

- Volume of satellite acquisitions (ordered and delivered) from Sentinel-1A/B, RadarSat-2, TerraSAR-X,

- Near real time (NRT) performance

- Detection trends

- Verification results.

It was noted that the delivery ratios generally had improved in comparison to the 2016 service performance. The overall service delivery ratio improved by 3%.

The TerraSAR-X delivery ratio was highlighted given the significant increase when compared with 2016. The overall NRT performance had improved, although it did not achieve the target of 90% due to technical limitations with the TerraSAR-X ground segment that implied delays to the reception of these images in the cone of the ground segment antenna (Neusterlitz). This situation is being addressed by the satellite operator (Airbus and DLR), and improved NRT delivery performance may be possible in 2019.

The users were informed that EMSA started delivering images from Sentinel-1B in 2017. In addition, EMSA indicated that for the last two years the service has relied mostly on the SAR imagery provided by Sentinel-1, corresponding to 76% of the acquisitions in 2017 and 87% of the oil spill detections.

The number of oil spill detections had increased when compared to the previous year (which was also an increase on the year before). EMSA explained these results by referring to the improvement of the detection capabilities of Sentinel-1 for detecting smaller spills that would not have been detected previously. Overall, the number of Class A versus Class B detections was not altered, each accounting for roughly half of the detections.

The trends presented during the meeting showed an increase for the last two years in the number of detections as well as the average number of detections per sq. km of sea covered. In fact, the average spill size is 40% smaller when compared to 2015, and the minimum size of spills detected decreased from 0.1 sq. km to 0.01 sq. km in 2017.

In terms of verification results, EMSA emphasised the increase of feedback provided by users through the GIS Viewer, more specifically the increase of 'Mineral oil' detections and decrease of 'Nothing observed' categorised detections.

After the results and performance conclusions regarding the year of 2017, questions from the participants were addressed:

- DE asked whether the higher number of detections were due to the higher resolution of the Sentinel-1 or if the algorithms had suffered modifications. EMSA clarified that the shift in the trend is not due to a change in the process of image acquisition itself, but instead due to the resolution of the mission. The higher quality of Sentinel images allows greater detection of possible oil spills. Moreover, improvements occurred in the service planning methodology, in terms of optimisation of sea surface coverage, which also contributed to the increase in the number of detections.

- DE noted that although the percentage of 'Nothing observed' feedback types has decreased from 2016 to 2017, this type of feedback is still very high (63%) and raised the discussion with the other countries about

the reason for this. It was noted by the UK and NO that several of these feedbacks were most probably linked to possible spills originating from oil platforms.

▪ DE also questioned how the verification of the detections was performed when they were classified as 'Nothing observed', i.e. with aerial means (airplane, RPAS, etc.), vessels, by the competent authorities, etc. DE also referred the need to include the timeliness of the verification (time between satellite detection and observation) in the statistics produced. EMSA stated that additional statistics are under development and that more details would be presented in the agenda item on evolution of statistics. EMSA also encouraged Member States to provide new ideas or suggestions.

## 2.2 CleanSeaNet service results and performance – Evolution

Presentation: EMSA (Sandra Sá)

According to Action Point 1, in the previous User Group additional statistics were requested by the users, namely more detailed information on which detections are verified and how, and the results of those verifications. The requests were assessed by EMSA and a summary of the outcome was presented during the meeting, as well as an indication of when they will become available in the interface. The statistics which are or will be available are presented below.

▪ For 2017 a histogram of all types of verification assets (e.g. patrol vessel, vessel, aerial means, or 'other' types) used during the verifications and reported in the feedback form was presented. One aspect highlighted during the presentation was the high detection verification rate of 'Mineral oil' by 'Other' types of assets; both EMSA and users agreed that this needs to be further investigated.

▪ Size of the spill. This was already available in the 2017 statistics as a trend analysis (and presented in point 17.2.1, 'Oil Spill size by classes'), and will be included in the EODC ORCHESTRA project, available from 2019 onwards.

▪ Length of time between detection and verification, results by region, and verification of morning versus evening detections, will all be included in the EODC ORCHESTRA project, available from 2019 onwards.

▪ Detections with possible polluters identified, which require new developments in the platform to perform the statistical analysis, will be available from 2020 onwards.

The presentation was followed by a series of interventions from FR, UK, ES and DE regarding the feedback system and the classification categories available:

▪ FR asked which categories were included in the 'Other' types of verification assets. EMSA clarified that all assets not included specifically in the detailed list (i.e. RPAS) are included under "Other". Nevertheless, the list can be improved /expanded to include additional assets, thereby reducing the number of items which would be included in 'Other'.

▪ UK and NO informed that very often the selection of the option 'Other' as verification asset was used for verifications performed by the platform operators. The platform operators would be contacted and informed about the detection, and they would confirm it or not after checking the sensors. As there is not a specific verification asset entry for this type of verification, it is classified as 'Other'.

▪ EMSA returned the question to the table as a good opportunity to update and improve the list of verification asset means. It was agreed by all participants to include the options 'In-situ platform' and 'RPAS' as additional entries in the detection verification assets list of the feedback form. This will be an action included in action points list (Annex 3). After approval of the User Group Report this modification will be issued in a subsequent SEG Release.

