Workshop Report

18th Mediterranean AIS Expert Working Group
Video conference
10 December 2021

Date: 10 January 2022

EMSA

Introduction

EMSA, as the MAREΣ EWG coordinator, in cooperation with the Italian Coast Guard, as the MAREΣ hosting authority, organised the 18th Mediterranean AIS Expert Working Group (EWG) meeting in accordance with the provisional agenda attached as **Annex 1**. Due the COVID-19 outbreak the meeting was held remotely, via *MS Teams* application. The meeting documents were published prior to the meeting via the EMSA website at: http://www.emsa.europa.eu/workshops-a-events/workshop-materials-reports.html

The meeting was attended by representatives of **Bulgaria**, **Croatia**, **France**, **Greece**, **Italy**, **Malta, Portugal, Romania,** and **Slovenia** (as MAREΣ Members States). Representatives of **Albania** and **Montenegro** attended the meeting as observers. Representatives of **Jordan**, **Morocco** and **Tunisia** attended the meeting as beneficiaries in the SAFEMED project and **Georgia** and **Ukraine** as beneficiaries in the Black and Caspian Sea Regions project (BCSEA). Representatives of **Norway** (the country hosting the HELCOM and North Sea/ Atlantic regional AIS servers) attended the meeting as observers. Representatives of **Bosnia and Herzegovina** attended the meeting because of their participation in the ENI and IPA II projects. The list of the participating countries and authorities is attached as **Annex 2**.

The video meeting was chaired by EMSA.

Objectives

The meeting objectives were as follow:

- Present the general activities and the progress achieved by MAREΣ and other regional AIS servers.
- Update the group on the status of national AIS networks.
- Update the group on the status of the MAREΣ AIS data exchange project since the last meeting.
- Discuss technical issues related to the AIS data exchange.

Meeting Programme

I.   Agenda Item 1: Opening and approval of the agenda

Mr **Lazaros Aichmalotidis** welcomed the participants and presented the meeting objectives and the agenda. Rear Admiral **Giuseppe Aulicino**, Head of Office Plans of the Operational Department of the Italian Coast Guard Headquarters and MAREΣ RS Coordinator, welcomed the group and remarked the significant level of cooperation achieved in the MAREΣ region. **Bosnia and Herzegovina** thanked for invitation to participate in the meeting.

EMSA introduced the remote meeting conducting rules. The Group **approved** the proposed agenda.

II.   Agenda Item 2: Wrap up of previous meeting.

EMSA noted that draft report of the 17th AIS EWG meeting was provided to the participants, asking for comments on 20 November 2020. Proposals for minor corrections were received and encompassed in the report. On 30 November 2020, the final version was published on the EMSA web site at: http://emsa.europa.eu/workshops-a-events/188-workshops.html. According to the procedure agreed at the MAREΣ 17th EWG (MAREΣ 17/2/1) the report of MAREΣ 17th EWG was considered as approved on 1 December 2020.

III.   Agenda Item 3: Follow – up actions of the previous meeting

EMSA presented the status of actions agreed at the previous meeting. The EWG **noted** the information provided and **agreed** the status of action points AP1; AP6; AP7; AP8; AP10; AP13; AP14 as

"completed/closed", the status of action points AP2; AP3; AP4; AP9 as "open", and the status of AP5; AP11; AP12 – as "ongoing".

Regarding the AP2 (data down sampling rate), EMSA will continue assessing the possible impacts of changing the down sampling rate for all T-AIS connections (i.e. from 6 min. to 1 min), considering the amount of data delivered by the new data provider, and will inform the EWG at the next meeting (**Action point 1**). Regarding the AP3, Slovenia was asked to reply by end- February 2022, providing updates to the meeting document ΜΑΡΕΣ 18/4/1 (**Action point 2**). Regarding the AP4, Slovenia, Portugal, Spain, Jordan and Morocco were reminded to reply to the ICG (ΜΑΡΕΣ) questionnaire, by end-February 2022 (**Action point 3**). Regarding the AP5, the group agreed EMSA to contact the ΜΑΡΕΣ participating States (during spring 2022) to approve/correct the information collected for the EU AIS operational manual (**Action point 4**). Regarding the AP6, EMSA informed about changes in the status of Jordan. The connection was re-established on 09.12.2021, and the status of action point in document ΜΑΡΕΣ 18/3/1 will be changed to "completed". Regarding the AP11 (participation of Tunisia in the 2nd phase of pilot project) and AP12 (participation of Morocco in the 2nd phase of pilot project), the execution of action points will be coordinated between EMSA, Tunisia and Morocco (**Action point 5**).

