Funded by:

Iceland Liechtenstein Norway grants

D3.2. – Model for online STCW training courses

ATi3: Co-design of the model for online STCW training courses

onthewave-project.eu

Blue Growth Programme Operator:

REPÚBLICA PORTUGUESA
ECONOMIA E MAR

Direção-Geral de Política do Mar

ON THE WAVE

Innovating in the maritime sector through upskilling and reskilling

Working together for a green and competitive Europe

TABLES 4
FIGURES 4
1 Introduction 5
2 Organisation and planning 7
2.1 Introduction 7
2.2 Quality standard 7
2.3 Administrative systems 8
2.4 Teaching facilities and equipment 10
3 Market Requirements and needs for STCW courses 11
3.1 Introduction 11
3.2 STCW requirements 12
3.3 Other requirements 14
3.3.1 National legislation 14
3.3.2 The National Maritime Authorities 14
3.3.3 Customers and private maritime organisations 14
4 Preparing the team 16
4.1 Instructor background and experience 16
4.2 Soft sustainability or other competences 16
4.3 Learning objectives 17
4.4 Learning methods 17
4.5 Course Documentation/Templates 18
5 Course material and regulations 20
5.1 Competences framework 20
5.2 STCW simulators 20
5.3 STCW Instructors 21
5.4 STCW Courses/IMO courses 23
5.5 Fit material to the method 24
6 Implementation of courses 24
6.1 Introduction 24
6.2 Activities 24
6.3 Documentation 25
6.4 Implementation 27
7 Quality and evaluation 28

TABLES

Table 1. STCW tables for the different chapters and functions with the shown headlines describing the four columns. 20
Table 2. Documentation 25
Table 2. Example Course Evaluation 27

FIGURES

Figure 1 – Topics that are approached in this model. 5
Figure 2 - Participants during simulator course at SIMSEA Real Operations in Norway. 9
Figure 3 - Example of simulator exercise 22

1 Introduction

The ***On the Wave*** "Model for online STCW training" is a document that will guide and support training providers of the maritime sector for the promotion of online STCW training courses. In detail, this model will focus on topics such as:

- Organizations' setting – What does an organization needs to have to successfully implement the model?
- The process – Which steps should the organizations follow to promote online STCW training courses?
- Preparing the team – Which background, competences and/or experience the team should have?
- Developing the materials – Which supports, activities, practices and devices should an organization prepare to assure online STCW training courses?
- Guidelines for the implementation – Which tips and suggestions to proceed with the implementation of the online STCW training courses can be shared?
- Quality control – How can the organization assure the quality of the online STCW training courses?

All partners have actively been involved in developing this document, and below you find the final outline of the online STCW model.

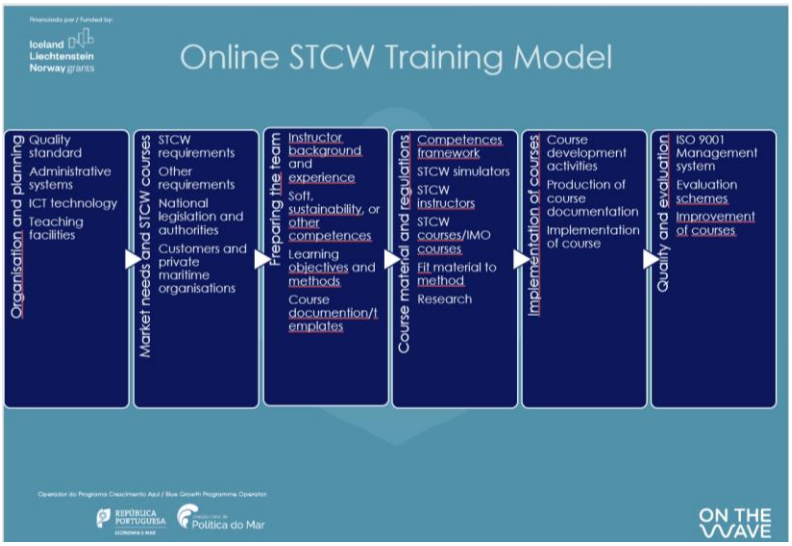

Figure 1 – Topics that are approached in this model.

The online STCW model is dynamic and its content and guided process for implementation must be viewed towards the situation at hand. Thus, each training centre should carefully evaluate their own situation and apply the model thereafter. For instance, if a maritime training course has the purpose to train on basic navigation skills, or use of RADAR/ARPA, one should evaluate which type of simulators that is

needed for that specific purpose. Basic simulation tasks may not require DNV Class-A ship simulators, and for other courses simulators may not be the right method for training. Some courses may be fully online, and while others have a blended method approach.

