Meeting: 17th IMS Group User Consultation Meeting (UCM#17)

Place and date: Lisbon, 21 October 2021 (videoconference)

Agenda item: 1 – Update on IMS MS service

Document number: IMS 17.1

Submitted by EMSA

Summary	This paper provides an overview and update of the status of existing Integrated Maritime Services (IMS) for Member States, related business rules and functionalities.
Action to be taken	As per Section 5.
Related documents	[1] Minutes of the IMS Group 16th User Consultation Meeting UCM#16 [2] HLSG DM08

1. Background

Integrated Maritime Services (IMS) provide functionalities for the purpose described in Annex III of the Directive 2002/59/EC (as amended), i.e. maritime safety, marine environment protection, port and maritime security, efficiency of maritime traffic and maritime transport and regional, national and local cooperation for the exchange of additional information. IMS, through the integration and sharing of relevant data and information, allow the provision of a set of configurable, voluntary functionalities responding to detailed business requirements. IMS develop and implement national, regional and local cooperation and are offered to all EU Member States authorities executing functions in the maritime domain. By definition, the provision of IMS functionalities follows a functional approach, i.e. they are independent of the MS governmental department/authority in which users are based. IMS are provided through an interoperable data and information sharing platform with 24/7 support. IMS integrates SafeSeaNet mandatory and additional system functionalities together with other relevant data from Union information systems, as well as Member States or third-party specific data sets and information. Based on SafeSeaNet, CleanSeaNet, Copernicus Maritime Surveillance, Satellite-AIS Data Centre and the European Union Long Range Identification and Tracking Cooperative Data Centre [EU LRIT CDC]) as the main data sources, IMS provides horizontal data processing, correlation and integration capabilities.

2. Current Status

There are over 3892 users beginning October 2021 of the IMS service for Member States (+126 compared to May 2021) from 27 MS using the service for, *inter-alia,* Maritime Safety including Search and Rescue, Law enforcement, fisheries monitoring, security, customs and intelligence purposes.

The distribution of users is presented below:

Member State	Number of users
Belgium (BE)	111
Bulgaria (BG)	41
Croatia (HR)	235
Cyprus (CY)	27
Denmark (DK)	282
Estonia (EE)	36
Finland (FI)	101
France (FR)	472
Germany (DE)	134
Greece (GR)	152
Iceland (IS)	93
Ireland (IE)	119
Italy (IT)	748
Latvia (LV)	17
Lithuania (LT)	12

Member State	Number of users
Luxembourg (LU)	13
Malta (MT)	96
Montenegro (ME)	14
Netherlands (NL)	292
Norway (NO)	44
Poland (PL)	50
Portugal (PT)	195
Romania (RO)	59
Slovakia (SK)	2
Slovenia (SI)	43
Spain (ES)	264
Sweden (SE)	240
Total:	3892

The list of data types or functions, associated business rules and access rights is given in the table below and reflects:

- VTMIS legal basis (Directive 2002/59/EC, as amended);
- Interface and Functionalities Control Document (SSN-IFCD Version 1.2), dated 28 February 2018;
- Further integration with other EU system's data, i.e. developments of the maritime applications and their back-ends;
- Display in a Single graphical interface (currently named 'SEG') to all EMSA hosted maritime services.