IV.   Agenda item 4: Status of AIS at the ΜΑΡΕΣ Member States

EMSA invited the ΜΑΡΕΣ Member States to present the status of their AIS national networks. The status information which was collected during the EWG meetings and from the questionnaires was summarized in document ΜΑΡΕΣ 17/6/1 and made available to the participants prior to the meeting.

Bulgaria: No changes since the previous meeting. The current status is as described in the document 18/4/1.

Croatia: No changes since the previous meeting. The data downsampling is supported and the downsampling rate is configurable. The applied throughput rate is appr. 35 msg/sec for outgoing data, at the server's node. The data storing format is NMEA, and the installation of multiple NPRs is supported. Updates to the document ΜΑΡΕΣ 18/4/1 will be provided also by e-mail.

France: The major upgrading of AIS system is in progress. Currently, the assigned capacity for the buffered data storage is 2 weeks.

Greece: The project to upgrade AIS network was completed, and connection have been established with other entities in Greece. The coverage is considered as very good. Updates to the status information in document ΜΑΡΕΣ 18/4/1 will be provided by e-mail (if needed).

Italy: A new AIS BS was installed in Adriatic, and one BS was re-located. The number of BSs remains 64.

Malta: No changes since the last meeting. Upgrading of VTS system is planned. The data throughput rate which is mentioned in ΜΑΡΕΣ 18/4/1 relates to outgoing data at the server node.

Portugal: No changes to the AIS network since the last meeting. Preparations for installing a new VTS system in Azores and Madeira is ongoing, and it will impact also the AIS system. The current assigned capacity for the buffered data storage is 12 hours.

Romania: No changes since the previous meeting. The data throughput rate in ΜΑΡΕΣ 18/4/1 relates to outgoing data at the server node.

Slovenia: The network was upgraded in January 2021. New functionalities are available (DGPS and AtoN). BSs are able to receive all messages (1-27) and also transmit relevant messages. The data throughput rate (for outgoing data, at the server node) is appr. 20 msg/sec. The downsampling is not supported. The buffered data storage capacity is 6 hours. All BSs are monitored from the central node, and the back-up server is available. Updates to the status information in document ΜΑΡΕΣ 18/4/1 will be provided also by e-mail

EMSA thanked MSs for the status information and **reminded** participants to provide updates to the status summary in ΜΑΡΕΣ 18/4/1 document by e-mail (by the end of February 2022) (**Action point 6**).

V.   Agenda item 5: Status of AIS at the MAREΣ Participants States and Observers States

EMSA **invited** the MAREΣ Participants States and Observers States to present the status of their AIS national networks. The status information which was collected during the EWG meetings and from replies to the questionnaires was summarised in document MAREΣ 18/5/1 and made available prior to the meeting.

Albania: Plans to start preparation for establishing AIS network in 2022.

Bosnia-Herzegovina: EMSA, on behalf of Bosnia-Herzegovina, introduced the planned activities.

Georgia: Two AIS BSs are already installed and operational, providing a good coverage. The data storage capacity is 16 days. Since participating in phase-2 of pilot project, Georgia can monitor AIS data from MAREΣ MSs and Ukraine in the MAREΣ Pelagus system. The status in the MAREΣ 18/7/1 document will be updated by e-mail. Georgia is also prepared to participate in the data retransmission testing with MAREΣ.

Jordan: Some technical difficulties were encountered during the previous period. Nothing to report regarding the status since the system was just re-connected. The available information to the status document MAREΣ 18/5/1 will be provided by e-mail. **Jordan** thanked the ICT personnel of ICG for their assistance. **EMSA** informed Jordan that the performance and stability of their network will be monitored by EMSA and MAREΣ (**Action point 7**).

