



## IALA GUIDELINE

# G1156 RECRUITMENT, TRAINING AND CERTIFICATION OF VTS PERSONNEL

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International Organization for Marine Aids to Navigation



# DOCUMENT REVISION

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

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December 2020	Edition 1.0 New Guideline taking updated detail from the annex of the former edition 2.2 of Recommendation R0103.	Council 72
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## 1. INTRODUCTION

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The effective delivery of Vessel Traffic Services (VTS) depends on the competence and experience of the personnel responsible for its operation. VTS personnel play a key role to:

- provide timely and relevant information on factors that may influence the transit of a ship and to assist on-board decision-making;
- monitor and manage traffic to ensure the safety and efficiency of ship movements; and
- respond to developing unsafe situations to assist the on-board decision-making process.

Recruitment, training, and certification of VTS personnel are essential for delivering effective VTS operations aligned with international standards. Relevant international guidance includes:

- IMO Resolution A.1158(32) – Guidelines for Vessel Traffic Services [1]
- IALA Standard S1050 – Training and Certification [2]
- IALA recommendations, guidelines, and model courses

This document assists competent authorities and VTS providers in establishing and maintaining consistent processes for the qualification and ongoing competence of VTS personnel.

## 2. DOCUMENT PURPOSE

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The purpose of this document is to provide guidance on implementing practices associated with the recruitment, training, assessment and certification of VTS personnel in a manner consistent with the IMO Guidelines for Vessel Traffic Services and the IALA standards, recommendations, guidelines and model courses.

*This Guideline is associated with IALA Recommendation R0103 (V-103) Training and Certification of VTS Personnel [3], a normative provision of IALA Standard 1050 Training and Certification. To demonstrate compliance with the recommendation, the practices described in this guideline should be taken into account.*

## 3. INTERNATIONAL FRAMEWORK FOR VTS TRAINING

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IMO Resolution A.1158(32) on Guidelines for Vessel Traffic Services states that:

- 5.2.3 *The competent authority for VTS should ensure that VTS training is approved and VTS personnel are certified.*
- 5.3.4 *The VTS provider should ensure that a VTS is adequately staffed and that VTS personnel are appropriately trained and qualified.*
- 8.2 *VTS personnel should only be considered competent when appropriately trained and qualified for their VTS duties. This includes:*
  - *satisfactorily completing generic VTS training approved by a competent authority;*
  - *satisfactorily completing on-the-job training at the VTS where the personnel are employed;*
  - *undergoing periodic assessments and revalidation training to ensure competence is maintained; and*
  - *being in possession of appropriate certification.*



IALA Standard *S1050 Training and Certification* specifies the practices associated with the training and assessment of VTS personnel. The Standard references normative provisions which are contained in IALA recommendations, covering the following scope:

- Training and assessment
- Accreditation, competency, certification and revalidation

IALA Recommendation *R0103 on Training and Certification of VTS Personnel*:

- RECOMMENDS that competent authorities and VTS providers implement and establish VTS training and certification in a standardized and harmonized manner in accordance with the guidelines and model courses developed by IALA; and
- INVITES National members and competent authorities for VTS to implement the provisions of this Recommendation and its associated guidelines and model courses on VTS training and certification.

## 4. VTS PERSONNEL

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VTS personnel are defined in IMO Resolution A.1158(32) as

*Persons performing tasks associated with vessel traffic services, trained in vessel traffic services operations and appropriately qualified.*

VTS personnel are individuals that are appropriately trained and qualified in VTS operations in accordance with the relevant model course associated with their functions. They actively contribute to the safe and efficient movement of vessel traffic in conjunction with the bridge team and allied services.

Whilst the composition/types of roles for personnel in each VTS may vary, the roles generally consist of:

- VTS operator;
- VTS supervisor; and
- On-the-job training (OJT) instructor

A VTS provider may also establish a VTS manager position.

Detailed job descriptions for VTS personnel should be developed focusing on the functions, objectives and responsibilities of the VTS.

### 4.1. VTS OPERATOR

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VTS operators are persons performing tasks associated with vessel traffic services, trained in vessel traffic services operations and appropriately qualified for VTS duties as described in 8.2 of IMO Resolution A.1158(32).

### 4.2. VTS SUPERVISOR

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The VTS provider may establish VTS supervisor positions, or assign supervisory functions, to assist in the day-to-day management and co-ordination of the operational activities of the VTS centre.

### 4.3. ON-THE-JOB TRAINING INSTRUCTOR

The VTS provider should have VTS personnel trained as OJT instructors to provide and coordinate local training at the VTS centre (e.g., OJT, adaptation training and updating training). The OJT instructor should have in-depth knowledge of the processes and procedures of the VTS centre(s) where they provide training.

Any person delivering and assessing local training at a VTS centre should hold the IALA *C0103-4 VTS on-the-job training instructor* qualification, or an equivalent national qualification.

### 4.4. VTS MANAGER

The VTS manager is responsible for managing and coordinating the activities of the VTS centre on behalf of the VTS provider. In some cases, a VTS manager may have the responsibility for more than one VTS centre.

It is recognised that the manager may or may not be trained in VTS operations and appropriately qualified to perform the duties of VTS personnel as described in 8.2 of IMO Resolution A.1158(32).

The VTS manager should be familiar with operations in the VTS area, the tasks performed by the VTS personnel, and interactions with allied services and other stakeholders.

*IALA Guideline 1167 – VTS Management* [14] provides further guidance on implementing management activities to facilitate the effective and efficient delivery of VTS.

## 5. SELECTION AND RECRUITMENT

### 5.1. SELECTION PROCESS

Policies and processes for the selection and recruitment of VTS personnel should be available. This may include minimum entry requirements such as:

- prior skills and knowledge;
- maritime experience and education;
- personal suitability characteristics; and
- medical fitness requirements.

