Meeting Report

3rd EMSA/ Italy/ Norway meeting on AIS Regional servers
Held in Venice on
28 November 2018

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EMSA

Introduction

The Italian Coast Guard (ICG) invited representatives of the Norwegian Coastal Administration (NCA) and European Maritime Safety Agency (EMSA) to a technical meeting, to discuss the status of the execution of SLAs, and the operational and technical requirements of the AIS data flow via the Regional Servers.

The meetings took place in Venice on the 28thNovember, from 09.30 to 12:30, according to the attached agenda (**Annex 1**). The list of participants is attached as **Annex 2**.

Meeting Programme

Agenda Item 1: Opening

Vice Admiral Piero Pellizzari of the Italian Coast Guard opened the meeting and welcomed the participants. Jon Leon Ervik of the Norwegian Coastal Administration remarked the importance of these meetings. Lazaros Aichmalotidis thanked Italy for the hospitality, and introduced the meeting's objectives, which were to discuss the status of the execution of SLAs and assess the operational and technical requirements of the AIS data flow via regional AIS servers.

The participants approved the proposed agenda.

Agenda Item 2: Follow on actions from the last meetings

EMSA presented the status of actions agreed at the first and second meetings on regional AIS servers (Lisbon, 07.02.2017 and Rome 10.08.2018). Most of actions have been executed; The open issues were discussed, as follows:

1) M2M interface between the central SSN and the regional servers

EMSA informed about the technical evaluation made by its services. A direct M2M connection between the RS and central SSN is possible without using the SSN-SI. The solution presents several advantages such as:

- independency of the potential stability issues of the SSN SI component;
- eventually less machines required (e.g. 3 of Apache COTS);
- easier encoding and decoding of messages (JSON format comparing to IEC comment block).

as well as the following drawbacks:

- new SIG, binding both Parties: e.g. monitoring and configuration messages are to be removed;
- development and adaption effort to a new format, mainly by Regional Servers;
- no AIS data buffering in case the SSN Ecosystem is down (e.g. the solution needs to be implemented);
- no additional down-sampling layer;
- no logging (at RS) of rejected messages (due e.g. to invalid format or values);
- no throttling;
- no SSN SI administration and monitoring console.

EMSA informed about the ongoing testing of the solution that would possibly replace the SSN-SIs (called "STAR Streaming remote hub") which is currently tested with SAT-AIS providers. Following that the testing will be proposed also to T-AIS data providers (i.e. regional AIS servers and Germany). EMSA will organise with Italy and Norway a videoconference to discuss the technical details of this solution, its installation and testing in December (**Action point 1**).

2) AIS "time stamp" issue

EMSA briefly recalled the actions taken:
- EMSAs drafted document was sent to the NCA and ICG on 23.08.2017 (feedback received by the ICG on 29.08.2017 and by the NCA on 06.09.2017).
- The status of the agreed action was discussed at the EMSA, Norway and Italy skype/ phone meeting on 11 December 2017.
- The 14th MARES EWG agreed that Italy will evaluate the feasibility for MARES to provide the clock synchronisation in the next proxy releases. The ICG presented the issue at the MARES 15th EWG.

Regarding the clock synchronization, Italy informed that the proposed solution cannot be implemented because most of the national AIS networks do not yet comply with the international technical standards. Considering the ICG feedback, the status of action point was agreed as "Closed" (**Action point 2**) until Member States will upgrade their national AIS Base Stations fully complying with the international standards. EMSA agreed to present the issue to the SSN group. Italy will assist EMSA in drafting the paper for the SSN Group meeting (**Action point 3**).

3) Defining standardised requirements for the NPRs

EMSA presented extracts from the RS Technical manuals, indicating parts which need to be amended and the configuration settings which differs between the RSs.

EMSA proposed to agree the list of settings to be harmonised (e.g. as mandatory, supported and additional functions):

- Mandatory functions:
    - Data buffering (for at least 12 hours);
    - Data filtering per message type;
    - "Old" data purging window (i.e. purging starts after 12 hours storing);
    - Data automatic retransmission.

- Supported functions:
    - Down-sampling;
    - Throttling, and its configuration;
    - Filtering (any other filters, e.g. per: area; the data validity; CB; message ID);
    - "Keep alive" function;
    - The "time synchronisation" mechanism;
    - Removal of duplicates;
    - NPR configuration (possibility to configure the above settings).

