

Meeting: Pilot project on “Facilitation of ship to shore reporting” – 2nd meeting

Place and date: Lisbon, 25 September 2019

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

Document number: 2.5

Submitted by EMSA

Summary	The document proposes improvements to the ship to shore MRS/VTs reporting and follow up interactions by electronic means.
Action to be taken	As per paragraph 4.
Related documents	Minutes of the 1 st meeting of the “ship to shore reporting” pilot project.

1 Background

As stipulated by the Single Programming Document (SPD) for 2019-2021¹, EMSA is committed to explore new technological developments such as the VHF Data Exchange System (VDES). It is stated that EMSA will collaborate with Norway through a joint project to test the feasibility of ship reporting through VDES by using Norway’s NorSat-2 LEO satellite with a VDES test-payload and VDES equipment on board (test) vessels.

The VDES component, as developed by IALA², will offer a more robust communication platform that allows for better data exchange between ships and between ships and shore. The new system aims to facilitate the introduction of new applications and services that will improve maritime radio communications significantly. The VDES contains a satellite component (known as VDE-SAT) which shall provide an effective means of extending the exchange of digital data at higher rate to areas outside of coastal VHF coverage.

To implement the aforementioned provisions of the SPD, EMSA launched the VDE Capability (VDE-C) pilot project to test the capabilities of VDES to relay digital packages from ship to Member States’ coastal authorities.

The objective of the VDE Capability (VDE-C) pilot project is to identify and test solutions related to:

- better organization of data on ships and on shore and better data exchange between ships and shore by equipping the master of a vessel, and those Authorities responsible for the safety of shipping ashore, with modern tools to make navigation and communications in the maritime transport domain more reliable and thereby reduce errors.
- test the use of a new satellite-based technology to relay digital data packages to Member States’ coastal authorities. The new satellite component of the VDE-SAT will be tested to overcome the

¹ The EMSA Programming Document 2019-2021 was adopted by the Administrative Board at the end of 2018. It constitutes the Agency’s roadmap for the year to come, laying out the specific actions and resources for 2019, and provides an indication of the developments in the medium term.

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/>

current difficulties of the shipping industry in sending large electronic files from ship to shore through existing satellite communication providers with low prices.

One of the use cases of this pilot project is the reporting of MRS/VTs data by using an on-board application or graphical user interface to be developed. This use case was identified during the first meeting of the pilot project for “facilitation of ship to shore reporting” and participating Member States invited EMSA to investigate how to establish ship-to-shore communication to provide the possibility for ships to report to MRS/VTs by electronic means.

2 Interaction with the VDE Capability pilot project

For receiving and processing ship reported data from the VDES ground station, a specific VDE Capability (VDE-C) system will be developed by EMSA. Its main purpose is to act as a relying information hub between a reporting vessel and MS information system (national SSN, VTS, etc.), as well as to handle different message formats for different MS interfaces. In addition to the VDE-C, a specific on-board application will be developed, which will provide a front-end to end-users on board vessels to input information using spreadsheets files or a simple user interface.

The structure of the data exchange format for the reporting of MRS/VTs data will be defined by the “facilitation of ship to shore reporting” pilot project.

The project seeks ways to enhance the quality of exchanged information however it must be stressed that it does not aim at replacing voice communication.

3 Proposed solution for MRS/VTs reporting

The electronic exchange of data between ships and the relevant MRS/VTs authorities could be facilitated through the VDE-C pilot project via:

- 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 (interface to be developed by EMSA) to the specific VDE-SAT equipment, and then via satellite to the ground station.
- Graphical user interfaces (GUI) which 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 GUI, email, or via system-to-system interface if the operational ICT system of the authority establishes the necessary connection to the VDE-C.

The content of the data to be reported to MRS/VTs authorities need to be specified and it is proposed to be in line with the reporting obligations of the specific MRS/VTs as specified by the relevant nautical publications (available on board of the ship).

The expected behaviour of the service can be summarised as follows:

- a. When choosing the MRS/VTs authority to send the report, the “on-board application” or GUI will provide to the vessel the form indicating the data elements required by this authority.
- b. The form will be prefilled with information already available from the ship’s Integrated Ship Report (ISR) provided by EMSA’s new Integrated Reports Distribution service.
- c. The submitted information will be communicated by the ship to the VDE-C and then to the relevant authority in the format required by that authority.

- d. The authority will validate the information received and the vessel will receive feedback whether such validation is successful or if an updated form needs to be resent.

The data flow is depicted in Figure 1 below:

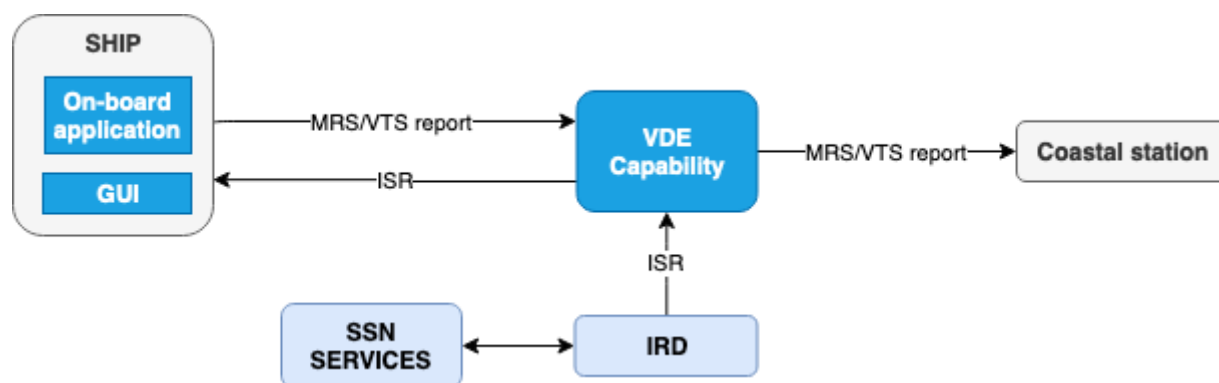


Figure 1: Reporting of MRS/VTs data use case's data flow

A similar approach is already implemented in some ship reporting systems (e.g. BELTREP or SOUNDREP) where vessels can fulfil most of the reporting procedures by using non-verbal means (see <http://www.sjofartsverket.se/en/Sound-VTS/Reporting/Online-reporting/> or <http://www.beltrep.org/transit/> for more details).

To manage risks and respond to possible contingencies, the development and testing of VDE-C and on-board application will be done stepwise. During the first iterations, the data exchange will be tested by using data communication technologies that participating vessels already have on-board (i.e. 3G/4G/Iridium). When this first phase is completed successfully, the data exchange via VDE-SAT would be elaborated as a second phase³.

The proposal needs to be further elaborated but the main objective is to establish a common platform for all MRS/VTs reporting systems which will be configurable to the reporting requirements of the specific Authority the vessel chooses to report.

EMSA would like to discuss this proposal with the Member States willing to test this solution with the support of limited number of ships which will participate in the pilot project.

4 Actions required

Member States are invited to take note of the above information and provide feedback on the proposal.

³ This part of the project is conditional to the approval of the regulatory frequency spectrum required for the satellite component of the VDES by the ITU World Radiocommunication Conference (WRC 19) which is to take place in November 2019.