MANUAL FOR A TRANSPARENT RECOGNITION OF
maritime pilots qualifications
under the ECVET and EQF
List of acronyms

ARPA – Automatic Radar Plotting Aid
BRM – Bridge Resource Management
CPD – Continuous Professional Development
ECDIS – Electronic Chart Display and Information System
ECV – Europass Curriculum Vitae
ECVET – European Credit System for Vocational Educational Training
ECTS – Education Training and Certification Standard for Maritime Pilots
EMPA – European Maritime Pilots Association
EQF – European Qualification Framework
EU – European Union
IAMSAR – International Aeronautical and Maritime Search and Rescue
IMO – International Maritime Organisation
ISPS – International Ship and Port Facility Security Code
MMP – Malta Maritime Pilots Coop
MSC – Maritime Safety Committee
NARAS – Navigation Radar and ARPA Simulator
PPNS – Portable Piloting Navigation Systems
SAR – Search and Rescue
SOLAS – International Convention for the Safety of Life at Sea
STCW – Standards of Training Certification and Watchkeeping
TUMPA – Turkish Maritime Pilots Association
VET – Vocational Educational Training
VTS - Vessel Traffic Services
VTSC - Vessel Traffic Services Centre

Disclaimer

This Manual was compiled on the basis of field research in direct consultation with stakeholders and partners. While the Malta Maritime Pilots strive to keep accurate data, it makes no guarantees of any kind, expressed or implied, regarding completeness, accuracy, reliability, or availability of the information submitted by all the partner organisations.

CSEL Srl undertook the analysis and evaluation of the data together with the project partners and with the external assessment of an expert in the field. The Manual is intended solely for the use of the project. The Malta Maritime Pilots reserves the rights to this Manual. No part of this publication shall be replicated and represented as an official version, nor as having been produced in affiliation with or with the endorsement of the Malta Maritime Pilots.

Both men and women work as Maritime Pilot. The male pronoun ‘he’ has been used in place of ‘he / she’ throughout this Manual solely for stylistic reasons and is in no way meant to imply that the profession is only open to male professionals.

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.
Executive summary

This manual has been written with aim of having a transparent recognition of the maritime pilots qualifications under the ECVET and EQF, a qualification focused on Risk Prevention and Environmental Protection.

The First Chapter illustrates the CERTIPILOT project and the Maritime Pilot profession. Background on the use of competences in the EU – ECVET and EQF, a section on the relevance of competences for Maritime Pilots Qualifications and the skills portfolio in the Europass CV are also included.

The second chapter, outlines the International Legislation on Training for Pilots and main training available. It also encompassed the National Legislation: Maltese, Spanish and Turkish on this aspect. Furthermore, the chapter includes the recommended training to Marine Pilots.

The third and last chapter, illustrates the qualification which is based on Occupational Standards for Maritime Pilots. The chapter explains how the designing of the proposed Occupational Standards have been set as the basis for the qualification. The last part of the chapter illustrates in detail the actual continous professional development qualification for Maritime Pilots Risk prevention and Environmental Protection. The qualification is based on a learning outcomes approach based on the ECVET system.

A chart summarising the qualification is included as an appendix. The chart outlines the learning outcomes, training methodology, assessment and reading list.
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1.1 The Maritime Pilot Profession

The Maritime Pilot is a highly specialised adviser to the shipping industry with specific local and regional knowledge. He advises Masters and/or Bridge Teams in the conduct of safe navigation of all kinds of vessels in confined, restricted pilotage waters near the coast and into ports, estuaries and fairways.

The Maritime Pilot operates within a challenging environment, where vessels are becoming larger in dimension and shipping lanes and waterways becoming ever more crowded.

Maritime Pilots play an important role in the promotion of maritime safety, efficiency of the Port and accessibility/workability of the fairway by ensuring the minimum risk to vessels and the Port’s infrastructure while protecting the environment and property and safeguarding lives. The Maritime Pilot must always keep this aim uppermost in his mind during the decision making process and must also adhere to the legal requirement of bringing sub standard vessels to the attention of the Port Authorities and thereby protecting the public interest.

The Maritime Pilot is an important member of the Bridge Team and, in most situations, performs the conduct of safe navigation and ship-handling on behalf of the Master.

The Maritime Pilot, who works alongside the Master, is required to have the knowledge of a Master when it comes to conducting a vessel (following training in Standards of Training Certification and Watchkeeping at Management Level) with specialisation in certain areas in which he has to be able to put theoretical knowledge into practice.