The participants agreed to assess whether the buffered data need to be downsampled or not, and if the NPRs should have the downsampling settings configuration capability (as supported functionality) (**Action point 4**).

Following the definition of the NPR requirements, EMSA presented the following list of actions:

- assess the current configurations/ capabilities (28.11.2018);
- amend the Technical manuals (by 20 December);
- agree the list of items to be harmonised. (RSs shall submit their proposals by 7 January 2019);
- assess the impacts (to national systems and RSs) (by the end of January 2019);
- conduct the meeting to discuss the impacts and the implementation plan (indicative - February 2019);
- agree the implementation plan (TBD, at the next meeting);
- amend SLAs (e.g. by including the new annex "Configurations") (Indicative - March 2019);
- amend IFCD (if required).

EMSA acknowledged that time plan presented was too short and agreed to prepare a document with a draft action plan to address the NPR synchronisation and share it with the ICG and the NCA by the 10 December (**Action point 5**).

The meeting agreed that the NPRs shall be capable to retransmit all recent data, and the regional servers shall warranty the reception and forwarding of all data (i.e. also "old" data) (**Action point 6**). Replying to a question of the NCA, EMSA agreed to provide the data quality definition (e.g. erroneous, delayed, missing data) which could be used as a basis to evaluate the services (**Action point 7**).

4) Other items

The participants discussed the status of other open or ongoing issues:

- *NCA to request the historical AIS database of the HELCOM and North Sea region from Denmark (action point 5, opened at the 1st meeting on regional AIS servers).*

The NCA informed that the issue regarding the transfer of historical AIS database of the HELCOM and North Sea region from Denmark was discussed with the DMA but was not conclusive due to reorganisations in the DMA. The meeting agreed to close the action point (**Action point 8**).

- *EMSA to evaluate further and propose if any additional method and procedures for the data retransmission/uploading needs to be introduced (action point 7, opened at the 1st meeting on regional AIS servers).*

EMSA proposed to keep the status of this action point as "Ongoing". Additional method might be proposed when required. (**Action point 9**).

- *Italy to present the data coverage maps distribution service at the next EWG meeting (action point 10, opened at the 1st meeting on regional AIS servers)*

Italy agreed that the presentation on the data coverage maps distribution service will be included in the agenda of the next MARES meeting (**Action point 10**).

- *EMSA, Italy and Norway to assess the need of making available a quality indicator in the comment block (as well any other indicator) (action point 11, opened at the 1st meeting on regional AIS servers).*

EMSA proposed to keep the status of this action point as "Ongoing" (**Action point 11**). No specific actions were proposed by RSs. EMSA is evaluating a new solution planned to replace the existing SSN-SI software.

- *EMSA to propose the necessary amendments to reflect the role of the RS administrator in the IFCD (action point 15, opened at the 1st meeting on regional AIS servers).*

EMSA informed that this action point is still open. The SSN/LRIT WG 2 group meeting agreed with the proposal. The issue will be executed during the next major upgrade of IFCD (**Action point 12**).

- *Italy and Norway to work further addressing the quality issues, with the support of their contractors and under the coordination of EMSA (action point 1, opened at the 2nd meeting on regional AIS servers)*

The meeting agreed to maintain the status of action point as "Ongoing".

- *EMSA, Italy and Norway to agree a common template to be used for the RS technical documentation's publication.*

EMSA explained that the issue regarding the annexes to the RS Technical manuals is still open. The Technical manual and its annexes are part of SSN documentation and shall be updated. Italy and Norway agreed to update the RS Technical manuals by mid-January 2019, taking into consideration also the presented remarks. The meeting agreed to confirm the status of RS Technical manuals every 6 months, in the Service summary report (**Action point 13**).

EMSA and RSs agreed to pre-fill the questionnaires (annexes to the RSs Technical Manuals) with the already available information and send them to the participating Countries for their revisions and amending (in January 2019) (**Action point 14**)

Agenda Items 3: Current status

The participants discussed the status of the execution of SLAs including the service malfunctions observed, the data retransmission capabilities, the service monitoring capabilities, and the planned/ required improvements. EMSA presented statistic on the incidents occurred and highlighted the importance of receiving a full feedback on the incidents, the cause of the incident and the solutions followed.

Italy and Norway confirmed that implementation of the automatic data retransmission is problematic due to technical implications. Italy and Norway agreed to assess solutions on how to introduce the automatic data retransmission (**Action point 15**).