Montenegro: Due to the connection problems, Montenegro had some difficulties to present their status to the meeting. Montenegro was asked to provide updated to the status document MAREΣ 18/5/1 by e-mail (by the end of February 2022).

Morocco: The AIS network consists of the same number (14) of shore-based stations. The applied data throughput rate is 2-4 msg/sec. Morocco is interested in the cooperation and participation in the 2nd phase of pilot project. A formal communication to EMSA is prepared and waiting for approval by competent authorities.

Tunisia: Updates to the status document MAREΣ 18/5/1 will be provided by e-mail. The data are stored for 3 months. During the previous period, some problems with data reception was observed. **Italy** informed that data from Sardinia channel is provided to Tunisia. **EMSA** proposed to conduct a meeting with Tunisia and Italy to discuss the issue (**Action point 8**).

EMSA reminded Tunisia to communicate their position regarding their participation in the 2nd phase of pilot project. **Tunisia** replied that it is interested in participating in phase-2 of pilot project. The future steps will be discussed at the planned meeting.

Ukraine: Implementation of 3 new BSs (2 in Black Sea and 1 in Azov) is completed, allowing to extend the coverage. Installation of additional 3 BSs is planned. The existing network can receive all AIS messages (1-27) and transmit all relevant messages. The data filtering capability is supported and could be applied in accordance with necessary criteria (for instance: MMSI, areas, ship type, ship flag etc.). The assigned space for the buffered data storing (i.e., the NPR hosting environment) is set to 12 hours. The data throughput rate from the central server is around 23 msg/sec. The data buffering capability is provided by NPR. The 24/7 technical support is available.

EMSA reminded the Participants and Observers States to provide updates to the status summary document MAREΣ 18/5/1 by e-mail, by the end of February 2022 (**Action point 9**).

VI.   Agenda Item 6: MAREΣ network activity and monitoring

Italy, as the MAREΣ RS hosting country, presented the MAREΣ general activities since the last EWG meeting.

During the reporting period, ΜΑΡΕΣ has been providing the central SafeSeaNet with AIS data gathered from the networks of ΜΑΡΕΣ Member States and also countries participating in the specific regional projects (SAFEMED IV, BCSEA etc.).

The highest number of vessels was detected during the summer period, when the traffic density increases due to the duct effect and also the high number of pleasure crafts. The amount of monitored vessels in the reference period was not fully coherent with the numbers of the previous reference period (attributed to the changes in maritime traffic caused by COVID-19), leading to an average decrease of approximately 15%.

According to the down-sampling policy established in the Service Level Agreement between Italy and EMSA (6 min.), the number of messages provided by ΜΑΡΕΣ to the SSN central System during the reference period was 1.770.597.038. The numbers of AIS messages delivered to ΜΑΡΕΣ by each of the participating Countries, the overall AIS information per month handled by ΜΑΡΕΣ, and the average number of AIS messages shared by ΜΑΡΕΣ per second were presented in document ΜΑΡΕΣ 18/6/1.

During the observation period, ΜΑΡΕΣ detected 148 network malfunctions requiring a human intervention to restore operations. The number of incidents was higher than detected during the previous period. The incidents were detected by the "core user monitoring" tool in the ΜΑΡΕΣ application. The average total elapsed time needed to restore the failures was about 135.3 h.

The agreed migration to the STAR Streaming Remote Hub interface (replacing the SSN SI application) was completed in ΜΑΡΕΣ RS for all, the pre-production, production, and backup environments. A solution for the ΜΑΡΕΣ stored (backlog) data retransmission through the STAR Streaming RH backlog solution was implemented and tested with EMSA. This solution is for retransmitting backlog data to the central SSN system following the RS or RH disconnection or malfunction.

The solutions for the AIS data (buffered or stored by the national AIS systems in case of the NPR or Regional Server malfunction) retransmission provided manually by Member States to the Regional AIS Server was introduced. The solution and actions taken are presented in the meeting document ΜΑΡΕΣ 18/9/1.