▪ A further field in the feedback form where the user could describe how this information was collected was also suggested. EMSA encouraged the participants to liaise with EMSA for any further suggestion to improve the feedback information (ex: further verification assets).

- DE suggested that the verification results reported are correlated with the time interval between satellite observation and MS in-situ verification. DE requested to have these statistics included in the verification results, as well as information on whether the acquisitions were during morning or evening, as already requested in the previous CSN UG.

- ES intervened explaining that sometimes the verification of some detections is impossible, particularly those distant from any assets. EMSA assured users that the feedback form of the next SEG release will include a structured options map for users to select the reason why an in-situ verification was not performed (e.g. weather, lack of means, etc.).

- UK intervened and mentioned that perhaps the number of detections has increased due to the fact that sometimes slicks (i.e. parts of an oil spill) are reported as individual spills. This means that a spill that contains multiple slicks is sometimes reported as different oil spills. EMSA requests that as soon as these situations are identified by the users they are immediately reported, as this information can be used to improve the quality of the detections. However, in case of complex, non-linear spills, this type of issue is difficult to avoid.

- DE reported that they are getting a higher number of possible oil spill detections that are categorised as natural phenomena after verification. They asked whether it was possible to decrease the number of false negatives of the service detections by using, for instance, optical sensors. The reason for this request is the high costs associated with aerial means that MS are subject to when they need to verify detections, when the objective is for the response to possible maritime pollution to become more cost-effective. EMSA explained the limitations of optical satellite imagery in terms of costs (for higher resolution), delivery time, daytime and weather, although other information can be provided through these sensors. In terms of service improvement, EMSA also informed the MS that service providers will be penalised in the future if false negatives are frequently reported (e.g. in regions where in the certain time of the year there are algae blooms, and service providers do not take such background information into account). In addition, despite not solving entirely the issue, new SAR systems (fully polarimetric) coming in the near future will allow a better distinction between mineral oil and algae blooms, for example, contributing to a decrease in the number of false positives.

- The UK suggested that a parameter in the alert report related to the level of chlorophyll could be added. EMSA will assess the feasibility of providing additional information to the MS in terms of detection capability of the SAR sensor for each service. This can include the wind and the chlorophyll ancillary information among other sources.

# 3. CleanSeaNet support to operations, emergencies and projects

## 3.1 CleanSeaNet support to operations, exercises and emergencies

Presentation: EMSA (Sónia Antunes)

Sónia Antunes, Project Officer for Earth Observation Services, presented the CleanSeaNet support to operations, exercises and emergencies. During 2017, the service provided support to 8 exercises and 11 specific operations, as listed in the table below.

| | Date | Exercise/Operation name | Organiser/Requester |
|---|---|---|---|
| **Exercises** | 14-16 June 2017 | Polex | Spain |
| | 6 July 2017 | HEAVEN PRAWN | Norway |
| | 28 August 2017 | GROUNDING OF SOMMARO | Finland |
| | 6 September 2017 | SCOPE 2017 | Norway |
| | 16 October 2017 | NEMESIS | Cyprus |
| | 19 October 2017 | RUBIN-1 | Bulgaria |
| | 19 October 2017 | POLEX 2017 | Portugal |
| | 24 October 2017 | REMPEC | REMPEC |
| **Operations** | 23-26 January 2017 | Tour D'Horizon | Netherlands |
| | 20-23 February 2017 | Tour D'Horizon | Sweden |
| | 15 February – 15 April 2017 | Wreck monitoring | France |
| | 14-15 April 2017 | Monitoring of Ship-to-Ship transfer | Ireland |
| | 15-18 May 2017 | Tour D'Horizon | Netherlands |
| | 1-31 May 2017 | Support to monitoring due to reduction of aerial capacity | Sweden |
| | 3-6 July 2017 | Tour D'Horizon | Netherlands |
| | 31 July – 4 August 2017 | Tour D'Horizon | Belgium |
| | 25-28 September 2017 | Tour D'Horizon | Netherlands |
| | 17 October 2017 | Swedish-Finnish MiniCEPCO | Sweden |
| | 4-7 December 2017 | Tour D'Horizon | Netherlands |

In the same period, support was also provided to 6 emergencies, as described in the table below.

| | Date | Exercise/Operation name | Requester | Observations |
|---|---|---|---|---|
| **Exercises** | 18 January 2017 | Oil spill in Izmit Bay | Turkey | No pollution detected |
| | May 2017 | Pollution in the port of Skaw (Danish and Swedish waters) | Denmark | No pollution detected |
| | 13 September – 5 October 2017 | Sinking of AGIA ZONI off Piraeus | Greece | Pollution has been detected in several acquisitions |
| | 10-12 October 2017 | Capsizing of tanker Goeast | Italy | No pollution detected |
| | 23-26 December 2017 | Running aground of cargo vessel Little Seyma off Mykonos island | Greece | No pollution detected |
| | 21-25 December 2017 | Accidental release during bunkering/refuelling operations in the UK Solent | UK | Pollution was detected in one of the services |

EMSA reiterated interest in receiving the reports/summaries/evaluations of the operations and exercises for which additional imagery was provided by the Agency. Coastal States were encouraged to send further information regarding the ad-hoc planning activities listed during the CUG meeting. EMSA also reinforced the importance of the activation of the Emergency Contingency Plan as soon as possible during an emergency to mobilise the necessary response means in time.