The participants also agreed to include in the SLAs amendment a new procedure of the manual data retransmission by RSs (**Action point 16**).

The participants briefly discussed the recent implementations by the ICG, where the NPRs purging time window setting was reviewed to increase it to 12 hours. On 18 October, the NPR software was updated for all participating countries.

Improvements in the service monitoring capabilities were discussed. Norway informed that participants of the HELCOM EWG and the North Sea/Atlantic EWG meetings were asked to report the root cause of incidents. The same issue was discussed at the MARES 15th EWG meeting. Norway also has amended their monitoring tool, adding the national system's availability statistics. Italy confirmed that the MARES monitoring toll has the same capability which can be activated.

EMSA presented the list of issues which could be improved, such as: timely updating the list of operational/ technical contacts, requesting the incident analyses by MSs, maintaining more active communication with MSs, reaction to the EMSA MSS communication. EMSA also reminded that regional servers can contact SSN NCA 24/7 service in cases when the AIS contact is not available.

Agenda Item 4: AIS data buffering by MSs

EMSA introduced the AIS data buffering issue and informed about the systematic tests the Agency will start to verify whether data buffering and re-transmission is being carried out properly at all stages. The participants were also informed about the SSN Group 4 agreement to draft and include in the Common Operational Procedures (COP) document, the procedure for the data buffering and re-transmission of AIS by Member States.

Italy remarked that the automatic data retransmission following the incident might be problematic for the Member States. EMSA reminded that the primary objective of these tests is to evaluate the status and to propose further improvements, if needed. The participants agreed to evaluate the Polish experience in developing the data retransmission functionality in their national system, when the results will become available by EMSA. Norway agreed to assist Poland in the testing, if requested. (**Action point 17**).

EMSA introduced the tests scenarios and presented a detailed test scenario. The testing with regional AIS servers could be conducted during January 2019, and with MSs - starting from February 2019. The participants agreed to support the proposed actions (**Action point 18**).

Italy proposed the development of a "testing NPR" installed for testing purposes (avoiding any interruption in the data transmission back to the dedicated Member State). Italy will prepare a short paper describing their proposal and send it to EMSA and Norway (by mid-January 2019) (**Action point 19**).

Agenda Item 5: MSs systems improvements

The Participants discussed the potential steps to improve the AIS data availability and quality including a solution whereby each MS maintains two NPRs. The solution introduced by Norway with some Member States was presented as an example. EMSA will assess if this solution could be proposed to Member States (e.g. at the next SSN Group meeting). Norway will be asked to provide an additional information about their experience to EMSA and Italy (**Action point 20**)

Possible amendments to the SLAs regarding the AIS data exchange by "3rd countries" monitoring were discussed. The participants agreed that EMSA will evaluate and propose the required amendments (**Action point 21**).

Agenda Item 6: Conclusions and the follow up actions

Lazaros Aichmalotidis thanked the participants for attending the meeting and presented the agreed actions. EMSA will prepare a draft meeting report which will be shared with the ICG and NCA for their feedback (**Action point 22**).

EMSA will create a new tab on EMSA website where the agreed minutes of the meetings on regional AIS servers will be published (**Action point 23**).

The list of follow-up actions is attached as **Annex 3.**

Annexes

Annex 1 – Agenda

Annex 2 – List of participants

Annex 3 – Actions agreed

Annex 1: Agenda

Agenda: 3rd EMSA/Italy/Norway meeting on regional AIS servers

ICG premises – Venice, Italy, 28 November 2018

Wednesday, 28 November 2018

Time	Agenda Item	Speakers
	Agenda items	
09:30	**Agenda Item 1: Opening of meeting and approval of agenda** EMSA will present the objectives of the meeting which include: - the current status of the execution of SLA; - the operational and technical requirements of the AIS data flown via the Regional Servers	EMSA
09:45	Agenda Item 2: Follow on actions from the last meetings The Participants will discuss the status of actions agreed at the first and second meetings on regional AIS servers (Lisbon, 07.02.2017 and Rome 10.08.2018)	EMSA
10:00	**Agenda Item 3: Current status** The participants will discuss the current status of the execution of SLA including: - the service malfunctions observed; - the data retransmission capabilities; - the service monitoring capabilities; - the planned/ required improvements.	EMSA/ICG/ NCA
10:30	**Agenda Item 4: AIS data buffering by MSs** a. EMSA analyses b. Actions proposed to SSN group c. Detailed test scenarios d. Amendments to the operational procedures The Participants will discuss issues related to the AIS data buffering capabilities of the MSs. EMSA will inform the Participants about the planned data buffering and retransmission tests. The meeting will discuss the detailed test scenarios.	EMSA/ICG/ NCA
12:30	**Agenda Item 5: MSs systems improvements** a. 2nd NPR for MSs b. MSs data retransmission to RSs The Participants will be invited to discuss the potential steps to improve the AIS data availability and quality.	EMSA/ICG/ NCA
13:30	**Agenda Item 6: Any other business**	EMSA/ICG/ NCA
14:00	**End of meeting**	

