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**On**

**Provision of**

**Vessel Traffic Services**

(INS, NAS & TOS)

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**Provision of Vessel Traffic Services**

(INS, NAS & TOS)

# introduction

The purpose of Vessel Traffic Services (VTS) is to improve the safety and efficiency of navigation, safety of life at sea and the protection of the marine environment and/or the adjacent shore area, worksites and offshore installations from possible adverse effects of maritime traffic.

Chapter V “Safety of Navigation” of the SOLAS 1974 Convention, Regulation V-12 “Vessel Traffic Services”, states, amongst other things, that:

*“Vessel traffic services contribute to safety of life at sea, safety and efficiency of navigation and protection of the marine environment, adjacent shore areas, work sites and offshore installations from possible adverse effects of maritime traffic.”*

*“Contracting Governments planning and implementing VTS shall, wherever possible, follow the guidelines developed by the Organization.”*

IMO Resolution A.857(20) *Guidelines for Vessel Traffic Services* define a Vessel Traffic Service (VTS) as a:

“S*ervice implemented by a Competent Authority, designed to improve the safety and efficiency of vessel traffic and to protect the environment*. *The service should have the capability to interact with the traffic and to respond to traffic situations developing in the VTS area.”*

In providing definitions and clarifications with regards to VTS services, IMO Resolution A.857(20) states that:

“*VTS should comprise at least an Information Service and may also include others, such as a Navigational Assistance Service or a Traffic Organisation Service, or both.*”

The principles of vessel traffic services are governed by a hierarchy of regulatory requirements and guidelines. Key requirements and guidelines include:

1. SOLAS Regulation V-12 “Vessel Traffic Services”.
2. IMO Resolution A.857(20) Guidelines for Vessel Traffic Services.
3. IMO Resolution A.918(22) IMO Standard Marine Communication Phrases.
4. IALA Vessel Traffic Services Manual.

Previous IALA Guideline 1068 on *Provision of a Navigational Assistance Service by Vessel Traffic Service* has been superseded by this guideline.

For a full list of references see section 7.

## Objective

The aim of this document is to give guidance on the delivery of the different types of services provided by a VTS such as Information Service, Navigational Assistance Service and Traffic Organisation Service. The guidelines also aim [to achieve consistency in the provision of the services worldwide in order to avoid confusion about the delivery of VTS services for the mariner trading between various jurisdictions].

# Acronyms and Definitions

To assist in the use of these guidelines, the following acronyms and definitions, mainly based on IMO resolutions, have been used:

1. Acronyms

|  |  |
| --- | --- |
| *COG* | Course over Ground |
| *IALA* | International Association for Marine Aids to Navigation and Lighthouse Authorities |
| *IMO* | International Maritime Organization |
| *ISPS* | International Ship and Port Facility Security (Code) |
| *MSC* | Maritime Safety Committee (Standing Committee of IMO) |
| *OOW* | Officer of the Watch |
| *PSC* | Port State Control |
| *SMCP* | IMO Resolution A.918(22) IMO Standard Marine Communication Phrases |
| *SOG* | Speed over Ground |
| *SOLAS* | International Convention for the Safety of Life at Sea |
| *VTS* | Vessel Traffic Services |
| *VTSO* | Vessel Traffic Services Operator |

1. General Definitions

|  |  |
| --- | --- |
| *Competent Authority* | The authority made responsible, in whole or in part, by the Government for safety, including environmental safety, and efficiency of vessel traffic and the protection of the environment.**1** |
| *Information Service (INS)* | A service to ensure that essential information becomes available in time for on-board navigational decision-making.**1** |
| *Maritime mobile service* | The Maritime Mobile Service is an internationally-allocated radio service providing for safety of life and property at sea and on inland waterways. |
| *Navigational assistance* | The process of providing assistance in the navigation from a VTS to an individual vessel when there is a developing (navigation) situation and when (relevant) information, available to the VTS, may assist the vessels’ navigation.  *Working Group 1 is requested to revisit the definitions in VTS34/WG1/WP4 (Produce Guidelines on Provision of VTS Types of Service (Task 10)) for navigation assistance and Navigation Assistance Service (NAS) at VTS35.* |
| *Navigational Assistance Service (NAS)* | A service to assist on-board navigational decision making and to monitor its effects.**1**  *Working Group 1 is requested to revisit the definitions in VTS34/WG1/WP4 (Produce Guidelines on Provision of VTS Types of Service (Task 10)) for navigation assistance and Navigation Assistance Service (NAS) at VTS35.* |
| *Participating Vessel* | Vessels navigating in an area where vessel traffic services are provided should make use of these services. Depending upon governing rules and regulations, participation in a VTS may be either voluntary or mandatory. Vessels should be allowed to use a VTS where mandatory participation is not required.**1** |
| *Traffic Clearance* | VTS authorization for a vessel to proceed under conditions specified. **2** |
| *Traffic Organisation Service (TOS)* | A service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the VTS area.**1** |
| *Vessel Traffic Services (VTS)* | A service implemented by a Competent Authority, designed to improve the safety and efficiency of vessel traffic and to protect the environment. The service should have the capability to interact with the traffic and to respond to traffic situations developing in the VTS area.**1** |
| *VTS Authority* | The authority with responsibility for the management, operation and coordination of the VTS, interaction with participating vessels and the safe and effective provision of the service.**1** |
| *VTS Centre* | The centre from which the VTS is operated.**1** |
| *VTS Operator* | An appropriately qualified person performing one or more tasks contributing to the services of the VTS.**1** |
| *VTS Sailing Plan* | A plan which is mutually agreed between a VTS operator and the master of a vessel concerning the movement of the vessel in a VTS area. |
| *VTS Traffic Image* | The surface picture of vessels and their movements in a VTS area.**1** |

1. Course, Track and Heading Definitions

|  |  |
| --- | --- |
| *Course* | The intended direction of movement of a vessel through the water.**2** |
| *Course Made Good* | That course which a vessel makes good over ground, as a result of the effect of currents, tidal streams, and leeway caused by wind and sea. (May be referred to as “Course over ground”) |
| *Course to Make Good* | That course which a vessel intends to make good over ground, after allowing for the effect of currents, tidal streams, and leeway caused by wind and sea. (Be aware that this term does not equate to Course to Steer). |
| *Track* | The path followed, or to be followed, between one position and another.**2** |
| *Heading* | The horizontal direction of the vessel's bows at a given moment measured in degrees clockwise from north.**2** |

Notes:

1. IMO Resolution A.857(20) Guidelines For Vessel Traffic Services
2. IMO Resolution A.918(22) IMO Standard Marine Communication Phrases

# GENERAL PROVISIONS

## Provision and Declaration of Services

An Information Service (INS) is the basic type of service. It should be formally declared and provided as a service by all VTS. When a VTS Authority organises and manages traffic within its VTS Area as part of its function, then it would normally also declare the provision of a Traffic Organisation Service (TOS).