During the reference period, the ICG added to ΜΑΡΕΣ (for testing purposes), a new provider called "ITA_DATALINK". Currently the information acquired through Data Links are only visualized to the ΜΑΡΕΣ GIS and are not delivered to EMSA or other ΜΑΡΕΣ participant Countries in the AIS streams. The results of testing are presented in the meeting document ΜΑΡΕΣ 18/10/1.

The **EWG** noted the provided information. **EMSA** commented that the ΜΑΡΕΣ observed a decrease in the traffic density in region, due to the COVID-19 which is similar to the overall trend in Europe.

VII. Agenda Item 7: Status of the SAFEMED and BCSEA projects. Pilot project on T-AIS sharing in the ΜΑΡΕΣ region

EMSA introduced the planned evolvement of the projects, and briefly presented some topics that if agreed by COM could become part of the future activities, such as: trainings, sponsorship, Flag state quality management, administrative procedures, digitalisation of national registries, support in preparing national contingency plans and SAR plans etc. EMSA will follow a tailor-made approach and will be focusing on each individual country. A new phase of SAFEMED and BCSEA projects will start on 1st April. For its successful execution, a full cooperation from all the ΜΑΡΕΣ RS countries is expected.

EMSA presented the current status of the SAFEMED and BCSEA projects. Three countries (Jordan, Morocco, and Tunisia) within the SAFEMED project (Phase 1) and two countries (Georgia and Ukraine) within the BCSEA project (Phase 1) are sharing their T-AIS data.

The Conditions of Use for the participation of the SAFEMED and BCSEA Countries in ΜΑΡΕΣ in phase 2 was agreed in the 16th ΜΑΡΕΣ meeting. Phase-2 of the pilot project (sharing of AIS data between BCs and EU MSs) is already active, and Georgia and Ukraine participate. Jordan is not connected yet due to the technical malfunctioning of their system. Also, it is important to follow the principle of reciprocity.

A high number of incidents for some ENP countries was recorded during previous periods. Jordan was not

providing data in 2019 and 2020. Morocco was not providing data between 17 March and 8 November 2021.

Morocco informed that the mentioned disconnection was due to the technical reasons. To solve the issue, AIS servers have been re-located to a different location. Replying to **Tunisia** about the access account in phase 2, **EMSA** informed that the existing account will be configured or created a new account in SEG.

EMSA remarked that **Morocco** and **Tunisia** might be involved immediately to the 2nd phase, as these countries already participate in phase-1 of the pilot project.

The EWG **noted** the provided information.

VIII.   Agenda Item 8: Status of other regional AIS servers (HELCOM and NSATL)

Norway as the hosting country of the North Sea/Atlantic and the HELCOM regional AIS servers presented the structure of both servers and the recently implemented solutions. The RSs technical design is based on the virtual servers' system. A new back-up centre for AIS exchange was recently developed and all MSs will submit messages to both centres in parallel. Availability to connect both centres simultaneously to the EMSA's "RH-switch" solution will be tested in January 2022.

The database server creates daily files of all notifications collected. The historic AIS data are stored for 2 years, and database is accessible for the HELCOM/NSATL Member States to download their stored data. The status of NPRs, per each participating State, is presented at the NCA website, which is publicly available. **Norway** works on introducing a new functionality allowing the RSs participating countries to retransmit their stored/ buffered data to regional server, through the NPR applications. **Norway** also briefly presented the status of their Sat-AIS system.

The group **noted** the information provided.

IX.   Agenda Item 9: AIS data manual retransmission

EMSA, Italy and **Norway** agreed to define a solution allowing MSs to retransmit their data to RSs and agreed to draft a document describing solutions on the stored data retransmission. **Italy** presented the solution in MAREΣ for the AIS data (buffered or stored by the national AIS systems in case of the NPR or Regional Server malfunction) retransmission, provided manually by the RS participating countries to regional AIS server, and the planned steps of its implementation.

The MAREΣ solution is based on the data files transfer by MS and the data uploading by the ICG personnel. To resent the stored data manually to MAREΣ, the solution requires certain tasks to be performed by both, the RS administrator and the MSs NPR Administrator.

