

**GUIDELINES AND CRITERIA FOR VESSEL TRAFFIC SERVICES  
ON INLAND WATERWAYS**  
(VTS Guidelines 2006)

**1. INTRODUCTION**

- 1.1 These Guidelines are compatible with SOLAS regulation V/8-2 and IMO Assembly Resolution A.857(20) and describe the principles and general operational provisions for the operation of a vessel traffic service (VTS) and participating vessels on inland waterways.
- 1.2 Administrations should take account of these Guidelines when planning, implementing and operating vessel traffic services on inland waterways.

**2 DEFINITIONS AND CLARIFICATIONS**

- 2.1 The following terms are used in connection with vessel traffic services on inland waterways:
- 2.1.1 *Vessel traffic service (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.
- 2.1.2 *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.
- 2.1.3 *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.
- 2.1.4 *VTS area* – the delineated, formally declared service area of the VTS. A VTS area may be subdivided in sub-areas or sectors.
- 2.1.5 *VTS centre* – the centre from which the VTS is operated. Each sub-area of the VTS may have its own sub-centre.
- 2.1.6 *VTS operator* – a person, appropriately qualified by the competent authority, performing one or more tasks contributing to the services of the VTS.

- 2.1.7 *VTS sailing plan* – a plan which is mutually agreed between a VTS authority and the boatmaster of a vessel concerning the movement of the vessel in a VTS area.
- 2.1.8 *VTS traffic image* – the surface picture of vessels and their movements in a VTS area.
- 2.1.9 *VTS services* – VTS should comprise at least an information service and may also include others, such as a navigational assistance service or a traffic organization service, or both, defined as follows:
  - 2.1.9.1 An *information service* is a service to ensure that essential information becomes available in time for on-board navigational decision-making.
  - 2.1.9.2 A *navigational assistance service* is a service to assist on-board navigational decision-making and to monitor its effects.
  - 2.1.9.3 A *traffic organization service* is a service to prevent the development of dangerous vessel traffic situations by planning and managing of traffic movements and to provide for the safe and efficient movement of vessel traffic within the VTS area.
- 2.1.10 *Allied services* – services actively involved in the safe and efficient passage of the vessel through the VTS area.
- 2.1.11 *Hazardous cargoes* – include those goods identified by national law as hazardous.
- 2.1.12 *Inland waterways* are rivers, lakes or other stretches of water, whether linked to the sea or landlocked, which by natural or man-made features are suitable for navigation. In the river estuary the boundary between sea and inland waterways is the baseline established in accordance with international law.

### **3 GENERAL CONSIDERAIONS FOR VESSEL TRAFFIC SERVICES ON INLAND WATERWAYS**

#### **3.1 Objectives**

- 3.1.1 The purpose of VTS is to improve the safety and efficiency of navigation, safety of life and the protection of the environment and/or the adjoining waterway banks, nearby residents and enterprises from possible adverse effects of vessel traffic. A part of these objectives of a Vessel Traffic Service may include promoting efficient transport and the collection of data that may be required in order to evaluate the Vessel Traffic Service.
- 3.1.2 The benefits of implementing a VTS are that it allows identification and monitoring of vessels, strategic planning of vessel movements and provision of navigational information and assistance. It can also assist in reducing the risk of pollution and coordinating pollution response. The efficiency of a VTS will depend on the reliability and continuity of communications and on the ability to provide concise, accurate and unambiguous information. The quality of accident prevention measures will depend on the capability of the system to detect developing dangerous situations and on the ability to give timely warning of such dangers.
- 3.1.3 The precise objectives of any VTS will depend upon the particular circumstances in the VTS area and the volume and character of vessel traffic as set forth in 3.2 of these Guidelines.
- 3.1.4 It is recommended that, whenever justified and reasonable, efforts should be made when setting up VTS to ensure compatibility with existing services on sea routes.
- 3.1.5 Vessels move from one VTS area to another and different operations of VTS in the various areas might lead to confusion to the boatmasters of the vessels. Consequently, adverse effects on achieving the objectives of the VTS might arise. As this can apply to boatmasters of inland navigation vessels, there is a need to harmonize inland VTS through international guidelines suitable for application on all inland waterways in a waterway system. As this can also apply to masters of maritime vessels when entering inland waterways these international guidelines should be applied world-wide, should follow the IMO Guidelines as closely as possible and be used whenever the application of the IMO Guidelines is considered to be inappropriate.