IMO Resolution A.918(22) [4] on the IMO standard marine communication phrases recognises the wide use of the English language for international navigational communications and that where language difficulties arise, English should be used as a common language for navigational purposes. Potential candidates should demonstrate using reliable tests they have attained a sufficient level of the language. Every candidate attending a C0103 model course should have achieved the International English Language Testing System (IELTS) level 5, or its equivalent.

The selection process should provide a mechanism for VTS providers to assess the suitability of candidates to perform the required VTS tasks. The selection process may include assessing personal attributes, aptitude testing, assessment of prior learning and satisfying the medical/physical requirements.

#### 5.1.1. PERSONAL ATTRIBUTES

Personal attributes are an important component of the selection process, and the following elements should be assessed when determining the suitability of a candidate:

- Personality as a prediction of future workplace behaviour

- Behaviour, where candidates should demonstrate a strong sense of responsibility, the ability to work independently, and a willingness to collaborate effectively as part of a team

### **5.1.2. APTITUDE/PSYCHOMETRIC TESTING**

The VTS provider should consider testing for personal aptitude, attributes and overall suitability requirements, even if they have previous maritime experience. Different types of tests and evaluations may be used such as:

- interviews
- written tests
- practical tests or exercises
- psychometric tests

Assessments should be designed to evaluate the suitability of a candidate within a VTS environment by:

- distinguishing among relevant and irrelevant information (e.g., assess the relative movement of fixed and moving objects);
- combining auditory and visual information;
- demonstrating spatial and situational awareness;
- demonstrating alertness and decisiveness when required;
- carrying out several tasks simultaneously (multi-tasking);
- carrying out routine work without losing situational awareness;
- prioritising and deciding what situations require immediate action;
- show initiative and make decisions whilst working within a framework of standards, regulations and structured procedures;
- working under conditions of stress;
- demonstrating effective participation as a member of a team;
- demonstrating appropriate communication, literacy (written and oral) and numeracy skills.

To assess the aptitude, attributes and suitability of a candidate, the assistance of specialists may be required to ensure appropriate tests and exercises are in place to complement the interview process conducted by the VTS provider.

### **5.1.3. MEDICAL/PHYSICAL REQUIREMENTS**

The VTS provider should establish policies on medical and physical requirements which candidates and VTS personnel need to meet such as medical, hearing and vision requirements.

## **5.2. SHIFTWORK**

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Candidates may vary in how they cope with shift work depending on their health, fitness, age, lifestyle, and domestic responsibilities.

In the recruitment process, a candidate should be provided with information about the VTS shift work arrangements and procedures. Further, if they are successful, it may be possible to offer work experience to allow the candidate to make an informed decision to whether shift work is suitable for them.

VTS provider should ensure candidates are aware of the established policies and procedures associated with the management of shift rosters and fatigue management.

## 6. TRAINING

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The provision of VTS relies on VTS personnel being appropriately trained and qualified for their VTS duties.

VTS training is supported by five IALA model courses that describe the required training, knowledge, and competence levels.

- C0103-1 - VTS Operator training [6]
- C0103-2 - VTS Supervisor training [7]
- C0103-3 - VTS On-the-Job training [8]
- C0103-4 - VTS On-the-Job Training Instructor [9]
- C0103-5 - Revalidation Training for VTS Personnel [10]

### 6.1. C0103-1 VTS OPERATOR TRAINING

The VTS operator course provides the student with the required knowledge, skills and attitude to undertake the duties associated with the provision of a VTS.

This includes:

- provide timely and relevant information on factors that may influence the transit of a ship and assist on-board decision making;
- monitor and manage traffic to ensure the safety and efficiency of ship movements; and
- respond to developing unsafe situations to assist the decision-making process on board.

### 6.2. C0103-2 VTS SUPERVISOR TRAINING

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The VTS supervisor course provides a qualified VTS operator with the required knowledge, skills and attitude to undertake the duties of a VTS Supervisor.

This includes:

- provide leadership and supervision of VTS Operators;
- carry out administrative duties such as managing the roster, ensuring reporting activities are completed (shift handovers, incident logs/reports);
- co-ordinate effective interaction between the VTS, allied and emergency services;
- support on-the-job training and periodic assessments; and
- provide guidance during the response to developing unsafe situations and internal / external emergencies.

### 6.3. C0103-3 VTS ON-THE-JOB TRAINING

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On-the-job (OJT) training is intended to provide the required knowledge, practical competence, skills and attitude to undertake duties at the VTS when they are employed.

The OJT programme covers:

- Communication Coordination and Interaction
- Legal Framework
- Provision of VTS
- Local Knowledge
- Equipment
- Human Factors
- Emergency Situations

VTS providers should determine when OJT training is undertaken to best meet their operational requirements. For example, OJT training may be completed:

- prior to the trainee attending formal C0103-1 VTS operator training;
- after a trainee attends formal C0103-1 VTS operator training; or
- in multiple stages, with some training prior to, and after completing formal C0103-1 VTS operator training.

#### **6.4. C0103-4 VTS ON-THE-JOB TRAINING INSTRUCTOR**

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The VTS on-the-job training instructor course covers the knowledge, skills and attitude required to undertake the duties associated with the role of a VTS OJT Instructor.

On completion of this course the student should have developed their practical skills to provide and coordinate local training (e.g. OJT, adaption training or updating training) at the VTS centre.

This includes:

- Designing training programmes including task books and assessment materials.
- Learning teaching and instructional techniques to deliver training programmes.
- Providing feedback to learners.
- Assessing the required competence of a student against the training objectives.
- Evaluating the effectiveness and continually improving training programmes.

