Outcome of the 31st Meeting of the Expert Working Group for Mutual Exchange and Deliveries of AIS & Data (HELCOM AIS EWG 31-2020)

Introduction

0.1 In accordance with the decision by the 30th Meeting of the Expert Working Group for Mutual Exchange and Deliveries of AIS & Data (AIS EWG 30-2019, Paragraph 9.1), the 31st Meeting of HELCOM AIS EWG was held on 9-10 June 2020. The Meeting was originally planned to be held in Oslo, Norway, at the premises of the Norwegian Space Agency. Considering the recent developments on COVID-19, the Meeting was held online.

0.2 The Meeting was attended by representatives from Denmark, Estonia, Finland, Latvia, Poland, Russia, Sweden, Norway and the EU (EMSA). The list of participants is contained in **Annex 1**.

0.3 The Meeting was chaired by Mr. Alar Siht, Estonia, Chair of HELCOM AIS EWG.

0.4 Mr. Florent Nicolas, HELCOM Project Coordinator – Data Expert, acted as Secretary of the Meeting.

0.5 The Meeting agreed that the Meeting will be recorded if further information is needed to prepare the Meeting Outcome. The recording will be deleted once the Outcome has been published.

Agenda Item 1 Adoption of the Agenda

Documents: 1-1, 1-2

1.1 Following a round of introductions, the Meeting adopted the Agenda of the Meeting as contained in document 1-1.

Agenda Item 2 Matters arising from other HELCOM meetings

Documents: 2-1

2.1 The Meeting took note of the information on meetings and decisions within HELCOM (document 2-1).

2.2 The Meeting took note of the update of the HELCOM Baltic Sea Action Plan (BSAP) and that this process is now a priority for the HELCOM working groups.

2.3 The Meeting took note of the information that the update of the BSAP is based on the existing expertise in the HELCOM working structure according to the mandates of the working groups and is overseen by the Heads of Delegation (HOD).

2.4 The Meeting discussed the wording of the BSAP action "Further work with regard to the regional HELCOM AIS system operational since 2005 in order to increase safety of navigation and gain environmental benefits".

2.5 The Meeting noted that new technologies are emerging and that their addition in the BSAP action is relevant.

2.6 The Meeting agreed to propose the following revised wording for the BSAP action: "Further work with regard to the regional HELCOM AIS system and also new systems such as VDES and other digitalised e-navigation services in order to increase safety of navigation and gain environmental benefits".

2.7 The Meeting noted that if this wording needs to be changed for the BSAP update process, it can be discussed by correspondence with the members of the AIS EWG.

Agenda Item 3 Recent national developments of AIS

Document: 3-1

3.1 The Meeting took a round-the-table to share information on national developments relevant to HELCOM AIS (including AIS coverage, Monitoring of VDL loading, Application specific AIS messages and VHF Data Exchange (VDE), E-navigation, Exchange of AIS information):

- **Denmark:** Denmark has the same 18 base stations along the coastline covering the Danish waters. The plans for outsourcing AIS operations mentioned in the Outcome of AIS EWG 29-2018 has been completed. However, DMA is still responsible on behalf of Denmark for having a functional AIS system. DMA is the owner of the infrastructure and hardware, and this will likely not change.
  A new tender for the AIS system is planned, and this will include a requirement for VDES capability.
  There are plans to test S-124 messages promulgation using VDES in the future (probably 2022).
  DMA are engaged in both R-Mode and STM BaltSafe projects.
- **Estonia:** No significant developments have taken place since the last meeting AIS EWG 30-2019, the 13 base stations provided by Jotron Norway on the Estonian coast are still functioning since 2004. The IEC stream of AIS messages is provided to the HELCOM Regional Server in Norway and to SafeSeaNet.
  MRS notices, based on AIS information and ship reports to GOFREP, are being sent as XML-messages to EU SafeSeaNet.
  The Estonian theoretical AIS coverage is from 26 up to 39 Nautical Miles (using IALA formula), it depends on the height of base station antenna. No general measurements have been done around the coastal area.
  Estonia is not monitoring the VDL loading.
  Application specific AIS messages: the Estonian technology is using IFM messages and types of messages are the same as mentioned in the report of AIS EWG 30-2019:
    - for ships entering to Estonian part of GOFREP area, the IFM3 ("Capability interrogation) is sent out by Tallinn Traffic
    - according to replay IFM4 (Capability reply) from ship the following messages are sent out:
    - IFM16 (Number of Persons on board),
    - IFM24 (Extended ship static and voyage-related data)
    - IFM25 (Dangerous cargo indication).

  VHF Data Exchange (VDE) technology is not in use yet.
  For E-navigation, route planning and route exchange: EMA Tallinn Traffic is participating in STM BALT SAFE Project, financed by Interreg and Norway, a contract with SAAB has been signed in May 2020 and the implementation of STM functionality should be finalised at Q3 2021.
  The public AIS information (testing phase) is available online (**presentation 1**). The users are able to extract AIS data for specific area(s) (Estonia EEZ, SAR, Polygon) in different output format (CSV, XML, JSON).
  The public AIS information is web-based.
  There will be an update from AIS to VDES planned for 2021.

