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| IALA Guideline |

Gnnnn

Guideline on VTS Digital Communications

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Date (of approval by Council)

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Revisions to this document are to be noted in the table prior to the issue of a revised document.

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# INTRODUCTION

# DOCUMENT PURPOSE

High level principles for the development of the guideline:

* Operational Guideline
* For different levels of automation
	+ focus on situations where human is in the loop
* Focus on the digital information exchange between VTS and vessels, incl. ROC
	+ allied services not included
	+ FAL - Port Call reports not included
* Use of concrete use-case examples, similarly as in GL 1132
* Focus on current technologies and available specifications
	+ Giving concrete examples of current best practices, e.g AIS ASM messages, UKC systems, advance reporting.
* No detailed system requirements.

# DOCUMENT STRUCTURE

This document consists of four parts:

* Part A sets out the general principles for digital communications;
* Part B provides more general guidance on message composition, delivery and interpretation
* Part C provides guidance to establish globally harmonized standard 'digital phrases for interactions
* Part C identifies a number of current technologies used to exchange VTS information

# PART a general principles of vts digital communications

Key considerations include:

* Managing a mix of traditional VHF voice, digital communications, and automated data exchange
* The intent of messages conveyed to actors is the same, irrespective of whether it is by voice or digital means.
* Messages can be conveyed to an individual ship or all ships by either VHF voice, digitally or via data exchange.

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* When can digital information replace voice communications?
* Publishing information on Digital Services
* Re-use of data

# part b message structure and delivery

Thing for consideration:

* Closed loop, when it is needed and how it will be achieved?

Different statuses: 1. received, 2. read, 3. comply

* Ambiguous terminology, differences in speech and text information
* Use of message markers in textual information?
* Differences between regular messages and warning/caution messages
* e.g. Geographical positions should always be given in degrees and minutes or in degrees, minutes and decimal minutes in the form:

*Latitude: DD-MMN or DD-MMS Longitude: DDD-MME or DDD-MMW*

 *or*

*Latitude: DD-MM.mmN or DD-MM.mmS Longitude: DDD-MM.mmE or DDD-MM.mmW*

*e.g. 07-08N 039-17W 32-18.65S 165-02.81E*

* AIS text messages structure

## Technical services

This section will include the operational descriptions and use cases for the potential technical services identified in the description for Maritime Service for VTS.

If needed further technical services can be added.

Consideration should also be on the timeframe when the services can be implemented, including the potential use of intermediate solutions before standardised technical services, based on S-100 product specifications, are available.

### Voyage Information Service

### Meteorology Service

### Meteorological warnings Service

### Hydrographic Service

### AtoN information Service

### Navigational warning service

### Route Information Service

### Slot management Service

### Traffic clearance Service

### Anchorage assignment Service

# PART C Standard *'DIGITAL'* phrases

to establish globally harmonized standard 'digital phrases for interactions.

# part D current technologies used for the exchange VTS information

## IALA GUIDELINEs

G1081 Provision of virtual Aids to Navigation

G1155 The development of a description of a Maritime Service in the context of e‐ navigation

G1157 Web service based S-100 data exchange

G1143 Unique identifiers for maritime resources

## IHO

S-100 …

[S-127, S-129?]

## IEC

IEC 63173-2 Secure exchange and communication of S-100 based products (SECOM)

## IMO

SN.1/Circ.289 Guidance on the use of AIS application-specific messages

# DEFINITIONS

The definitions of terms used in this Guideline can be found in the *International Dictionary of Marine Aids to Navigation* (IALA dictionary) at <http://www.iala-aism.org/wiki/dictionary> and were checked as correct at the time of going to print. Where conflict arises, the IALA Dictionary should be considered as the authoritative source of definitions used in IALA documents.

# abbreviations

This section should be typed with the **Abbreviations** style. The acronym or initialism is typed and then tab is pressed so that the style inserts the appropriate tabs and paragraph spacings e.g.:

NGO Non-governmental organization

VTS Vessel Traffic Services

The list should be typed in alphabetical order. The text automatically aligns as an indented paragraph until carriage return is hit and then the next term can be entered.

# references

References are sources directly referred to in the running text and should be given a sequential number, starting at 1. The reference number should be included as close to the referenced text as possible and included as a number within square brackets.

The reference should be listed in the References section in the following syntax using the **Reference** **list** style:

[Author surname,] <space> [initial.] <space> [year] <space> [title.]

For example:

“Hawking also suggests ways that quantum mechanics can be combined with the theory of special relativity [1]. This text builds on his discussion of the instability of black holes described in *A Brief History of Time* [2].”

should be included in the reference list as follows:

1. Hawking, S. (2001) The Universe in a Nutshell.
2. Hawking, S. (1988) A Brief History of Time.

The **Reference list** style will add a number for the reference as soon as you start typing the text and the paragraph will automatically align with the first line of text. Press return to enter a new reference in the list.

# Further reading

Any texts that are recommended to the reader without direct reference in the text should be listed within this section using the same syntax as the reference list. Sources should be listed using the **Further reading** style.

1. Einstein, A. (1905) Relativity: The Special and General Theory of Relativity
2. Idle, E. (1984) The Galaxy Song

# Index

**No index entries found.**

1. Example of appendix Title (Head 1) style

Appendices should be started on a separate page and contain information that is directly relevant to the main body of the text at a certain point, but that would be too large or distracting to include at that particular point. There are four levels of appendix heading styles available in the **Style Gallery.**

* 1. Example of Appendix Head 1 style
		1. Example of Appendix Head 2 Style

At the end of the **Appendix head 2** style text press carriage return, the following paragraph is **the Heading 1 separation line** style, press carriage return again, and the following line will be in **Body text** style.

* + - 1. Example of Appendix head 3 style

The same following formatting applies to the **Appendix Head 3** style i.e., press carriage return, the following paragraph is the **Heading 2 separation line** style, press carriage return again, and you will be back to body text.

* + - * 1. Example of Appendix Head 4 style

The Appendix Head 4 style is followed by body text and does not have a separation line. Only the level 1 **Appendix Title** will appear in the TOC.

* + - * 1. Example of Appendix Head 5 style

The **Appendix Head 5 style** is followed by body text and does not have a separation line. Figure and tables should be labelled as a continuation from the main Guideline content.

1. Example of Annex title (Head 1) style

Annexes should include information that can exist in isolation e.g.

* a technical specification for a new piece of equipment;
* the content and structure of a new training module; or
* the detail associated with a new recommendation for an AIS.

Annexes can include appendices if required. There are also four levels of annex heading styles available in the **Style Gallery.** In addition to the **Annex title** (**Head 1)** style there is **Annexe Head 2**, **Annexe Head 3** and **Annexe Head 4**. These follow a similar format to the appendix heading styles. As many annexes can be included as needed and it is advisable to separate them with a page break. Only the level 1 **Annex title** style text will appear in the TOC.

* 1. Example of Annex Head 2 style
		1. Example of Annex Head 3 style
			1. Example of Annex Head 4 style

Annex figures and tables should be labelled with the **Annex Figure Caption** and **Annex Table Caption** styles respectively, rather than the main figure and table caption styles. This ensures the annex can be read logically in isolation and that annex figures and tables are not included in the List of Figures and Tables respectively on the main Guideline contents page.

1. Example of annex figure caption
	* + - 1. Example of Annex Head 5 style