**IALA Model Course**

C0103-5

REVALIDATION Training for VTS Personnel

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1. MODEL COURSE OVERVIEW

# Introduction

IALA Model Courses have been developed to provide guidance on the level of training and knowledge needed to reach levels of competence defined by IALA. They provide IALA national members and other appropriate authorities with guidance on the training of VTS Personnel.

IALA’s contribution to the development of internationally harmonized guidance for vessel traffic services is recognized in IMO Resolution A.1158(32) Guidelines for Vessel Traffic Services and the Annex to the resolution states:

* *Contracting Governments are encouraged to take into account IALA standards and associated recommendations, guidelines and model courses (Section 9.2)*
* *VTS personnel should only be considered competent when appropriately trained and qualified for their VTS duties. This includes, inter alia:*
* *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 recommendations, guidelines and model courses specifically related to the establishment and operation of VTS include:

* **Recommendation 0103** **- Training and Certification of VTS personnel** specifies the practices associated with the training and certification of VTS personnel to assist authorities when recruiting, training and assessing VTS personnel to ensure the harmonized delivery of vessel traffic services world-wide.
* **Guideline 1156 - Recruitment, training, and certification of VTS personnel** states that *“Model courses provided by accredited training organizations should be approved by the competent authority.”*
* **Guideline 1014 -** **Accreditation of VTS training organizations and approval to deliver IALA VTS model courses** sets out the process by which a training organization can be accredited to deliver approved VTS training courses.
* IALA model courses including:
* Model Course C0103-1 VTS Operator Training
* Model Course C0103-2 VTS Supervisor Training
* Model Course C0103-3 VTS On-the-Job Training
* Model Course C0103-4 VTS On-the-Job Training Instructor
* Model Course C0103-5 Revalidation training for VTS personnel

# Purpose of the Model Course

The purpose of model course C0103-5 is to assist VTS training organisations and VTS providers, and their teaching staff to establish and conduct revalidation training to ensure VTS personnel are competent for their VTS duties.

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. This includes providing a consistent approach to ensure level of performance and skills in all areas of operation, including knowledge which may be infrequently used. Revalidation training covers generic and area specific elements of competency.

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.

*Note - the term ‘Course provider’ is a general term used in this document to describe either a VTS Training Organization, or a VTS provider.*

It is not the intention of the model course to present instructors with a rigid ‘teaching package’. Rather, this model course provides a standard framework to assist in the preparation of revalidation training programs based on the IALA VTS model courses.

# Course Objective

To successfully complete this course the student will demonstrate the ongoing knowledge, practical competence, skills, and attitude to continue to undertake the duties associated with the provision of 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.

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.

# Course Curriculum Outline

Revalidation training should be developed based on the duties carried out by VTS Personnel. This document focuses on revalidation training for VTS Operator qualifications and is based on IALA Model Course C0103-1.

Revalidation training for other VTS duties should be developed in a similar manner to this model course, reflecting the respective model course: revalidation of VTS Supervisor qualification should be based on C0103-2 and VTS OJT Instructor qualification should be based on C0103-4.

Revalidation training for VTS personnel at a specific VTS centre should be based on C0103-3 and carried by the VTS provider.

To reflect specific requirements, a training needs analysis may be carried out prior to providing the training. The competence levels achieved in revalidation training should reflect the level identified for that element in the appropriate IALA model course.

Part B provides a framework to assist with the development of a course curriculum for revalidation training based on the VTS model courses to ensure VTS operators maintain their professional currency and that previous training is reinforced.

Training activities, scenarios, simulated exercises, and assessments undertaken during the course are intended to represent the role of the VTS Operator and reflect events or incidents that may be experienced at a VTS.

# Entry Requirements

The Revalidation Course is provided to existing qualified VTS Personnel. Participants for the revalidation course will have already successfully completed the IALA Model Course C0103-1 – VTS Operator Training and IALA Model Course C0103-3 VTS On-the-job Training.

Where students hold additional qualifications, such as IALA Model Course C0103-2 VTS Supervisor Training or IALA Model Course C0103-4 VTS On-the-Job Training Instructor, they should complete additional recurrent training to confirm ongoing competence and maintain currency in those areas.

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# Course Intake - Limitations

The course provider should determine the number of students enrolled and provide information about the student-to-staff ratio. The class or group size should ensure that the instructor(s) can give each student the necessary individual attention to meet the learning objectives.