The Maritime Pilot needs to have:
- detailed local, geographical, meteorological and hydrological knowledge;
- detailed knowledge of relevant local, national and international regulations;
- detailed local knowledge of traffic organisation and regulation;
- the ability to assess and judge the position of a vessel in the fairway and in traffic situations employing tactical as well as strategic knowledge with or without the use of charts and electronic navigation aids; and
- full knowledge and a full range of skills in the manoeuvring and handling of any type and size of vessel in the pilotage areas.

The Maritime Pilot is a professional at handling ships in close quarters. As a manager of high risk situations it is vital that he maintains a proper working relationship with the Master and the Officer in Charge of the Navigational Watch in order to ensure the safety of the shipping lanes\(^1\).

The Maritime Pilot's job profile

The Pilot is an adviser to the international shipping industry and his role is integral to the local traffic safety system.

The Pilot is a professional adviser to the captain with comprehensive knowledge of how to conduct a vessel and specialised knowledge and experience in a specific area.

\(^1\) www.empa-pilots.org
The Pilot’s duty is to ensure a safe and efficient traffic flow, the minimisation of risks to vessels and infrastructure and the protection of the environment.

The Pilot should be able to execute safe passage under all conditions and berth and unberth all types of vessels.

The Pilot must be able to work together with the Bridge Team with trust and confidence.

The Pilot must lead the Bridge Team when handling ships in close quarters, when managing high risk situations and in crisis situations and accidents.

The Pilot must have the ability to make quick decisions under pressure.

The Pilot must have access to all sources of information on board a vessel as well as the cooperation of the Bridge Team and other competent public services and authorities (e.g. VTS, water police, port authorities)

The Pilot is the coordinator of other related services (e.g. tugs, linesmen)

The Pilot must be able to board on and alight from vessels in a safe and efficient way.

The Pilot must act in accordance with the philosophy and rules of the Pilots Organisation.

The Pilot is duty bound to report any shortcomings in maritime and security affairs observed while carrying out his duties to the relevant authorities.

1.2 The important role of Maritime Pilots

“All the officers that are on the bridge during a manoeuvre can see what there is above the sea, but only one can see what there is underneath: that one is the Maritime Pilot.” (CERTIPILOT Consultation Event, Malta, July 2012 – Contribution of the President of the Rumanian Maritime Pilots Association).

Given that more than 400 million sea passengers use European ports each year, maritime transport can be said to have a direct impact on the quality of life of European citizens. Ports also handle 90% of Europe’s international trade. Maritime shipping and port efficiency are essential to the safety of passengers, seafarers, freight.

Globalisation has brought about an increase in the number of vessels using shipping lanes and ports which in turn has made it imperative to ensure high standards in seafarers’ qualifications for increased safety and environmental protection. Several factors have put pressure on the European maritime system including the expansion of the Suez Canal which will affect the Mediterranean Sea, with the rise in popularity of shipping over other modes of transport of both freight and passengers, in light of the fact that it is fast becoming the most economic transport option. Furthermore, ever increasing vessel size is increasing the complexity of manoeuvring, especially in ports.

The Maritime Pilot’s role in ports is crucial for the safe transport of people and goods as well as for the protection of the environment. The path to becoming a Maritime Pilot varies in each country but the characteristics of the profession are the same across Europe. This is due to the high sensitivity of the profession and its crucial contribution to a country’s economy and safety of its ports and waterways. Moreover, local knowledge is a key requisite of the profession which makes a Maritime Pilot a professional who is strictly bound to his area of operation.

The functions of a Maritime Pilot are to facilitate the entry and exit of ships and floating structures into ports and to advise their captains when carrying out nautical manoeuvres within ports and within the geographical limits of the pilotage area in order to ensure that safety and security conditions are met as per the terms established by the Law on State Ports, the Merchant Marine General Rules and other such statutory or contractual provisions.

The most difficult manoeuvre faced by a ship is its approach into the port, where it has to navigate obstacles and restrictions both at and below sea level, and coordinate with other vessels going in and out of the port.

The navigation of the vessel is subject to local weather conditions such as currents and winds which may be unfamiliar to the crew.

Light pollution of the coastal line prevents the correct localisation and identification of lights and benchmarks that a ship needs for safe navigation.

\[\text{ECTS, EMPA 2005}\]
This service is provided from a pilot, firstly by giving instructions from the time of departing from the station and secondly assist the ship master from the bridge during the manoeuvre. This service ensures the safe navigation of ships, their crews, as well as the safety of port facilities and service users.

The Pilot is a master mariner who advises captains of ships and floating structures to safely and easily enter and exit ports, rivers, estuaries or bars, anchorages and buoys, loading docks and exterior in both movements interior and exterior of ships, moorings, berthing and undocking in ports as well as in other areas, indicates the most convenient route for the ship to take and the nautical manoeuvres necessary for safe navigation.