#### **6.5. C0103-5 REVALIDATION TRAINING FOR VTS PERSONNEL**

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This course provides a structured means for VTS personnel to demonstrate the ongoing knowledge, practical competence, skills, and attitude to continue to undertake the duties associated with the provision of VTS.

Upon the successful completion of this course, VTS personnel should have demonstrated the skill, knowledge and experience to revalidate their VTS qualifications in order to perform their roles effectively.

#### **6.6. ACCREDITATION AND APPROVAL OF VTS MODEL COURSES**

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The competent authorities need to ensure that training organisations are accredited and approved for each IALA VTS model course that they deliver. This process involves two steps:

- Accreditation which is the formal endorsement that a training organization operates under a suitable quality management system to deliver effective training.
- Approval which is the formal endorsement that a training organization meets the standards specified in an IALA model course for its implementation, delivery and assessment.

*IALA Guideline G1014 Accreditation of VTS Training Organizations and Approval to Deliver IALA VTS Model Courses [11] sets out the process by which a training organization can be accredited to deliver approved VTS training courses.*

A list of training organizations accredited to deliver VTS model courses in accordance with IALA Guideline G1014 are available on the IALA website.

## **6.7. RECOGNITION OF PRIOR LEARNING**

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Exemptions from a module or subject elements within a VTS model course may be considered depending on the qualifications and training that an individual may already have. The accredited training organization delivering the approved model course should assess the prior learning of a candidate.

*IALA Guideline G1017 Assessment for Recognition of Prior Learning in VTS Training [5] provides further guidance on the assessment and recognition of prior learning.*

## **6.8. USE OF SIMULATORS**

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Simulation training should be included in VTS training as part of the C0103 model courses and in the process of maintaining qualifications to:

- verify to what extent the competence levels of VTS model courses have been met.
- assess performance as part of the process of maintaining qualification (skills and development training and revalidation training).

Simulation training enables the creation of simple and complex, high-risk situations within a VTS environment. These situations replicate the interaction between VTS, ships, ports, allied services, and other organizations as appropriate, to manage and monitor ship traffic and respond to developing unsafe situations.

This training provides a structured and effective method for developing and maintaining competencies by replicating real-world scenarios in a controlled setting. Specifically, it:

- allows VTS personnel to practice technical skills, refine their decision-making, and enhance operational competence without the risks associated with real VTS operations.
- emphasizes teamwork, communication, and adaptability.
- allows VTS personnel to build confidence in undertaking both routine day-to-day tasks, as well responding to developing situations or emergencies.

*IALA Guideline G1027 Simulation in VTS Training [12] provides guidance for training organizations and VTS providers on developing and conducting simulation in their VTS training.*



## 7. QUALIFICATIONS FOR INSTRUCTORS AND ASSESSORS

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### 7.1. INSTRUCTORS AND ASSESSORS AT ACCREDITED TRAINING ORGANIZATIONS

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The relevant authorities should determine the qualifications and experience required for instructors delivering model courses at an accredited training organization. Authorities should ensure that instructors and assessors hold appropriate and recognized teaching qualifications and that they are appropriately qualified and experienced for the training being provided and assessing competence. The requirements for such qualifications and experience should be incorporated within the accredited training organizations quality and/or training management systems.

### 7.2. INSTRUCTORS AND ASSESSORS WITHIN VTS PROVIDERS

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The relevant authorities should ensure that instructors and assessors delivering VTS centre specific training (e.g., OJT, adaptation training and updating training) are suitably experienced and appropriately qualified in accordance with the IALA C0103-4 (V-103/4) *VTS On-the-Job Training Instructor Model Course* and/or an equivalent national qualification.

*IALA C0103-4 - VTS On-the-Job Training Instructor model course provides a structure to ensure instructors have the knowledge, skill and attitude to deliver VTS centre specific OJT, adaptation training and updating training.*

### 7.3. INSTRUCTORS

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Any person conducting VTS training should:

- have a detailed understanding of the training programme and objectives of the training being conducted;
- be qualified in the task for which training is being conducted; and
- have practical instructional experience.
- If conducting training with the use of a simulator:
  - have received guidance in instructional techniques involving the use of simulators; and
  - have gained practical and operational experience on the simulator being used.

### 7.4. ASSESSORS

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Any person assessing the competence of VTS personnel during training should:

- have a good level of knowledge and understanding of the competence to be assessed;
- be qualified in the task for which the assessment is being made; and
- have received guidance in assessment methods and practices.

## 8. QUALIFICATION AND CERTIFICATION

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### 8.1. QUALIFICATION

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Qualification is the education, knowledge, understanding, proficiency, skill, experience or any other attribute which competent authority has determined as desirable for performing the duties of the position. VTS qualifications should be based on the principle that satisfactory results are obtained on completion of the IALA VTS model courses.

VTS personnel should only be considered competent when appropriately trained and qualified for their VTS duties. This includes:

- satisfactorily completing generic VTS training approved by the competent authority;
- satisfactorily completing on-the-job training at the VTS where the person is employed;
- undergoing performance assessment and revalidation training to ensure competence is maintained; and
- being in possession of appropriate certification.

## **8.2. CERTIFICATE / CERTIFICATION**

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A certificate is a document that confirms that a student has met the requirements for the award of a specific qualification. The certificate is evidence that VTS personnel are considered competent for their VTS duties (certification).

## **8.3. VTS MODEL COURSE CERTIFICATE**

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A VTS model course certificate is a document awarded by the accredited training organization, to confirm that a student has successfully completed a VTS model course. The course certificate should include:

- the name of the student
- the country in which it was awarded
- authorized signature of the accredited training organization
- the name of the relevant model course
- unique identification information
- the date of award
- the unique course certificate number

VTS model course certificates should be in the official language or languages of the awarding country. If the language is not English, then a translation should be available.