In general, it is recommended that 8-10 students is the maximum that a single instructor can be expected to train satisfactorily to the level of competence involved. Larger numbers may be admitted depending on the method of delivery.

# Training Staff Requirements

All instructors and assessors should be appropriately qualified for the training being provided and the assessment required for the model course.

As well as instructors and assessors, additional staff may be required for the maintenance of equipment, for the preparation of materials and training areas as well as support for simulation and other practical activities.

*IALA Guideline 1156 - Recruitment, training, and assessment of VTS Personnel* provides further guidance on the qualifications for instructors.

# Facilities and Equipment

The teaching aids, facilities and equipment students will utilise during the course should be fit for purpose and of a sufficient standard to reflect the training methodologies used in the course delivery. Examples of training methodologies may include:

* classroom sessions, presentations and facilitated discussion
* group based learning activities
* case studies and recordings
* remote learning (e.g. e-learning, online, distance, hybrid, blended)
* simulation training.

Training should be managed in a manner consistent with IALA Guideline 1027 in order to provide sufficient behavioural realism to allow students to acquire the knowledge and skills appropriate to the training objectives.

The course provider should provide for safe learning environment consistent with any national health and safety requirements.

# Delivery of the Model Course

All VTS training should be:

* Structured in accordance with written programmes, including such methods and means of delivery, procedures and course material as are necessary to achieve the prescribed standard of competence; and,
* Conducted, monitored, assessed, and supported by qualified persons.

The training staff should take into consideration existing knowledge, skills and attitudes of students to support the assessment and recognition of prior learning. A training needs analysis should be carried out to identify any differences between the level of competence of the student and those identified within the curriculum tables, and teaching strategies to address these gaps should be implemented.

Teaching programmes should be designed to ensure VTS personnel (eg operator, supervisor) are competent. All pertinent subject elements from the respective VTS Model Course should be covered and clearly documented.

The presentation of concepts and methodologies may be repeated as necessary until the instructor is satisfied that the student has attained the required competence in each subject.

Thorough preparation is key to successful implementation of the course.

## Developing course content

Training staff should develop the recurrent course content based on a training needs analysis which is used to evaluate the current competencies of students and identify gaps that the revalidation training should address. It is noted that the core focus areas may change over time and depending on the student intake.

Lesson plans and detailed learning objectives should be developed based on the subject areas, competence tables, references, and materials listed in Part B of the existing VTS model courses.

The presentation of the material should be tailored to reflect specific training objectives and include practical exercises, assessments, etc. When developing lesson plans, the instructor should use teaching methods that will ensure students can achieve the required learning objectives.

The course timetable may need to be adjusted depending on the student intake as different students may require different lengths of time to cover the same content.

1. Competence Level Taxonomy for VTS Training

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Knowledge and/or Attitude | Skill | Verbs (examples) |
| Level 1  Work of a routine and predictable nature generally requiring supervision | Comprehension  Understands facts and principles; interprets verbal/written material; interprets charts, graphs and illustrations; estimates future consequences implied in data; justifies methods and procedures | Guided response  The early stages in learning a complex skill and includes imitation by repeating a demonstrated action using a multi-response approach (trial and error method) to identify an appropriate response | Arrange, define, list, locate, label, identify, select |
| Level 2  More demanding range of work involving greater individual responsibility. Some complex/non-routine activities | Application  Applies concepts and principles to new situations; applies laws and theories to practical situations; demonstrates correct usage of methods or procedures | Autonomous response  The learned responses have become habitual, and the movement is performed with confidence and proficiency | Comply (with), describe, display, give examples, recognise, operate, perform (an action), participate in |
| Level 3  Skilled work involving a broad range of work activities. Mostly complex and non-routine | Analysis  Recognises un-stated assumptions; recognises logical inconsistencies in reasoning; distinguishes between facts and inferences; evaluates the relevancy of data; analyses the organizational structure of work | Complex observable response  The skilful performance of acts that involve complex movement patterns. Proficiency is demonstrated by quick, smooth, accurate performance. The accomplishment of acts at this level includes a highly co-ordinated automatic performance | Analyse, apply, categorise, classify, compare, differentiate, explain, justify, operate, solve |
| Level 4  Work that is often complex, technical and professional with a substantial degree of personal responsibility and autonomy | Synthesis  Integrates learning from different areas into a plan for solving a problem; formulates a new scheme for classifying objects or events | Adaptation  Skills are so well developed that individuals can adapt rapidly to special requirements or problem situations | Adapt, construct (build), demonstrate, devise, evaluate, interpret, organize, plan, predict, resolve, respond to |
| Level 5  Complex techniques across wide and often unpredicted variety of contexts. Professional/senior managerial work | Evaluation  Judges the adequacy with which conclusions are supported by data; judges the value of a work by use of internal criteria; judges the value of a work by use of external standards of excellence | Creation  The creation of new practices or procedures to fit a particular situation or specific problem and emphasizes creativity based upon highly developed skills | construct, compose, coordinate, create, criticise, draw conclusion, evaluate, formulate, improve, judge, modify, synthesize |

