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Proposal on the Draft Guideline on VTS Digital Communications

# Summary

This document proposes specific revisions to the *Draft Guideline on VTS Digital Communications* and its annex *Use Cases on VTS Digital Communications*, focusing on the refinement of general principles and digital services and the optimization of use cases.

## Purpose of the document

The document aims at providing input paper for task group to advance the Task 1.3.1 “Develop guidance on VTS digital communications (operational aspects)”.

## Related documents

IALA VTS57-6.1.1 *Committees Work programme 2025-2027*

IALA VTS57-12.5.1.2 *WP Draft GL on VTS Digital communications*

IALA VTS57-12.5.1.3 *WP ANNEX Use Cases on VTS Digital communications - VTS57*

IMO MSC.1-Circ.1610-Rev.1 *Descriptions of Maritime Services in the Context of E-Navigation*

IALA VTS56-8.3.1 *Proposal to modify the Draft guideline on VTS Digital communications*

IALA VTS57-8.3.1 *Proposal on the Description and Use Cases of VTS Scheduling and Allocation Service*

IALA VTS57-12.3.6 *Service specification for VTS traffic clearance 1.5\_final*

IALA VTS57-12.3.9 *Service Specification for route exchange 1.0*

# Background

According to IALA Work Programme 2025-2027, the VTS Committee is progressing on the Task 1.3.1 “Develop guidance on VTS digital communications (operational aspects)”. During VTS57, the two work papers of the *Draft* *Guideline on VTS Digital Communications* and its annex *Use Cases on VTS Digital Communications* have been developed. The *Guideline on VTS Digital Communications* version 1.0 will be further discussed and finalized at the upcoming VTS58. Meanwhile, the *Use Cases on VTS Digital Communications* will be kept as a living document, constantly updated and refined.

# Discussion

## Regarding the *Draft Guideline on VTS Digital Communications*

### Amendment suggestions on “PART A GENERAL PRINCIPLES OF VTS DIGITAL COMMUNICATIONS”

1. The section “4.1 Managing a mix of voice communication, digital communications, and automated data exchange” in the draft guideline states:

“The introduction of digital communication marks a dualistic operational phase for VTS.”

It is recommended to amend the statement as:

“The introduction of digital communication marks a dualistic operational history for VTS.”

And at the end of the paragraph, it is recommended to add the following:

“Voice communication should be reserved for urgent and time-critical message communication, and to act as a backup for digital communication service technical failure.”

The reasons for amendment suggestions:

It is generally considered that voice communication should be retained on human-crewed vessels such as conventional vessels, which could be used:

* for delivery of urgent and time-critical messages,
* as a backup option when digital communication service suffers a technical failure.

Consequently, the VTS dualistic operation will remain in existence for a prolonged duration, during which voice communication will gradually decrease in the future.

2. The section “4.2 Delivery of the information” in the draft guideline states:

“Digital communications should have the same communication procedures as the voice communications.”

It is recommended to delete the statement or amend it as:

“Digital communications should/may have the same communication procedures as the voice communications where applicable. Digital communication should be processed according to IALA GL1132 *VTS Voice Communications and Phraseology* where applicable.”

The reasons for amendment suggestions:

* The operational procedures for digital communications and voice communications are not identical.

*Descriptions of Maritime Services in the Context of E-Navigation* (MSC.1-Circ.1610-Rev.1) from IMO defines one of the purposes of providing information in a digital format for MS1 Vessel Traffic Service is to “simplify work procedures”, and mentions repeatedly that “Information provided digitally could partly replace voice communications in non-time-critical situations and, in addition, complement voice communications in time-critical situations.”

Meanwhile, Chapter 1 “INTRODUCTION” in the *Draft Guideline on VTS Digital Communications* states:

“If a vessel intends to use MS-1 services, it must be capable of receiving these and must subscribe to the services. The vessel is responsible for managing its subscriptions to and unsubscriptions from the services. Vessel Traffic Service (VTS) should ensure that VTS personnel are aware of which vessels have received information digitally, eliminating the need for duplication via VHF. If a vessel has not received the information digitally, the VTS personnel are responsible for providing it via VHF voice communication in the conventional manner.”

It can be seen that the operation scenarios of digital communications are different from voice communications, so their corresponding communication procedures may not be the same.