UK asked for clarification on the procedure to request top-up images during emergencies, asking whether users need to go through CECIS to place the request or if they can go directly to EMSA's Maritime Support Service (MSS). EMSA clarified that there was no change to the procedure and that the activation can be done both ways (directly to the MSS or via CECIS which will subsequently relay the information to the MSS).

## 3.2 CleanSeaNet support to projects

Presentation: EMSA (Sónia Antunes)

EMSA presented an overview of the results of additional services provided in the context of: SafeMed III (to Morocco, Algeria, Tunisia, Israel and Jordan, until March 2017); SafeMed IV (only delivered to Jordan, and ongoing since December 2017); and BCSEA (to Georgia and Azerbaijan, and ongoing since December 2017) which was a follow-up of the TRACECA project.

The CleanSeaNet service also provided support to Greenland from March to December 2017 at the request of the Danish Administration. Since the beginning of 2018, this support has been provided by the Copernicus Maritime Surveillance (CMS) service, also implemented by EMSA. Regarding this project, the Coverage Requirements were updated in October 2017 to cover a larger coastal area. Specifications and details of the cooperation agreement were also updated.

The participants were informed that pollution monitoring services in the outermost regions of European countries can be requested through EMSA's CMS service.

# 4. Presentations by Coastal States

## 4.1 France

Presentation: Melaine Loarer (FR)

FR delivered a presentation on a shipwreck that occurred on the 22 December 2016, on the coast of Brittany. The case drew a lot of attention in the media where the authorities' competency was questioned.

On their way to Turkey, two MAERSK supply vessels heading towards the demolition yards of Aliaga, in Turkey, sank off the coast of Brittany. There were no casualties, since no one was on board the vessels; however, there was a risk of pollution. After cleaning the hulls, limited oil slicks were observed by the aerial means mobilised to monitor the wrecking operations. To monitor the potential oil spills, satellite images were planned to complement the routine imagery provided by CleanSeaNet. In total, seven acquisitions were delivered between mid-February and mid-April. The images delivered detected two possible oil spills. However, none of these could have originated in the shipwreck, given the distance of one of the spills and the shape of the other (more similar to a discharge from a vessel underway rather than to a leakage). FR stated that the support from CleanSeaNet was crucial to the national authorities in the decision-making.

NL asked FR what the future of the shipwrecks will be. After considering requesting MAERSK to re-float and remove the shipwrecks, the French authorities decided to leave the vessels where they sank, since no more leakage was observed in the area.

## 4.2 United Kingdom

Presentation: Neil Chapman (UK)

The UK provided a presentation on the country's experience with the CleanSeaNet service. Starting with an overview of UK's 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 also referred to the value that Earth Observation information brings in the context of legal measures against polluters and the impact it can have on the detection and identification of culprits.

The UK explained that they usually compile the information contained in the CSN alert report along with other sources and prepare a more detailed report, including additional information, to distribute to port state authorities. These users are responsible for ship inspections and thus need a wide range of information to support their activities. UK also noted an increase in the number of slicks reported by service providers in 2017, which could be also linked with the higher resolution and quality of Sentinel-1 products.

The UK ended the presentation with a recent use case of a minor leakage of hydraulic oil from a propulsion jet hydraulic system. The vessel owners assessed the case and stated that the reported leakage, detected by CleanSeaNet, was bigger than could have been discharged by the hydraulic system. The vessel operators argued that the spill detected was due to a high quantity of algae in the area. The vessel owner hypothesised that the disruption of the algae (due to the high speed of the boat) could lead to the release of a big quantity of cellular oil from the algae, and therefore increase the size of the reported spill. The speaker asked the audience whether this could be a valid justification, and if any of the users present in the meeting had faced a similar situation.

ES questioned the scientific background and foundation of the conclusions made by the ship operator, and the group agreed that further scientific studies are required before this hypothesis can be accepted as a valid source of CSN false positives.

## 4.3 Denmark

Presentation: Dennis Riegels (DK)

The presentation delivered by DK focused on the added value of satellite-based imagery in the optimisation of the aerial surveillance means available.

DK began the presentation with a brief overview on the utilisation of SAR images in maritime pollution detection and integration with the Danish systems (e.g. AIS density and Maritime Domaine Awareness charts to monitor vessel traffic). The increase of CSN images over recent years was noted.

The limitations faced by the Danish authorities when using SAR imagery and gathering evidence for prosecution in case of maritime pollution were also presented. One of the main challenges highlighted by the speaker was the fact the DK administration does not possess aerial means and must rely on a private company to monitor the area.

DK presented two cases: a legal and an illegal discharge of oil, using both CleanSeaNet and Sea Track Web. However, the speaker noted that the results of only one system are enough to follow up with the polluters.

NL raised the point that the country would risk losing expertise by contracting external private companies to perform the aerial surveillance activities. The speaker acknowledged this possibility, but noted that due to the lack of aerial means, these short-term contracts are needed to ensure aerial surveillance of the coastal regions.

Regarding maritime pollution cases, FR noted that in France prosecution cases require in-situ verification. UK intervened as well to ask whether Danish legal system accepts satellite-based imagery as proof. DK informed the audience that it might be accepted as proof, however a sample from the suspect vessel would be preferable.