With this solution also it is important to ensure the MSs capabilities to retrieve data from their DBs and prepare it in the required format (NMEA), with an IEC TAG Block containing, at minimum, a timestamp in the 'c' parameter for every sentence, as described in the document MAREΣ 18/9/1. The MAREΣ solution has been presented also to the SSN group meeting (SSN/LRIT 9.4.4), and provided, as technical instruction, to the AIS PoCs in the MAREΣ participating countries.

EMSA informed that the presented solution is one of steps agreed and executed by EMSA, Italy and Norway to harmonise the RSs functionalities, and suggested **Italy** to start testing the proposed solution with volunteers MSs (**Action point 10**).

The group **noted** the information provided.

X.   Agenda item 10: Integration of AIS information acquired by the ICG patrol vessels

Italy presented the outcome of tests, conducted by ICG, on integration of the AIS information collected by the patrol vessels and delivered to the national AIS network through long-range connections.

To perform more effective management of own tasks, the ICG fitted some of its patrol vessels with a customized AIS Data Link system (AIS D-Link) allowing to perform the automatic transmission to the national AIS network of AIS data collected by the ship's transponder. The AIS D-Link also allows vessels to receive, using the same connections, any AIS information from the national AIS network. As a result, the solution allows to increase significantly their own maritime picture.

The on-board AIS Gateway has been configured in repeater mode to transmit, in addition to the AIS data of its own vessel, also those data received from other vessels on the same channels. Since March 2021, the ICG provides MAREΣ with AIS data collected and retransmitted by its 5 OPVs fitted with the AIS D-Link system. This information acquired through Data Links are only visualized to the MAREΣ GIS and is not delivered to EMSA or other MAREΣ participant Countries in the AIS streams.

Italy proposed other Member States to assess this solution and their capabilities to enrich AIS data with data acquired by their vessels. **France** asked **Italy** about the observed latency of datalink when using the tested solution. **Italy** replied that latency was around 2 seconds, which is typical to the satellite communications.

The group **noted** the information provided.

XI.   Agenda item 11: AIS data quality

EMSA presented the data quality issues assessed during the previous periods, focusing on the MMSI transmissions quality. The presented assessment was based on the MAREΣ monthly reports and evaluation of the MSs streamed datasets.

Considering what was agreed at the 17th MAREΣ EWG regarding the data quality issues (AP8), EMSA in coordination with Italy and Norway, worked to find out the best solution how to improve "fake" data detection and presentation, without polluting databases. The data filtering was one of options assessed. EMSA, Italy and Norway agreed that the principle of data integrity needs to be respected and the data will not be filtered by RSs or EMSA.

Instead, EMSA plans to develop a technical solution in the STAR Tracking and the linked systems, allowing to detect non-compliant particulars reported in T-AIS messages (e.g. MMSI numbers, IMO numbers etc.). All "doubtful" MMSIs should be specifically marked and presented in SEG, allowing users also to monitor the performance of ships in the areas of responsibility. The developments might take place during 2022.

The group **noted** the information provided.

XI.   Any Other Business

EMSA thanked the participants for their active participation. The participants were invited to check and update the lists of contact persons and technical representatives of the AIS EWG. The updates (if any) shall be sent to EMSA, by email (**Action point 11**).

Georgia informed that, if the COVID-19 conditions will permit, they still offering hosting the next EWG physical meeting in Batumi, Georgia.

EMSA will draft the meeting report and submit to the participants for their comments/inputs (**Action point 12).**