The use of the IALA logo on a VTS model course certificate recognises that the competent authority is a member of IALA and has approved the delivery of that VTS model course by the accredited training organization in accordance with IALA Guideline *G1014*.

## **8.4. RECOGNITION OF CERTIFICATES**

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A competent authority may choose to recognise the VTS course certificates issued by other competent authorities where:

- the certificate has been issued in accordance with Recommendation *R0103 on Training and Certification of VTS Personnel*; and
- they are satisfied with the training arrangements of the other country or state concerned.

## 8.5. VALIDITY OF CERTIFICATES

To continue to be considered competent for their VTS duties, VTS personnel should undergo periodic assessments and revalidation training. A qualification should remain valid until either:

- an assessment indicates that the holder has fallen below the required competency and proficiency set by the relevant authority;
- there is a break in service, for any reason, for a period defined by the relevant authority; or
- the maximum time period for undertaking revalidation training has been reached.

If a VTS Operator is no longer considered competent for the VTS duties, the Competent Authority should identify a process for managing the situation and revalidating qualifications.

The process for maintaining qualifications is provided in Section 9.

## 8.6. TRAINING RECORDS

The VTS provider should maintain a register of training records for VTS personnel. These records should include details of (but not be limited to):

- OJT for each VTS area and VTS centre at which the holder is employed, and the date the training was completed
- VTS model courses successfully completed, including the name of the accredited training organization where the course was undertaken, when the course was undertaken and copies of the course certification
- periodic assessments (e.g. performance assessments, competency based tests)
- revalidation records
- any other relevant course or training successfully completed (e.g., first aid training)

Competent Authorities or VTS providers may consider issuing a VTS certification log as a means to formally record course certificates and training activities of VTS personnel. The log should include (but not be limited to):

- the holder's full name
- the country in which it was awarded
- date of birth and/or unique identification information
- the date of issue
- a unique certificate number
- brief details of the VTS qualifications held, including the certificate number

## 9. MAINTAINING QUALIFICATIONS

As indicated in IMO Resolution A.1158(32)

*8.2 - VTS personnel should only be considered competent when appropriately trained and qualified for their VTS duties, and,*

*8.2.3 undergoing periodic assessments and revalidation training to ensure competence is maintained.*

In this context, “revalidation” refers to the process required to maintain a VTS qualification.

A structured process for revalidation and continued professional development ensures that holders of VTS qualifications maintain and develop skills, improve their competency, and prevents skills and knowledge from degrading over time.

To ensure qualifications remain current VTS personnel should participate in required training, stay informed about new procedures, refresh knowledge, and demonstrate ongoing competency.

VTS providers should establish processes and procedures for maintaining qualifications and continual professional development to ensure VTS personnel remain qualified to conduct their VTS duties taking into account of any additional requirements identified by the Competent Authority.

Consideration should be given to the following areas:

- Periodic assessments to verify competence and address cases where personnel fall below required competency levels.
- A training strategy to continue the development of skills.
- A training strategy to cope with changes in the VTS environment, including regulatory, operational and technical (adaptation training).
- Revalidation training within the time frame as determined by the competent authority.
- Procedures for personnel returning after a break in service.
- Maintenance of additional qualifications where VTS personnel hold VTS supervisor or OJT Instructor certificates.

The process for maintaining qualifications should address the VTS duties carried out by VTS personnel. This includes initial VTS training (C0103-1 VTS Operator and C0103-3 VTS OJT) as well as role specific training (C0103-2 VTS Supervisor and C0103-4 VTS OJT Instructor). The process for maintaining qualifications may vary depending on the requirements of the competent authority, the operational requirements of the VTS provider, and the individual's training needs. This includes an approach including periodic assessments as well as specific revalidation training. The training activities to maintain qualifications are presented in figure 1.