## **3.2 Responsibilities and liability**

- 3.2.1 Where two or more Administrations or competent authorities have a common interest in establishing a VTS in a particular area, they should develop a coordinated vessel traffic service on the basis of an agreement between them. Where a coordinated vessel traffic service is established, it should have uniform procedures and operations.
- 3.2.2 In planning and establishing a VTS, the administration, administrations or the competent authority should:
  - 3.2.2.1 ensure that a legal basis for the operation of a VTS is provided for and that the VTS is operated in accordance with all applicable law;
  - 3.2.2.2 ensure that objectives for the VTS are set;
  - 3.2.2.3 ensure that a VTS authority is appointed and legally empowered;
  - 3.2.2.4 ensure that the service area is delineated and declared a VTS area; where appropriate, this area may be subdivided in sub-areas or sectors;
  - 3.2.2.5 determine the type and level of services to be provided, having regard to the objectives of the VTS;
  - 3.2.2.6 establish appropriate standards for supporting equipment;
  - 3.2.2.7 ensure that the VTS authority is provided with the equipment and facilities necessary to effectively accomplish the objectives of the VTS;
  - 3.2.2.8 ensure that the VTS authority is provided with sufficient staff, appropriately qualified, suitably trained and capable of performing the tasks required, taking into consideration the type and level of services to be provided;
  - 3.2.2.9 establish appropriate qualifications and training requirements for VTS operators, taking into consideration the type and level of services to be provided;
  - 3.2.2.10 ensure that provisions for the training of VTS operators are available;
  - 3.2.2.11 instruct the VTS authority to operate the VTS in accordance with relevant resolutions and guidelines;

- 3.2.2.12 establish a policy with respect to violations of VTS regulatory requirements, and ensure that this policy is consistent with all applicable law. This policy should consider the consequences of technical failures, and due consideration should be given to extraordinary circumstances that result.
- 3.2.3 In operating a VTS the VTS authority should:
  - 3.2.3.1 ensure that the objectives of the VTS are met,
  - 3.2.3.2 ensure that the standards set by the competent authority for levels of services and operator's qualifications and equipment are met;
  - 3.2.3.3 ensure that the VTS is operated in conformity with relevant resolutions and guidelines;
  - 3.2.3.4 ensure that the VTS operations are harmonized with ship reporting and routing measures, aids to navigation, pilotage and port operations, where applicable and appropriate;
  - 3.2.3.5 consider the participation of the pilot both as a user and provider of information, where applicable and appropriate;
  - 3.2.3.6 ensure that a continuous watch on the designated communication systems is kept and that all published services are available during the operational hours of the VTS, where applicable and appropriate;
  - 3.2.3.7 ensure that operating procedures for routine and emergency situations are established;
  - 3.2.3.8 in a timely manner, provide the boatmaster with full details of the requirements to be met and the procedures to be followed in the VTS area. This information should include the categories of vessels required or expected to participate; radio frequencies to be used for reporting; areas of applicability; the times and geographical positions for submitting reports; the format and content of the required reports; the VTS authority responsible for the operation of the service; any information, advice or instructions to be provided to participating ships; and the types and level of services available. This information should be published in the appropriate publications.
- 3.2.4 The liability element of an accident following compliance with VTS guidance is an important consideration which can only be decided on a case-by-case basis in accordance with national law. Consequently, a VTS authority should take into account the legal implications in the event of a shipping accident where VTS operators may have failed to carry out their duty competently.