Blended learning: Combination of instruction from different models of teaching and learning, including e-learning.

Distant learning: online distance simulator learning, online classroom, or e-learning.

2 Organisation and planning

2.1 Introduction

The organisation needs an approved quality system. Such systems are according to quality standards and give most of the needed information for the organisation.

In addition to its main processes, the organisation should also have the following support processes:

- Marketing and sales
- Finance and accounting
- Human Resources
- Quality
- Procurement
- Maintenance
- Modelling (simulator)

It is necessary to clearly defined roles and responsibilities. The following roles should be considered:

- Training Responsible
- Booking Responsible
- Technology responsible
- Product Development Responsible
- Instructors
- Accounting support
- Modelling engineers if applicable

2.2 Quality standard

All organisations delivering STCW courses are obliged to have a quality system/standard. The system covers:

- administration of the certification system
- all training courses and programmes
- examinations and assessments carried out.
- qualifications and experience required of instructors and assessors.
- due regard to the policies, systems, and controls
- internal quality assurance reviews.

There will take place internal and external reviews assuring that the quality requirements are met.

Training and assessment are continuously monitored through the quality system to ensure the achievement of objectives and related standards.

2.3 Administrative systems

Booking

An administration system for the STCW courses is important and should be web-based and easily accessible for customers.

The course administration system online should both present the organisation and the courses. A vital part is the online booking, the course database and daily course administration.

Online booking should be done either by a shipping company representative, individual participants or by the organisation's booking responsible. Typical a booking will be executed from where you will find the course description, either online or by mail/phone.

When booking courses, the database should contain descriptions of the courses offered, the time and place of their execution, customer and participant information, etc. The customers should easily find relevant information about the course including whether there are any seats available.

The system or web page should also include an official course catalogue, including appropriate information about the courses, for existing and new customers.

Booking can take place in two ways. Either the customer book themselves via a website or they send the necessary booking information so that the booking responsible can do the booking for them.

When the booking is registered, the participant will get a booking confirmation by mail, preferably automated. This email should contain all relevant information about the course, terms and conditions for cancelling and administrative information like possible hotel and transportation arrangements. A copy of the confirmation mail should also be sent to the contact person at the participant's company.

If not otherwise agreed in writing, all cancellations should be done in writing and sent by e-mail or by completing the electronic form in the booking system.

Rules for cancellation of a booking as an individual or for completing courses should be clearly stated. The organisation must also reserve the right to cancel courses when there are not enough participants to warrant a course, or in the event of unforeseen incidents and force majeure.

Below are some examples of other administrative routines.

Registrations: Course participants are registered in the course database.

Control of participants: The instructor will check that the participants have met and have the correct information on each individual.

The instructor will hand the list of participants and the corresponding information sheet over to the Booking responsible. Candidates that have not met must be reported to the booking responsible.

A welcome folder is created for each course, one for each participant. The folder contains paper for taking notes, pens, the time schedule, a deviation form and other important course info. This is kept on the participants' desks when the course starts.

Name tags: Participants should write their names on a paper and place it in the plastic tag at the desk before the course starts.

Document of evidence: The document of evidence is according to the course fact sheet should be issued to the course participants at the end of the course. A copy could be sent to the shipping company together with the invoice. The course diploma for each candidate is also archived in the system.

Written exams and/or practical tests conducted as part of the course should be graded in terms of passed/failed.

An order/invoice system that should be connected to the booking system?

Course participants must fill in an Evaluation form immediately after completing the course/exam.

If deemed necessary to do changes in a course, training or assessment programme, management must see to it that relevant authority or customer are involved as necessary. The changes should be documented.

List of Approved Instructors and Assessors should be established for the different courses.

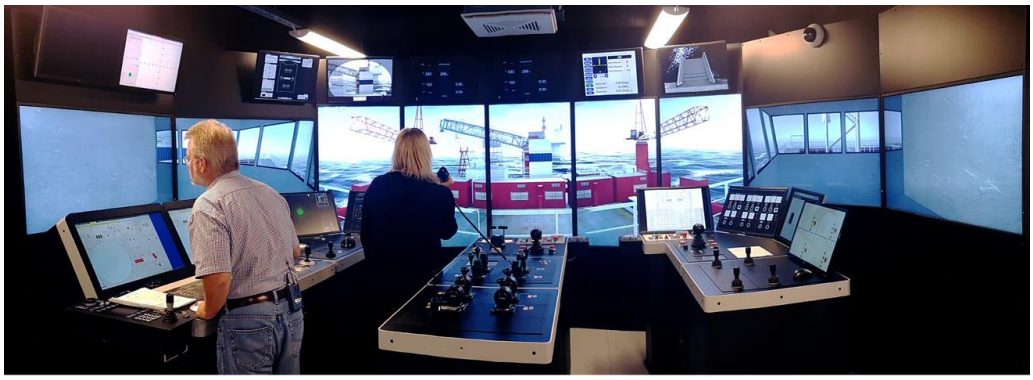

Figure 2 - Participants during simulator course at SIMSEA Real Operations in Norway.