Despite the presence of a Pilot on a ship the Master of that ship remains responsible for the conduct and navigation of the ship in all respects. The Master is in command of the ship and Pilot manages manoeuvres.

In addition to advising the Captain, the Pilot also performs the following functions:

- Navigation control.
- Checking the status of the switching of each vessel.
- Reports any shortcomings and deficiencies. In this regard it is noted that the 52% of vessels arriving in European waters has some kind of deficiency³.
- Coordinates with the towing and mooring services of the port.
- Reports any incidents detected in navigation in port waters to the Maritime and Port Authorities.
- Reports any pollution sources found in port waters.
- Reports on the failure or breakdown of beacon signals from the port and its vicinity.
- Communicates with authorities in case of maritime emergencies.
- Participates in consultations, meetings and discussions with the maritime community.

³ www.parismou.org - Annual Report , 2010
Pilotage service personnel are the first to board the ship and consequently are in a position to inform the competent authorities of any deficiencies that the vessel may have in order to ensure that its entry into port is carried out in adequate conditions of safety and security.

In accordance with the provisions of Directive 95/21, vessels reported to the Authorities take priority for inspection by the Port State Control.

The development of a Maritime Pilot’s profession depends strongly on his experience and continuous specific training. Both the IMO and the EU agree that the main priorities for the sector are: high quality lifelong training; need for recognition of qualifications acquired through different learning methods; encouragement of high standard training making use of simulators. Training opportunities for Maritime Pilots are however lacking. Although Maritime Pilots share common training needs with other Maritime Professionals they require specific training in skills which are particular to their profession.

The highly specialised skills needed to become a Maritime Pilot together with the need to have localised knowledge make opportunities for training hard to find. Apart from the training carried out by the National Maritime Pilots Association and Local Authorities, very few training centres in Europe can address Maritime Pilots’ training needs. Moreover, the training available is not linked to the European vocational training system. Vocational training qualifications and certification for pilotage services do not enjoy a common EU framework or even a national reference framework. This situation does not allow National Certification Authorities to establish a level for vocational training undertaken abroad, nor for qualifications acquired through non-formal and informal training. This is also preventing Maritime Pilots from being supported by public funding to co-finance their training, although they have right to such support.

Furthermore, the skills of Maritime Pilots are strongly connected to non-formal and informal education which is currently not considered as being part of their training record, thus resulting in distortions of information on their CVs.

The gaps identified above also have a negative effect on pilotage organisation, which encounters difficulties in planning common and individual training paths for Maritime Pilots in order to address their weaknesses and improve their performance and skills.

1.3 CERTIPILOT Project

CERTIPILOT is voluntary framework, which focuses on the recognition of pilots’ qualifications acquired through vocational training; specifically through the application of the European Credits system for Vocational Training (ECVET) and the European Qualification Framework (EQF) to the vocational training undertaken by Maritime Pilots. Starting from the A960 Recommendation of IMO, CERTIPILOT links the training undertaken by pilots along their career with the European educational system without introducing new standards or new courses. CERTIPILOT takes stock of the training needs that Maritime Pilots have and tries to go beyond the boundaries of the Maritime and Transport Authorities giving Maritime Pilots’ training the dignity and relevance it deserves also in relation to the European educational system.

The target audience of the project are Maritime Pilots, recruited and licensed on the basis of the National legislation applicable to the different Countries. CERTIPILOT does not refer to the training undertaken by individuals before becoming Maritime Pilots; it does not set common obligations and it does not establish new courses or standards. The project allows for the recognition of the value and quality of Maritime Pilots’ VET under the educational systems and in line with the EU legislative direction in the sector.

More specifically, CERTIPILOT provides a qualification for Maritime Pilots who wish to specialise in emergency manouvring and risk prevention in ports. The qualification is based on the competences that Maritime Pilots need to strengthen and links them with the existing training available.

After following the career development path which is common to Master and officers, Pilots’
training needs become more specifically linked to their task of manoeuvring vessels in ports, but there is no system in place to make it possible to assess the competences and the levels related to these competencies. CERTIPILOT fills this gap, in particular in relation to the use of technology in VET and environmental protection.

The project creates a comprehensive framework enabling Pilots’ Associations and National Educational Authorities to assess pilots’ qualification levels as well as the levels of training undertaken, both internally and abroad; and to facilitate qualifications recognition. Thanks to CERTIPILOT it will be possible, for the first time, to take formal, informal and non-formal learning into consideration when assessing a Pilot’s training record. This innovative aspect is relevant to the profession, as the qualifications of Pilots are strongly linked with the experience gained through work as well as with testing carried out using the technology available. The solution was proposed by the end users of the service in a bottom up approach. Moreover, the issue of recognition of qualifications is addressed in a holistic manner, i.e. not focusing on just one specific training programme. In terms of comparison with existing solutions it has to be noted that CERTIPILOT focuses, for the very first time, on Maritime Pilots. For the first time, EUROPASS is applied to the Pilots’ profession.