A VTS Authority would normally be expected to respond to situations where a vessel was observed, or otherwise deemed, by the VTS to be in need of navigational assistance, using appropriate procedures. It would also normally be expected to respond to requests from a vessel that is in need of navigational assistance in situations such as an equipment failure or incapacitation of a key member of the bridge team; this may be limited to getting the vessel to the nearest place of safety.

It, therefore, follows that a VTS Authority should normally declare a Navigational Assistance Service (NAS) in addition to an INS or TOS and that VTS staff should be appropriately trained. Where the delivery of NAS is subject to special conditions or additional capabilities/requirements relating to a specific VTS Area, these should be clearly promulgated.

## Promulgation of Information and Types of Services

The services offered to the mariner by a VTS should be promulgated to vessels in the appropriate internationally recognised marine publications, and locally produced User Guides or Manuals. This should include details of the VTS area, its capabilities, types of service provided, rules, regulations, requirements and procedures. The information promulgated should be verified and up-dated at least at annual intervals.

## Responding to Traffic Situations Developing in the VTS Area

IMO Resolution A.857(20) states that:

*“A VTS should at all times be capable of generating a comprehensive overview of the traffic in its service area combined with all traffic influencing factors.”*

The VTS should be able to compile a traffic image, which is the basis for its capability to respond to traffic situations developing in its service area. The VTS traffic image allows the VTS operator to evaluate situations and to respond accordingly.

To respond to traffic situations developing in the VTS area and to determine appropriate actions the acquired data should be processed and evaluated. Conclusions from the evaluation need to be communicated to participating vessels by giving relevant information and in regard to the provided service type.

~~A distinction should be made between the provision of navigational information, being a relay of information extracted from the VTS sensors and the traffic image, and the provision of navigational advice, where a professional opinion is included.~~

## Equipment Capabilities

Consideration should be given to the quality of the traffic image available, communications capability and equipment availability in determining to provide the specific service type. For further information refer to IALA Recommendation V-128 – *Operational and Technical Performance Requirements for VTS Equipment*.

## Staffing and Training

Any person who is serving in a VTS centre that is appropriately qualified, trained and assessed as competent by the relevant authority, may provide the applicable service type or types within a particular VTS area.

It is important that VTS personnel should be trained and practiced in the delivery of the relevant service type/types provided. In determining which types of service a VTS will provide, the appropriate authorities should give careful consideration to:

* The staffing levels required to deliver the service;
* The qualifications of VTS personnel and appropriate delegations/authorisations to reflect the type of service they will provide.

VTS operators should be appropriately trained and ready to deliver NAS at no notice when a situation that compromises navigational safety is observed or deemed necessary, whereas the provision of NAS on request may only be appropriate for certain VTS Authorities where the geographic arrangement of the port and its approaches, the capability of the systems, and the training of the operators allow.

Although training in the provision of NAS and TOS should normally be undertaken with, or as part of V103/1 *VTS Operator Training*, the additional local training for NAS and TOS should be undertaken as part of V103/3 *On-the-Job Training* with specific reference made in their local authorisations.

For further information refer to IALA Recommendation V-103 - *VTS Operator Training* and IALA Guidelines 1045 *on Staffing Levels at VTS Centres.*

## Legal

It is important that consideration is given to the national and international legal basis for the provision of the service type(s) provided.

INSTRUCTION [and ADVICE] by VTS personnel should be given under the regulatory powers and responsibilities of the VTS / Competent Authorities.

As regards INSTRUCTION the recipient has a legal obligation to comply with this message unless contradictory safety reasons exist, which then have to be reported immediately to the sender.

## Operational Procedures

All details for the provision of any type of service, including the terminology used, should be contained in the operational procedures of the VTS Centre.

Further information and guidance on preparing operational procedures is provided in the IALA Recommendation V-127 *on Operational Procedures for Vessel Traffic Services.*

## Interaction between a VTS and a Vessel

Where a VTS provides a service, irrespective of whether the service is initiated by the VTS or the participating vessel, care should be taken that VTS operations do not encroach upon the master's responsibility for safe navigation, however, they should support the bridge team decision-making by providing essential information in a timely manner.

Decisions concerning the actual navigation and the manoeuvring of the vessel remain with the master. Neither a sailing plan, nor requested or agreed changes to the sailing plan can supersede the decisions of the master concerning the actual navigation and manoeuvring of the vessel.[[1]](#footnote-1)

## Communication

In all VTS messages to a vessel or vessels it should be made clear whether the message contains information, advice, warning, or an instruction.

A fundamental principle of VTS communications is that any communication should be result-oriented; leaving the details of execution, such as course to be steered or engine manoeuvres to be executed, to the master on board the vessel. Phrases that are used on the bridge of the vessel, in particular specific rudder or engine commands such as “Stop Engine” or “Hard to Starboard”, should never be used by the VTS.

IMO Standard Marine Communication Phrases should be used wherever practicable. Where appropriate, e.g. when language difficulties exist, the VTS operator should ask the operator on the vessel to use the IMO Standard Marine Communication Phrases.

### Message Markers

There are eight types of communication message markers that are frequently used to emphasise the content of the message or to ensure that the message will be properly understood, particularly when language difficulties are apparent between the VTS and the vessel.