No	Data type or specific function	Business rule	Presentation / display aspects
1	**LRIT**	LRIT Flag Fleet position report data is made available to MS users from EU LRIT CDC as decided by each MS. The general rule is that only data belonging to a MS fleet is provided to the users of that MS. However, those MS who have agreed to share their flag fleet data with other MS, will be able to see LRIT flag fleet data from all sharing MS. The MS who have agreed to share their LRIT flag fleet are: DE, DK, FR, FI, GI, GR, IS, IT, LV, LT, NL, NO, RO, SI, UK.	The regular (6 hours) LRIT position data is a part of the integrated ship position comprising (based on the access rights) of T-AIS, S-AIS, LRIT and VMS. • SEG displays the most recent position reports of a vessel regardless of the tracking (position report) system. • The reporting as requested via the EU LRIT CDC user web interface is not displayed. The reporting requested via the DDP or XML interfaces to the EU LRIT CDC is displayed.
2	**Satellite-AIS**	A global feed of SAT-AIS is made available to all users without any restriction, as agreed with the data providers (commercial providers and Norway).	The SAT-AIS position report data is a part of the integrated ship position. • SEG displays the most recent position reports of a vessel regardless of the tracking system.
3	**SafeSeaNet T-AIS**	SSN T-AIS data is streamed from the SSN system and accessible to all users.	The T-AIS position data is a part of the integrated ship position. • SEG displays the most recent position reports of a vessel regardless of the tracking system. • AIS Voyage info: vessel particulars, ship type, length, width, draught, destination, ETA to destination, cargo type, positioning system On request from Romania and Croatia, tests are conducted with Italy (MARES server admin.) on the provision of the T-AIS with 1-minute frequency. This is to validate the use of the more frequent data in the context of ABMs and for SAR purposes.
4	**VMS**	VMS Flag data is streamed from EFCA to EMSA. Access is governed by MS fisheries authorities, and upon agreement it is provided to IMS MS users. VMS data is available to all IMS users for Search and Rescue purpose via Enhanced SAR Surpic functionality.	The VMS position data is a part of the integrated ship position. • SEG displays the most recent position reports of a vessel regardless of the tracking system.

No	Data type or specific function	Business rule	Presentation / display aspects
5	**Patrol Assets**	Patrol asset data are provided from MS to EMSA. This data stream is filtered and made available only to MS providing the data. Access is governed by MS, and can be filtered at MS, organisation and user level.	The patrol data asset is linked to the data provided by the MS and is independent of the display of the integrated ship position.
6	**CleanSeaNet (EO)**	CSN oil spill detections, SAR satellite imagery as well as the Vessel Detection Services (VDS) are made available from the Earth Observation Data Centre.	The SAR satellite images as well as the derived products (oil spill detections and VDS) are displayed by default for a 6-day time window – 3 days in the past (acquired EO images) and 3 days in the future (planned EO images). All remaining historical data is available on request from the SEG.
7	**Copernicus Maritime Surveillance Services (CMS)**	Copernicus is an EU Programme aimed at developing European information services based on satellite Earth Observation (EO) and in-situ (non-space) data. The European Maritime Safety Agency (EMSA) is the Entrusted Entity responsible for implementing the Copernicus Maritime Surveillance (CMS) service under a Delegation Agreement signed with the European Commission for the period 2015-2020.	CMS data (EO and VDS) is available for IMS users and displayed by default for a 6-day time window – 3 days in the past (acquired EO images) and 3 days in the future (planned EO images). All remaining historical data is available on request from the SEG.
8	**Enhanced SAR SURPIC**[1]	The Enhanced SARSURPIC tool provides global information based on the existing LRIT SAR SURPIC function with addition of all available position reports /data types (including VMS). To access the Enhanced SARSURPIC function the IMS user must be registered in the EU LRIT Data Centre and has to be granted the SAR Role.	Ship positions obtained in the Enhanced SARSURPIC use all the integrated position reports, which the user is entitled to see, within last 24 hours from the time of request. The function remains active for 30 minutes.
9	**Automated Behaviour Monitoring**	Details of the ABMs are included in the UCM#17 IMS Group paper 17.2. Each authority will be recipient of the ABM alerts as configured per its ABM Administrator	Configuration, alert and display of ABMs is done through the ABM configuration tool in SEG.