## 4.4   The Netherlands

Presentation: Michiel Visser (NL)

NL delivered a presentation on the oil spill detection trends over recent years, and the impact this has had on the aerial means mobilised for maritime surveillance. The presentation was based on the results of a study performed to assess the influence of satellite imagery on the number of flight hours planned and how the two means of detection can be combined.

Using aircraft, it takes five hours cover all the Dutch Exclusive Economic Zone (EEZ). Moreover, the trend of number of oil detections per flight hour presented showed a decrease. NL stated that satellites add good value in terms of oil spill detection, given the cost of routine flight hours which currently allow the detection of a very small number of spills. The efficiency of the current procedure was questioned.

NL highlighted an increase in the satellite imagery requested in terms of coverage. Along with the update of the coverage requirements in 2017, the user noted the better quality of the images received as well as the enhanced planning, which results in a better coverage of the region. The results indicated that further adjustment of the number of flight hours is required for the service to become cost-effective, as well as the procedures (i.e. mobilise aerial means to certain regions in the North only when necessary, i.e. when there are detections, and focus the flight hours on the coastal areas).

EMSA noted the difficulty in fully harmonising the coverage area as in the northern part of the NL area the coverage is already much higher than the requirement. EMSA also took the opportunity to remind users that the Agency is available to further discuss coverage requirements and advised that Member States can contact the CleanSeaNet team directly to discuss adjustments.

# 5. CleanSeaNet coverage requirements update

Presentation: EMSA (Ricardo Vicente)

Ricardo Vicente, Project Officer for Earth Observation services, delivered a presentation dedicated to the follow-up action point 4: Coverage requirements update from the previous user group meeting.

EMSA presented the most recent results on the MS areas of interest (with the coverage requirements updated) and a density map of the satellite acquisitions, which provided an overview of how CleanSeaNet is covering users' requirements. Currently, on average, the service performs 340 acquisitions per month. The Agency also noted the new planning approach, which includes the allocation on behalf of the MS.

Feedback on this action point was received from six MS, namely France, Germany, the Netherlands, Sweden, Denmark and Greece, whose coverage requirements were updated according to the users' needs. Overall, the results of this update are positive, and users are satisfied.

France:

a)  La Reunion

EMSA took actions to improve the coverage in La Réunion area as requested by the CSN user. This improvement was made available in the CSN planning from July 2018 onwards.

b)  Antilles and Guyana

This region of the world is not covered by CSN NRT deliveries due to the distance to the ground stations that are used by CSN. The CSN user mentioned that the delivery time of the acquisitions in this region was high (circa 2 hours). EMSA explained that had recently exploited alternative ground stations and took immediate action to decrease the delivery times. From July 2018 onwards, the morning acquisitions will be delivered in NRT + 90 min and the afternoon ones in NRT + 20 min. EMSA also informed the users that an improvement will be probably achieved with the operational use of the European Data Relay System (EDRS) in the next contracts. EDRS is a laser link connection between satellites which enhances, up to NRT, the delivery times of acquisitions outside of the ground stations coverage. EMSA expects this technology to be operational in 2019. This improvement will be useful especially to French Guyana.

c)  Mainland France

The CSN user mentioned that it would make more sense, from the operational perspective of the French authority, to have CSN acquisitions during the morning and less or none during the afternoon in the French mainland, which includes the Channel and North Sea, Atlantic and Mediterranean Ecological Protection Zone (EPZ). EMSA highlighted that in this region there are other adjacent MS whose waters are contiguous, thus any change in the CSN planning would have to be discussed with the interested parties. It was noted that the current planning (July 2018) delivers more coverage than the requirements for the three sub-areas.

The Netherlands:

The CSN user was interested in balancing the delivery of acquisitions in the area of interest through an increase in the southern part. EMSA mentioned that the past planning was very dependent on Radarsat-2, which provided less coverage closer to the coast. EMSA highlighted that the current planning (June 2018), mainly using Sentinel-1 A/B with extended swaths, covers the identified needs. EMSA also mentioned that the user's coverage requirements are being entirely fulfilled.

Germany:

The CSN user was interested in balancing the delivery of acquisitions in the area of interest through an increase in the western part. EMSA mentioned that the past planning was very dependent on Radarsat-2, which provided less coverage closer to the coast. As is the case with the Netherlands, EMSA highlighted that the current planning, mainly using Sentinel-1 A/B with extended swaths, covers the identified needs. EMSA also mentioned that the coverage requirements are being fulfilled and that the requested adjustments have been implemented from July 2018 onwards.

Sweden:

The CSN user expressed satisfaction with the available images for the area of interest and mentioned that there were still some images over land. EMSA explained that the Agency has incorporated this assessment in the CSN planning activity and that some of the acquisitions could not be changed because the footprints are fixed. Nevertheless, if a change in the planning in the HELCOM region is needed, it should be discussed in the scope of the IWGAS.

The presentation was followed by several interventions from the participants regarding the update of the user requirements:

- FR took the floor to acknowledge the current number of images delivered, and that the acquisition of images during the morning is preferable.

- ES raised the issue that any changes to the FR planning that impact Spanish requirements need to be discussed. EMSA assured the participants that any changes made to the planning that could impact other coastal states will be discussed with the affected MS.