* Digital communication can be used for communication of messages which were expressed by voice.

IALA G1132 *VTS Voice Communications and Phraseology* harmonizes VTS voice communication through the use of standard message structure and phrases, and provides general guidance on message composition, delivery and interpretation. When digital communication is used for communication of such messages which were expressed by voice, it should be processed according to IALA G1132.

3. In the section “4.2 Delivery of the information”, “to achieve closed-loop communication in digital communications different types of responses” are defined:

“Delivered: system acknowledges message reception

Received: human operator acknowledges message reception

Approved: human operator approves the content of the message”

It is recommended to amend the definitions as:

“Delivered: system acknowledges message delivery

Received: human operator or system acknowledges message reception

Approved: human operator or system approves the content of the message”

The reasons for amendment suggestions:

* The responses of “received” and “approved” could be achieved not only by human operator, but also by system automatically.

Considering the current level of information technology, the system is already able to automatically process some simple business scenarios by setting rules and replacing operators with the system.

* And to eliminate ambiguity, the response of “delivered” should only refer to the status of message delivery, without the status of acknowledging message reception and approving message’s content.

Clarifying the definitions of these three types of response would be conductive to provide descriptions in the following use cases, service specifications, and other documents.

### Improvement suggestions on “PART B VTS DIGITAL SERVICE”

1. Given the rapid development of technology, the prospective VTS digital communication services would focus more on automatically computation and processing. The Route Crosscheck Service, for instance, is used to compare the vessel’s route plan with the navigational requirements within a VTS area. If such services are to be discussed in this guideline, the use cases related to the services need to take into account a wide range of parameters which include the draft, height, speed of a vessel and waterway depths, clearance heights, traffic regulations within a VTS area, etc. Each parameter may involve multiple states, along with the calculation rules between these parameters, which will significantly increase the complexity of developing the guideline. A common solution is to consider placing such services in other guidelines or future versions of this guideline.

It is suggested that this draft guideline focuses on the descriptions of VTS digital communication services within a limited scope, and should be reviewed with the work paper of use cases.

2. In the section “5.2.4.2 Slot Management Service”, it is recommended to incorporate “hydrologic” condition to maintain correspondence with “tide” in the description：

“The time slot may be based on hydrologic/weather conditions (e.g. tide, fog), port/area resources (e.g. berth, anchorage), traffic density, infrastructure (e.g. bridge, lock) or etc.”

## Regarding the *Use Cases on VTS Digital Communications*

### Timely updates on use cases

The current work paper of *Use Cases on VTS Digital Communications* is not the latest version, it is recommended to promptly update the work paper.

The differences include:

* The *Service specification for Route exchange 1.0* contains 15 use cases, while the *Use Cases on VTS Digital Communications* contains only 9 use cases for Route Exchange Service.
* There are multiple inconsistencies between the *Service specification for VTS traffic clearance service 1.5* and the *Use Cases on VTS Digital Communications*, e.g.:

|  |  |
| --- | --- |
| ***Service specification for VTS traffic clearance service 1.5*** | ***Use Cases on VTS Digital Communications*** |
| Use Case 2 – Entering, leaving or passing through VTS area | USE CASE 2 - ENTERING OR PASSING THROUGH A VTS AREA |
| The vessel sends message with estimated or planned time of arrival in VTS area through its system to the service and requests permission to proceed through the VTS area from the service | The vessel sends message (ETA) through its system to the service and requests traffic clearance to proceed through the VTS area from the service |
| Route with planned time of arrival are acknowledged by the VTS and sends permission to proceed through the VTS area | Route with ETA are acknowledged by the VTS and sends approval |

Considering the *Service specification for Route exchange 1.0* and the *Service specification for VTS traffic clearance service 1.5* have been approved by the Council, WG1 and WG2 need to be consistent to facilitate the development of subsequent technical service specifications.

### Further optimization on use cases

There are still some issues that need clarification in the work paper of *Use Cases on VTS Digital Communications*, thus it is recommended for further discussion and optimization.

For specific modification suggestions for the use cases of the Route Exchange Service, please refer to Section 3.1 of the Proposal on the *Service specification for Route exchange 1.0* which submitted by China MSA to TG 2.5.2.

# Action requested of the Committee

The Committee is requested to consider the contents of this document and take action as appropriate.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)