The aim of this project is to create a system for the recognition of Maritime Pilots’ qualifications particularly in relation to training related to emergency manoeuvres in harbours, risk prevention and training with the use of simulations.

The objectives are to facilitate the recognition of competences acquired through formal, informal and not-formal training.

Currently, although there are a number of training opportunities that are in line with the international standards set by IMO or recognised within specific networks, the ECVET/EQF system is not applied, thus creating inefficiencies and discrimination as some certificate courses may be acceptable in one country, but are not acceptable to relevant educational authorities in other countries. CERTIPILOT addresses the existing situation and facilitates mutual recognition of vocational training of Maritime Pilots.

CERTIPILOT is based on the complementary experiences of the partners involved in the project. The Malta Maritime Pilots Cooperative, acting as a lead partner, is the organisation providing pilotage services in Maltese ports and has developed a number of initiatives in the area of training, especially with the use of a manoeuvring simulator, as well as other types of courses in line with IMO standards.

The Turkish Maritime Pilots Association is the organisation representing the interest of all Turkish Maritime Pilots. The Association also organises training sessions and CPD courses for its members. The Colegio Oficial Nacional de Practicos de Puerto from Spain is established under National Law to act as supervisor for all the Spanish Pilots. It represents Maritime Pilots’ interests and carries out activities of general interests such as negotiations with relevant authorities and the training and selection of Maritime Pilots. The Colegio cooperates with the Spanish Government to safeguard the maritime sector and the environment.

The fourth partner is CSEL s.r.l., a recognised training provider that delivers vocational training in Italy. The organisation’s experience and knowledge of the European VET system was invaluable when it came to integrating the technical experience and skills of the Maritime Pilots within a framework that balances the needs of the profession with the requirements of ECVET and EQF.

CERTIPILOT is based on a participative bottom-up approach with the end users (Maritime Pilots) developing the new model in collaboration with the VET expert partner and with the extensive involvement of National and European stakeholders.
1.4 The recognition of competences in the EU – ECVET and EQF

Background on the use of competences in the EU – ECVET and EQF

Knowledge, Skills and Competences constitute the core elements of the reference levels. In the Commission’s Proposal for a Recommendation of the European Parliament and the Council, competence is defined as ‘the proven ability to use knowledge [and] skills’. It is also described ‘in terms of responsibility and autonomy’ (European Commission, 2006, p. 16)\(^5\).

Skills ‘mean the ability to apply knowledge and use know-how to complete tasks and solve problems’. A distinction is made between cognitive and practical skills. Knowledge ‘means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of study or work’\(^6\). In the EQF, knowledge is described as theoretical and/or factual.

The focus on a competence-based approach to the development of the EQF is based on increased attention being paid to concepts of adaptive and workplace-oriented learning processes, of lifelong learning, of informal and non-formal learning and of the abilities and knowledge necessary for employability in a rapidly changing society (López Baigorri et al., 2006; Rigby and Sanchis, 2006\(^7\)). Fundamental importance is given to the consideration and accreditation of learning outcomes achieved in ways other than on a formal basis and of implicit knowledge. Hence the underlying principle of


\(^7\) Rigby, Mike; Sanchis, Enric. D. The concept of skill and its social construction. European journal of vocational training, 2006, No 37, 1, pp. 22-33.

the terminology to be developed for vocational Knowledge, Skills and Competences in the EQF was ‘to establish a typology of qualitative outcomes of VET in terms of knowledge, skills and competences that will serve as conceptual underpinning for the horizontal dimension in developing a European Credit System for VET’ (Cedefop; Winterton and Delamare-Le Deist, 2004, p. 1\(^\circ\)). This concept, originally devised for the ECVET system, was later also used by the Expert Group as the basis for the definition of Knowledge Skills and Competences in the EQF.

The relevance of competences for Maritime Pilots Qualifications

As described by Cedefop,\(^8\) countries that introduce a qualifications framework are thereby seeking to make their national educational systems more transparent, more innovative and more competitive. They also aim to improve the match between the educational system and the labour market. Thus, qualifications frameworks are seen as engines of innovation: the point of introducing them is to promote a number of fundamental, long-term reforms. These include, for example, wider access to opportunities for education, more ways of acquiring qualifications (other than solely by participation in institutionalised courses), the certification of non-formal and informal learning; and encouraging learners to acquire competences that are relevant to the labour market while getting employed people involved in describing and assessing such competences.