- DE requested the provision of density maps of acquisitions at the end of each year, as part of the statistics for coastal states, in order to support the assessment the service delivery and coverage requirements evaluation and update.

    - EMSA clarified that for planned imagery this is already the case (at European level), and was already presented in this user group, during the coverage requirements presentation.

    - Statistics on the delivered images, as well as density of verified spills, will be only available with further EODC ORCHESTRA developments (in production at the end of 2019). The MS are welcome to provide further suggestions in terms of calculations for statistics.

- UK also took the opportunity to ask how the satellite coverage requirements are defined, particularly with concerns the maximum number of images possible. EMSA took this opportunity to inform the users about the variables that are connected with the establishment and fulfilment of coverage requirements:

    - Ability of the Member States to verify the CleanSeaNet detection. Since the start of the service, the rationale behind the coverage requirements is the ability, in terms of validation resources, by the Member States, to use and verify in an operational context the CleanSeaNet detections.

    - Coverage requirements are also affected by the availability of satellites in the different areas of interest (in some areas the availability of satellite passes is not very high and thus may limit EMSA's to fulfil the requirements ). Moreover, in some areas EMSA is competing for the satellite time with other users, which may originate conflicts.

    - Provision of an harmonize service, according to the different coverage requirements, to all coastal States.

    - Availability of budget.

Finally EMSA recapped the coverage requirements updating procedure:

1. Area(s) of interest submitted via shapefile (polygon in WGS84)

2. Clearly state the number of acquisitions per area per month

3. Include other restrictions/requirements in the comments section of the shapefile.

# 6. CleanSeaNet in SEG graphical user interface

## 6.1 CleanSeaNet Transition to SEG

Presentation: EMSA (Sónia Antunes)

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

At this stage, Release 1.6 is about to enter into production (expected within a couple of days), and all CSN users will have access to it in parallel to the current interface (the GISViewer). This version still does not include the feedback mechanism. The Agency noted that the transition to the new interface will only happen when the improved feedback form is fully operational and this is expected to take place in Release 1.7. Release 1.7 should be in production by end August, on time for the CSN training in September. EMSA also highlighted that on 30 September the GIS Viewer will be cut-off from the system and full transition to the SEG will be complete. Until 30 September, feedback should be provided exclusively via the GIS Viewer.

EMSA took the opportunity to request the users to report any bugs or issues found in SEG by addressing an email to MaritimeSupportServices@emsa.europa.eu with cleanseanet@emsa.europa.eu in copy. The email subject should include the tag 'SEG' in the beginning of the title, and in the body of the email the user should provide the following information:

- User account,

- Detailed description of the issue identified,

- If possible, screenshots of the issue reported.

DE asked about the procedure to create new users for CSN. EMSA informed that at this stage, after creating a new user, EMSA has to be informed by email (addressed to the MSS) of the UserID (username to the EMSA portal), as a manual migration step is required. From October-November onwards, with the upcoming Identity Management System (IdM v2), any new users will have automatic access to SEG.

The presentation was followed by a brief discussion on the new functionalities to come in future SEG releases. These included the upload of shapefiles, export of kmls and display of MS specific layers (like Sensitive Areas).

IT asked whether the mobile app will continue to evolve alongside SEG, as there isn't a feedback form available. EMSA stated that if it is in the interest of the CleanSeaNet user community, this feature in the app can be requested, and noted this as a follow-up action point.

NL reported that it is no longer possible to upload files and pictures in the app. EMSA explained that there was an issue with integration of information from the IMS mobile app that caused the temporary removal of the functionality. The Agency took this as a follow-up action and will assess the status of this issue and report to the users as soon as possible.

## 6.2 CleanSeaNet Training in SEG: Review of past CSN training and upcoming CSN training in SEG

Presentation: EMSA (Sónia Antunes)

EMSA presented the outcome of the Train-the-Trainer sessions delivered at EMSA, which comprised four sessions of 1.5 days. The training took place on 19-21 and 26-28 September 2017 and was attended by 56 participants from 31 countries. A further training of 2 days was delivered at the request of the Portuguese Navy, and a brief report was given. This session took place on 25-26 October 2017, at the Portuguese Navy premises, and was attended by 13 Navy staff.

An outlook of the training activities scheduled for 2018 was presented to the participants.

The next CleanSeaNet training will be delivered on the SEG version 1.7 interface. The feedback mechanism, which will be available in the next version, will be an important part of the training. Each training session will be 1.5 days, and open to a maximum of 14 participants. Each coastal State will be able to send two participants in total. The training dates scheduled in 2017 are:

- September 4 (all day) and 5 (morning)
- September 6 (all day) and 7 (morning)
- September 11 (all day) and 12 (morning)
- September 13 (all day) and 14 (morning)

Updated training material will be made available in advance.

EMSA also informed the users that from October onwards, CleanSeaNet webinars will be offered on a regular basis. These will be tailored online short training sessions, free to register, and with a maximum capacity of three computers connected to EMSA. In the future, the Agency will change the technology used to deliver webinars to allow an increase in the number of computers connected to EMSA.

