IALA

IALA GUIDELINE

GNNNN
COMPETENCIES FOR PLANNING AND IMPLEMENTING A VTS

Edition 1.0

June 2021

urn:mrn:iala:pub:gnnnn

DOCUMENT REVISION

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

Date	Details	Approval
June 2021	Edition 1.0	Council 73

CONTENTS

List of Tables

List of Figures

1. DOCUMENT PURPOSE

The purpose of the guidance is to assist Contracting Governments, competent authorities for VTS and VTS authorities in establishing, planning and implementing a VTS effectively in a manner consistent with their international obligations under SOLAS and to conform with IALA Standards.

In particular, the guidance provides a mechanism to ensure those responsible for the planning and implementation are competent in the practices described in Recommendation *R0119 Establishment of VTS (V-119)* [1]and associated Guideline *G1150 Establishing, Planning and Implementing VTS* [2]

- Recommendation *R0119* specifies the practices associated with the establishment of VTSs as prescribed in SOLAS regulation *V/12 (Vessel Traffic Services)* [3]

- Guideline *G1150* [2] provides the framework to assist authorities in implementing practices specified in Recommendation *R0119* [1], including arranging for establishing, planning and implementing VTS.

For the purpose of this guidance, competence is the application of knowledge, skills, attitude and personal attributes to effectively and efficiently establish, plan and implement VTS to expected and recognized standards. The Guideline will also assist:

- VTS authorities to prepare any necessary "On-the-Job" training for staff deemed necessary;

- VTS authorities to identify possible external training needs (e.g. project management); and

- VTS training organisations to prepare courses upon request.

1.1. RELATIONSHIP TO OTHER DOCUMENTS

Please note, this Guideline describes knowledge, skills, attitudes and personal attributes required to assist in implementing the practices described in Recommendation *R0119* for establishing, planning and implementing VTS and the associated Guideline *G1150*.

This Guideline is informative in nature and is to encourage best practice. It is not necessary to conform to in order to claim compliance to Recommendation *R0119*.

2. INTRODUCTION

The IMO *Convention for the Safety of Life at Sea (SOLAS) 1974 - Chapter V (Safety of Navigation), Regulation 12* [3] provides for Vessel Traffic Services and states that:

> "Contracting Governments undertake to arrange for the establishment of Vessel Traffic Services where, in their opinion, the volume of traffic or the degree of risk justifies such services".

Under the general provisions of treaty law and of IMO conventions, States are responsible for promulgating laws and regulations and for taking all other steps which may be necessary to give those instruments full and complete effect so as to ensure safety of life at sea and protection of the marine environment.

IMO Resolution *A.857(20) Guidelines for Vessel Traffic Services* [4] invites Governments to take account of the annexed Guidelines when developing, implementing and operating vessel traffic services, specifically setting out the responsibilities of Contracting Governments for planning and implementing a vessel traffic service.

IALA *G1150* [2] provides the framework to assist authorities in implementing practices specified in IALA *R0119* [1]. This includes arranging for establishing, planning and implementing VTSs.

3. OVERVIEW

The implementation of a VTS to improve the safety and efficiency of navigation, safety of life at sea and the protection of the marine environment, and its ongoing operation, is a significant investment.

Careful planning should be undertaken to ensure a VTS is implemented effectively, achieves its objectives and is sufficiently resourced and funded on an ongoing basis.

A key factor in achieving this is ensuring that those involved in the planning and implementation are familiar with the international framework for VTS and competency to implement the practices specified in *R0119* [1]and associated *G1150* [2].

The key areas shown in Table 1 include:

Table 1   Key areas in establishing, planning and implementing a VTS

Activity		Key Components
ESTABLISHING	→	How to give effect to SOLAS regulation V/12 (Vessel Traffic Services) of the Convention? *International Framework and Obligations* *National law*
PLANNING	→	How to plan for a VTS? *Comprehensive information gathering, risk assessment and analysis process to determine the need for a VTS, the feasibility of operating a VTS and the design necessary to achieve the needs identified.*
IMPLEMENTING	→	How to implement a VTS? *Project Management* *Procurement* *Conformance with IMO Resolution A.857(20) and IALA Standards* *Authorization*

4. ESTABLISHING

The international framework for establishing a VTS includes:

1. *International Convention for the Safety of Life at Sea (SOLAS) 1974* [3];

2. *IMO Resolution A.857(20) Guidelines for Vessel Traffic Services* [4];

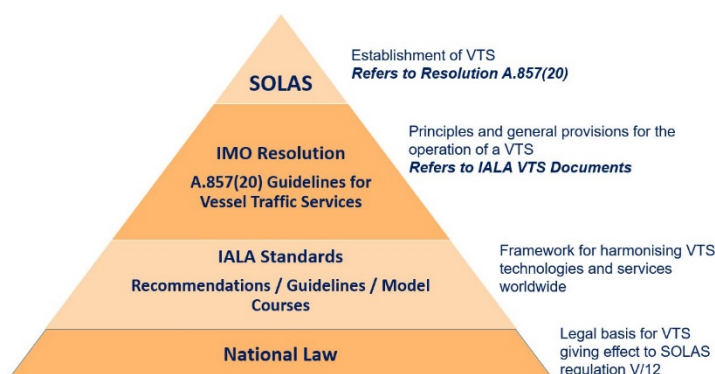3. IALA Standards; and

4. National Law.

Figure 1   International framework for establishing a VTS

Another key consideration in establishing a VTS is setting up the governance framework to ensure the effective implementation and on-going delivery of a VTS and that the relevant authority is effectively administering its obligations under SOLAS such as:

- Promulgating laws and regulations and for taking all other steps which may be necessary to give effect to SOLAS regulation V/12 (Vessel Traffic Services) [3].

- Implementing a regulatory framework for establishing and operating VTSs in accordance with relevant international conventions and IMO instruments, IALA standards and national law.

- Appointing and authorizing a competent authority for VTSs.

- Authorizing VTS authorities to operate VTSs and ensuring that VTS training is approved and VTS personnel are certified.

- Ensuring appropriate control and monitoring mechanisms are in place to demonstrate the authority is effectively administering its obligations.

  Further guidance on control and monitoring mechanism is provided in IALA Guidelines:

  - *G1115 Preparing for an IMO Member State Audit Scheme (IMSAS) on Vessel Traffic Services* [5]; and

  - *G1101 Auditing and Assessing VTS* [6].

4.1. WHAT KNOWLEDGE AND COMPETENCE ARE REQUIRED TO ESTABLISHING VTS?

The following table shows the knowledge and competence within the international framework required to establish VTS:

Table 2   Competencies for establishing a VTS

Competencies within the international framework for establishing a VTS	
Topic	**Element**

IMO Regulatory Regime	General provisions of treaty law and of IMO Conventions.
	
	In particular, the responsibility of States for promulgating laws and regulations and for taking all other steps which may be necessary to give those instruments full and complete effect so as to ensure safety of life at sea and protection of the marine environment. This includes:
	
	- SOLAS Chapter V [3]:
	  - Regulation 10 – Ships' routeing
	  - Regulation 11 – Ship reporting systems
	  - Regulation 12 – Vessel traffic services
	- MARPOL [7]
	- COLREGs [8]

IMO Resolution A.857(20) Guidelines for Vessel Traffic Services	IMO Resolution *A.857(20) Guidelines for Vessel Traffic Services* [4], with a focus on: - The responsibilities to ensure a legal basis for the operation of a VTS is provided for and that the VTS is operated in accordance with national and international law.

Competencies within the international framework for establishing a VTS	
Topic	**Element**
	• Establishing appropriate standards for shore and offshore based equipment. • Ensuring the VTS Authority is provided with sufficient staff, appropriately qualified, suitably trained and capable of performing the tasks required. • Establishing appropriate qualifications and training requirements for VTS operators. • Instructing the VTS Authority to operate the VTS in accordance with relevant IMO Resolutions.

IALA Standards	The principal components of the IALA document structure relating to VTSs including:
	
	• **Standards** relating to VTS, that is:
	
	  • *S1040 Vessel Traffic Services* [9] *;*
	
	  • *S1010 Marine Aids to Navigation Planning and Service Requirements* [10] *;*
	
	  • *S1050 Training and Certification* [11] *;* and
	
	  • *S1070 Information Services* [12] *.*
	
	• **Recommendations** – In particular, the practices that shall be carried out in order to comply with a recommendation.
	