Competences, when used as the basis for occupational standards effectively define what it means to be competent in a specific job role such as Maritime Pilots. Competence is about taking skills and knowledge and applying them to show the understanding and ability necessary to carry out a work function, in this case of a Maritime Pilot and

\(^8\) Cedefop; Winterton, Jonathan; Delamare-Le Deist, Françoise. Extended outline of the study on the developing typology for knowledge, skills and competences (Cedefop project). Working document, Thessaloniki, 21 June 2004.

\(^9\) Cedefop. European journal of vocational training No 42/43 2007/3 • 2008/1
more specifically in relation to risk prevention and environmental protection.

Maritime Pilots are exposed to the increasing challenges brought by their profession, which are mainly influenced by the growing maritime traffic and the ships’ technological development. Such challenges can be positively addressed if professionals who take care of manoeuvring the ships are adequately trained and updated to be equipped with the right competences to tackle specific circumstances.

1.5 The skills portfolio in the Europass CV

In 1998, the European Commission and Cedefop set up the European forum on transparency of vocational qualifications to bring together social partners with representatives of national training authorities around the issue of transparency. The European CV and the Certificate Supplement resulted from the work of the forum.

Europass includes three other documents, developed at European level in the late 1990s:

- The Diploma Supplement for use by higher education institutions throughout Europe and elsewhere to complement the degrees they award.
- The Europass Language Passport in which citizens can record their language skills on the basis of the Common European Framework of Reference for Languages (CEFR).
- Europass Mobility, which replaced Europass Training a document recording work placement experiences abroad, as part of an education or training initiative. Europass Mobility has a wider scope, as it can also record experiences other than placements, such as academic periods abroad.

The objective of Europass is

- to help citizens communicate their skills and qualifications effectively when looking for a job or training;
- to help employers understand the skills and qualifications of the workforce; and
- to help education and training authorities define and communicate the content of curricula.

A new Europass CV (template and online editor) was launched on 12 December 2012. Improvements include:

- more user-friendly online interface with direct preview of the final document;
- new headings: Personal website, Instant messaging, Language certificate(s);
- improved tutorials for better structured information: description of projects, conferences, publications, etc.; and
- new graphical identity for better legibility of Europass CV generated: new font, use of colours, simplified headings, etc.

Also, the European Skills Passport was launched together with the new CV. The ESP is a user-friendly electronic folder to help students, workers or job-seekers build up personal, modular inventory of personal skills and qualifications acquired throughout life.

It can contain a range of documents (Language Passport, copies of degrees, attestations of employment, etc.). When attached to a Europass CV, the European Skills Passport will reinforce the CV by bringing evidence of the skills and qualifications listed.

The European Skills Passport helps individuals to document their skills and qualifications to find a job or further training and to validate their skills. The European Skills Passport is an electronic portfolio which provides a comprehensive picture of one’s skills and qualifications.
Europass includes five documents which ensure that one’s skills and qualifications can be clearly and easily understood in Europe:

- Two documents which are freely accessible and are to be completed by European citizens:
  - the Curriculum Vitae which presents one’s skills and qualifications effectively and clearly. One can create one’s CV online using tutorials or by downloading the template with examples and instructions.
  - the Language Passport which is a self-assessment tool for language skills and qualifications. One can create one’s Language Passport online using tutorials or by downloading the template, with examples and instructions.

- Three documents issued by education and training authorities:
  - the Europass Mobility which records the knowledge and skills acquired in another European country.
  - the Certificate Supplement which describes the knowledge and skills acquired by holders of vocational education and training certificates.
  - the Diploma Supplement which describes the knowledge and skills acquired by holders of higher education degrees.

Source: europass.cedefop.europa.eu
International legislation on training for pilots and main training available

2.1 International Legislation

Each country retains the full competence on pilotage, while the International Maritime Organization (IMO) has regulated various aspects of the profession through a set of Resolutions, Conventions and Recommendations related to the characteristics of the service to be provided, the safety connected to the service, the relationship between Maritime Pilots and Masters as well as a landmark Recommendation on Training.

The following International Legislation needs to be taken into consideration when referring to the Pilotage:

- IMO Resolution A.159 (ES.IV), Recommendation on Pilotage, 27th November 1968.
- IMO Resolution A.1045 (27) Pilot transfer arrangements.
- IMO. International Convention for the Safety of Life at Sea (SOLAS), 1974 (SOLAS) Chapter 23/ V.
- IMO Resolution A. 601 (15). Provision and display of manoeuvring information on board ships.
- IMO Resolution A.159 (ES.IV), Recommendation on Pilotage, 27th November 1968.