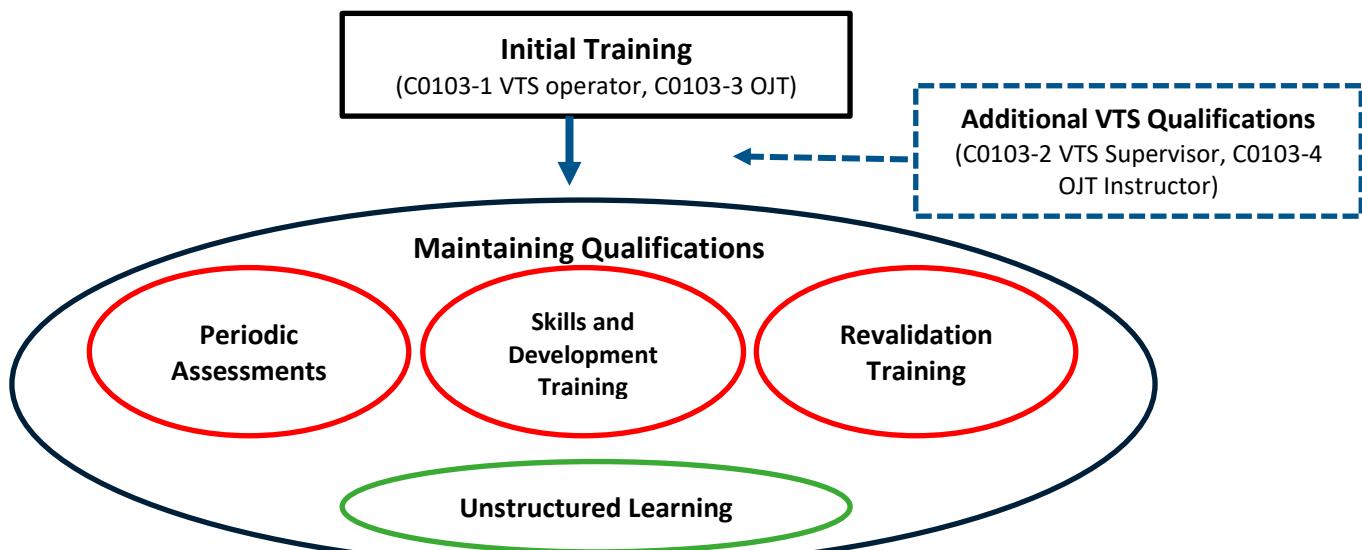


Figure 1 Process to maintain qualifications

VTS providers should ensure that VTS personnel holding C0103-2 VTS Supervisor and C0103-4 On-the-Job Training (OJT) Instructor certificates also maintain their qualifications to confirm ongoing competence in those areas. A training needs analysis process may be used to identify any additional training requirements that may be required to ensure VTS personnel refresh, maintain, and enhance skills, knowledge and competencies ensuring the ongoing validity of their VTS qualifications.

Table 1 provides an overview of the different training components, requirements and frequency to assist VTS personnel to ensure competence is maintained.

Table 1 Overview of Training Components, Requirements and Frequency

Component	Requirement	Frequency
<b>PERIODIC ASSESSMENTS</b>		
Performance assessments	Once trained and qualified, regular performance assessments of VTS personnel are undertaken to ensure that the established standards continue to be met.	As determined by the VTS Provider - Annually, or more frequently.
Assessing Competency in VTS Communications	Periodic tests are to be completed to assess competency with standard message structure and phrases.	As determined by the VTS Provider - Annually, or more frequently
<b>SKILLS AND DEVELOPMENT TRAINING</b>		
Adaptation training	Training to be completed when significant changes to VTS operations are expected, such as changes associated with equipment, regulations, operational procedures etc.	As determined by the VTS provider, preferably before the change(s) takes place.
Updating training	A tailor-made programme based on a training needs analysis which identifies that an individual requires additional training to maintain competency.	As determined by the VTS provider within the requirements of the Competent Authority
Other training	Additional training programs that may address specific learning needs of personnel at a VTS.	As determined by the VTS provider, requirements of

Component	Requirement	Frequency
		the relevant qualification or national requirements
<b>REVALIDATION TRAINING</b>		
Revalidation training	Structured training course or program that ensures the ongoing validity of VTS qualifications (Model Course C0103-5 – Revalidation training for VTS Personnel). Training to be delivered by Training Organizations or may be delivered by a VTS provider.	As determined by the Competent Authority - Intervals between 3 to 5 years.

## 9.1. PERIODIC ASSESSMENTS

Once VTS personnel are trained and qualified, regular performance and competency assessments should be undertaken to ensure that established standards continue to be met. These periodic assessments may identify areas for improvements that can trigger a need for additional skills and development training.

### 9.1.1. PERFORMANCE ASSESSMENT

Performance assessment is a process used to evaluate an individual's job performance in carrying out specific tasks or functions associated with VTS duties. This assessment provides insights into their effectiveness and skills, while also identifying areas for improvement and development.

Performance assessments may be carried out using different approaches, including as part of the annual assessment of personnel, through a 360° assessment process or other methods. Regardless of the approach used, performance assessment of VTS personnel should be carried out at regular intervals to evaluate an individual's competence to carry out their VTS duties. These assessments may include a combination of elements, for example:

- Proficiency checks to measure specific levels of skill or knowledge
- Scenario/ Simulation exercises
- Structured peer reviews conducted by VTS Personnel trained as a VTS On-the-Job Training Instructor
- Review organised and/or conducted by a VTS Supervisor
- Review of reports and voice recordings

If a performance assessment shows that established competency is not being met, then updating training with the individual should be considered to help maintain their qualifications. The content of this training can be identified through a training needs analysis (see annex A).

To demonstrate the performance of VTS personnel is being observed and monitored, VTS providers should ensure:

- The framework and assessment methods used to undertake performance assessments is documented.
- Processes and procedures are in place to ensure performance assessments are completed.
- The assessment that an individual VTS operator has satisfactorily completed a performance assessment should be documented / signed off by nominated staff member/s.
- The outcomes are reflected in training records.

### 9.1.2. VTS ENGLISH COMMUNICATIONS COMPETENCY TESTING

VTS Communications competency tests are designed to monitor that VTS personnel continue to conform with the practices for VTS communications as outlined in IMO Standard Marine Communication Phrases (SMCP)[4] and IALA G1132 on VTS Voice Communications and Phraseology [16].

VTS providers should monitor that VTS personnel continue to conform with the practices for VTS communications as outlined in IMO Standard Marine Communication Phrases (SMCP) and IALA G1132.

*IALA Guideline on VTS English Communication Competency Testing* [13] provides a framework for VTS providers to assess competency with standard message structure and phrases.

## 9.2. SKILLS AND DEVELOPMENT TRAINING

Skills and development training focuses on building the abilities needed to perform tasks proficiently. This includes being able to keep up with changes in technology, regulations, or the operating environment as well ensuring VTS personnel can apply this knowledge effectively into real-world scenarios.

VTS providers should determine the type of training required for their operations to build the skills, knowledge and capabilities of their VTS personnel. The common types of training are:

- Adaption Training
- Updating Training
- Other Training

To identify specific skills gaps and development needs for VTS personnel it is recommended that a training needs analysis should be undertaken. Annex A provides an example of how a training needs analysis for an individual may be completed.

### 9.2.1. ADAPTATION TRAINING

Adaptation training is carried out whenever significant changes to VTS operations are expected or when changes have been made, concerning equipment, regulations, operational procedures or any other matter which is relevant to the performance of VTS personnel.