- **Finland:** The reliability of the national AIS network has been further enhanced by increasing areas with double coverage. To achieve this goal, some new base stations have been installed in coastal areas and also in the lake Saimaa area. Total number of Finnish base stations is now 55.
  The project to update the Hydro/Meteo ASM message format has been started. The transmission format will be gradually updated in all base stations in connection with other ongoing upgrades. During the tests, a portrayal problem has been identified. It seems that some vessel equipment are not capable of distinguishing and displaying reports from different sensor sites because the information is sent out using only one joint MMSI (MMSI of the base station).
  Some work has been done with developing historical AIS data analyse tools to support fairway planning and maintenance. The tools are implemented using general-purpose off-the-self data visualization software called Tableau (www.tableau.com).
  VTS Finland is also participating in the STM Efficient Flow and BaltSafe -projects in order to further test route exchange and other digital maritime services in the VTS.

- **Latvia:** No changes in the network since the last meeting of the AIS EWG.

- **Norway:** New base stations have been installed to increase the coverage, there is now a total of 77 base stations sites including one Green Field Station on Svalbard. For the AIS data, a back-up center is ready to get the data. Regarding VDL, there are no areas with intense shipping so no monitoring of VDL.
  The status on IMO e-navigation, followed by some examples and projects relevant for the HELCOM areas, and challenges related to the implementation of common digital solutions were presented (**presentation 2**).
  The Meeting took note of a project currently running in Norway to develop a new type of base station called "Green Field Station (GFS)". This type of base station aims to increase the coverage in the Arctic, especially in Svalbard (**presentation 3**).
  A test of a public data portal was launched, public users will be able to extract data as they wish (does not include fishing vessels under 15 meters and does not include recreational vessels under 45 meters. The messages 1,2,3 as well as 18 can be received from all vessels in the area of the coverage by a Norwegian AIS base station.

- **Poland:** No changes in the network since the last meeting of the AIS EWG.

- **Sweden**: Sweden has added a new base station on the west coast. This will enhance the visibility into one fjord where ships anchor as well as provide a general redundant AIS base station in Sweden´s most busy fairway.
  Sweden has now 42 base stations in total. The system is performing well and we have very satisfactory availability figures. Sweden does not store the VDL loading.

  Sweden is participating in the research project Efficient Flow which is a following up project from STM and Mona Lisa.

- **Russia**: Two new AIS base stations in Kaliningrad will join the AIS network next year when the licenses will be ready. The measurements and results of VDL loading are less than 20% in the eastern part of Gulf of Finland and near by 10% in Kaliningrad area. There is a currently a new national e-Navigation testbed for STM with 7 vessels involved logged in STM domain.

3.2 The Meeting took note of the information in the document 3-1 on a solution to ensure AIS data availability by restoration following the National Proxy (NPR) malfunction (**presentation 4**).

3.3 The Meeting took note that technical issues can produce a "data hole" that reduces the availability of data.

3.4 The Meeting discussed that if the Regional Server hosted by Norway has technical issues, a back-up can be restored by the administrator (Norwegian Coastal Administration).

3.5 The Meeting discussed that in May 2020, a technical issue appeared in the Regional Server and the data was made available at a later stage since it was still stored in NPR.

3.6 The Meeting welcomed the solution proposed by Norway in document 3-1.

3.7 The Meeting welcomed the offer from Norway to test a restore functionality on NPR. The Countries were invited to contact Mr. Harald Åsheim (harald.aasheim@kystverket.no) for more information.

3.8 The Meeting noted that Estonia would test the solution with Norway.

3.9 The Meeting took note of the presentation from EU (EMSA) on the Traffic Density Mapping (TDM) service developed in 2019 (**presentation 5**).

3.10 The Meeting took note that in addition to the existing maps, three new types of maps will be made available by EMSA.

- Comparative maps will compare two corresponding maps of the same type, area, ship type range but different time periods.
- Detailed maps will have a higher definition of grid cell than the current maps (200*200 m compared to the current 1*1 km).
- Vector maps will present ships routes (polylines) in the predefined areas.

3.11 The Meeting took note that detailed and vector maps will be constructed for specific areas of interests defined by the EU Member States and EMSA.

Agenda Item 4 Maintaining and further development of HELCOM AIS

4.1 The Meeting discussed of the information from Norway on the future opportunity for Baltic Sea Countries to retrieve their own national historical AIS data through the public data portal (cf. paragraph 3.1 of this Outcome). This portal will be password protected for responsible authorities of the Baltic Sea Countries.

4.2 The Meeting took note of the information from Norway (**presentation 6**) on the answers to the questionnaire to offer a better system to deliver regional AIS data stream.