This Resolution is a pillar for Maritime Pilotage as it recommends that states organize the service in a more effective manner, thus paving the way for the modern pilotage service. From this date, countries started to organise and provide pilotage in a more effective and professional manner, thus creating a specific niche within the Maritime Sector. The resolution states:

“The Assembly recommends to governments that they should organize pilotage in those areas where such services would contribute to the safety of navigation in a more effective way than other possible measures and should, where applicable, define the ships or classes of ships for which employment of a pilot would be mandatory”.

The other important element to be highlighted in this Resolution is the identification of ships that require the pilotage service. States are invited to establish the types and classes of ships for which pilotage should become mandatory. Pilotage is therefore not envisaged as an ancillary service to the maritime sector but it is starting to be considered as an essential service especially for specific types of vessels.
The IMO SOLAS Chapter V, Regulation 23 on Pilot Transfer Arrangements addresses the main risk factor for professional pilots, i.e. their transfer from the pilot boat to the ship. This regulation establishes safety standards as well as technical characteristics that ships need to have so as to guarantee a safe transfer. Moreover, this Regulation addresses other elements related to the safe performance of the job of a Maritime Pilot such as the accessibility to the deck, lighting systems, mechanical hoist and related equipment.

The IMO SOLAS V/23 is complemented by a recent regulation, namely the IMO Resolution A.1045 (27) adopted on 30 November 2011 establishing more detailed and precise recommendations on pilots transfer arrangements. In particular, this Resolution focuses on the pilot ladder that is installed on all ships, indicating the requirements in terms of:
- Position and construction
- Ropes
- Accommodation ladders used in conjunction with Pilot Ladders
- Mechanical pilot hoist
- Access to deck
- Safe approach of the pilot boat
- Installation of pilot ladder winch reels
- Point of access
- Physical positioning of pilot ladder winch reels
- Handrails and handgrips
- Securing of the pilot ladder
- Mechanical securing of pilot ladder winch reel

The need of further specifying certain characteristics that instruments used by Maritime Pilots need to have is very strong because accidents during the transfer are the first cause of work related deaths for Maritime Pilots. This Regulation in fact goes into very specific technical details of the equipment that ships must have in order to reduce the risk of falls and accidents during pilot transfers. Maritime Pilots perform an essential but very risky job, both for themselves and for third parties.

The IMO Resolution A.601(15), adopted on 19 November 1987 regulates the Provisions and display of manoeuvring information on board ships. In particular it establishes that the manoeuvring information should be presented as follows:
1. Pilot card;
2. Wheelhouse poster;
3. Manoeuvring booklet.

The Administration should recommend that manoeuvring information, in the form of the models contained in the appendices, should be provided as follows:
1. For all new ships to which the requirement of the 1974 SOLAS Convention, as amended, apply, the pilot card should be provided; and
2. For all new ship of 100 meters in length and over, and all new chemical tankers and gas carriers regardless of size, the pilot card, wheelhouse poster and manoeuvring booklet should be provided.

The Administration should encourage the provision of manoeuvring information on existing ships, and ships that may pose a hazard due to unusual dimensions or characteristics.

The manoeuvring information should be amended after modification or conversion of the ship, which may alter its manoeuvring characteristics or extreme dimensions.
Manoeuvring Information (Appendix 1)
The Pilot card, to be filled in by the Master, is intended to provide information to the pilot on boarding the ship. This information should describe the current condition of the ship with regard to its loading, propulsion and manoeuvring equipment and other relevant equipment.

The contents of the pilot card are available for use without the necessity of conducting special manoeuvring trials.

Wheelhouse Poster (Appendix 2)
The wheelhouse poster should be permanently displayed in the wheelhouse. It should contain general particular and detailed information describing the manoeuvring characteristics of the ship and be of such a size as to ensure ease of use. The manoeuvring performance of the ship may differ from that shown on the poster due to environmental, hull and loading conditions.

Manoeuvring booklet (Appendix 3)
The manoeuvring booklet should be available on board and should contain comprehensive details of the ship’s manoeuvring characteristics and other relevant data. The manoeuvring booklet should include the information shown on the wheelhouse poster together with other available manoeuvring information. Most of the information in the booklet can be estimated but some should be obtained from trials. The information in the booklet may be supplemented in the course of the ship’s life.

The IMO Maritime Safety Committee Circular 1156 of the 23 May 2005 provides Guidance on the access of Public Authorities, Emergency response services and Pilots on board ships to which SOLAS chapter XI-2 and the ISPS Code applies.

The special measures to enhance maritime security contained in SOLAS chapter XI -2 and in the ISPS Code have been developed for the purpose of enhancing the security in the international maritime transport sector and should not be used to create unnecessary or unjustified delay or inhibit the access on board of public authorities and emergency response services.