This training should preferably be delivered before any changes occur to ensure smooth implementation of the changes.

Adaptation training should be tailored to each situation, considering the complexity and nature of the change. Key considerations include:

- Designing and developing appropriate training.
- Preparing a structured program with detailed lesson plans and clear learning objectives based on the training needs analysis.
- Identifying the most suitable party to develop and deliver the training, which could be in-house, a training organization, a service provider (e.g. the company installing VTS equipment), or a combination of these.
- Developing assessment approach suitable to the training provided.

### 9.2.2. UPDATING TRAINING

Updating training is a tailored made program aimed at refreshing or improving specific areas of competency. It allows VTS personnel to regain professional knowledge and skills, while reinforcing previous training.

VTS providers should establish processes and procedures to identify when updating training is required to ensure VTS personnel maintain competency and may be required in circumstances such as:

- a break in service
- an unsatisfactory performance assessment or proficiency check
- upon request
- when deemed necessary by the VTS provider

When an event triggers the need for updating training, a training needs analysis should be conducted to identify performance gaps, establish training goals, and define the required performance levels.

Before the training begins, VTS personnel should be informed about the program's objectives, duration, and format. For example, after a break in service of three months or more, a VTS provider could conduct a training needs analysis to determine if updating training is necessary, considering recent changes, the complexity of the VTS area and the individual's duties.

Updating training may cover both generic and area-specific competency elements. These training activities may be enhanced through the use of case studies and by incorporating simulation exercises tailored to specific tasks performed by VTS personnel. These exercises can range from low-level simulation approaches, such as role-playing scenarios, to full mission options that utilise interactive computer-based simulations [13]. The exercises may cover various areas, including:

- Responding to developing unsafe situations
- Emergency response to equip individuals with the skills and knowledge necessary to respond effectively to emergencies by ensuring safety and preparedness in crisis situations.
- Joint operation exercises involving multiple parties such as VTS, tugs, pilots, response agencies are involved.

VTS providers need to identify who would be best positioned to develop and deliver update training, whether in-house, through a Training Organization or a combination of both.

#### **9.2.3. OTHER TRAINING**

Other training may be designed to address the specific learning needs and requirements of personnel at a particular VTS, ensuring they remain competent for their duties. These programs may focus on area-specific competencies, tools, and procedures relevant to the immediate work environment, such as:

- Familiarization trips on vessels with pilots or other stakeholders, visits to allied services, adjacent VTS centres, or other similar organizations to increase knowledge of operations in the VTS area.
- Regular updates of regulatory, procedural and technological developments.
- Attendance and participation in relevant emergency, business continuity, fail over or operational procedural exercises.
- Workplace safety, including induction and first aid courses.

Where appropriate, practical activities may be accompanied by a workbook in which the learning goal of the activity is linked to several questions, thereby enhancing the learning and integration of this experience into their role.

### **9.3. REVALIDATION TRAINING**

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Revalidation training is the periodic, structured training designed to refresh, maintain, and enhance skills, knowledge and competencies of VTS personnel, ensuring the ongoing validity of their VTS qualifications.



Revalidation training provides a mechanism to:

- Focus on the retention of critical skills and knowledge to ensure VTS personnel can continue to perform in their roles effectively.
- Refresh specific skills, particularly those that may degrade over time without use.
- Assess the competency of VTS personnel through a structured and standardised programme.

Competent Authorities are responsible for ensuring that revalidation training is carried out at intervals of between three to five years, and for providing guidance on how revalidation training may be delivered. This guidance can include, for example, the use of structured courses, simulation exercises, or other approved formats.

VTS providers should have processes and procedures in place to ensure that VTS personnel complete revalidation training within the timeframes and guidance provided by the competent authority.

Where VTS personnel hold additional qualifications, such as VTS supervisors or OJT instructors, they are expected to maintain the competencies required for these roles. Competent Authorities may determine the revalidation requirements, which could include attending a structured revalidation course aligned with the original model course (e.g. C0103-2 and C0103-4) or other comparable approaches such as:

- Demonstrating continued competence through active supervisory duties or instructional activities.
- Participation in relevant professional development activities (e.g. leadership, crisis management, decision-making, coaching, or instructional design), or
- Using other approved methods that ensure continued competence in leadership, mentoring, and assessment.

Revalidation training may be delivered either by an accredited VTS Training Organization, or a VTS provider approved to provide revalidation training for their own personnel. It is acknowledged that, depending on how the training program is structured, both an accredited VTS Training Organization and the VTS provider may be involved in developing and delivering training activities.

*IALA Model Course C0103-5 Revalidation training for VTS Personnel* provides further guidance on how this training may be established.

#### **9.4. UNSTRUCTURED LEARNING**

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Unstructured (sometimes called informal) learning occurs through everyday on-the-job experiences, interactions, and activities, without the need for formal training programs or instruction. It is typically unplanned and spontaneous, where individuals gain knowledge, skills, or insights through:

- On-the-job learning where new skills or knowledge are gained by observing, trying tasks themselves, or receiving guidance from others.
- Peer discussions where insights are informally exchanged such as in the review and analysis of lessons learned from local VTS operations or incidents.
- Self-directed learning where an individual explores new topics, skills, or tools on their own, such as reading articles, watching videos/tutorials, or experimenting with software functionality.
- Trial and error where skills are gained by experimenting with different approaches, learning from mistakes, and improving through repeated practice.

## 10. VTS CAREER PROGRESSION

The formal recognition of VTS qualifications provides the foundation for a professional framework similar to that adopted by the shipping and pilotage industry. The regular revalidation of these qualifications seeks to create quality standards comparable to other professions.