2.4 Teaching facilities and equipment

Teaching facilities, equipment and simulators must be available for all planned courses.

The platform hosting the organisations' online learning, could preferably be connected to the online booking system. For the online and blended STCW courses the system must be easily accessible from students' computers.

Layouts in classrooms are planned according to the number of students, and additional rooms for group work should be provided if necessary.

Teaching equipment such as a projector and backboard must be available.

Approved simulators are available for the type of course, either navigation, cargo or machinery simulator.

3 Market Requirements and needs for STCW courses

3.1 Introduction

The STCW Convention prescribes minimum standards relating to training, certification and watchkeeping for seafarers which countries are obliged to meet.

STCW Convention chapters are listed below:

- Chapter I: General provisions
- Chapter II: Master and deck department
- Chapter III: Engine department
- Chapter IV: Radiocommunication and radio personnel
- Chapter V: Special training requirements for personnel on certain types of ships
- Chapter VI: Emergency, occupational safety, medical care, and survival functions
- Chapter VII: Alternative certification
- Chapter VIII: Watchkeeping

The STCW Code: The regulations contained in the Convention are supported by sections in the STCW Code. The Convention contains basic requirements which are then enlarged upon and explained in the Code.

Part A of the Code is mandatory. The minimum standards of competence required for seagoing personnel are given in detail in a series of tables.

Part B of the Code contains recommended guidance which is intended to help Parties implement the Convention. The measures suggested are not mandatory and the examples given are only intended to illustrate how certain Convention requirements may be complied with. However, the recommendations in general represent an approach that has been harmonized by discussions within IMO and consultation with other international organizations.

The education and courses are defined and described in the STCW convention with the A and B code. STCW education and courses are defined and described in different chapters. IMO model courses give guidance on how to implement the different courses.

When discussing whether a STCW course could be an online or blended course both the STCW Convention/codes and IMO model courses should be examined.

3.2 STCW requirements

The regulations contained in the Convention are supported by the STCW Code.

The STCW Code section A is mandatory while Section B is recommended.

Section B of the Code provides guidance to those who deal with the education, training or assessment of seafarers.

Firstly, there are requirements related to the training itself. STCW Chapter I, Regulation I/6 Training and assessment is a requirement for instructors related to STCW courses. This rue is shown below.

> ***"Regulation I/6 Training and assessment***
> *Each Party shall ensure that:*
> *.1 the training and assessment of seafarers, as required under the Convention, are administered, supervised and monitored in accordance with the provisions of section A-I/6 of the STCW Code; and*
> *.2 those responsible for the training and assessment of competence of seafarers, as required under the Convention, are appropriately qualified in accordance with the provisions of section A-I/6 of the STCW Code for the type and level of training or assessment involved."*

The rule shown above is elaborated in section A-I/6 in the STCW code. In this A-code requirements are related to documentation of courses, qualifications, in-service training and assessment of competence. Section B-I/6 gives further guidance regarding training and assessment, including the use of distance learning and e-learning.

STCW chapter I, regulation I/8 Quality standards are shown below. These are requirements for the organisations' standard quality systems, evaluations and reports.

> ***Regulation I/8 Quality standards***
> *1 Each Party shall ensure that:*
> *.1 in accordance with the provisions of section A-I/8 of the STCW Code, all training, assessment of competence, certification, including medical certification, endorsement and revalidation activities carried out by non-governmental agencies or entities under its authority are continuously monitored through quality standards system to ensure achievement of defined objectives, including those concerning the qualifications and experience of instructors and assessors; and*
> *.2 where governmental agencies or entities perform such activities, there shall be a quality standards system.*
> *2 Each Party shall also ensure that an evaluation is periodically undertaken, in accordance with the provisions of section A-I/8 of the STCW Code, by qualified persons who are not themselves involved in the activities concerned. This evaluation shall include all changes to national regulations and procedures in compliance with the amendments to the Convention and STCW Code, with dates of entry into force later than the date information was communicated to the Secretary-General.*
> *3 A report containing the results of the evaluation required by paragraph 2 shall be communicated to the Secretary-General in accordance with the format specified in section A-I/7 of the STCW Code.*

The rule shown above is elaborated in section A-I/8 in the STCW code. These requirements detail the scope and content of the quality standard. Section B-I/8 gives further guidance regarding quality standard models, including:
- a model for assessment of knowledge, understanding, skills and competence.
- independent evaluation
- reports.