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[1] This is a function available via a SEG

No	Data type or specific function	Business rule	Presentation / display aspects

10	**SSN Port+ notification information**	SSN Enrichment data is available to all IMS authorities	• Voyage Info:
			  ○ Last port, ETD and ATD from Last Port
			  ○ Port of Call and Shipcall ID at MS port
			  ○ ETA, ETD, ATA and ATD to/from Port of Call
			  ○ Purpose of call, Anchorage Y/N, Position in Port of Call and Port Facility
			  ○ Brief cargo description and Total Persons on Board
			• Hazmat Y/N
			• Security Y/N
			• Security information (current security level)
			• Waste Y/N
			• Incident Y/N

11	**SSN request for details**	Detailed data for the SSN authorized IMS users from Member States authorities performing functional roles in the maritime domain, in line with the Access Rights set in the SSN IFCD: Access subject to SSN NCA authorisation when granting the specific profile defined in User Configuration manual.	Per ship, on request: • Detailed Port+ Voyage information • Port + Hazmat notification details per ship • Port + Security notification details • Port + Waste notification details • Incident notification details • MRS details
12	**Met-Ocean**	Remote sensing Made available to all users based on CMEMS – Copernicus Marine Environment Monitoring Service, and EUMETSAT service.	Specific layers are available, e.g.: • Sea Surface Temperature • Chlorophyll-a • Ice concentration and thickness • Sea Surface Winds • Ocean Currents • Sea Surface Height • Salinity • Precipitation estimate • Fog • Air-mass

No	Data type or specific function	Business rule	Presentation / display aspects
13	**Met-ocean**	In-situ data from ~5000 in-situ platforms are open to all users. Access to the data on measured parameters is provided via EU EMODNet service.	Information is geo-located and divided per type of platform: Argo, Drift buoy (positions & 7/60-day tracks), Ferrybox, Glider, HF Radar (positions & 7/60-day tracks), Mooring, Profiler. The following parameters are available: • Waves • Water Temperature • Water Salinity • Currents • Optical Properties • Sea Level • Atmospheric • Water Conductivity
14	**Met-ocean**	The forecast layers are open to all users based on CMEMS Copernicus Marine Environment Monitoring Service (CMEMS) and ECMWF's Copernicus Atmospheric Monitoring Service (CAMS).	They cover, among others: • Sea Surface Temperature • Ocean currents • Sea Surface Height • Significant Wave Height • Sulphur Dioxide • Nitrogen Dioxide • Carbon Dioxide
15	**SSN MRS Data**	Following the agreed guidelines at SSN HLSG 10 for exchanging MRS notifications through SSN. Requests for the MRS details follow the rules set under point 11.	MRS position will be displayed on the map with a specific icon. For each ship, additional MRS 'enrichment' (or voyage) information will include: • Position • ReportingDateAndTime – timestamp (if not available the SentAt value will be used) • Voyage Information • NextPortOfCall • ETA • Total Persons On Board • Any DG – yes/ no • MRS identification • CST identification
16	**THETIS public data**	Public Port State Control (PSC) is presented in an integrated display to all the IMS users.	Data is available per ship, on request: • Date of the last PSC inspection and their details • Current detentions Y/N • Refusal of access information Y/N • Prevention of operation Y/N

No	Data type or specific function	Business rule	Presentation / display aspects
17	**Areas**	A number of customised areas for MS, including: - AIS shore-based stations data provided by UK; - Irish maritime rescue coordination centres and SAR resources; - Ballast water convention areas in North Sea; - French EEZ areas; - German WSP areas.	Areas are available to all users via the Layers-> Area menu.
18	**COD**	Data provided/ registered by the MS to identify organizations/ authorities performing duties in the VTMIS Directive context. STMID information (location of the authority, contacts, and duties) are available to all registered IMS users.	Displayed in SEG. Information is stored in the Central Organizations Database (COD).
19	**EQUASIS**	EQUASIS is a publicly available platform collecting and disseminating high quality, safety-related information on the world's merchant fleet that has been provided by the holders of such information. Access to EQUASIS is provided to all registered IMS users via the SEG.	Users are provided information on classification, flag performance, inspections, ship history, etc. for vessels with a valid IMO number registered in EQUASIS.
20	**General Arrangement Plans (Pilot Project)**	The provision of the GA plans functionality is available in the SEG interface. Volunteer MS are invited to contact interested ship-owners or other stakeholders in possession of the GA plans and subsequently upon their consent upload them in SEG.	The GA plans are made available only to the registered IMS users with a Search & Rescue role (i.e. with access to the Enhanced-SARSURPIC function) via SEG. They can be used only in the context of Directive 2002/59/EC only when responding to an emergency on board. The GA plans must neither be disclosed to any third party nor be reproduced without the consent of their respective owner. Specific disclaimer note was added.
21	**Approximate Distance Calculator**	IMS users will be able to calculate the approximate distance travelled by a vessel within (and outside) a determined SECA area	The track and the distance(s) will be displayed in the map and TTT of the SEG.