### **3.3 VTS services**

The following guidance concerning the services that are rendered by a VTS should be taken into account:

- 3.3.1 An *information service* is provided by broadcasting information at fixed times and intervals or when deemed necessary by the VTS or at the request of a vessel, and may include for example reports on the position, identity and intentions of other traffic; waterway conditions; weather; hazards; or any other factors that may influence the vessel's transit.
- 3.3.2 A *traffic organization service* concerns the operational management of traffic and the forward planning of vessel movements to prevent congestion and dangerous situations, and is particularly relevant in times of high traffic density or when the movement of special transports may affect the flow of other traffic. The service may also include establishing and operating a system of traffic clearances or VTS sailing plans or both in relation to priority of movements, allocation of space, mandatory reporting of movements in the VTS area, routes to be followed, speed limits to be observed or other appropriate measures which are considered necessary by the VTS authority.
- 3.3.3 When the VTS operator 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 boatmaster on board the vessel. Care should be taken that VTS operations do not encroach upon the boatmaster's responsibility for safe navigation, or disturb the traditional relationship between boatmaster and pilot, where applicable.
- 3.3.4 A VTS area can be divided into sectors, but these should be as few as possible. Area and sector boundaries should not be located where vessels normally alter course or manoeuvre or where they are approaching areas of convergence, route junctions or where there is crossing traffic. VTS centres in an area or sector should use a name identifier. The boundaries should be indicated in the appropriate publications.

### **3.4 Communication and reporting**

- 3.4.1 Communication between a VTS centre and a participating vessel or between participating vessels should be limited to information essential to achieve the objectives of the VTS. Communication should be clear, unambiguous and easily understood by as many as possible of all participants. Standard reports and phrases should be used when necessary. Where language difficulties exist, use should be made of a common language as determined by the VTS authority.

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

3.4.3 Traffic signals are regarded as communications facilities.

### **3.5 Organization**

#### *3.5.1 Elements of a VTS*

In order to perform the required tasks a VTS organization must have adequate resources and procedures governing operations and interactions between the various elements.

The requirements in each field are determined by the particular nature of the VTS area, the density and character of the traffic and the type of service that is to be provided.

Consideration should be given to the establishment of back-up facilities to sustain and maintain the desired level of reliability and availability.

#### *3.5.2 Tasks that may be performed in accordance with the service rendered*

3.5.2.1 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 traffic image allows the VTS operator to evaluate situations and make decisions accordingly. Data should be collected to compile the traffic image. This includes:

3.5.2.1.1 data on the waterway situation, such as meteorological, hydrographical and hydrological conditions and the operational status of aids to navigation;

3.5.2.1.2 data on the traffic situation, such as vessel positions, movements, identities and intentions with respect to manoeuvres, destination and routing;

3.5.2.1.3 data of vessels in accordance with the reporting requirements and if necessary any additional data, required for the effective operation of the VTS.

3.5.2.2. Vessel's reports by communication between vessels and the VTS centre should also be used as a major source of necessary data.

3.5.2.3 To respond to traffic situations developing in the VTS area and to decide upon appropriate actions, the acquired data should be processed and evaluated.

Conclusions from the evaluation need to be communicated to participating vessels. 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.

3.5.3 *Operating procedures*

Where operating procedures are concerned, a distinction should be made between internal and external procedures. Internal procedures cover operating instruments, interactions among the staff and the internal routing and distribution of data. External procedures cover interactions with users and allied services. A further distinction should be made between procedures governing the daily routine and procedures governing response to contingencies such as obstructions, calamities and environmental protection needs. All operational procedures, routine or contingency, should be laid down in handbooks or manuals and be an integral part of regular training exercises. Adherence to procedures should be monitored.