VTS personnel have the scope for career progression by making use of the skills and experience gained, in either VTS, or other maritime environments (see example in Figure 2).

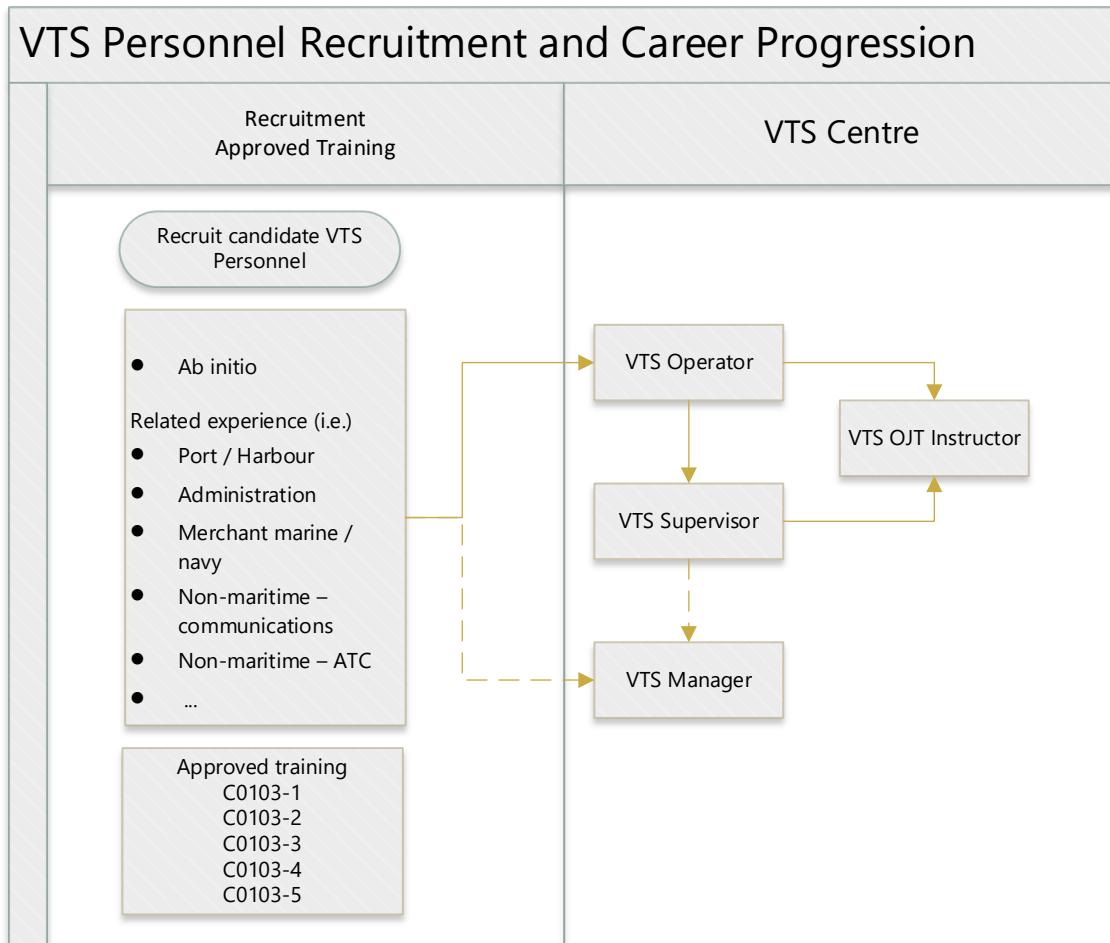


Figure 2 VTS Career progression

## 11. DEFINITIONS

The definitions of terms used in this Guideline can be found in the International Dictionary of Marine Aids to Navigation (IALA Dictionary) at <http://www.iala-aism.org/wiki/dictionary> and were checked as correct at the time of going to print. Where conflict arises, the IALA Dictionary should be considered as the authoritative source of definitions used in IALA documents.

In addition, for the purpose of this Guideline, the following definitions and clarifications have been used:

*Accreditation (of a training organization)* is the formal endorsement by a competent authority that a training organization operates under a quality management system to deliver effective training (Reference – G1014)

*Approval (of IALA model courses)* is the formal endorsement by the competent authority that a training organization meets the standards specified in an IALA model course for its implementation, delivery and assessment. (Reference – G1014)

*Adaptation training* is carried out whenever significant changes to VTS operations are expected or when changes have been made, concerning equipment, regulations, operational procedures or any other matter which is relevant to the performance of VTS personnel. (Reference – G1156 Section 9.1)

*Certificate* is a document that confirms that a student has met the requirements for the award of a specific qualification. The certificate is evidence that VTS personnel are considered competent for their VTS duties (certification). (Reference – G1156 Section 8.2)

*Competent authority* means the entity made responsible by the Government for vessel traffic services. (Reference – IMO Resolution A.1158(32))

*Competence* is having the knowledge, skills, attitude and personal attributes necessary to safely, effectively and efficiently to perform the tasks associated with VTS

*On-the-job training (OJT)* is intended to provide the required knowledge, practical competence, skills and attitude to undertake duties at the VTS when they are employed. (Reference – G1156 Section 6.2.3)

*Performance assessment* is a process used to evaluate an individual's job performance in carrying out specific tasks or functions associated with VTS duties. This assessment provides insights into their effectiveness and skills, while also identifying areas for improvement and development. (Reference – G1156 Section 9.1.1)

*Qualification* is the education, knowledge, understanding, proficiency, skill, experience or any other attribute which the competent authority has determined desirable for performing the duties of the position. VTS qualifications should be based on the principle that satisfactory results are obtained on completion of the IALA VTS model courses. (Reference – G1156 section 8.1)

*Recognition of prior learning (RPL)* is a process of assessing the experience, knowledge, skills, attitudes and competencies acquired by an applicant (through formal or informal learning) against a given set of learning outcomes, objectives, or standards to determine whether the required learning and competency has been achieved. (Reference – G1017)

*Revalidation training* is the periodic, structured training designed to refresh, maintain, and enhance skills, knowledge and competencies of VTS personnel, ensuring the ongoing validity of their VTS qualifications. (Reference – G1156 section 9.3)

*Simulation training* is a form of experiential learning that uses a realistic, safe and controlled environment to:

- develop and improve skills in the provision of VTS;
- assess the levels of competencies of new and existing VTS personnel; and
- maintain the levels of competencies of existing VTS personnel.