Active S2S interfaces

No	MS	Data type and coverage	Interface used
21	Italy (Italian CG)	Satellite AIS – global feed	STAR Streaming remote hub completed.
23	Portugal (Navy)	Satellite AIS – global feed	STAR Streaming remote hub completed.
24	Iceland	Satellite AIS – Area of Interest	STAR Streaming remote hub completed.
25	Denmark	Satellite AIS – global feed	STAR Streaming remote hub completed.
26	Norway	Satellite AIS – global feed	STAR Streaming remote hub completed.
28	The Netherlands	Satellite AIS – global feed	STAR Streaming remote hub completed.
29	Poland	ABM alerts	JSON service in PRE-PROD and in PROD.
30	Poland	Un-correlated VDS	On-request service- HTTP GET method; WFS response
31	Germany	Satellite AIS – Area of Interest	STAR Streaming remote hub.

S2S interfaces in development

No	MS	Data type and coverage	Interface used
32	France	Satellite AIS	STAR Streaming remote hub in progress
33	Poland	Satellite AIS – global feed	STAR Streaming remote hub deployment in progress.

34	**Ireland**	Un-correlated VDS	On-request service- HTTP GET method; WFS response
35	**Poland**	ABM Configuration	TBD
36	**Spain**	ABM	Tests on-going
37	**Belgium**	Maritime Traffic picture including SAT-AIS	Tests on-going (Streaming or WMS layer)

3. Future new data types and associated access rights and pilot services

EMSA continues to provide and improve the Integrated Maritime Services, and addresses requests of Member States, expressed at the IMS Group User Consultation, SSN HLSG meetings and ESA-EMSA Satellite AIS consultation meetings.

The following table outlines the elements pending implementation or new, specific data types, pilot project developments and new tools/functionalities foreseen. Feasibility assessment and basic presentation/display aspects are also described.

No	Data type or specific function	Business rule	Presentation / display aspects
38	**AIS - Aids to Navigation (AtoNs), SAR Aircraft, SART**	Display of AIS AtoNs / Display of Standard Search And Rescue aircraft position reports and Display of AIS-SART.	Will be available once the data is available from the AIS regional servers and the relevant back-end services are implemented.
39	**S-AIS**	Validity/Invalidity Check of an AIS message	This service validates the vessel's position against the satellite footprint by means of verifying the presence of the current position of the vessel in the coverage of the satellite at reception time.
40	**S-AIS**	Doppler validation	This service provides the possibility of validating an AIS position report using Doppler shift frequency. EMSA will be able to compute an independent position from the GNSS positions sent within the AIS message, thus validating or invaliding an AIS position report.

No	Data type or specific function	Business rule	Presentation / display aspects
41	**Drift Modelling**	The IMS Search & Rescue community identified the need to develop a drift modelling tool within the IMS interface(s) to assist operators in SAR activities.	The tool will provide IMS registered users access to one or more [external] drift models. Users will be able to specify and input parameters to drive the models via the SEG. The results of the drift models will be displayed in the SEG.
42	**Sulphur emissions information**	Specific display of ships exceeding a defined SO2 (sulphur) emission threshold.	Technical discussions on the implementation are on-going with Germany in the context of the RPAS services.
43	**S2S for FR SeaMIS**	Implement a S2S service to enrich French SAR information system with additional position reports, voyage PortPlus information, Incidents, Hazmat and MRS.	Technical discussions were done with France. This is now discussed with other Member States through the Pilot project on "Facilitation of ship to shore reporting" organised under the EMSA "Interoperability Project".
44	**Chat (Collaborative) Tool**	IMS registered users requested a live chat tool to exchange information between operators. The tool will increase collaboration between cross-border and cross-sectorial operational actors.	A number of options for the technical implementation were evaluated via a study launched by EMSA. The outcome was presented to the group.