	• **Guidelines** – In particular, how to implement practices normally specified in a recommendation.
	
	• **Model Courses** - training documents which define the level of training and knowledge needed to reach levels of competence defined by IALA.

National Law	National law, including the regulatory, compliance and enforcement framework within the context of VTSs to: • Ensure that a legal basis for the operation of a VTS is provided for and that the VTS is operated in accordance with national and international law. • Ensure that VTS authorities are appointed and legally empowered. • Instructing the VTS Authority to operate the VTS in accordance with relevant IMO Resolutions. • Establishing a policy with respect to violations of VTS regulatory requirements and ensuring that this policy is consistent with national law.

Competencies within the international framework for establishing a VTS	
Topic	**Element**
Governance	The administration's policies relating to VTSs. Key considerations include establishing policy frameworks for: • Training and Certification; • Compliance and Enforcement; • Authorising VTS authorities; • Auditing a VTS. A proper quality assurance system should be implemented to ensure policies issued by the competent authority for VTSs are adhered to by the VTS authority and the approved VTS training organization; and • An ongoing evaluation of the VTS, in terms of meeting its objectives and addressing the reasons for which it was implemented.

5. PLANNING AND IMPLEMENTING

The implementation of a VTS to improve the safety and efficiency of navigation, safety of life at sea and the protection of the marine environment, and its ongoing operation, is a significant investment. Careful planning should be undertaken to ensure a VTS is implemented effectively, achieves its objectives and is sufficiently resourced and funded on an ongoing basis.

IALA Guideline *G1150 Establishing, Planning and Implementing VTS* [2] recommends that, when planning and implementing VTS, a project management approach be adopted to ensure the major deliverables, assumptions and constraints are clearly documented. In particular, the Guideline states that:

"Relevant international guidance prepared and published by appropriate international organizations regarding project management should be considered, or where there are national requirements for project management, these should be used."

As an example of international guidance, the Guideline refers to *ISO 21500 Guidance on Project Management* [13] - an international standard issued by the International Organization for Standardization (ISO).

IALA Guideline *G1150* [2] highlights the five project management phases and the key areas for consideration as they relate to VTS:

1. Initiating - This marks the beginning of the project. The goal of this phase is to define the proposed implementation of a VTS at a broad level and its feasibility to address the issues and problems associated with the volume of traffic and degree of risk in the waterway.

2. Planning - During this phase, the scope and goals of the project are defined and a project management plan is developed. It involves identifying the cost, quality, available resources and a realistic timetable.

3. Implementing - This is the phase where deliverables are developed and completed.

4. Controlling - This phase is invariable carried out simultaneously with Phase 3 (Implementing), thereby ensuring that project objectives and deliverables are met. This phase is about measuring project progression and performance and ensuring that everything happening aligns with the project management plan.

5. Closing - The closing processes are used to formally establish that the project phase or project is finished.

Authorities should ensure that those responsible for the planning and implementing a VTS are competent in project management and have the necessary knowledge, skills and capability to effectively and efficiently establish, plan and implement the VTS to recognized standards.

5.1. WHAT KNOWLEDGE AND COMPETENCIES ARE REQUIRED WHEN PLANNING AND IMPLEMENTING A VTS?

The following table shows the knowledge and competencies required when planning and implementing a VTS:

Table 3   Competencies for planning and implementing a VTS

Competencies for Planning and Implementing a VTS	
Phase	**Element**

1. Initiating	The principles and practices associated with:
	
	• Business Case - This document identifies the need for a VTS, providing justification for implementing a VTS, including evaluation of the benefits, cost and risk of alternative options and provides a rationale for the preferred solution.
	
	• Feasibility Study – This document establishes whether a VTS is a viable solution to address the issue or problem.
	
	• Risk Assessment - To support the feasibility study a process of comprehensive information gathering, and analysis is inevitably involved to enable relevant issues and problems in the maritime area to be identified, assessed, defined, and analysed.
	