It is recommended that message markers are used when providing Vessel Traffic Services. However, it is at the discretion of the user which marker is applicable to the situation and if authority to use it has been given by the appropriate authority. If used, the message marker is to precede the message or the corresponding part of the message.

Illustrated examples of the use of the message markers may be found in ANNEX A.

#### INFORMATION

SMCP defines INFORMATION as a communication whereby the message is restricted to observed facts, situations, etc. and is preferably used for navigational and traffic information.

As such, it is a relay of information extracted from the VTS sensors and the traffic image where no professional opinion by the VTS operator is included, other than the determination by the VTS operator that the information is relevant to the mariner.

Implicit in this definition is that the consequences of using the INFORMATION will be up to the recipient.

1. Examples of the provision of INFORMATION to a vessel within a VTS area:

|  |  |
| --- | --- |
| Example 1 | “INFORMATION. Ice-breaker assistance is mandatory to port “XX”.” |
| Example 2 | “INFORMATION. Next high water at port “YY” predicted to be “….” at a height of “ZZ” metres.” |

#### WARNING

SMCP defines WARNING as a communication whereby the message implies the intention of the sender to inform others about danger. It may be used to convey potentially dangerous situations or observed developing situations.

As such, it is a relay of information extracted from the VTS sensors and the traffic image and, in the professional opinion of the VTS operator, the message should be communicated to inform a vessel or vessels about potential danger.

The contents of a warning message should immediately be assessed onboard the vessel in conjunction with any additional information which may not be available to the VTS centre.

Implicit in this definition is that the recipient should pay immediate attention to the danger mentioned. The consequences of a WARNING will be up to the recipient. Subject to the response of the vessel, a warning message may be followed by further messages, such as ADVICE and/or INSTRUCTION.

1. Examples of the provision of WARNING to a vessel within a VTS area:

|  |  |
| --- | --- |
| Example 1 | “WARNING. Obstruction in the fairway. Submerged container …. degrees, distance …. meters from …. buoy.” |
| Example 2 | “WARNING. According to my equipment you are running into danger. Shallow water ..... degrees (or distance) from you.” |
| Example 3 | “WARNING. According to my equipment, you will pass close to the outgoing vessel bearing …… degrees distance … nautical miles.” |

#### ADVICE

SMCP defines ADVICE as a communication whereby the message implies the intention of the sender to influence the recipient by a recommendation*.*

Implicit in this definition is:

* A professional opinion on the part of the VTS operator is included in the message as a means to influence the recipient; and
* The recipient should pay immediate attention to the advice mentioned and the consequences of using the information provided will be up to the recipient. Advice does not necessarily have to be followed but should be considered very carefully by the recipient;
* The recipient should always inform the VTS of intended actions.

The provision of ADVICE in response to a developing situation may also include or require:

* An assessment of the suitability of the vessel to respond to the advice provided including an assessment of linguistic ability;
* A review of vessel characteristics including manoeuvrability relative to the area in which the service is provided and any defects or deficiencies;
* An assessment of the environmental conditions; and/or
* An assessment of the implications of the cargo carried.

1. Examples of the provision of ADVICE to a vessel within a VTS area:

|  |  |
| --- | --- |
| Example 1 | “WARNING. According to my equipment you are diverging from the recommended track.”  “ADVICE. Follow the recommended track.” |
| Example 2 | “ADVICE. Recommend course to make good ... degrees.” |
| Example 3 | “WARNING. According to my equipment you are running into danger. Shallow water, distance .....”  “ADVICE. Recommend course … degrees.” |

VTS personnel and mariners should be fully aware of the implications of words such as “track”, “heading”, “course made good”, “course to make good” and “course”.

ADVICE given from the VTS centre should be result-oriented. Generally, advice should be provided using the terms “track” or “course to make good”.

When authorised by the competent authority and when intervention by VTS is deemed necessary or requested by a vessel, the VTS operator may advise or recommend a course. However, it should be understood that the safe and effective execution of the action remains the responsibility of the master.

In all circumstances when ADVICE is given, VTS personnel should monitor its effect carefully.

VTS/Competent Authorities should consider the legal implications of authorising VTS personnel to issue ADVICE and the competence of staff to give it.

#### INSTRUCTION

SMCPdefines INSTRUCTION as a communication whereby the message implies the intention of the sender to influence the recipient by a regulation.

Implicit in this definition is:

* The sender should have the full authority to communicate such a message;
* The recipient has a legal obligation to comply with this message unless contradictory safety reasons exist, which then have to be reported immediately to the sender.

INSTRUCTION as a message marker should not be used in an Information Service.

IMO Resolution A.857(20) Guidelines for Vessel Traffic Services states that:

*“When the VTS is authorized to issue instructions to vessels, these instructions should be result-oriented only, leaving the details of execution, such as course to be steered or engine manoeuvres to be executed, to the master or pilot on board the vessel. Care should be taken that VTS operations do not encroach upon the master's responsibility for safe navigation, or disturb the traditional relationship between master and pilot*.”

Thus, whilst it is acceptable to issue ADVICE on course, it would not be appropriate to issue precise course requirements as an INSTRUCTION.

Generally masters of vessels will respond promptly and carry out INSTRUCTIONS given by a VTS. However, it should be recognised that there may be occasions when an INSTRUCTION by a VTS is disregarded because the master has additional information not available to the VTS centre and he/she decides on another course of action. For example, a vessel that is not being tracked by the VTS may be a contributing factor to the navigational situation.

1. Examples of the provision of INSTRUCTION to a vessel within a VTS area:

|  |  |
| --- | --- |
| Example 1 | "WARNING. There is a restricted area south of you distance 1.2 nautical miles."  “INSTRUCTION. Do not enter this area.” |
| Example 2 | “WARNING. Visibility in the approach channel is less than …... nautical miles.  “INSTRUCTION. Do not enter the fairway.” |

#### QUESTION

SMCPdefines QUESTION as a communication whereby the message marker indicates that the following message is of an interrogative character.

The use of this marker removes any doubt as to whether a question is being asked or a statement is being made, especially when interrogatives such as what, where, why, who, how are additionally used at the beginning of the question.

Implicit in this definition is that the recipient is expected to return an answer.