4. Action points from IMS Group UCM#16, UCM#15 and UCM#14

Action Point	Topic and Action	Resp.	Status
UCM-16/01	EMSA invite Member States to contact EMSA to further discuss these uses cases and to present them during the next ABM workshop in December 2021.	MSs	On-going.
UCM-16/02	EMSA to liaise with IE to explore the use case on ship navigational status' change timeline.	EMSA, IE	On-going.
UCM-16/03	Member States to take note and further analyse on the potential AI and Machine Learning scenarios	MSs	/
UCM-16/04	Member States to provide other AI and Machine Learning scenarios at IMS UCM17 and ABM WS 7. EMSA can support when needed.	MSs, EMSA	On-going.
UCM-16/05	EMSA will discuss internally on how to improve the quantity of position information	EMSA	On-going.

Action Point	Topic and Action	Resp.	Status
UCM-16/06	Member States to take note and further analyse operational need on H-ABM. In the Pre-Operational phase EMSA can support the retrieval of data on behalf of the MS.	MSs, EMSA	/
UCM-16/07	Member States to provide potential new H-ABM use cases at IMS UCM17 and ABM WS 7.	MSs, EMSA	On-going.
UCM-16/08	when the requirement for the drift modelling service will be validated, EMSA will further analyse the impact on SEG and report to the IMS group.	EMSA	To be done after IMS 18
UCM-16/09	EMSA will analyse the uses cases for SART-AIS, MOB-AIS and EPIRB-AIS functionalities and will present the outcomes at the next IMS UCM.	EMSA	On-going.
UCM-16/10	EMSA invited the user group members to express interest in information to consume from CISE	MSs	/
UCM-15/02	EMSA will liaise with BE, DK and HR to identify use cases scenario for the use of IVEF in IMS. The outcomes will be presented at IMS UCM#16.	EMSA, BE, DK and HR	On-going.
UCM-15/04	the following Member States volunteers to: • Test new ABMs and combined scenario: DK, FR, HR, IE • Validate the advanced analytics tool prototype: FR	EMSA, DK, FR, HR, IE	Pending for test new ABMs and combined scenario Done for analytics tool prototype
UCM-15/05	EMSA to further investigate the possibilities for the "quick link" or "deep hyperlink" and present the result at the next IMS meeting	EMSA	Pending
UCM-15/07	Member States shall report the cases of misaligned ship identifiers to the 24/7 MSS so that the particulars in the ship reference databases (OVR, CSD) could be quickly corrected.	MSs	/

Action Point	Topic and Action	Resp.	Status
UCM-15/11	EMSA will investigate if the 24 h limit for ACQ in LTS could be extended.	EMSA	Ongoing. This limitation is done by SEG to avoid too heavy responses.

The following table provides the remaining action points stemming from the IMS Group 14th User Consultation Meeting.

Action Point	Topic and Action	Resp.	status
UCM-14/07	EMSA to update the IMS training material available on the EMSA web page.	EMSA	ongoing - done for Mobile App;
UCM-14/10	EMSA to diversify IMS training material to reflect customised trainer profiles (basic, advanced and train-the-trainer).	EMSA	ongoing (will be based on the implementation of the training material in EMSA online training platform);
UCM-14/11	EMSA to publish IMS Frequently Asked Questions (FAQ).	EMSA	pending.

The status of actions from previous IMS UCM meetings will be introduced during IMS UCM 17.

5. Action required

IMS users are requested to:

- Take note of the existing data types and business rules for the IMS MS services (see section 2).
- Comment and endorse the planned, new data types foreseen for the next phase of the IMS development (see section 3 above).
- Take note of the potential pilot projects (see section 3).
- Contact EMSA (ims@emsa.europa.eu) should they wish to benefit from the webinar for National IMS admin dedicated to IMS users management.

EMSA will maintain the record of the business rules as well as any related changes.