STCW chapter I, regulation I/12 Use of simulators, is requirements for the simulators used in STCW course/exercises. This is shown below.

Regulation I/12 Use of simulators
1 The performance standards and other provisions set forth in section A-I/12 and such other requirements as are prescribed in part A of the STCW Code for any certificate concerned shall be complied with in respect of
.1 all mandatory simulator-based training;
.2 any assessment of competency required by part A of the STCW Code which is carried out of using a simulator; and
.3 any demonstration, of using a simulator, of continued proficiency required by part A of the STCW Code.

Regulation I/12 shown above is elaborated in section STCW A code A-I/12 "Standards governing the use of simulators". The requirements are divided into two parts. Part I is the performance standards for simulators and STCW code part II is concerned with other provisions such as training objectives, training and qualifications of instructors/assessors.

Section STCW code B, B-I/12 "Guidance regarding use of simulators" and covers radar, ECDIS, navigation and watchkeeping, ship handling, cargo handling, GMDSS and main/auxiliary machinery simulation.

STCW Chapter II are requirements for the education of the master& deck department.

STCW Chapter III are requirements for the education of the engine department.

STCW chapter IV deals with radiocommunication and radio operators. The GMDSS course is elaborated in the STCW section A-IV and section B-IV.

STCW chapter V are special training requirements for personnel on certain types of ships. This is related to tankers and passenger ships. The courses listed are elaborated in the respective section A and B of the code.

STCW chapter VI are listing courses regarding emergency, occupational safety, security, medical care and survival functions. The courses listed are elaborated in the respective section A and B of the code.

When new versions of the STCW convention are issued, this may create a competence gap giving a market for new courses for a period of time especially for STCW chapter II.

3.3 Other requirements

3.3.1 National legislation

National legislation is necessary to implement IMO conventions and their codes for the seafarers and shipping-companies. There may also be some additional requirements in national legislation or guidance. These rules and guides should also be considered if relevant.

3.3.2 The National Maritime Authorities

The respective Maritime Authorities are the administrative and supervisory authority in matters related to the safety of life, health, material assets and the environment on vessels flying the nations flag and foreign ships in national waters. Their activities are governed by national and international legislation, agreements and political decisions.

The respective national maritime authorities can issue guidance related to IMO conventions and codes, including the STCW convention.

Maritime Education and training institutions are required to send applications for approval in certain areas. The authorities may have thewn procedure for this.

The Norwegian Maritime Authority has also issued a certain number of plans/syllables for several STWC courses, also when covered by IMO model-courses.

3.3.3 Customers and private maritime organisations

Customers are concerned that the crews receive courses in accordance with IMO or other requirements. In addition, it is of great importance that the crew on board have the necessary documents of evidence from the courses in internal or external surveys. The benefit of online courses, either as a blended course or online only, is less duration at the course centre, saving time and expenses for shipping companies.

Private maritime organisations, for example OCIMF, have developed a new and updated Ship Inspection Report Programme, SIRE 2.0. This program requires different types of STCW courses, or others for tanker-personal.

In addition, separate courses are sometimes ordered by the individual customer for specific purposes. Either as a one and only, or as a repetitive course. Other course requirements may be, for example, deviations on board that can be fixed with a course. Or there may be demands from different maritime organisations or the shipping companies' customers.

4 Preparing the team

4.1 Instructor background and experience

Maritime instructors have professional qualifications documented by a certificate. Maritime Instructors must be qualified with an appropriate "Certificate of Competence." For officers, this should be held on an operational or management level, according to the level of the course content. A higher degree of education, can in some areas replace the certificate requirements.

If a course is related to a specific ship type, consideration should be done whether the instructor or assessor should have a background from this ship type.

Instructors must additionally have the necessary teaching and assessment skills. The requirement is covered by the following model-course:

1) IMO model course 6.09 "Training Course for Instructors" related to classroom instruction.
2) IMO model course 6.10 "Train the Simulator Trainer and Assessor" required for being an instructor in simulator exercises.

Simulator instructors need additional training in the specific simulator equipment. The simulator suppliers normally provide such training. To have a good simulator-instructor, much experience and dedication are needed. More in-depth knowledge and experience with the simulator may sometimes be needed.