4.3 The Meeting took note that some respondents will be contacted by Norway to explain more precisely their answers in case of unclarity.

4.4 The Meeting noted that based on the Outcome of AIS EWG 30-2019 (paragraph 4.12), the Contracting Parties were invited to send information to the HELCOM Secretariat on the current status of AIS data buffering at the national level and that a document would be compiled and submitted to this meeting. Unfortunately, only one answer was received.

4.5 The Meeting agreed that the request can be renewed. The Contracting Parties will send information to the HELCOM Secretariat (florent.nicolas@helcom.fi) on the current status of AIS data buffering at the national level as soon as possible but before the end of 2020. The HELCOM Secretariat will compile the information and submit a summary at the next HELCOM AIS EWG Meeting in 2021.

Agenda Item 5 Access to and use of HELCOM AIS information

Document: 5-1

5.1 The Meeting took note of the overview of requests to access and to use the HELCOM AIS data, received by the Secretariat during the period from April 2019 to June 2020 (document 5-1).

5.2 The Meeting took note of the information from Estonia that the request from the Tallinn University on 3 September 2019 was concluded. Since the data was covering the Estonian waters only, the requestee downloaded the data from the national AIS data portal.

5.3 The Meeting highlighted that the form for a standard agreement on access to and use of HELCOM AIS data (Appendix 3 of the HELCOM Recommendation 33/1) does not mention that the requestee is not allowed to share data with which it is possible to identify particular ships. The Meeting noted that this issue can be discussed during the next AIS EWG Meeting.

5.4 The Meeting took note of the information from the Secretariat (**presentation 7**) on sharing AIS data products in the future. The Secretariat would like to share in the future the polylines based on AIS data. The Meeting also noted that ship identification and information, such as the dimensions, might not be available in such data.

5.5 The Meeting discussed that sharing lines (polylines) can be difficult because of the heavy size of the files for large area such as the Baltic Sea Region.

Agenda Item 6 Cooperation with other organizations

6.1 The Meeting took note of the information from Finland (**presentation 8**) on VDES status at IALA, following the World Radio Conference 2019 and the IALA ENAV WG3: satellite component will now be included in VDES.

6.2 The Meeting took note that IALA ENAV WG3 began to draft a revision of ITU-R M.2092-0 with input from several countries including Denmark, Norway, Sweden and the United States.

6.3 The Meeting discussed the estimated time when certified VDES base stations could be expected to be available. While the revision of recommendation ITU-R M.2092 is still ongoing, it seems unlikely that there would be test standard and certified equipment available before the end of 2020.

Agenda Item 7 Any other business

7.1 The Meeting updated the lists of contact persons and technical representatives for the HELCOM AIS EWG as well as contact persons for the HELCOM AIS Agreement (document 7-1).

7.2 The Meeting took note of the information from the Secretariat that the update of the contact persons for the HELCOM AIS EWG is important since only these contacts will receive invitations and documents for future meetings.

7.3 The Meeting took note that these contact lists are not available on the HELCOM Meeting Portal but are available upon request to the Secretariat (florent.nicolas@helcom.fi).

7.4 The Meeting took note that the different lists will be sent to the Meeting participants while the update is complete after the Meeting.

7.5 The Meeting took note of the information from Finland on AIS analysis tool for fairway planning and maintenance purposes (**presentation 9**). The aim of these analyses is to ensure that the fairways are well maintained and ready to welcome the vessels that are commonly using these fairways. The results are displayed using the online solution called Tableau that can be easily customized for such purposes.

7.6 The Meeting took note of the information from the Chair that due to his retirement, Marek Dziewicki (Poland) will no longer attend the Meetings of the AIS EWG but if a meeting will be held in Tallinn, he will be kindly invited as a guest. The Meeting highlighted the nice cooperation with Mr. Dziewicki since the beginning of the AIS EWG in February 2002.

Agenda Item 8 Future work and meetings

8.1 The Meeting took note of the proposal from Estonia that physical meetings and online meetings can happen alternately.

8.2 The Meeting welcomed the offer by Norway to host the next meeting of the AIS EWG and agreed to arrange AIS EWG 32-2021 with a possibility to have the meeting either in Svalbard or Oslo, tentatively during the last week of May or first week of June 2021. The final location and dates will be confirmed by intersessional correspondence between the host and the HELCOM Secretariat as soon as possible, for example by Autumn 2020.

8.3 The Meeting took note of the information from Norway that representatives from the Mediterranean AIS Regional Server Hosting Authority could be invited guests to the next Meeting to share experience.

Agenda Item 9 Outcome of the Meeting

9.1 The Meeting adopted the draft Outcome of HELCOM AIS EWG 31-2020 containing the main decisions of the Meeting. The Outcome of the Meeting will be made available in the HELCOM Meeting Portal, together with the documents considered and presentations given during the Meeting.

Annex 1 List of Participants

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