UK suggested the organisation of an Advanced User training session focusing on the Alerting and User Management components. EMSA clarified that the Alerting and User management components will be upgraded as part of the EODC ORCHESTRA and IdM v2 projects, so at this stage a training would not be efficient as next year these new interfaces will be deployed in production. Moreover, the focus for this year is the transition to the SEG interface. As soon as the abovementioned components are in production (in 2019) then advanced trainings can be organised.

Upon DE's intervention, EMSA also reminded the group that in SEG release 1.6 users will be able to perform manual queries for services using the alert area as a geographical criteria, and it is envisaged that in release 1.8 this assessment will be automatized.

NL took the floor to ask from a budgetary perspective how sustainable CleanSeaNet is, and what is the long term perspective for the service. The Agency informed participants that the CleanSeaNet budget is part of the Agency's Anti-Pollution Measures (APM) budget, which is currently defined until the end of 2020, with a budget similar to that allocated in past years. Moreover, there is already a Commission proposal for the next Multi Annual Financial Framework (MFF), for the period 2021-2027 where there is no indication at this stage of substantial changes to the CleanSeaNet funding.

# 7. Copernicus services: overview on Copernicus Maritime Surveillance service

Presentation: EMSA (Ricardo Vicente)

EMSA presented an overview of the Copernicus Maritime Surveillance service (CMS). The presentation comprised a brief introduction to Copernicus programme and examples of the activity areas within the scope of the CMS. The CMS Product Catalogue, distributed during the meeting, is a good source of information in case potential users require more information on the service and also how can the service be accessed. EMSA is available to answer any questions concerning the CMS through the contact: copernicus@emsa.europa.eu.

ES took the opportunity to mention the work developed by Spanish Universities using Sentinel-2 public data, through which pollution was detected in European waters. ES also asked why this information has not reached users. EMSA explained that any analysis product stemming from the systematic use of Sentinel-2 data originating from the ESA Copernicus hub has significant limitations in terms of operational use, including:

- Timeliness (availability in the hub after several hours)
- Service level (no formal commitment to a high delivery rate of images)
- Sentinel 2 high level operational plan focused on land and coastal waters (not high seas)
- Medium resolution optical images suffer significant limitations in terms of weather (dependent on cloud cover) and daytime acquisitions (mostly morning passes and limited to daylight conditions).

EMSA mentioned that, although in the future there may be some potential in terms of using Sentinel-2 images as an ancillary dataset, the core of the CleanSeaNet service should remain a quasi-real time, high quality radar based service, in order to fulfil the core requirements of its users.

# 8. Earth Observation services evolution: Earth Observation Data Centre (EODC) and ORCHESTRA

Presentation: EMSA (Pedro Lourenço)

The presentation covered recent and upcoming developments related to the three evolution pillars of EMSA's EO services for the upcoming 2018/19 years:

- EODC Processing: Improved performance and reliability of the EODC

- EODC ORCHESTRA: Improved functionalities, additional statistics and enhanced alert and notification system

- New EO Services contract: new EO products, delivered faster and with higher quality

EMSA highlighted that these new systems will provide more efficiency and better service delivery, improving the overall quality of CleanSeaNet service.

DK requested clarifications regarding if the transition to the ORCHESTRA would imply changes to the system-to-system connections that currently connect the SeaTrackWeb model to the EODC and that enable the distribution of CSN oil spill detections. EMSA clarified that the ORCHESTRA does not have impact in these types of interfaces. In the future the EODC will evolve to use authorized services (services that require a username and password to be accessed) but this will be communicated to the end users in due time, so that the necessary adjustments are made.

# 9. Any other business

1. Fionn Molloy, Deputy Head of Unit of Unit C.3.2 Maritime Surveillance, took the floor to present the '30 Days at Sea' Campaign, focused on environmental crime and marine pollution (e.g. oil spill, marine litter, animal life trafficking, etc.). This will be an operation hosted by Europol in October 2018. EMSA was present at the briefing of the operation where MS coast guard and law enforcement authorities were also represented. During this meeting, the need for communication between the law enforcement authorities and the CSN NCAs at a national level was reinforced. To initiate this cooperation, EMSA asked the user group participants if contact details could be shared with Europol for further anti-environmental crime measures. Sharing will only be done with other national administrations of the same Member State. The participants did not express any objections to this distribution at national level.

2. EMSA suggested the organisation of the User Group earlier in the year, between March and April. This would avoid overlap the meetings of other EMSA services, such as SafeSeaNet, Integrated Maritime Services and Long-Range Identification and Tracking system (LRIT) and would enable the sharing of statistics earlier in the year. DE reminded EMSA about the IWGAS meeting usually held during this time of the year, and mentioned the importance of ensuring no conflict between these two events.