New instructors will carry out on-the-job- training together with experienced instructors. They should participate in relevant training until approved by the organisation to satisfy a quality standard. This should eventually be documented in a list of approved instructors for the different courses.

4.2 Soft sustainability or other competences

Personnel responsible for teaching in other than maritime disciplines, for instance human factors, must have either a higher education (master's degree or above) or non-formal real competence within relevant disciplines, preferably with relevant experience.

4.3 Learning objectives

The teaching syllabus should be written in a learning objective format. The objectives describe what the student must know to demonstrate that knowledge has been transferred.

Such format is an appropriate teaching and assessment tool to express:

- The depth of understanding of a subject and the degree of familiarization with a subject on the part of the student
- What knowledge the student needs to acquire and should be able to demonstrate.

The instructors should preferably teach learning in an object-orientated way. For example by using the words :

"The learning outcome is that the trainee/student is able to.."

The learning outcome can be classified in the following dimensions: Cognitive, affective and psychomotor.

4.4 Learning methods

During the online and blended course, different learning methods should be considered relating:

- E-learning - online
- Classroom
- Simulator exercises
- Remote (instructor teaching via the web.)

Pedagogy is about how young people learn, while andragogy is part of pedagogy that deals with how adults learn. A distinction between those two is important for the instructor in his preparation.

The instructor will always find different methods and ways to present the course content. Most courses are done the adults with experience.

Learning methods both as reflected in the IMO model-courses 6.09/6.10 and the teams/instructors' own experience should be considered.

Assessment and evaluation of the course will later give indications if a change in learning methods should be considered.

4.5 Course Documentation/Templates

Instructor:

All training and assessment of seafarers for certification shall be structured in accordance with a documented course program including its course material.
To develop a course, the use of templates for documentation of the course is of great assistance. This is treated in chapter X.
When the course is already developed, and all the documentation is available, the instructor(s) must familiarize themselves with all the course content. Then they should establish whether are something missing, especially within their participation in the course, if they are not responsible for the whole course.
Depending on the complexity of the course, and the experience of the instructors, an internal "Pilot course" could be of a big benefit.
The simulator-exercises should be prepared and tested by the instructors.

The staff

The instructor team and supporting staff should communicate and prepare any administrative routines, including deciding course dates and marketing the course.

Assessment

All training shall have a written and/or practical test/assessment to determine the level of learning outcome. Such measurement is important to evaluate the candidates learning as well as the quality of the training process. Measuring the training processes is an important means to identify necessary improvements in the programs.
Multiple choice tests are used to measure knowledge acquired and assessments to measure skills, human behaviour, and attitudes. Other methods may be considered for the individual course.

Most programs measure the program's performance by testing the candidates' learning outcomes at the end of the training process according to predefined criteria. A document of evidence is issued to candidates who have passed the exams.

In-service training

Instructors shall have an appreciation of the course including training objectives. They must be qualified in the task for which training is being conducted. That includes having an appropriate level of knowledge and understanding of the competence to be assessed.

That they have gained practical assessment experience.

For courses using a simulator, additional practical operational experience on the type of simulator being used is needed.

And they have gained practical assessment experience on the simulator under supervision and to the satisfaction of an experienced assessor.

5 Course material and regulations

5.1 Competences framework

The training must be planned. A training plan will detail all the skills, knowledge and behaviours that must be taught to a person, how the training will be conducted and recorded, the coordination of theory and practice and how and when assessments should be performed. The plan must be documented and made available to training staff.

A qualification should not be awarded unless the person concerned is assessed against a standard; i.e., as provided in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW).

For the respective courses, a table is shown with four columns. These colours with the content of each column I s shown below. For example, is the criteria for evaluating competence listed in column 4 of the STCW table.

The STCW tables describe education and courses this way for STCW chapters II to VI.

STCW Tables			
Column 1	**Column 2**	**Column 3**	**Column 4**
Competence	**Knowledge, understanding and proficiency**	**Methods for demonstrating competence**	**Criteria for evaluating competence**

Table 1. STCW tables for the different chapters and functions with the shown headlines describing the four columns.

The IMO model-courses then have descriptions of a course outline, listing and detailing all the elements in column 2, "Knowledge, understanding and proficiency" above.

The model courses should therefore be read together with the relevant STCW tables.

5.2 STCW simulators

Equipment

The correct simulator and training level must be established.

In short, there are simulators within navigation bridges, desktop navigation, desktop cargo, machinery room and machinery desktop. Each type of simulator is divided into classes A-D, class D being the new sky simulator.

Organisations need a "Statement of Compliance" documenting the simulators and type/class.