(Reference - G1027)

*Training Needs Analysis* identifies and evaluates gaps between the current skills, knowledge, and competencies of individuals, and those required as a VTS operator. (Reference – G1156 Annex A)

*Training organization* is an entity accredited by the competent authority and approved to deliver one or more IALA model courses. (Reference – G1014)

*Unstructured learning (or sometimes called informal learning)* occurs through everyday on-the-job experiences, interactions, and activities, without the need for formal training programs or instruction. (Reference – G1156 Section 9.4)



*Updating training* is a tailored made program aimed at refreshing or improving specific areas of competency. It allows VTS personnel to regain professional knowledge and skills, while reinforcing previous training. (Reference – G1156 Section 9.2.2)

*VTS provider* means the organization or entity authorized by the Government or competent authority to provide vessel traffic services. (Reference – IMO Resolution A.1158(32))

*VTS certification log* is a record of course certificates and training activities of VTS personnel. (Reference – G1156 Section 8.6)

*VTS personnel* means persons performing tasks associated with vessel traffic services, trained in vessel traffic service operations and appropriately qualified. (Reference – IMO Resolution A.1158(32))

## 12. ABBREVIATIONS

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CPD	Continual professional development
IELTS	International English Language Testing System
IMO	International Maritime Organization
OJT	On-the-job training
SMCP	Standard Marine Communication Phrases
VTS	Vessel Traffic Services

## 13. REFERENCES

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- [1] IMO. Resolution A.1158(32) on Guidelines for Vessel Traffic Services
- [2] IALA. Standard S1050 Training and Certification
- [3] IALA. Recommendation R0103 Training and Certification of VTS Personnel
- [4] IMO. Resolution A.918(22) IMO Standard Marine Communication Phrases
- [5] IALA. Guideline G1017 Assessment for Recognition of Prior Learning in VTS Training
- [6] IALA. Model Course C0103-1 - VTS Operator training
- [7] IALA. Model Course C0103-2 - VTS Supervisor training
- [8] IALA. Model Course C0103-3- VTS On-the-Job training
- [9] IALA. Model Course C0103-4 - VTS On-the-Job Training Instructor
- [10] IALA. Model Course C0103-5 - Revalidation training for VTS personnel
- [11] IALA. Guideline G1014 Accreditation of VTS Training Organizations and Approval to Deliver IALA VTS Model Courses
- [12] IALA. Guideline G1027 Simulation in VTS Training
- [13] IALA. Guideline on VTS English Communication Competency Testing
- [14] IALA. Guideline G1167 VTS Management
- [15] IALA. G1132 VTS VHF Voice Communication and Phraseology



## ANNEX A TRAINING NEEDS ANALYSIS

A Training Needs Analysis identifies and evaluates gaps between the current skills, knowledge, and competencies of individuals, and those required as a VTS operator. Its purpose is to pinpoint specific areas where training is needed to improve performance, align VTS personnel capabilities with VTS requirements, and ensure efficient, targeted training programs. This process helps to direct training efforts where they will have the greatest impact on individual or the organization.

Where performance issues are identified, then it is important to determine if they are due to gaps in knowledge, skills, or attitude, as training is just one of several solutions which may be available to address performance problems. Depending on the outcomes from the gap analysis, training programs can be tailored to focus on developing specific competencies or enhancing skills that require more attention while minimising time spent on those already mastered.

These are the key steps when conducting a training needs analysis for an individual is:

1 Determine objectives and skill set

- Identify the specific competencies, knowledge, and skills needed for a VTS personnel to perform their role effectively.
- Set clear and measurable training objectives based on the identified gaps. These objectives define what the individual should achieve after completing the training.

2 Evaluate skills of an individual

Review the individual's current skills, knowledge, and abilities by:

- Reviewing past performance assessments to identify documented strengths and weaknesses.
- Gathering input from others to get a broader perspective on the individual's capabilities.
- Asking the individual to reflect and self-assess their strengths and areas for improvement.
- Creating a list of the individual's current skills, qualifications, and experiences relevant to their role.

3 Measure the skill gap

- Compare the individual's current competencies against the skills required for their role and identify specific gaps that may need addressing to enhance their effectiveness.
- Prioritise by determining which gaps are most critical to focus on based on organizational priorities and the training needs of the individual.

4 Develop Training solutions

- Review and assess existing training programs to identify areas for improvement, while also considering programs that can be used as is or tailored to meet current needs.
- Identify other appropriate training methods and resources to address the identified gaps.
- Consider budget, time, and available resources when planning the training solution. It may also be necessary to assign someone the responsibility for facilitating and managing the training.
- Work with the individual to establish specific, measurable, achievable, relevant, and time-bound (SMART) goals for their development. Document a plan that outlines specific areas where the individual needs improvement, the recommended training solutions, timelines, and how progress will be measured.

5 Monitor Progress and Evaluate Training

- After the training, evaluate whether the individual's performance has improved, their confidence has increased in the targeted areas, and the training objectives were met.
- Document findings for future reference and accountability.