1. Examples of the provision of QUESTION to a vessel within a VTS area:

|  |  |
| --- | --- |
| Example 1 | “QUESTION. What is your present maximum draft?” |
| Example 2 | “QUESTION. Do you carry any dangerous goods?“ |

#### ANSWER

SMCPdefines ANSWER as a communication whereby the message marker indicates that the following message is the reply to a previous question.

An answer should not contain another question.

1. Examples of the provision of ANSWER to a vessel within a VTS area:

|  |  |
| --- | --- |
| Example 1 | “ANSWER. My present maximum draft is zero seven metres.” |
| Example 2 | “ANSWER. No, I do not carry any dangerous goods.“ |

#### REQUEST

SMCP defines REQUEST as a communication whereby the message marker indicates that the following message is asking for action from others with respect to the vessel.

The use of this message marker is to signal: I want something to be arranged or provided, e.g. ship´s stores requirements, tugs, permission, etc.

REQUEST must not be used involving navigation, or to modify COLREGs.

1. Examples of the provision of REQUEST to a vessel within a VTS area:

|  |  |
| --- | --- |
| Example 1 | “REQUEST. Correct the list of the vessel.” |
| Example 2 | “REQUEST. Rig the pilot ladder on port side ..... metres above water.“ |
| Example 3 | “REQUEST. Correct the list of the vessel.” |

#### INTENTION

SMCP defines INTENTION as a communication whereby the message marker indicates that the following message informs others about immediate navigational action intended to be taken.

The use of this message marker is logically restricted to messages announcing navigational actions by the vessel sending this message.

Implicit in this definition is that only the vessel can use this message marker and not the VTS centre.

# Description of information service (INS)

## General

An Information Service provides relevant information at appropriate times for the promulgated VTS area.

An Information Service involves maintaining a traffic image and allows interaction with traffic and response to developing traffic situations. An Information Service should provide essential and timely information to assist the on-board decision-making process, which may include:

* The position, identity, intention and destination of vessels;
* Amendments and changes in promulgated information concerning the VTS area such as boundaries, procedures, radio frequencies, reporting points;
* The mandatory reporting of movements;
* Meteorological and hydrological conditions, notices to mariners, status of aids to navigation;
* Maneuverability limitations of vessels in the VTS area that may impose restrictions on the navigation of other vessels, or any other potential hindrances: or
* Any information concerning the safe navigation of the vessel.

## Provision of an Information Service

### When should an Information Service be provided

An Information Service may be provided:

* when broadcasting information at fixed times and intervals, as promulgated in the appropriate navigational publications;
* when deemed necessary by the VTS; or
* when the vessel has requested information.

### Types of Information provided by an Information Service

1. Examples of the types of information that may be provided by the VTS operating an Information Service:

| **Information related to:** | **Examples:** |
| --- | --- |
| Navigational situations  (including traffic and route information) | The position, identity, destination of vessels and the intention of other traffic; amendments and changes in promulgated information concerning the VTS area such as boundaries, procedures, radio frequencies, reporting points; the mandatory reporting of movements; limited maneuverability that may impose restrictions on the navigation of other vessels, or any other potential hindrances; suspension or change of routes; etc. |
| Navigational warnings | Dangerous wrecks, obstacles not otherwise promulgated, diving operations, vessels not under command, etc. |
| Meteorology | Information that will include the speed and direction of the prevailing wind, direction and height of the waves, visibility, atmospheric pressure, the formation of ice, etc. |
| Meteorological warnings | Gale, storm, tsunami, restricted visibility, etc. |
| Hydrography | Information that will include factors such as the stability of the seabed, sea depth, the accuracy of surveys, tidal ranges, tidal streams, prevailing currents and swell, etc. |
| Electronic navigational aids | The availability of electronic navigational aid such as: GNSS, Loran, LRIT, DGPS, AIS shore base stations, RACON, Satellite AIS, etc. |
| Other information | Port information, pilot or tug request, cargo information, health condition, PSC, ISPS, etc. |

If a VTS is tasked with providing maritime safety information (MSI), guidance on this type of information is found in IMO Resolution A.706(17)a – World-wide navigational warning service.

### Where may an Information Service be provided

An Information Service should be provided within the declared VTS area where VTS has been deemed necessary by the competent authority.

[See figure XX in Annex xx]

### Methods of providing Information Service

While VHF should be the primary means of providing information any available means within the maritime mobile service may be used including MF, AIS and Inmarsat-C messaging for example.

# Description of Navigational assistance service (NaS)

## General

A Navigational Assistance Service is a service that provides essential and timely navigational information to assist in the on-board navigational decision-making process and to monitor its effects. It may also involve the provision of navigational advice and/or instruction for the promulgated VTS area.

The Navigational Assistance Service is especially important in difficult navigational or meteorological circumstances or in case of defects or deficiencies.

A Navigational Assistance Service is an important supplement to the provision of other navigational services and it may be provided at the request of a vessel or when a navigational situation is observed and intervention by the VTS is deemed necessary.

Navigational Assistance Service requires positive identification and continuous communication throughout the process. If possible and if time permits, checks should normally be made prior to commencement of the provision of Navigational Assistance Service to assess the capability of the vessel to respond to the guidance given. An example of a checklist is found at ANNEX D, which should be modified as required for local requirements.

## Provision of a Navigational Assistance Service

It is recommended that a Navigational Assistance Service:

* Is provided to an individual vessel, at the request of the vessel or when deemed necessary by the VTS, to assist the decision making process on board the vessel concerned.

This service consists of navigational matters relating to a specific vessel and may include information, warning, advice and instruction subject to the authority of the VTS.

* Has a start and end time.

It is important that information to assist the on-board decision making is provided in a timely manner. It should be conducted in a clear and concise manner in order to maximise on-board understanding and to eliminate the chance of misinterpretation and to minimize the risk of unwanted consequences.

### When should a Navigational Assistance Service be provided

Navigational Assistance Service may be provided as follows:

* *When deemed necessary by the VTS*

This may occur when the VTS observes a developing situation (e.g. a vessel deviating from a recommended route) and deems it necessary to interact with the bridge team.