	IALA recommends the use of the IALA risk management toolbox for assessing the risks in waterways when initiating and planning a VTS. Further information is available from:
	
	    • Recommendation *R1002 Risk Management for Marine Aids to Navigation* [14]*.*
	
	    • Guideline *G1123 The Use of IALA Waterway Risk Assessment Programme (IWRAP MKII)*[15] *.*
	
	    • Guideline *G1124 The Use of Ports and Waterways Safety Assessment (PAWSA) MKII Tool* [16] *.*
	
	    • Guideline *G1138 The Use of the Simplified IALA Risk Assessment Method (SIRA)* [17] *.*

2. Planning	IALA Standards relating to VTSs, the national framework for VTSs and processes for demonstrating compliance with IALA Standards, Recommendations, Guidelines and Model Courses related to the implementation and operation of a VTS is available at https://www.iala-aism.org/product/s1040-vessel-traffic-services/. The principles and practices associated with preparing project management documentation, including:

Competencies for Planning and Implementing a VTS	
Phase	**Element**
	• **Project plan** – identifies the project timeline, including the phases of the project, the tasks to be performed, and possible constraints (for example, financial budgets, resourcing etc). • **Functional requirements** – defining the operational behaviours and functions the VTS is to accomplish to achieve its objectives. • **Risk plan** – identifies anticipated risks and issues that may cause potential quality roadblocks and to mitigate those risks. • **Communications plan** – to establish the appropriate level of communication engagement with stakeholders. • **Procurement plan** – the purchasing requirements to meet the needs of the proposed VTS. • **Acceptance plan** – to identify the tasks that need to be completed to implement a VTS and the criteria that must be met before the VTS is declared operational.
3. **Implementing**	Skills to coordinate and direct project resources to: • meet the objectives and deliverables described in the project plan; and • manage the financial and resourcing aspects of the project.
4. **Controlling**	Monitoring and controlling skills to keep the project on track by ensuring that the project remains within scope, on time and on budget so that the project proceeds with minimal risk.
5. **Closing**	Skills to close out the implementation, including signing off that the final deliverables of implementing the VTS have been met. Skills to authorise a VTS under national law in accordance with relevant international conventions, IMO instruments and IALA standards.

6.   ABBREVIATIONS

Abbreviations used in this guideline:

COLREG   Convention on the International Regulations for Preventing Collisions at Sea
IMO   International Maritime Organization
ISO   International Organization for Standardization
IWRAP   IALA Waterway Risk Assessment Programme
MARPOL   International Convention for the Prevention of Pollution from Ships
NGO   Non-Governmental International Organization
PAWSA   Ports and Waterways Safety Assessment (PAWSA)
SIRA   Simplified IALA Risk Assessment Method (SIRA)
SOLAS   International Convention for the Safety of Life at Sea

7.   REFERENCES

[1]   IALA. (2020) Recommendation R0119 Establishment of VTS (V-119), Ed 4.0

[2]   IALA. (2020) Guideline G1150 Establishing, Planning and Implementing VTS, Ed 2.0

[3]   IMO. (1974) International Convention for the Safety of Life At Sea

[4]   IMO. (1997) Resolution A.857(20) Guidelines for Vessel Traffic Services

[5]   IALA. (2015) Guideline G1115 Preparing for an IMO Member State Audit Scheme (IMSAS) on Vessel Traffic Services, Ed 1.0

[6]   IALA (2013) Guideline G1101 Auditing and Assessing VTS, Ed 1.0

[7]   IMO. (1973) International Convention for the Prevention of Pollution on Ships (MARPOL)

[8]   IMO. (1972) International Regulations for Preventing Collisions at Sea (COLREGS)

[9]   IALA. (2018) Standard S1040 Vessel Traffic Services, Ed. 1.0

[10]   IALA. (2018) Standard S1010 AtoN Planning and Service Requirement, Ed. 1.0

[11]   IALA. (2018) Standard S1050 Training and Certification, Ed. 1.0

[12]   IALA. (2018) Standard S1070 Information Services Ed, 1.0

[13]   ISO. 21500 (2021) Guidance on Project Management

[14]   IALA. (2017) Recommendation R1002 Risk Management for Marine Aids to Navigation, Ed. 1.1

[15]   IALA. (2017) Guideline G1123 The Use of IALA Waterway Risk Assessment Programme (IWRAP MKII), Ed. 1.0

[16]   IALA. (2017) Guideline G1124 The Use of Ports and Waterways Safety Assessment (PAWSA) MKII Tool, Ed 1.0

[17]   IALA. (2017) Guideline G1138 The Use of the Simplified IALA Risk Assessment Method (SIRA), Ed 1.0