3.5.4 *Database*

A VTS authority should have, as necessary for the operation of the service, a database with the capacity to retain, update, supplement and retrieve data once collected. Any data retained in a system for further use should be made available only on a selective and secure basis.

**3.6 Participating vessels**

3.6.1 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. All types of vessels should be permitted and encouraged to use a VTS where mandatory participation is not required.

3.6.2 Decisions concerning the actual navigation and the manoeuvring of the vessel remain with the boatmaster. Neither a VTS sailing plan, nor requested or agreed changes to the sailing plan can supersede the decisions of the boatmaster concerning the actual navigation and manoeuvring of the vessel.



- 3.6.3 Communication with the VTS and other vessels should be conducted in accordance with established procedures, in particular where a communication concerns intended manoeuvres. VTS procedures should stipulate what communications are required and which communication systems should be monitored. Prior to entering a VTS area, vessels should make all required reports, including reporting of deficiencies. During their passage through a VTS area, vessels should adhere to governing rules and regulations, maintain a continuous watch on the assigned communication systems and report deviations from the agreed sailing plan, if such a plan has been established in co-operation with the VTS.
- 3.6.4 Boatmasters of vessels should report to the VTS centre any observed dangers to navigation or pollution of the environment.
- 3.6.5 In case of a complete failure of the vessel's appropriate communication equipment the boatmaster shall endeavour to inform the VTS centre and other vessels in the vicinity by any other available means of communication of the vessel's inability to communicate in the appropriate manner.
- 3.6.6 Vessels should carry publications giving full particulars on governing rules and regulations regarding identification, reporting and/or conduct in each VTS area to be entered during the voyage.

#### **4. GUIDANCE FOR PLANNING AND IMPLEMENTING VESSEL TRAFFIC SERVICES**

##### **4.1 Responsibility for planning and implementing a VTS**

It is the responsibility of administrations or competent authorities to plan and implement vessel traffic services or amendments to such services.

##### **4.2 Guidance for planning a vessel traffic service**

- 4.2.1 Local needs for traffic management should be carefully investigated and determined by analyzing casualties, assessing risks and consulting local user groups. Where the risks are considered VTS-addressable, or in cases where monitoring of the traffic and interaction between authority and participating vessels is considered to be essential, the implementation of a VTS, as an important traffic management instrument, should be considered.
- 4.2.2 A VTS is particularly appropriate in an area that may include any of the following:
- 4.2.2.1 high traffic density;
  - 4.2.2.2 traffic carrying hazardous cargoes;

- 4.2.2.3 conflicting and complex navigation patterns;
  - 4.2.2.4 difficult hydrographical, hydrological and meteorological elements;
  - 4.2.2.5 shifting shoals and other local hazards;
  - 4.2.2.6 environmental considerations;
  - 4.2.2.7 interference by vessel traffic with other waterborne activities;
  - 4.2.2.8 number of casualties in an area during a specified period;
  - 4.2.2.9 existing or planned vessel traffic services on adjacent waterways and the need for co-operation between neighbouring States, if appropriate;
  - 4.2.2.10 narrow channels, port configuration, bridges, locks, bends and similar areas where the progress of vessels may be restricted;
  - 4.2.2.11 existing or foreseeable changes in the traffic pattern in the area.
- 4.2.3 In further deciding upon the establishment of a VTS, authorities or competent authorities should also consider the responsibilities, set out in 3.2 of these Guidelines, and the availability of the requisite technology and expertise.

### **4.3 Further guidance on vessel traffic services**

- 4.3.1 VTS authorities should, in the planning of the VTS to be established, make use of available manuals prepared by and published by appropriate international organizations and associations.
- 4.3.2 The following references should also be consulted for further details and applicability:
  - 4.3.2.1 The IALA Vessel Traffic Services Manual;
  - 4.3.2.2 The IALA/IMPA/IAPH World VTS Guide;
  - 4.3.2.3 The IALA Recommendations relevant to VTS.