* *When the vessel has requested the service*

This may occur on request by a vessel in circumstances such as equipment failure or navigational unfamiliarity. Individual circumstances will dictate the degree of preparation that can be undertaken prior to commencing the Navigational Assistance Service on request. If possible, preparations should include an assessment of the risks involved.

When the VTS observes a developing situation (e.g. a vessel deviating from a recommended route) and deems it necessary to interact, it is likely that, under such circumstances, the immediate priority will be placed on providing the necessary assistance before attempting to formally negotiate the commencement of Navigational Assistance Service. However, once the immediate situation has been resolved, the continuation or completion of the service should be subsequently clarified and the use of the checklist considered.

The provision of Navigational Assistance Service does not absolve the master from the responsibility for the safety of the vessel; furthermore the master should be made aware of any limitations that may affect the service provided. The VTS operator should also be aware of the specific responsibilities for collision avoidance that apply to the vessel.

Examples of developing situations where a Navigational Assistance Service may be provided:

* Risk of grounding;
* Vessel deviating from the VTS sailing plan;
* Vessel unsure of its position or unable to determine its position;
* Vessel unsure of the route to its destination;
* Assistance to a vessel to an anchoring position;
* Vessel defects or deficiencies, such as navigation or manoeuvring equipment failure;
* Severe meteorological conditions (e.g. low visibility, high winds);
* Risk of collision between vessels;
* Risk of collision with a fixed or floating object;
* Assistance to a vessel to support the unexpected incapacity of a key member of the bridge team.

### Types of Information provided by a Navigational Assistance Service

1. Examples of the types of information which may be provided by a VTS operating a Navigational Assistance Service:

|  |  |
| --- | --- |
| **Information related to NAS:** | **Examples:** |
| Request and identification | Availability of NAS; start and end of NAS; request for ship identification such as position, course made good and speed over the ground; status of ship's equipment; etc. |
| Navigational information  (including position and course information) | Examples provided to an individual vessel:  - Provide range and bearing from fixed objects, fairway/channel or way-points; proximity to navigational hazards, etc.  - Provide information related to navigating into a channel/fairway/lane (i.e. track is parallel/diverging/converging with/from/to reference line); etc. |
| Advice (or instruction) | - Advice (or instruct) a ship to alter the course, speed;  - Advice (or instruct) to keep clear from area/position, close up/drop back on/from vessels; etc. |
| Navigational warnings | Diverging from the recommended track; dangerous wrecks; obstacles not otherwise promulgated; diving operations; vessels not under command; etc. |

### Where may a Navigational Assistance Service be provided

Navigational Assistance Service should be provided within the declared VTS area and/or in specified areas or sectors within the VTS area where NAS has been deemed necessary by the competent authority.

[See figure XX in Annex xx]

### Methods of providing a Navigational Assistance Service

In providing a Navigational Assistance Service it is important that the interaction from a VTS centre to assist the on-board decision making is conducted in a timely manner, is unambiguous and clearly understood by both parties and not open to interpretation.

Messages relating to Navigational Assistance Service should always be addressed by name to the vessel participating in the service so that there is no doubt to whom the content of the message is directed.

Consideration should be given regarding the VHF radio frequency on which the Navigational Assistance Service should be provided depending on individual and local circumstances. An assessment should be made of the benefits of conducting the assistance on a discrete frequency so that interference from other users can be avoided, or the use of a common working frequency such that other users are aware of the likely actions of the vessel participating in the Navigational Assistance Service. Other options may be available if the participating vessel is able to monitor two or more frequencies.

While VHF may be the primary means of providing Navigational Assistance Service any available means may be used.

#### Message Markers within a Navigational Assistance Service

INSTRUCTION as a message marker should only be provided when the VTS operator has been given the authority to use it within the Navigational Assistance Service.

It is recommended as best practice that message markers are always used when delivering Navigational Assistance Service irrespective of the language ability of the recipient. Navigational Assistance Service is often provided when a degree of stress or urgency exists and the use of message markers can help to ensure that the purpose of each part of the message is clear and unambiguous.

# Description of Traffic Organisation Service (TOS)

## General

A Traffic Organisation Service is a service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the declared VTS area. It concerns the operational management of traffic and the planning of vessel movements and is particularly relevant in times of high traffic density or when vessel movements may affect the traffic flow.

## Provision of a Traffic Organisation Service

### When should a Traffic Organisation Service be provided

A Traffic Organisation Service should be provided when the VTS is authorised to provide services, such as when:

* vessel movements need to be planned or prioritised to prevent congestion or dangerous situations;
* special transports or vessels with hazardous or polluting cargo may affect the flow of other traffic and need to be organised;
* an operating system of traffic clearances or sailing plans, or both, has been established;
* the allocation of space needs to be organised;
* mandatory reporting of movements in the VTS area has been established;
* special routes should be followed;
* speed limits should be observed;
* the VTS observes a developing situation and deems it necessary to interact and coordinate or direct vessel movements;
* nautical activities (e.g. sailing regattas) or marine works in-progress (such as dredging or submarine cable-laying) may interfere with the flow of vessel movement.

A Traffic Organisation Service should be responsible for separating traffic in the interest of safety. This separation could be defined in space, time and/or distance.

Enforcement may also be carried out within a Traffic Organisation Service where the VTS should monitor adherence to applicable rules and regulations and to take appropriate action where required and within the authority of the VTS.

