1. Vessel Traffic Services (VTS)

## Introduction

In accordance with the Purpose and Scope of the NAVGUIDE this chapter provides a first point of reference and guidance on more detailed guidance from IMO and IALA.

## Purpose

According to IMO Resolution A857(20), *Guidelines for Vessel Traffic Services*:

“The purpose of vessel traffic services 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.”

## Definition

A VTS, as defined by IMO Resolution A857(20), *Guidelines for Vessel Traffic Services*, is:

“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 respond to traffic situations developing in the VTS area”.

## VTS Manual

The IALA VTS Manual is acknowledged by the VTS community as being the most comprehensive guide to Vessel Traffic Services (VTS) as well as a point of reference for further detailed study.

The contents are aimed at a wide readership to encompass all who are in any way involved with the policy for provision, operation and effectiveness of VTS, including those with management responsibility at national level and those who deliver services to the mariner.

## Objectives of a VTS

At its simplest, the main objectives of a VTS are to:

* aid the mariner in the safe use of navigable waterways;
* afford unhindered access to pursue commercial and leisure activities; and
* contribute to keeping the seas and adjacent environment free from pollution.

Experience shows that, in general, these ideals are subject to potentially greater and more intense risks in coastal waters particularly at shipping congestion points and at the interface with ports and estuaries. The benefits derived from VTS can be of considerable value and, when properly implemented, outweigh the costs of provision.

## Functions of a VTS

VTS functions - can be subdivided into internal and external functions. Internal functions are the preparatory activities that have to be performed to enable a VTS to operate. These include data collection, data evaluation and decision-making. External functions are activities executed with the purpose of influencing the traffic characteristics. They relate to the primary traffic management functions of rule-making, allocation of space, routine control of vessels and manoeuvres to avoid collisions, as well as to other management functions such as enforcement, remedial and ancillary activities.

Amongst the most important functions that a VTS may carry out are those related to, contributing to and thereby enhancing:

* Safety of life at sea;
* Safety of navigation;
* Efficiency of vessel traffic movement;
* Protection of the marine environment;
* Supporting maritime security;
* Supporting law enforcement; and
* Protection of adjacent communities and infrastructure.

## Types of VTS services

**Vessel Traffic Services**

Local Port Services

Traffic

Organization

Service

Information Service

Navigational Assistance Service

Safe use of the waterway

Efficiency of traffic movement

Protection of the marine and adjacent environment

**Local Port Service**

**Providing Traffic:**

**INFORMATION**

**WARNING**

**ADVICE**

**INSTRUCTION**

REQUESTED

OBSERVED

or

**Providing Navigational:**

***INFORMATION***

***WARNING***

***ADVICE***

***and/or***

***INSTRUCTION***

**Providing local information, e.g.**

Environmental data & Port information

**OBJECTIVES**

**FUNCTIONS**

Safe and efficient port operations

NON VTS

1. Overview of types of VTS

## VTS services

An authorised VTS will be capable of offering one or more of the following types of service:

### Information Service (INS)

An Information Service provides essential and timely information to assist the on-board decision-making process.

### Traffic Organization Service (TOS)

A Traffic Organization Service is a service to provide for the safe and efficient movement of traffic and to identify and manage potentially dangerous traffic situations. A Traffic Organization Service provides essential and timely information to assist the on-board decision-making process and may advise, instruct or exercise authority to direct movements.

### Navigational Assistance Service (NAS)

A Navigational Assistance Service may be provided in addition to an Information Service and/or Traffic Organization Service. It is a service to assist in the on-board navigational decision-making process and is provided at the request of a vessel, or when deemed necessary by the VTS. It 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 information, warning, navigational advice and/or instruction.

## Surveillance requirements for the VTS area

The extent of the VTS area should be taken into account with regard to the surveillance equipment necessary. In principle the equipment should be able to cover an area well in excess of the designated VTS area, to allow for any decrease in performance in poor weather conditions. The surveillance equipment in most common use continues to be radar although other systems, such as the Automatic Identification System (AIS) and CCTV, are used to good effect. Therefore, depending on the services that a VTS is to carry out the radar coverage can be:

* Nil (automatic identification systems, voice communication and reporting only);
* Partly (covered areas chosen intentionally with some blind sectors);
* Totally by one radar sensor (without any blind sectors); or
* Totally by two or more radar sensors (for large VTS areas and to prevent shadow and other effects of radar targets).

## VTS equipment

Traffic density and structure, navigation hazards, local climate, topography, environmental requirements, commercial aspects and the extent of a VTS area sets the requirements for VTS equipment and these factors will have substantial impact on life cycle costs of a VTS and the acquisition of VTS equipment. Equipment may include:

* Communications;
* VTS Radar System;
* Automatic Identification System (AIS);
* Closed Circuit TV Cameras (CCTV);
* Radio Direction Finders (RDF);
* Hydrometeo Equipment; and/or
* VTS Data System.

## VTS personnel

VTS Operators, masters, bridge watchkeeping personnel and pilots share a responsibility for good communications, effective co-ordination and understanding of each other’s role for the safe conduct of vessels in VTS areas. They are all part of a team and share the same objective with respect to the safe movement of vessel traffic.

Examples of job descriptions are shown in ‘Roles and Responsibilities’ below and in IALA Recommendation V-103. These job descriptions can be expanded as necessary to encompass more fully the responsibilities specific to each VTS centre.

## IALA World VTS Guide

VTS procedures can be found in the IALA world VTS guide at:

[http://www.worldvtsguide.org](http://www.worldvtsguide.org/) - add additional text of the Guide.

## Summary

Readers are encouraged to refer to the:

* IALA VTS Manual Edition 5 and
* IALA World VTS Guide for further reference.

Add section on VTS implementation procedures.