# 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 17<sup>th</sup> CleanSeaNet User Group

Annex 2 – Meeting Agenda

Annex 3 – Attendance List

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## Annex 1 – List of follow-up actions resulting from the 17ᵗʰ CleanSeaNet User Group

| Action Point | Topic and Action | Resp. | Status | Comments |
|---|---|---|---|---|
| 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 | Member States | Open | Users are invited to provide feedback on follow-up activities and top-up imagery requests. MS are also asked to provide more detailed information when fulfilling the feedback forms. |
| 2 | SEG interface transition into operation | Member States | Open | Users are welcome to provide feedback in the first months using the latest release and after full transition into SEG to detect bugs and malfunctions, as well as to provide suggestions on how to improve the experience. |
| 3 | SEG Feedback form: update the list of the detection verification assets used by MS to include as verification assets:<br>- 'In-situ / oil platform'<br>- 'RPAS' | EMSA | Open | n/a |
| 4 | SEG Feedback form: Additional options for feedback form | Member States | Open | Users are welcome to provide further suggestions to complement the list of options in the feedback form.<br>EMSA will implement an update of the verification assets list, after general agreement among users. |
| 5 | CleanSeaNet service statistics. The group expressed interest in receiving the following statistics:<br>a) Density maps of planned images<br>b) Density maps of delivered images<br>c) Density maps of planned versus delivery acquisitions<br>d) Verification results versus the time of the observation<br>e) Verification results versus morning or evening passes | EMSA | Open | 5 a) Already produced for this user group<br>5 b) EODC ORCHESTRA: to be implemented in 2019 (and available for 2020)<br>5 c) EODC ORCHESTRA: to be implemented in 2019 (and available for 2020)<br>5 d) Available from S1 2019<br>5 e) Available from S1 2019 |
| 5 | ORCHESTRA Project: Statistics | Member States | Open | Users are welcome to provide further suggestions in terms of calculations for statistics. |
| 6 | Mobile app evolution: Feedback form option | Member States | Open | Following IT request to include the CSN feedback form in the mobile app, it is requested from other users to express interest in the functionality. This feature will be developed if it is in the interest of the CleanSeaNet community. |

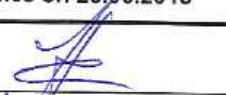| Action Point | Topic and Action | Resp. | Status | Comments |
|---|---|---|---|---|
| | | EMSA | Open | EMSA will assess the possibility of integrating a feedback form in the mobile app, if supported by Member States. |
| 7 | Mobile app maintenance: integration of information It is no longer possible to upload files and pictures in the app, due to an integration of information issue that led to the temporary disablement of this functionality. | EMSA | Open | The Agency will assess the status of this issue and report to the users as soon as possible. |
| 8 | Spills detection: difficulties to distinguish between several spills and slicks were reported by the UK | EMSA and Member States | Open | - EMSA will discuss this issue with the operators in order to improve the detection and differentiation of spills and slicks. <br> - EMSA requests that as soon as these situations are identified by the users they are immediately reported towards improving the quality of the detections. <br> - In case of complex, non-linear spills, this type of issue is difficult to avoid. |
| 9 | 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 projects, so at this stage a training would not be efficient as next year these new interfaces will be deployed in production. Moreover the focus for this year is the transition to the SEG interface. As soon as the abovementioned components are in production (in 2019) then advanced trainings can be organized. |
| 10 | '30 Days at Sea' Campaign against environmental crime and marine pollution (October 2018). Sharing at national level, with law enforcement authorities, contact details of CSN user group members. | EMSA and Member States | Open | There were no issues raised during the User Group regarding EMSA sharing, with respective national law enforcement authorities, the contact details of CSN user group Members in the scope of the '30 Days at Sea' Campaign against environmental crime and marine pollution (October 2018). |
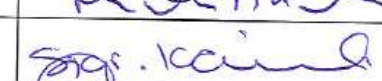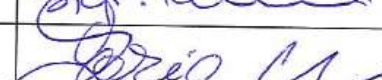
## Annex 2 – Meeting Agenda

## Lisbon, EMSA Meeting Room -1.11, 28 June 2018

| Thursday, 28 June 2018 | | |
| --- | --- | --- |
| **Time** | **Agenda Item** | **Speaker** |
| **09.00** – 09:30 | Registration | |
| **09:30** – 10:00 | Opening/Introduction<br>■  CSN 17.1.1 Approval of agenda and list of documents<br>■  CSN 17.1.2 Status of follow-up actions of 16<sup>th</sup> CSN UG | Leendert Bal<br>Pedro Lourenço<br>(EMSA) |
| **10:00** – 10:30 | CleanSeaNet regular service overview<br>■  CSN 17.2.1 CSN Service results and performance<br>■  CSN 17.2.2 CSN Service results and performance - Evolution | Sandra Sá<br>(EMSA) |
| **10:30** – 11:00 | CleanSeaNet support to operations, exercises, emergencies, and projects<br>■  CSN 17.3.1 Support to operation, exercises and emergencies<br>■  CSN 17.3.2 Support to projects | Sónia Antunes (EMSA) |
| *11:00* – *11:30* | *Coffee break* | |
| **11:30** – 12:30 | Presentations from Coastal States<br>■  CSN 17.4.1 (**FR**) "Shipwrecks: SAR image to monitor fuel leakage"<br>■  CSN 17.4.2 (**UK**) "UK experience of CleanSeaNet"<br>■  CSN 17.4.3 (**DK**) "Presentation from Defence Command Denmark"<br>■  CSN 17.4.4 (**NL**) "Influence of the use of satellite images (CleanSeaNet service) on the number of flying hours required within the Netherlands regarding 2021-2031" | FR: Melaine Loarer<br>UK: Neil Chapman<br>DK : Dennis Riegels<br>NL: Michiel Visser |
| *12:30* – *14:00* | *Lunch break* | |
| **14:00 - 14:30** | CleanSeaNet coverage requirements<br>■  CSN 17.5.1 CleanSeaNet coverage requirements updates and way forward | Ricardo Vicente (EMSA) |
| **14:30** – 14:45 | EO Services evolution<br>■  CSN 17.6.1 Report on new services tender and EODC ORCHESTRA | Pedro Lourenço (EMSA) |
| **14:45** – 15:15 | Overview Copernicus services<br>■  CSN 17.7.1 Description of CMS services and presentation of examples | Ricardo Vicente (EMSA) |
| *15:15* – *15:45* | *Coffee break* | |
| **15:45** – 16:45 | CleanSeaNet in SEG<br>■  CSN 17.8.1 CSN Transition to SEG<br>■  CSN 17.8.2 CSN Training in SEG | Sónia Antunes (EMSA) |
| **16:45** – 17:00 | AOB and meeting closure | EMSA |

