

Meeting: Pilot project on “Facilitation of ship to shore reporting” – 3rd meeting

Place and date: Video conference, 23 June 2020

Agenda item: Ships to shore MRS/VTs reporting by electronic means – progress report

Document number: 3.4

Submitted by EMSA

Summary	The document presents the progress report on the work done by EMSA regarding the ship to shore MRS/VTs reporting by electronic means and updates on VDE-SAT development.
Action to be taken	As per paragraph 4.
Related documents	Minutes of the 2 nd meeting of the “ship to shore reporting” pilot project.

1 Background

At the 2nd meeting of the Pilot Project for the Facilitation of Ship to Shore Reporting, which took place on 25 September 2019, EMSA informed the project participants on the new technological advancement known as the Very High Frequency (VHF) Data Exchange System (VDES) and its benefits.

The VDES is primarily a maritime radiocommunication system which provides the means for exchange of digital data by integrating the functions of terrestrial and satellite VHF data exchange, application specific message (ASM) and automatic identification system (AIS). Data exchange can take place between ships, shore stations and satellites through the VDES terrestrial and satellite components¹ using frequencies in the VHF Maritime Mobile band (156 025 - 162 025 MHz). The VDES concept, as developed by IALA² and by the International Telecommunication Union (ITU), will offer a more robust communication platform that allows for better digital data exchange between ships and between ships and shore. At IMO, discussions on the use of VDES are expected to start soon particularly in respect of the amendments needed in the relevant regulations of the SOLAS Convention (Chapter V and possibly Chapter IV). This will allow for the integration of the VDES as a new digital maritime radiocommunication system that can be used within the context of the implementation of e-navigation and the modernization of the Global Maritime Distress and Safety System (GMDSS).

During the past years, EMSA has been collaborating extensively with the European Space Agency (ESA) and Norway (Norwegian Coastal Administration and Space Norway) through a joint demonstration project to test the feasibility of ship reporting through the satellite component (VDE-SAT) of the VDES by using Norway's NorSat-2 LEO satellite with a VDES test-payload and VDES equipment on board (test) vessels.

¹ The regulatory frequency spectrum required for the satellite component of the VDES was approved by the ITU World Radiocommunication Conference (WRC 19) in November 2019.

² IALA Guideline G1117: VHF Data Exchange System (VDES) OVERVIEW, 12.2017, <https://www.iala-aism.org/product/vhd-data-exchange-system-vdes-overview-1117/>

During the facilitation of ship to shore reporting meetings, Member States identified a use case aiming at reporting of MRS/VTS data to coastal station by electronic means. Some synergies were found between the two projects and EMSA presented during the last meeting the concept of ship-to-shore MRS/VTS reporting by electronic means, which, in addition to using existing communication links (3G, 4G, and satellite communication), will test the VDE-SAT connection when a ship is sailing on high seas. The proposal was approved by the participants.

2 Current status

Considering the technical similarities between the foreseen VTS/MRS reporting by electronic means, and the Integrated Ship Report (ISR) message content, it was decided to re-use the data exchange service of the Integrated Reports Distribution (IRD) system with Member State authorities, and to extend it to cover the possibility for ship data providers to report VTS/MRS reports to Coastal Stations via IRD.

For VTS/MRS reporting, a ship user will have the following options:

- A specific “on-board application” which is responsible for creating a message or binary content and displaying returned results. The information is sent by the application to the specific VDE-SAT equipment, and then via satellite to the ground station. There will be limited number of equipment for testing (maximum 5);
- A web based graphical user interface (GUI) may serve as an option for a vessel to input and consult operational information (e.g. MRS report and voyage data).

The coastal station’s operators will have the possibility to access the information reported by the ship via the IRD web interface, email or via system-to-system interface. For this purpose, the existing ISR content will be amended with new blocks of data containing VTS/MRS report. It will also be possible to provide feedback to the reported information, which would be communicated to the vessel either by VDE-SAT or via Internet.

A conceptual overview is presented through the diagram below (blue colour indicates changes or new developments):

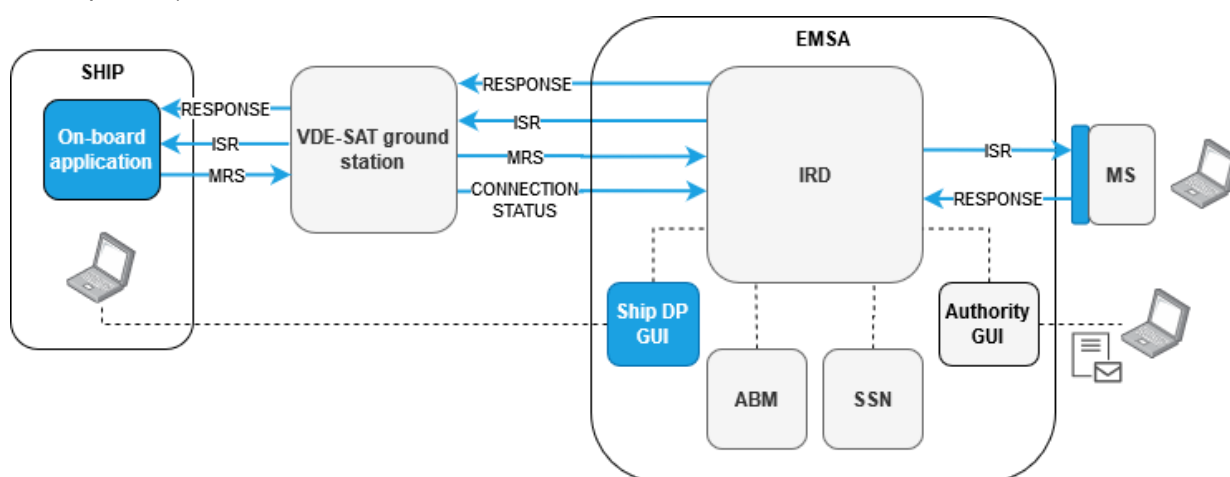


Figure 1: Context diagram of the amended IRD service (note: “Ship DP GUI” stands for “ship data provider GUI”).

The following high-level changes are planned:

- development of an on-board application for ship data providers to allow them submitting and consulting VTS/MRS reports using VDE-SAT technology;

- b. development of a specific graphical user interface for ship data providers to allow them submitting and consulting VTS/MRS reports via Internet;
- c. implementation of a system-to-system interface for exchange of data between IRD and VDE-SAT ground station (operated by Space Norway) to communicate ISR, VTS/MRS and responses from authorities;
- d. amendments to the existing ISR message with the elements of VTS/MRS report for Member State coastal authorities, and to receive provided responses;
- e. updates to the existing user web interface to show reports received from ships and to provide response to these reports.

3 Planning

The table below gives an overview of the planned schedule:

Schedule	Task
March – May 2020	Drafting of the technical requirements.
June 2020	Signature of the contract.
June – August 2020	Design phase with Space Norway.
October 2020 – January 2021	Development
January – February 2021	Testing period and integration testing with Space Norway.
March 2021	Implementation of system in production.
April – August 2021	Operational tests with Member States and selected ships.

4 Actions required

Member States are invited to take note of the above information and provide relevant feedback. MSs willing to participate in testing one of the above presented solutions are invited to express their interest.