## Competence levels

To assist in the development of lesson plans, five levels of competence are used in the model courses for VTS personnel. Levels 1 to 4 are used in the model course for the training of VTS Operators. Learning objectives are provided within the VTS model course. Verb taxonomies have been provided with these levels to assist the training staff with the creation of detailed learning objectives. (Table 2 refers to the competence level taxonomy for VTS Training)

## Competence tables, teaching aids and references

Detailed competence tables are provided in part B of the respective VTS model course, including competence levels and proposed teaching aids and references. The training materials prepared (e.g. course notes, course presentations and reference documents etc) should be consistent with IALA standards and up-to-date taking into account recent changes and industry developments. These training materials should be available to the student for their reference.

## References

Course development and delivery should take into consideration the following references. Where required, additional references are identified in specific modules.

* United Nations Convention on the Law of the Sea (UNCLOS)
* International Regulations for Preventing Collisions at Sea, 1972 (COLREGS)
* International Conventions for the Safety of Life at Sea (SOLAS)
* SOLAS Chapter V, Regulation 12 - Vessel traffic services
* SOLAS, Chapter V, Regulation 7 - Search and Rescue Services
* SOLAS Chapter V, Regulation 11 – Aids to Navigation
* IMO Resolution A.1158(32), Guidelines for Vessel Traffic Services
* IMO GMDSS Manual
* IMO/ICAO Publication - International Aeronautical and Maritime Search and Rescue (IAMSAR) manual, three volumes:
* Vol 1 – Organization and management (IMO 960)
* Vol 2 – Mission co-ordination (IMO 961)
* Vol 3 – Mobile facilities (IMO 962)
* IALA Vessel Traffic Services Manual
* IALA S1040 Vessel Traffic Services
* IALA S1050 Training and Certification
* IALA R0103 Training and Certification of VTS Personnel
* IALA G1103 Train the Trainer
* IALA G1141 Operational Procedures for Delivering VTS
* IALA G1156 Recruitment, Training and Certification of VTS Personnel
* IALA C0103-1 VTS Operator Training
* IALA International Dictionary of Marine Aids to Navigation
* National, regional, and local legislation and regulations on VTS, ports, harbours, pilotage and

allied services

* National Notices to Mariners related to VTS
* Local Notices to Mariners, navigational warnings related to the VTS area
* National procedures and standards for operation of VTS
* Local procedures for operation of VTS
* Internal and external emergency procedures
* Local charts and geographic knowledge and characteristics of the VTS area
* Meteorological and hydrographic publications/information

## Course review and updating

The course content should be reviewed on a regular basis to ensure it reflects the current IALA standards, recommendations, guidelines and consider recent changes and industry developments.

On conclusion of the course, a review should be undertaken based on course feedback and observations during course delivery to identify ongoing improvements and training materials that may need updating.

# Assessment

Student progress should be continually monitored and assessed, and regular reviews undertaken. Any problems that may arise should be addressed so that the student can attain the required levels of competence and has the opportunity to meet the course objectives.

Assessments should reflect the level of competence required, as provided in the competence tables for each module.

The course provider should determine the assessment methods to be used to ensure competence levels have been attained for each subject element. In addition, the course provider should have procedures in place to address instances where the student is unable to attain the required competence.

Assessment results should be recorded and retained in accordance with national and/or organizational requirements as evidence to indicate the competence levels that have been attained for each subject of the model course.

# Course Certificate

A student should be considered competent when they have:

* demonstrated they have the theoretical and practical knowledge, and
* have passed the appropriate assessments to ensure they have met the required competency as outlined in this model course.