Delaying unnecessarily the arrival of the pilot on the bridge, especially when the ship is underway, is detrimental to the safety of navigation and may lead to situations where the safety of the ship and of other ships or of people in the vicinity may be jeopardized.

Inhibiting the access of public authorities on board may be construed as obstructing them from executing their duties or obstructing judicial or other statutory proceedings or the administration of justice, when public authorities are lawfully seeking to board a ship. In such a case, the public authority should inform the master of the ship of the laws, regulations, decrees or orders which gives the public authority the legal right to access the ship in accordance with international or national law. The public authority should present an identity document when seeking to board a ship and the ship may seek to verify its authenticity.

Each country, apart from adopting such international provisions, has developed national frameworks in relation to the access and functioning of pilotage. Across the globe we find a mix of solutions adopted for the provision of pilotage service in ports, passage areas and rivers. In some countries pilots are civil servants while in others they are individual professionals; some countries have encouraged the creation of private companies or cooperatives to run the service. The different solutions adopted, however, do no change the nature and the sensitiveness of the profession. Maritime Pilots are crucial for the safety and security of maritime transport across the globe; they perform a risky job with a high impact on local societies.

Training is not only a necessary pre-condition to access to the profession but it is also an integral part of the Maritime Pilot’s job. Their day-to-day work constitutes training in itself as every manoeuvre presents different conditions and factors and needs to be tackled individually. This job cannot be automated; technology can support but can never replace the experience, the knowledge and the competence of a Maritime Pilot. The importance of training for Maritime Pilots is reflected in the international legislation, where apart from the above-mentioned regulations and recommendations, we can find a specific provision on training for pilots.

International organisations such as IMO discuss and put forward provisions that address cross
cutting issues touching the sector at global level. Provision of the service, accessibility to the ships and reduction of fatalities, accessibility to the deck and inspections are the areas regulated by the IMO. Each country is then responsible for the actual implementation of the profession, its organisation, its development and functioning.

However, through the IMO Resolution A960, specific recommendations for training of Maritime Pilots are given. Through this Act, IMO sets specific international criteria in terms of training required for the accessibility to the profession as well as the competences to be assessed by the National Authorities. IMO goes also beyond this and enters into the types of vocational training and refreshing courses that Maritime Pilots should undergo during their career.

Moreover, it distinguished between the training to be undertaken and the continued proficiency, i.e. the validation and confirmation of the competences that are necessary for the performance of their duties.

2.2 National Legislation: Maltese, Spanish and Turkish

The provisions established by the international legislation on pilotage are incorporated in each country’s legislation regulating the profession and the service. Such regulations are integrated into specific national rules that govern the delivery of the pilotage service in each country and do not necessarily tally across countries.

Accessibility to the profession depends on national legislation and is regulated in different ways. The CERTIPILOT project actively involves Maltese, Turkish and Spanish pilots and the analysis of their countries’ respective legislation is useful to identify the main differences and similarities.

In this context, particularly important is the way training is dealt with under the different national systems.

There are different paths to becoming a Maritime Pilot and the determination of the relevant criteria is the competence of each National Authority. CERTIPILOT project does not want to interfere in this aspect, neither directly nor indirectly. The licensed Maritime Pilots are the target audience of the project and the aim of the project is to provide the basis for a common framework so as to allow for the mutual recognition of competences acquired through Vocational Educational Training. This will lead to a more harmonised vocational training system and can facilitate the professional development of Maritime Pilots.

2.2.1. Maltese National Legislation

This chapter provides an overview of the main characteristics of the Maltese Legislation covering maritime pilotage in Malta.

Maritime pilotage in Malta is regulated under the Maritime Pilotage Regulations (Subsidiary Legislation 499.26) – 1st March 2003.

In Maltese Ports pilotage is compulsory for all ships and navigating within the limits of a compulsory pilotage port, whether entering, leaving, anchoring or moving, must be done under the direction of a Pilot.

The following ships are exempted from pilotage:
- ships owned or operated by the government of Malta;
- men of war of a foreign power;
- ships of less than 500 GT;
- fishing vessels;
- yachts;
- ships, including tugs, barges and other types of vessels, whose ordinary course of navigation and trade does not extend beyond the limits of the territorial waters of Malta; and
- high speed craft calling in Malta on a scheduled service and whose Master complies with qualifications and standards developed by the Authority.

The function of a Pilot on board a ship is to provide information and advice to the Master of the Ship, as well as to assist the Master and the Ship’s navigating Officers to make safe passage through the pilotage area or areas for which the Pilot is engaged.

Despite the presence of a Pilot on a ship the Master of the ship continues to be responsible for the conduct and navigation of the ship in all respects.
When providing pilotage services the Pilot liaises as required with the Port Authority in order to record the proceedings of the said service.