Level of training

The tasks done by the simulator may be categorized as follows for setting up the level of simulation:

- ✓ Familiarization: the trainee is familiar with the equipment, layout, procedures and routine tasks.
- ✓ Operational: the task relates to the inputs/outputs and their relationships and is to do with the performance of a function. For example le, the ability to operate the RADAR equipment, etc.
- ✓ Functional: the task relates to the functions or activities performed by the system without reference to which of the elements of the system perform those functions. For example, the use of RADAR for determining position or collision avoidance, etc.
- ✓ Management task: relates to the management of a combination of more than one system to perform a given job, e.g., situational awareness or position determination after combining the RADAR outputs with the ECDIS.
- ✓ Communication task: relates to effective communication between different human resources to report, get feedback or execute a task.
- ✓ Emergency: the tasks performed in circumstances where there is variation or deviation from the expected scenario or situation.
- ✓ Crisis: the tasks performed when the emergency has developed into a crisis.

In addition to the above category of tasks, certain tasks are team-based and require individual traits such as communication, personal relationships, team playing, influencing, negotiating, self-learning, establishing trust, managing and leading, etc.

The performance objectives need to be specified against a different range of contexts and circumstances, e.g. from fair weather to rough weather, open sea to restricted waters, normal temperatures to icy cold temperatures, normal to heavy load conditions, etc.

5.3 STCW Instructors

All instructors must have a certificate documenting the level of education and practice onboard ship. In addition, the IMO model course is 6.09/6.10.

Doing an exercise on the simulator, all the phases should be covered with documentation as highlighted in the figure below.

Simulator assignments start with an individual task so the candidates can get familiar with the simulator and its equipment and can continue with a suitable and adapted progression through the various levels of difficulty.

The simulator training teaching methodology focuses on the student's active participation. This is normally composed as follows:

- ✓ Briefing; review of the tasks, learning objectives, planning and Safe Job Analyses.
- ✓ Execution: the candidates will carry out the tasks while being monitored, guided, and given feedback by the instructors.
- ✓ Debriefing; A review of the observations and incidents from simulator training and clarification of learning outcome. The debriefing will include individual reflection.

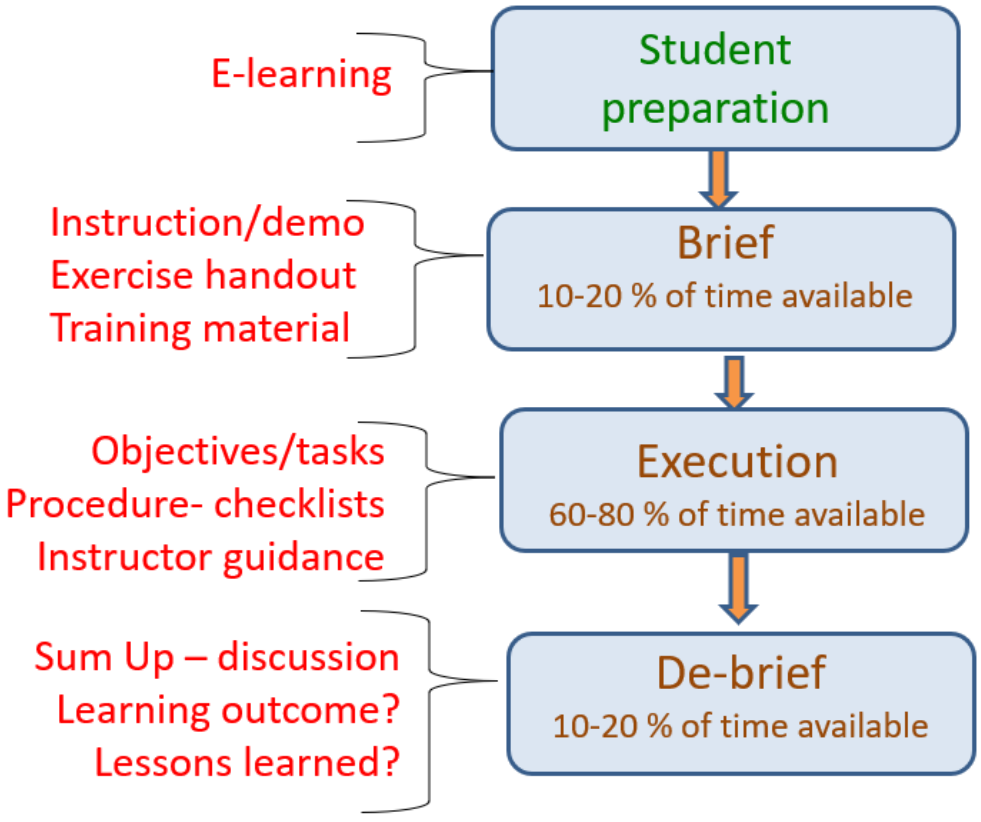

Figure 3 - Example of simulator exercise.