# Acronyms

AIS Automatic Identification System(s)

ALRS Admiralty List of Radio Signals

ARPA Automatic Radar Plotting Aid

AtoN Aid to Navigation

CCTV Close circuit television

COLREGS International Regulations for Preventing Collisions at Sea

COMSAR Sub-Committee on Communications and Search and Rescue (IMO – now part of NCSR)

DF Direction Finding (VHF-DF)

DGNSS Differential Global Navigation Satellite System(s)

DSC Digital Selective Calling

DST Decision Support Tool

ECDIS Electronic Chart Display and Information System(s)

ECS Electronic Chart System(s)

ETA Estimated Time of Arrival

FAL Convention on the Facilitation of International Maritime Traffic (IMO)

GMDSS Global Maritime Distress and Safety System

GNSS Global Navigation Satellite System(s)

GOC General Operator Certificate (GMDSS)

IALA International Association of Marine Aids to Navigation and Lighthouse Authorities - AISM

IAMSAR International Aeronautical and Maritime Search and Rescue (IMO/ICAO)

ICAO International Civil Aviation Organization

IEC International Electrotechnical Commission

IELTS International English Language Test System

IMDG International Maritime Dangerous Goods (IMO)

IMO International Maritime Organization

ISPS International Ship and Port Facility Security (Code)

ITU International Telecommunication Union

Lat Latitude

LLTV Low light television

Long Longitude

LOP Line(s) of position

MARPOL International Convention for the Prevention of Pollutions from Ships (IMO)

MASS Maritime Autonomous Surface Ships

MAtoN Marine Aid to Navigation

MSI Maritime Safety Information

OJT On-the-Job Training

PIANC World Association for Waterborne Transport Infrastructure

Racon Radar beacon(s)

ROC Restricted Operator’s Certificate (GMDSS)

Ro-ro Roll on – roll off

RPL Recognition of Prior Learning

RR Radio Regulations

SAR Search and Rescue

SMCP Standard Marine Communication Phrases (IMO)

SOLAS Convention on the Safety of Life at Sea (IMO)

STCW Standards of Training, Certification and Watchkeeping of Seafarers, 1978, as amended

UN United Nations

UNCLOS UN Convention on the Law of the Sea

VHF Very High Frequency (30 MHz to 300 MHz)

1. COURSE CONTENT

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. It 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

The key topics to be covered during a Revalidation training course should be based on the training needs analysis which:

* Evaluates the current competencies of VTS personnel by assessing the current skill levels and knowledge.
* Identifies gaps in skills or knowledge that the training should address.

# Generic training

## C0103-1 VTS Operator Training

Revalidation training for VTS Operators should reflect the learning objectives and elements presented in C0103-1. Table 2 provides an overview of the elements to be considered for revalidation training.

1. Summary of C0103-5 – Revalidation Training for VTS Operators

| **Module Title** | **Overview** | **Revalidation Training** |
| --- | --- | --- |
| 1. Communication Coordination and Interaction | This module covers the communications principles used in VTS operations and assumes the minimum level of English has been obtained as identified in IALA Guideline 1156 and has appropriate national qualifications to operate the VHF marine radiotelephony equipment. | Focuses on ongoing competence, with clear and unambiguous communication and addressing areas that may be identified during the training needs analysis.  Include VTS Communication Competency training and assessment [G#### ] |
| 1. Legal Framework | This module covers the regulatory and legislative framework of VTS, including the liabilities and the responsibilities of allied services and participating ships in the VTS. | Focuses on knowledge of current regulatory framework, including any amendments or revisions in international and national requirements. |
| 1. Provision of VTS | This module covers the practical aspects associated with the provision of VTS including the provision of information, and the issuing of advice, warnings, instructions, and traffic clearances. | Ensure ongoing competence, and providing focus training on specific areas as may be identified during the training needs analysis. |
| 1. Nautical Knowledge | This module covers nautical knowledge elements required to perform the function of a VTS Operator. | Ensure ongoing competence, providing focus training on specific areas as may be identified during the training needs analysis. |
| 1. Equipment | This module covers the requirement for VTS Operators to be able to understand the operational limitations and benefits of equipment used in VTS. | Includes changes and developments in equipment, as well as technical developments in the maritime industry that may affect VTSO operations. |
| 1. Human Factors | This module addresses the required competences for VTS Operators to perform their duties under all conditions including emergencies and stressful situations | Focus on developments in international best practice, addressing any areas that may be identified during the training needs analysis. |
| 1. Emergency Situations | This module includes the processes and procedures to respond to emergency situations (internal and external) while maintaining safety of the waterway in the VTS area. | Focus on emergencies and incidents, including relevant case studies/incident reports and reflects any areas that may be identified during the training needs analysis. |