Annexes

Annex 1 –Agenda
Annex 2 – List of participants
Annex 3 – List of actions

Annex 1 –Agenda

Agenda: 18ᵗʰ Mediterranean AIS Expert Working Group meeting

Videoconference, 10 December 2021

Friday, 10 December 2021		
Time (UTC)	**Agenda Item**	**Speakers**
09:30 – 10:00	**Connecting to the meeting application**	All
10:00 – 10:05	**Agenda Item 1**: Opening the meeting and approval of agenda	EMSA
10:05 – 10:15	**Agenda Item 2**: Wrap up of previous meeting	EMSA
10:15 – 10:30	**Agenda Item 3**: Follow – up actions of the previous meeting	EMSA
10:30 – 11:00	**Agenda Item 4**: Status of AIS at the MAREΣ Member States	MAREΣ Member States
11:00 – 11:20	**Agenda Item 5**: Status of AIS at the MAREΣ Participants States and Observers States	MAREΣ Participant States / Observer States
11:20 – 11:40	**Agenda Item 6**: MAREΣ network activity and monitoring	Italy
11:40 – 12:00	**Agenda Item 7:** • Status of the SAFEMED and BCSEA projects. • Pilot project on T-AIS sharing in the MAREΣ region.	EMSA
12:00 – 13:00	Break	
13:00 – 13:20	**Agenda Item 8**: Status of other regional AIS servers (HELCOM and NSATL)	Norway
13:20 – 13:30	**Agenda Item 9**: AIS data manual retransmission	Italy
13:30 – 13:40	**Agenda item 10:** Integration of AIS information acquired by the ICG patrol vessels	Italy
13:40 – 13:50	**Agenda item 11**: AIS data quality	EMSA
13:50 – 14:00	**Any other business – Conclusions - Date/place of next meeting**	All
14:00	**End of meeting**	

Annex 2 – List of participants*

Nr	Country	Administrations represented
1	Albania	Ministry of Infrastructure and Energy
2	Bosnia and Herzegovina	Ministry of Communications and Transport
3	Bulgaria	Bulgarian Ports Infrastructure Company
4	Croatia	Ministry of the Sea Transport and Infrastructure
5	France	DAM / CEREMA
6	Georgia	LEPL Maritime Transport Agency
7	Greece	Hellenic Coast Guard
8	Italy	Italian Coast Guard Headquarters
9	Italy	ELMAN S.r.l.
10	Jordan	Maritime Authority of Jordan
11	Morocco	Merchant Marine Directorate
12	Montenegro	Administration for Maritime Safety and Port Management
13	Norway	Norwegian Coastal Administration
14	Portugal	DGRM
15	Romania	Romanian Naval Authority
16	Slovenia	Slovenian Maritime Administration
17	Tunisia	Ministry of Transport
18	Ukraine	State Enterprise "Maritime Search and Rescue Service"
19	EMSA	Unit 3.3
20	EMSA	Unit 1.3

*The list of participants is available at EMSA.

Annex 3 – List of actions

The agreed actions of the meeting are listed below:

Action point 1: EMSA to report to the 19th ΜΑΡΕΣ EWG the results of the assessment regarding changing of the down sampling rates (e.g. from 6 min to 1 min).

Action point 2: Slovenia to submit the remaining replies on AIS status, providing updates to the meeting document ΜΑΡΕΣ 18/4/1 (by end-February 2022).

Action point 3: Slovenia, Portugal, Spain, Jordan, and Morocco to provide their replies to the ICG questionnaire on the NPR hosting environment parameters (by end- February 2022).

Action point 4: EMSA to contact the ΜΑΡΕΣ participating countries to approve/correct the information collected for the EU AIS operational manual (by April 2022).

Action point 5: EMSA, Tunisia and Morocco to coordinate actions required for the participation in the 2nd phase of pilot project.

Action point 6: ΜΑΡΕΣ Member States to provide updates to the status summary document ΜΑΡΕΣ 18/4/1 by e-mail (by end- February 2022)

Action point 7: EMSA and Italy to monitor the performance of Jordan's connection towards ΜΑΡΕΣ (until the end of March 2022).

Action point 8: EMSA, Italy and Tunisia to conduct a technical meeting to discuss the issues observed (Dec.-February 2021)

Action point 9: ΜΑΡΕΣ Participants and Observers States to provide updates (if any) to the status summary document ΜΑΡΕΣ 18/5/1 by e-mail (by the end of February 2022)

Action point 10: Italy to test the data retransmission solution with volunteers MSs (before April 2022).

Action point 11: ΜΑΡΕΣ participating countries to provide the necessary updates to the lists of contacts for the AIS EWG (if any), by end-February 2022.

Action point 12: EMSA to draft the meeting report and submit to the participants for their comments/inputs.