# MS 1 - Vessel Traffic Service

This template should be used to describe Maritime Services. Descriptions of Maritime Services provided to IMO using this template will enable IMO to exercise leadership and overarching oversight and to provide a globally harmonized list of recognized Maritime Services.

To ensure a standardized approach in the development and implementation of Maritime Services, the content should include a general description of the operational services, and a reference to associated technical services that will enable the exchange of information in digital format:

* + 1. Submitting organization

IALA

* + 1. Coordinating bodies

IMO and IALA

* + 1. Description of the Maritime Service

Stating the exact nature and scope of the Maritime Service in accordance, if applicable, with existing IMO instruments. Additional details might be added for clarity as required.

This Maritime Service in the context of e-Navigation is a data service for the exchange of VTS information by electronic means between VTS and ships transiting in the VTS area. With the Maritime Service in the context of e-navigation is meant the Maritime Digital Data Services necessary for the exchange of VTS by electronic means, not to be confused with operational services for VTS.

* + - 1. Operational Description

Vessel Traffic Service (VTS) means a service implemented by a Government with the capability to interact with vessel traffic and respond to developing situations within a vessel traffic service area to improve the safety and efficiency of navigation, contribute to safety of life at sea and support the protection of the environment.

IMO Resolution A.XXX(XX) states that:

*“The purpose of VTS is to contribute to the safety of life at sea, improve the safety and efficiency of navigation and support the protection of the environment within a VTS area by mitigating the development of unsafe situations through:*

1. *providing timely and relevant information on factors that may influence ship movements and assist onboard decision-making.*
2. *monitoring and managing ship traffic to ensure the safety and efficiency of ship movements.*
3. *responding to developing unsafe situations.*

The IALA Guideline G1089 “*Provision of Vessel Traffic Services (VTS)”* provides guidance for the provision of VTS to participating ships in a harmonized manner in accordance with internationally approved guidelines and IALA Standards.

* + 1. Purpose

What is the purpose of the Maritime Service?

What value does it bring to its intended stakeholders?

Is the Maritime Service compliant with regulatory requirements, if applicable?

In the case that the Maritime Service covers existing services, a description of the steps required to transition from analogue to digital information promulgation must be included.

The purpose of this Maritime Service in the context of e-Navigation is to support the provision of VTS to participating ships by providing information in a digital format.

Information can be displayed in appropriate systems on board in order to create the means to reduce administrative burden and information overload, reduce miscommunication due to external interference, simplify work procedures, promote sustainable shipping, and increase navigational safety.

This maritime service can be used for data and information exchange between MASS, conventional ships, VTS and allied services.

* + 1. Operational approach

How is the purpose of the Maritime Service achieved, taking into account existing guidance of the Organization and other international bodies?

As part of the providing VTS to vessels digital information provided in this Maritime Service in the context of e-Navigation can be delivered by several different means, such as AIS/VDES messages, by IP-based communication and using S-100 based Product Specifications and other international standards.

Information provided digitally could partly replace voice communications in non-time critical situations and in addition complement voice communications in time critical situations.

The steps to achieve this transition to digital information exchange may vary in different areas and for different types of vessels. Details about digital information exchange should be published by the VTS provider.

IALA publishes standards and associated recommendations and guidelines specifically related technical services and specifications used for the implementation of this Maritime Service.

* + 1. User needs

Describe the user needs the Maritime Service addresses. In so doing make reference to any relevant IMO instruments and, where applicable, include one or more use cases.

The use cases are generic and intended for description purposes only.

* + - 1. Use Case - Providing timely and relevant information

The provision of timely and relevant information on factors that may influence the ship’s movements and assist on-board decision making should be provided where:

* Deemed necessary by the VTS; or
* Requested by the participating ship.