Annex 2: Participants

1. Piero Pellizzari

2. Giuseppe Aulicino

3. Antonio Vollero

4. Massimo Marrazzo

5. Cosmo Forte

6. Jon Leon Ervik

7. Harald Åsheim

8. Malin Dreijer

9. Lazaros Aichmalotidis

10. Edmunds Belinskis

Annex 3: List of actions

The agreed actions of the meeting are provided in the list below.

Action point 1: The status of action point regarding the M2M interface between the central SSN and the regional servers is considered as closed. EMSA will organise a videoconference to discuss technical details of the "STAR Streaming remote hub" software and the RSs involvement in its testing.

Action point 2: The status of action point regarding the time synchronisation issue is considered as closed until Member States will upgrade their national networks with BSs fully complying with the international standards.

Action point 3: EMSA will present the "time synchronisation" issue to the SSN group. Italy will assist EMSA in drafting the paper for the SSN Group meeting.

Action point 4: EMSA, Italy and Norway will assess, should the buffered data be downsampled or not, and should the NPRs have the downsampling settings configuration capability (as supported functionality).

Action point 5: EMSA will prepare a document with a draft action plan to address the NPR synchronisation and share it with the ICG and NCA by the 10 December

Action point 6: The regional servers shall warranty the reception and forwarding of all data from Member States (i.e. also "old" data).

Action point 7: EMSA will provide the data quality definition (e.g. erroneous, delayed, missing data) which could be used as a basis to evaluate the services

Action point 8: The status of action point regarding the transfer of historical AIS database of the HELCOM and North Sea region from Denmark is considered as closed.

Action point 9: The status of action point regarding further proposals of any additional method and procedures for the data retransmission/ uploading is considered as "Ongoing".

Action point 10: The ICG presentation on the data coverage maps distribution service will be included in the agenda of the MARES next meeting.

Action point 11: The status of action point regarding assessment of the need of making available a quality indicator in the comment block (as well any other indicator) is considered as "Ongoing".

Action point 12: The role of the RS administrator will be reflected in the IFCD document during its next major upgrade.

Action point 13: Italy and Norway will update the RS Technical manuals by mid-January 2019 taking into consideration also the presented remarks (). The status of RS Technical manuals will be confirmed every 6 months, in the Service summary reports.

Action point 14: EMSA and RSs will partially pre-fill questionnaires (annexes to the RSs Technical manuals) with already available information and send these to the participating Countries to be revised and amended (in January 2018).

Action point 15: Italy and Norway will assess solutions on how to introduce the automatic data retransmission.

Action point 16: A new procedure of the data retransmission by RSs will be agreed and included in the SLAs amendment.

Action point 17: EMSA, Italy and Norway will assess the Polish experience in developing the data retransmission functionality in their national system, when the results will become available by EMSA. Norway will assist Poland in the testing, if requested.

Action point 18: Regional servers will support EMSA in conducting the data buffering tests.

Action point 19: Italy will prepare a short paper describing their proposal on how to introduce the "testing NPR", and submit it to EMSA and Norway (by mid- January 2019).

Action point 20: EMSA will assess if the solution to introduce a second NPR could be proposed to Member States (e.g. at the next SSN Group meeting). Norway will be asked to provide an additional information about their experience to EMSA and Italy

Action point 21: EMSA will evaluate and propose the required amendments to the SLAs regarding the AIS data exchange by "3rd countries" monitoring.

Action point 22: EMSA will prepare a draft meeting report which will be shared with the ICG and NCA for their feedback.

Action point 23: EMSA will create a new tab on EMSA website where the agreed minutes of the meetings on regional AIS servers will be published