## Annex 3 – Attendance List

| Country | First Name | Last Name | Organisation | E-mail | Attendance on 28.06.2018 |
|---------|-----------|-----------|--------------|--------|--------------------------|
| Albania | Tomor | Harizi | General Maritime Directorate | tomor.harizi@dpdetare.gov.al | |
| Belgium | Guido | Fidlers | Federal Public Service Health, Food Chain Safety and Environment | guido.fidlers@milieu.belgie.be | |
| Bulgaria | Veneta | Georgieva | Executive Agency Maritime Administration | veneta.georgieva@marad.bg | |
| Bulgaria | Irina | Tasheva | Executive Agency Maritime Administration | Irina.Tasheva@marad.bg | |
| Cyprus | Stelios | Kyriacou | Shipping Deputy Ministry to the President | skyriacou@dms.gov.cy | |
| Denmark | Dennis | Riegels | Defence Command Denmark | VFK-M-MSP332@mil.dk | |
| Denmark | Rasmus Burin Høgh | Kimer | Defence Command Denmark, Arctic Command | VFK-A-JOC114@mil.dk | |
| Estonia | Annika | Malva | Police and Border Guard Board | annika.malva@politsei.ee | |
| Finland | Pekka | Parkkali | Finnish Border Guard | pekka.parkkali@raja.fi | |
| Finland | Markus | Santasalo | Finnish Environment Institute | markus.santasalo@ymparisto.fi | |
| France | Melaine | Loarer | Direction des affaires maritimes | melaine.loarer@developpement-durable.gouv.fr | |
| Germany | Dirk | Reichenbach | Havariekommando (CCME) | DReichenbach@havariekommando.de | |
| Iceland | Sigridur | Kristinsdottir | Environment Agency of Iceland | sigridur.kristinsdottir@ust.is | |
| Italy | Dario | Cau | Italian Coast Guard | dario.cau@mit.gov.it | |
| Italy | Marco | Musmeci | Italian Coast Guard | MARCO.MUSMECI@MIT.GOV.IT | |

| Country | First Name | Last Name | Organisation | E-mail | Attendance on 28.06.2018 |
|---|---|---|---|---|---|
| Italy | Saverio | Coco | Italian Coast Guard | saverio.coco@mit.gov.it | |
| Latvia | Ojars | Gerke | Latvian Coast Guard | ojars.gerke@mrcc.lv | |
| Malta | Mevric | Zammit | Authority for Transport in Malta | mevric.zammit@transport.gov.mt | |
| Malta | Shaun | Ciantar | Armed forces of Malta | shaun.ciantar@gov.mt | |
| Montenegro | Milorad | Krgovic | Maritime Safety Department | miloradkrgovic@t-com.me | |
| Poland | Jaroslaw | Bomba | Maritime Office in Gdynia | jaroslaw.bomba@umgdy.gov.pl | |
| Romania | Dumitru | Bucuresteanu | Romanian Naval Authority | dbucuresteanu@rna.ro | |
| Slovenia | Primož | Bajec | Slovenian Maritime Administration | primoz.bajec1@gov.si | |
| Slovenia | Boris | Laganis | Slovenian Maritime Administration | boris.laganis@gov.si | |
| Spain | Berta | Blanco Meruelo | Sasemar | bertabm@sasemar.es | |
| Spain | Evangelina | Díaz Delgado | Sasemar | mevangelinadd@sasemar.es | |
| Sweden | Anders | Litzén | Swedish Coast Guard | anders.litzen@kustbevakningen.se | |
| The Netherlands | Jack | Hagen | Rijkswaterstaat | jack.hagen@rws.nl | |
| The Netherlands | Michiel | Visser | Rijkswaterstaat Zee & Delta | michiel.visser@rws.nl | |
| Turkey | Ömer | Doğruer | Ministry of Transportation Maritime and Communications | omerdogruer@hotmail.com | |
| United Kingdom | Neil | Chapman | Maritime & Coastguard Agency | neil.chapman@mcga.gov.uk | |

| Country | First Name | Last Name | Organisation | E-mail | Attendance on 28.06.2018 |
|---------|-----------|-----------|--------------|--------|--------------------------|
| Norway | Kjersti | Dale | Costal Administration | kjersti.dale@kystverket.no | *Kjersti Dale* |
|  |  |  |  |  |  |

| EMSA Staff | | |
|---|---|---|
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