5.4 STCW Courses/IMO courses

IMO model course

The purpose of the IMO model courses is to assist training institutes and their teaching staff in organising and introducing new courses. The model courses will also assist the training institutes to enhance their existing capabilities.

The model course is a guideline, and a trained instructor can never be substituted.

For a course to be successful, considerable attention must be made to resources like:

- Qualification and experience of simulator instructors
- Additional staff to execute simulator training function
- Infrastucture – for simulation, lectures and discussions
- Equipment
- Resource material

As in all training endeavours, the knowledge, skills and dedication of the instructors are the key components in the transfer of knowledge and skills to those being trained through IMO model courses.

Because educational systems and the cultural backgrounds of trainees in maritime subjects vary considerably from country to country, the model course material has been designed to identify the basic entry requirements and trainee target group for each course in universally applicable terms, and to specify clearly the technical content and levels of knowledge and skill necessary to meet the technical intent of IMO conventions and related recommendations.

Having adjusted the course content to suit the trainee intake and any revision of the course objectives, the instructor should draw up lesson plans based on the detailed syllabus. The detailed syllabus contains specific references to textbooks or teaching material suggested for use in the course. Where no adjustment has been found necessary in the learning objectives of the detailed syllabus, the lesson plans may simply consist of the detailed syllabus with keywords or other reminders added to assist the instructor in presenting the material.

5.5 Fit material to the method

As mentioned above, STCW Convention and tables gives certain obligations and advice regarding the STCW courses.

IMO model courses are designed to assist in the implementation of courses and should be viewed in context with the relevant IMO model course. Some model courses are not linked to STCW tables.

In the chapter about the implementation of courses, the documentation needed for a course, gives a guide of how to fit material into a method, i.e., develop a course.

Attention is also drawn to STCW section B-I/6 para 6-11 about distance learning and e-learning. Firstly this section approves the use of distance learning and e-learning. Furthermore, guidance for training and assessment is given. This guidance should be considered.

6 Implementation of courses

6.1 Introduction

Development and implementation of new courses are done by one or more persons with the required competence and experience. The supporting staff should be informed and involved, as necessary.

Recommendations in the "Guidance on the implementation of IMO model courses" should be considered. These guides are enclosed at the end of most model-courses.

Necessary documentation for the course should be developed.

6.2 Activities

When a need for a new course is established, and the decision to develop the course is made, the development can start.

The first step is to dedicate the people or team involved in the work according to their areas of responsibility.

The next step is to review the relevant regulations and guides for the course. This is firstly the STCW regulation(s) and associated sections in STCW A and B code. Then the IMO model-course describes the course.

A careful study especially of the model course to get a clear understanding of the course content. Based on this study and the guides regarding E-learning in the STCW

B- code, a decision should be made whether the course is online, blended or classroom/simulator.

The first document to be established should be the "Factsheet". The table below describes the necessary documentation their purpose.

DOCUMENTATION RELATED TO STCW COURSES	
Factsheet	An overview with the specific considerations for the course, also used for approval, booking and commercial purposes.
Online course documentation **Assessment online**	The E-learning course for the online-platform, in the format used by the course supplier. Includes assessment of the students.
Instructor Manual/lesson plan	To assist the instructor in preparing and conducting the course.
Simulator Exercises	Standardized information with all necessary information to the student executing the exercise
Assessment	Multiple choice questionnaires or other tests
Course evaluation	Standardized questionnaire where each student gives feedback to the course supplier.

Table 2. Documentation

The main content of the documentation is described in the next para.

6.3 Documentation

1) Factsheet with the following content:
    a. Course decryption including
        - Scope
        - Learning outcome/objectives
        - Course content (online and/or on-site)
        - Target group
        - Duration
        - Max number of participants
        - Student pre-qualification
        - Exam/test/Assessment, how it is done
        - Educational equipment
    b. Time schedule/Training schedule
    c. Qualifications for instructors/assessors
    d. Document of evidence
    e. Overview of relevant rules and regulations including any compliance matrix
    f. Web text: The authorized course description for the booking system

2) Online documentation/E-learning includes the following content:

   a. Course introduction with
      - Welcome
      - Learning outcome
      - Course overview
      - Rules and regulations
   b. Each chapter/part:
      - Introduction, including a description of the content in this chapter/part.
      - Main part(s)/Topics presented one at a time.
      - Summary in the end.
   c. Assessment of the student during the online course:
      - Multiple questions, a certain number for each chapter
      - each question with at least four choices.
   d. Layout-considerations to be done related to educational factors.