### Types of Information provided by a Traffic Organisation Service

1. Examples of types of information that may be provided by the VTS within a Traffic Organisation Service:

| **Information related to:** | **Examples:** |
| --- | --- |
| Traffic clearance | Give authorisation under conditional circumstances to a vessel when;   * prior to or entering a VTS area; * /departing from a berth or a anchorage position within a VTS area; * entering into a fairway within a VTS area; or * prior to commencing a manoeuvre that may be detrimental to safe navigation.   Examples of some conditions:   * A VTS sailing plan before entering a VTS area; * Report position at determined reporting point/line/pilot station; * Use a second fairway in case of bad visibility/weather; * Use a tug boat in case of strong wind; * Dredging or compass swing in confined waterway. |
| Anchorage | Examples of anchorage situations:   * Organising the movements to/from an anchorage position/area; * Assignment of an anchorage position; * Assisting vessels into anchorage position. |
| Enforcement | Examples of enforcement:   * Speed limits; * Adherence to rules regarding traffic routeing measures; * Pilotage requirements; * Other traffic regulations and possibly local by-laws. |
| Waterway (sea, channels and fairway) management | Examples of management measures:   * The use of one way traffic as an alternative of two way traffic, depending on the dimensions of ship or the weather conditions; * Organising other traffic when a vessel has passed point of no return; * Slot management to allocate ships in a time window; * Organising the traffic concerning vessel dimensions in comparison to fairway restrictions; * Instruct vessels when overtaking is not permitted; * Establish and organise ship safety zones in case of particular operations; * Establish and organise exclusion zones; * Instruct vessels to keep clear from special areas/positions; * Organising the traffic as regards to meteorological, hydrographical or other restrictions such as visibility, wind speed, current, sea state and under keel clearance. |

### Where may Traffic Organisation Service be provided

A Traffic Organisation Service should be provided within the declared VTS area and/or in specified areas or sectors within the VTS area where Traffic Organisation Service has been deemed necessary by the competent authority.

[See figure XX in Annex xx]

### Methods of providing Traffic Organisation Service

While VHF may be the primary means of providing a Traffic Organisation Service any available means may be used.

# REFERENCES

1. SOLAS Regulation V-12 Vessel Traffic Services
2. IMO Resolution A.857(20) Guidelines for Vessel Traffic Services
3. MO Resolution A.918(22) IMO Standard Marine Communication Phrases
4. IMO Resolution A.954(23) Proper use of VHF channels at sea
5. IALA VTS Manual
6. IALA Recommendation V-127 on Operational Procedures for Vessel Traffic Services
7. IALA Recommendation V-128 – Operational and Technical Performance Requirements for VTS Equipment
8. IALA Recommendation V-103 - VTS Operator training
9. IALA Guidelines 1045 on Staffing Levels at VTS Centres
10. The use of message markers in different service types of a VTS
11. The use of message markers in different service types of a VTS

|  |  |  |  |
| --- | --- | --- | --- |
| ***Message Markers*** | ***Service types*** | | |
| ***INS*** | ***NAS*** | ***TOS*** |
| *Information* | X | X | X |
| *Warning* | (X) | X | X |
| *Advice* | (X) | X | X |
| *Instruction* | (X) | (X) | X |
| *Question* | X | X | X |
| *Answer* | X | X | X |
| *Request* | (X) | X | X |
| *Intention*  *(only by the vessel)* | - | - | - |

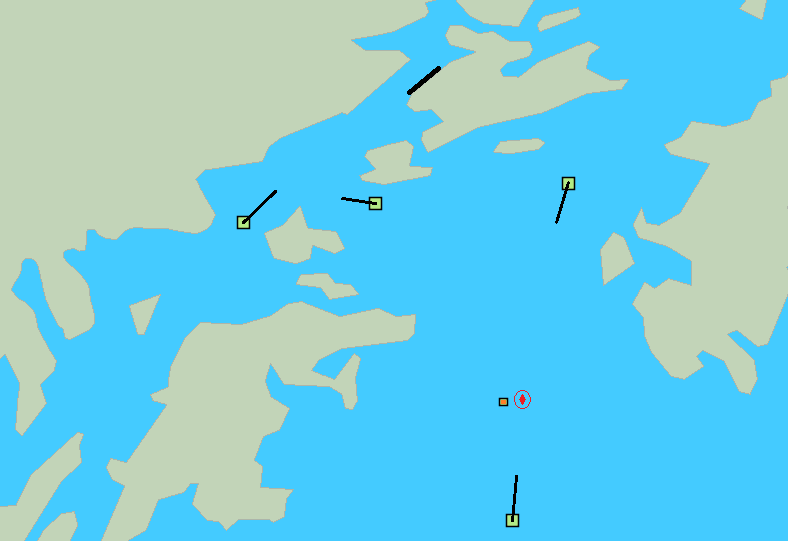
Note:

* X within brackets (X) means that the message marker may be provided within the service type if determined by the appropriate authority.
* The text is extracted from IMO Resolution A.918(22) *IMO Standard Marine Communication Phrases*. For more detailed information on message markers, see this Resolution.

2. ILLUSTRATED Examples on the use of message markers

**INFORMATION SERVICE (INS)**

**X**



Berth J

**INFORMATION**

Pilot boat on station wind N 5 m/s.

**REQUEST**

Rig pilot ladder port side 2 m above water.

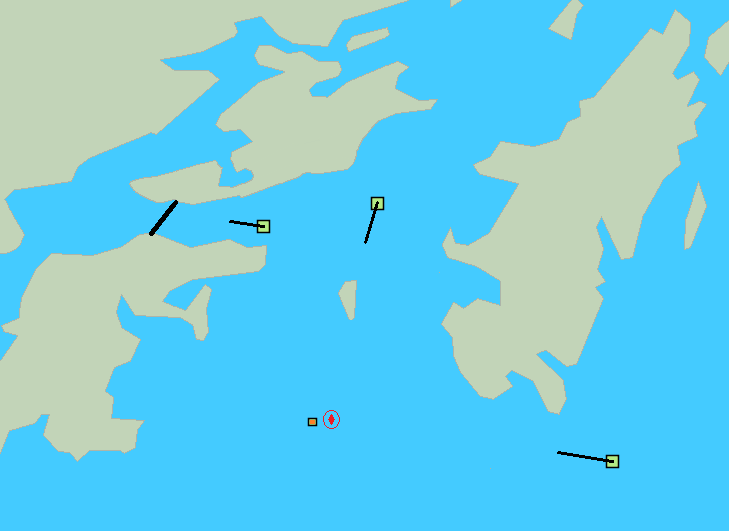
**INFORMATION**

Ship x nm SW of you, proceeding N to Berth J.

**QUESTION**

What is your ETA at the pilot station?

1. Examples of VHF communication from VTS to ships based on SMCP and message markers in an INFORMATION SERVICE.



**QUESTION**

Will you go east or west of Island B?