Vessels can receive timely and relevant information in a digital format that can be displayed in the navigational equipment on board. This may include but is not limited to:

* Navigational situations (including traffic and route information)
* Navigational warnings
* Meteorology
* Meteorological warnings
* Hydrography
* Electronic navigational aids
* Other information
  + - 1. Use Case - Managing ship traffic

Vessels can receive information related to the management of ship traffic in a digital format that can be displayed in the navigational equipment on board. Digital communication may apply to elements of the Management of ship traffic that is not time critical.

This information may include but is not limited to:

Examples:

* Slot management: provides vessels digitally with priority of arrival and distance between two vessels.
* Traffic clearance: provides vessels digitally with permission to proceed, impose conditions or deny entry.
* Anchorage: providing the assigned anchorage position in digital format.
* Route information: provides vessels digitally with recommended route information.
* Waterway managementvessel provides VTS digitally their intentions, such as overtaking of another vessel.
* Information regarding restricted or no go area: the content (draft, closed fairway/port/quay etc.) can be provided digitally to vessels without using voice communication.
  + - 1. Use Case – Responding to unsafe situations

VTS responding to developing unsafe situations can be supported by the provision of navigational information to in digital format. Information provided digitally could complement voice communications in time critical situations and in addition partly replace voice communications non-time critical situations.

Examples:

* Recommended route can be sent digitally to a vessel
* Pre-arrival reporting can be automated for update of voyage plan in order to avoid collisions, allisions and groundings and assist in safe navigation.
* The content of the voice communication can be provided digitally and be displayed as text in parallel / in addition to voice communication.
* Risk of grounding/striking/collision. In addition to voice communications, the vessel can be provided with an electronic route recommendation.
  + 1. Information to be provided

List the information elements the Maritime Service provides. The information elements will be the starting point for data modelling, as part of the technical services to access, promulgate or exchange the information.

Technical Services and data models used for the implementation of this Maritime Service are under development.

S-212 on VTS *Digital Information* [under development] is a product specification for encoding VTS Information. It is based on the IHO S-100 framework specification and the ISO 19100 series of standards.

S-212 datasets describe the Navigational situation (including traffic and route information), Navigational warning, Meterorology, Meterorological Warning, Hydrography, Electronic navigational aids and other information

Information elements provided in the Maritime Service may include but is not limited to:

* Weather and Wave conditions and observations, using AIS/VDES Application-Specific Messages defined in IMO SN.circ.289 or S-100 based product specifications developed by the Joint Technical Commission for Oceanography and Marine Meteorology (WMO/IOC JCOMM) (S-411 to S414)
* Navigational warning information, using S-124 Product Specification for Navigational Warnings
* Information related to Aids to Navigation, using virtual Aids to Navigation following the guidance from IALA G1081 Provision of Virtual Aids to Navigation or S-125 Product Specification for Marine Navigational Services.
* Route Information, using AIS/VDES Application-Specific Messages defined in IMO SN.circ.289, S-421 Product Specification on Route Plan or IEC specification 61174-1:2021 Route plan exchange format.
* Restricted Area Information, AIS/VDES Application-Specific Messages defined in IMO SN.circ.289
* VTS and SRS Area and Reporting information, using S-127 Product Specification on Marine Traffic Management
  + 1. Associated technical services

Using the table below list existing or potential technical services associated with this Maritime Service.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | ID (MRN) | Description | Standardisation Body |
| Voyage Information Service | urn:mrn:stm:service:specification:sma:vis | The service supports exchange of voyage plans, text messages and area messages. | IEC |
| Weather Service |  |  |  |
| Route Information Service | urn:mrn:mcp:service:specification:fta:ENSI-VRS | The Service provides route validation for ships |  |

* + 1. Relation to other Maritime Services

Describe any relationships between this and other Maritime Services such as interdependencies or areas of overlap. This section should clarify the nature of interdependencies, overlaps and provide recommendations for their resolution.

This Maritime Service has close relationship with other Maritime Services as several information elements delivered in the service can also be provided as part of other Maritime Services. Areas of overlap should be taken into consideration during the implementation of the service.