3) Instructor Manual, to assist the instructor may consist of an overview of course documentation and:

   a. Copy of presentations used for teaching.
   b. Course content for the participants
   c. Cases/tasks
   d. Simulator exercises.
   e. Test/assessment
   f. Bibliography
   g. Appendix as necessary, for example "Lesson Plan"

4) Simulator exercises with number/name and the following content:

   a. Introduction including objective and purpose.
   b. Presentation of ship type with data
   c. Situation of the ship
   d. Operator tasks
   e. Appendix if needed
   f.

5) Assessment in the classroom: Multiple choice or test either as questions with open or partly open answers.

6) Course evaluation should be standardized for all courses. All parts of the course should be covered. For blended courses this means that the online/e-learning part also should be addressed.

Course evaluation **Do you agree with the following statements?**						
Questions:	Disagree		Not Sure		Agree	
	1	2	3	4	5	6
The course was adequate to my previous knowledge.				X		
The content held a high professional level.						X
The content was relevant to my work.					X	
The simulator is realistic.				X		
The simulator exercises were realistic.					X	
Our teaching methods are good.						
Course facilities are satisfactory.						X
All together a good course.					X	
What can be improved?	(Open question)					

Table 3. Example Course Evaluation

6.4 Implementation

When the course is ready for publication in the booking system, management will develop booking details in cooperation with the booking responsible:

- Start- and end times for each individual course.
- Information to be included in the booking confirmation. Se "Factsheet."

New courses to be announced at own web-page, though customerscustomers and other marketing.

We will release the course or training offering as soon as we have run a *test course* to check that the course is in accordance with the decided course documentation and/or customer requirements. Representatives from the customers will attend the test course. Any instructors hired specifically for this type of training will take part in the test course.

When all documentation is established, further necessary course preparations should be done inhouse. This could be: lectures, establish exercise scenarios on the simulator and briefs/debriefs or the exercises.

If necessary, the instructors should get relevant training.

When all course documentation and preparations for the course are ready, the first course should be done as a pilot course either in-house or with external course participants.

Define scope/duration related to content (hours) – also STCW regulation for this.

7 Quality and evaluation

To reach and maintain their goals and requirements, organisations have established a quality management system. The Quality Management System can be structured in accordance with ISO 9001 or equalling.

The training process is based on learning objectives for each training activity. The content and timetable are according to the organisations teaching methodology, the specific training requirements, rules, and regulations.

The simulation training will normally consist of a section that deals with regulations/rules and a section involving simulator training. The main learning vehicle in simulator training is a realistic exercise according to the learning outcome.

Document control ensures that all documents associated with the Management System meet the standards.

The management system includes all documentation with an approved layout of each document/template.

For the quality system, there are procedures of deviation report and reporting of improvement proposal should be a part of such a system.

Reporting is done by filling in a Non-Conformity Report which is handled as appropriate.

Course participants or the company they represent should be entitled to complain relating to any activity in the organisation. Any complaint should be dealt with according to the company quality plan.

Evaluation schemes should be used for all courses, both online/e-learning or blended courses.

The instructor team will analyse the evaluations including any comments the instructors may have. Evaluation feedback under a certain level should trigger a follow up.

Internal and external audits according to the quality system are conducted to control that the activities (simulator training and courses) are assessed for the need for corrective measures and/or improvements. The survey should focus on courses online and on site including equipment, classroom and simulator.

Based on assessment results and evaluation schemes after online- or e-learning courses, improvement should be considered.

How to improve existing courses.

ON THE WAVE

Promotor:

INOVA+

Partners:

FOR-MAR
Centro de Formação Profissional das Pescas e do Mar

SIMSEA
REAL OPERATIONS

spea
Sociedade Portuguesa para o Estudo das Aves

This project is funded by Iceland, Liechtenstein and Norway through the EEA Grants. Through the European Economic Area (EEA) Agreement, Iceland, Liechtenstein and Norway are partners in the internal market with the Member States of the European Union. In order to promote a continuous and balanced strengthening of economic and trade relations, the parties to the EEA Agreement have established a multi-annual Financial Mechanism, known as the EEA Grants. The EEA Grants aim to reduce social and economic disparities in Europe and to strengthen bilateral relations between these three countries and the recipient countries. For the 2014-2021 period, a total contribution of € 2.8 billion was agreed for 15 beneficiary countries. Portugal will benefit from a budget of 102.7 million euros. Learn more at eeagrants.gov.pt