**INFORMATION**

Pilot station in bearing 280 degrees and 2,5 nm from you.

**INFORMATION**

Current is setting 4 knots E in the channel.

Island B

Examples of VHF communication from VTS to ships based on SMCP and message markers in an INFORMATION SERVICE. **NAVIGATIONAL ASSISTANCE SERVICE (NAS)**



**Sequence 1**

**INFORMATION**

According to my equipment you are heading towards shallow waters in xx minutes.

**QUESTION**

What is your intention?

**Sequence 2**

**WARNING**

According to my equipment you are heading towards shallow waters in distance xx cables.

**INFORMATION**

Safe water in bearing xxx degrees from you.

**Sequence 3**

**WARNING**

You are running into danger. Shallow water in xx cables.

**ADVICE**

Recommended course to make good xxx degrees.

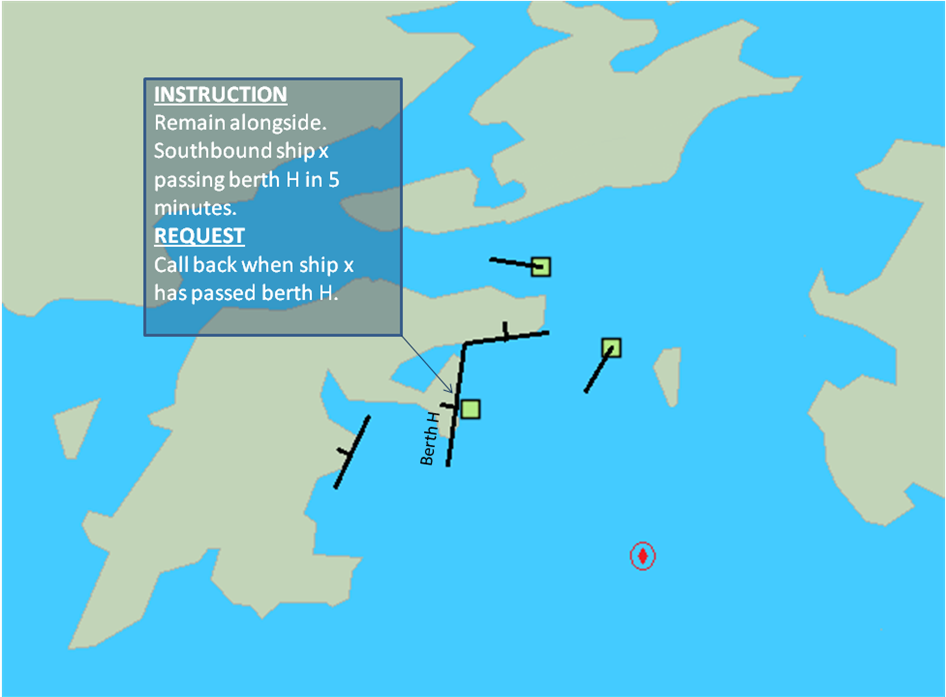
**(**or **INSTRUCTION)**

Alter course to SE.

1. Example of VHF communication between VTS and ship in a NAVIGATIONAL ASSISTANCE SERVICE.

The picture shows 3 sequences where a situation is building up. Finally the situation becomes time critical and the communication will be urgent.

**TRAFFIC ORGANISATION SERVICE (TOS**)



**X**

1. Example of VHF communication between VTS and ship in a TRAFFIC ORGANISATION SERVICE. The ship has requested for “Traffic Clearance” and the VTS responds to it.
3. EXAMPLES OF SITUATIONS AND DIFFERENT USE OF MESSAGE MARKERS
4. Examples of situations and different use of message markers

|  |  |  |  |
| --- | --- | --- | --- |
| **Examples of situations** | **Service types** | | |
| **INS** | **NAS** | **TOS** |
| A vessel is approaching the VTS area | **INFORMATION:** Traffic clearance is required before entering the VTS area |  | **INFORMATION:** You have permission to enter the VTS area  **INFORMATION:** You are cleared to enter the VTS area |
| **INFORMATION:** Buoy number xxx unlit.  **ADVICE:**  All vessels should navigate with caution in the vicinity of the unlit buoy.  **INFORMATION:** DGPS station is not operational. |  | **INSTRUCTION:** Do not navigate in the vicinity of the unlit buoy. (The operator may use ADVICE, depending on the situation or local regulations.) |
| **INFORMATION:** Received gale warning, expected strong wind gusts at 16 30.  **QUESTION:** Do you require tugs or other assistance? | **INSTRUCTION:** Reduce speed to 8 knots. | **ADVICE:** Leave buoy number xxx on your starboard side, keep clear of the vessel, anchored to the West of the buoy. |
| **QUESTION:** Which channel do you intend to use?  **INFORMATION:** Speed limit for this channel is 8 knots.  **REQUEST:** When abeam of buoy number xxx report your position. | **INSTRUCTION:** Do not enter this area. | |
| **WARNING:** There is a restricted area south of you, distance 12 cables. | **ADVICE:** Proceed to the anchorage number XXX distance 3 nautical miles bearing 305 degrees. |  |
|  | **WARNING:** Visibility in the approach channel is less than ..... cables. |  | **INSTRUCTION:** Do not enter the approach channel. (The operator may use ADVICE, depending on the situation or local regulations.) |

1. Example: Vessel deviating from its route

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Situation** | **Time** | **Service types** | | |
| **INS** | **NAS** | |
| A vessel is steering out of the fairway/ or steering towards shallow waters. | 00-00  *time permitting*  END | **INFORMATION**: VTS equipment indicates that you are heading towards shallow waters, within xx minutes.  **QUESTION:** What are your intentions?  **INFORMATION**1: Safe water is in bearing xxx degrees from you  **INFORMATION**1: Safe water is north of you  **QUESTION:** Have you altered course? | | |
|  | *Comments:*  *A) If there is time - acceptance from the ship will then be done.*  *B) If there isn’t time for an acceptance from the vessel, the operator continues to provide NAS.* | |
| **ADVICE1:** Safe water is in bearing xxx degrees from you  **WARNING:** Shallow waters2 cables ahead of you.  **ADVICE2:** True course to safe waters**,** xxx degrees  **ADVICE2:** Recommended course make good xxx degrees  **ADVICE3:** Recommended course xxx degrees | | |
|  | | *Comments:*  *A)The operator informs the vessel when NAS has ended.*  *B) After providing NAS without an acceptance from the vessel the operator should inform the vessel about it.* |
|  |  | **INFORMATION:** You are now in a safe position.  **INFORMATION:** You are clear from the shallow area. | | |

1. A vessel approaching the port within a VTS area

|  |  |  |
| --- | --- | --- |
| **Service types** | | |
| **INS** | **NAS** | **TOS** |
| **INFORMATION:** Your berth is free, pilot is available. | **ADVICE:** Keep course over ground 245 degrees. Abeam of the turning buoy change course to South to 178 degrees. Pilot boarding speed 6 knots. | **INFORMATION:** You have permission to proceed to the pilot boarding position. |
| **INFORMATION:** Your berth is occupied | **INSTRUCTION:** Your anchorage position is Latitude 43 degrees 08.0 minutes N Longitude 027 degrees 57.5 minutes E. Keep course over ground 180 degrees. | **INFORMATION:** You have to stay adrift or drop anchor.  **QUESTION:** What is your intention?  **ADVICE:** Proceed to anchorage area number two, minimum distance to other vessels four cables. |
| **INFORMATION:** Vessel "xxx" carrying out survey in vicinity of turning buoy. Wide berth requested. Buoy number xxx unlit. |  | **INSTRUCTION:** When proceeding to the anchorage leave the turning buoy on your port side. Minimum distance to scientific research vessel five cables. |
| **WARNING**: According to my equipmentyour anchorage position has changed five cables to east | | |
|  |  | **ADVICE:** Check your position and make sure the anchor is not drifting. |

1. Vessel is overtaking another vessel in a narrow channel

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Service types** | | |
| **INS** | **TOS** | |
|  | **INFORMATION**: Vessel ahead of you  **INFORMATION**: Vessel xxx will pass buoy 10 in xx minutes. | | |
| **INFORMATION:** According to my equipment, you will overtake vessel xxx close to buoy nr 20.  **REQUEST**: Recommend contact with vessel xxx to agree on the position for the overtaking | **ADVICE:** Do not overtake the vessel ahead of you before buoy nr. 25. | |
|  | **INSTRUCTION:** Do not overtake the vessel ahead of you before vessel xxx has passed buoy 18  **INSTRUCTION:** Do not pass the position xxx before UTC/LT. | *Comments: If two vessels are not allowed to pass or overtake each other in the area, the VTS operator may use message marker INSTRUCTION.* |

1. Two meeting vessels are heading to a narrow area or channel, where it could be risk of near passage/collision.

|  |  |  |
| --- | --- | --- |
| **Service types** | | |
| **INS** | **TOS** | |
| **INFORMATION:** Vessel xxx will pass buoy 10 in xx minutes. | | |
| **INFORMATION:** According to my equipment, you will meet vessel xxx close to buoy nr 20.  **REQUEST**: Recommend to contact, vessel xxx to arrange the position for the meeting. | **ADVICE:** Do not pass buoy18 before vessel xxx has passed.  ADVICE: | |
|  | **INSTRUCTION:** Do not pass buoy 18 before vessel xxx has passed.  **INSTRUCTION:** Do not pass position xxx before UTC/LT. | *Comments: If two vessels are not allowed to meet in the area then the operator can use message marker INSTRUCTION.* |

1. Vessel requesting Navigational Assistance Service

|  |
| --- |
| **Service types** |
| **NAS** |
| **INFORMATION:** Navigational Assistance Service begins now [to guide you to safe water]  **QUESTION:** What is your course?  **INFORMATION:** VTS radar/equipment indicates you are x cables N/S/E/W of centreline  **INFORMATION:** VTS radar/equipment indicates that you are outside of the fairway.  **ADVICE:** True course to safe water is xxxº  **ADVICE:** Keep buoy/lighthouse on your port/starboard side  **ADVICE:** Pass buoy/lighthouse on N/S/E/W side  **WARNING:** According to my equipment you are diverging from the recommended track  **ADVICE:** Follow the recommended track  **INFORMATION:**Navigational Assistance Service ends [at XX:xx UTC] |

1. Title required if used

|  |  |  |
| --- | --- | --- |
| **Service types** | | |
| **INS** | **NAS** | **TOS** |
|  |  |  |
|  |  |  |

2. Examples of a VTS CHECKLIST FOR THE PROVISION OF NAVIGATIONAL ASSISTANCE SERVICE[[2]](#footnote-2)

**VTS (area, centre and operator): ………………................................................…**

**VESSEL (name and call sign): ………………………….....................................…**

**Review:**

1. Positive identification
2. Vessel’s machinery status
3. Vessel’s navigational and communications equipment status
4. Up-to-date charts
5. Master/Officer knowledge of English/local language
6. Master’s knowledge of local area
7. Master’s knowledge of NAS
8. Environmental conditions (wind, day/night, visibility, tidal height, tidal stream)
9. Traffic
10. Cargo
11. VTS operator competence/authorisation
12. VTS equipment capabilities and limitations, performance, serviceability and back-up (particularly key elements of communications, radar and AIS)

**Assess and Decide:**

1. Alternative options such as provision of an on-board pilot.
2. Capability of vessel to continue passage under NAS.
3. The risks involved if for any reason the VTS is not able to provide NAS .
4. Need for amendment to passage plan (such as a temporary anchorage).
5. Communications channel for provision of NAS.
6. The language proficiency of the vessel operator.

**Agree:**

1. Master’s understanding that NAS does not in any way absolve him from his responsibility for the safety of his vessel or for collision avoidance.
2. Master’s acceptance to continue passage under NAS.
3. VHF channel
4. Commencement of NAS
5. Completion of NAS

1. Refer to section 2.6.2 IMO Resolution A.857(20) Guidelines for vessel traffic services. [↑](#footnote-ref-1)
2. This checklist is not exhaustive and is provided as an example, which should be modified and amplified with operational procedures as required for local conditions. [↑](#footnote-ref-2)