Whenever a duty pilot perceives or encounters any difficulties in the provision of the service, he shall immediately communicate this to the Chief Pilot who, if necessary, shall liaise with, or seek the direction of the Port Authority.

It is the duty of the Pilot to draw the attention of the Chief Pilot to any deficiency on ships piloted, or any other occurrences that may affect the safe manoeuvre of the ship or the safety of personnel, who shall in turn inform the Port Authority.

Pilots must immediately report any environmental concerns, navigational hazards or defects in navigational aids to the Chief Pilot and the Port Authority.

It is the duty of the authorities to ensure the safe and efficient use of ports, their approaches and allocated berths.

The Pilot is obliged to follow the written instructions of the Port Authority received prior to boarding the ship, even if such instructions may appear to conflict with already existing available printed data, provided that in an emergency such written instructions may be dispensed with.

A Pilot shall immediately report any accident involving the ship which he is serving on, particularly any accidents that may have resulted in damage to port facilities and/or third parties to the Chief Pilot and the Port Authority.

A Pilot shall also immediately report any near misses or any concerns in respect to navigation as expressed by the Master or Pilot whilst piloting a ship to the Chief Pilot and the Port Authority.

Such notification shall be followed by a formal written report, which shall reach the Chief Pilot and the Port Authority not later than 24 hrs after the occurrence of such incident or accident.

Notwithstanding any proceedings which may be taken under any law, the Port Authority may take disciplinary action against any Pilot who fails to comply with the provisions of this regulation.

A Pilot shall embark ships at the pilot boarding station as established by the Authority; and disembark at a position as agreed to between
the pilot and the ship’s Master, or at a position as directed by the Port Authority.

The Port Authority may authorise a Pilot to board or disembark form a ship inside the port if the weather is such as to preclude the pilot launch from safely transferring a pilot outside such port.

A Pilot who does not comply with the provisions of this regulation shall explain his actions to the Port Authority within 2 working days, and if the Port Authority is not satisfied with such explanation, it may take disciplinary action against the Pilot concerned.

Every Master shall ensure that the procedure for the boarding and disembarking from the ships is in accordance SOLAS Regulation V/23 (Pilot Transfer Arrangements)

The Pilot may request the Master of a ship which he is piloting to declare to him the particulars of the ship’s draft, state of readiness of engines and navigational aids, and other information relating to the ship as the Pilot specifies and is reasonably necessary to enable the Pilot to carry out his duties as the pilot of the ship.

The Master shall also bring to the notice of the Pilot any defects in, and any matter to the ship, her machinery and equipment, of which the Master is aware and which might materially affect the navigation of the ship.

Every Master of a ship shall provide a lee and reduce sufficiently the speed of his ship when the plot launch is approaching.

At the end of every manoeuvre, the Pilot completes a certificate of pilotage service outlining the pilotage service he has rendered, to be signed by the ship’s Master in respect of each service he performs; provided that in exceptional circumstances, if such certificate is for any justified reason not available, the Chief Pilot or the Deputy Chief Pilot may sign the Pilotage Certificate.

The format of such a certificate shall be agreed to by the Port Authority and the service provider.

The National Authority ensures the provision of Pilotage services in the ports by entering into a pilotage agreement with a service provider.

If a service provider fails to provide the pilotage service in accordance with the regulations and with the pilotage agreement, in cases of emergency, the Port Authority may seek to engage competent persons so as to ensure the proper running of the pilotage service.

The pilotage agreement includes provisions regarding the provisions of pilotage services in the Ports and their approaches together with the management and operations of pilot launches in these ports.

A code of Conduct is annexed to the Pilotage agreement and shall form an integral part of the pilotage agreement, outlining standards that the Pilots are to adopt and procedure that they are to following the provisions for the pilotage services.

The Port Authority establishes the number of licensed Pilots required at any one taking into account market considerations and the efficacy of the service to be provided.

No person is licensed as a Pilot unless he/she has:
- passed such qualifying examinations as may be prescribed;
- been licensed as a Trainee Pilot as prescribed by these regulations;
- obtained such practical experience in the Pilotage of Ships during the period referred to in paragraph (b);
- had his license confirmed by the Port Authority; and
- satisfies such other conditions as may from time to time be prescribed.
Maritime Pilots are divided into the following classes:

- Class 1 Pilots: Pilots licensed to pilot any ship
- Class 2 Pilots: Pilots licensed to pilot ships up to 300 mtr LOA
- Class 3 Pilots: Pilots licensed to pilot ships up to 250 mtr LOA
- Class 4 Pilots: Pilots licensed to pilot ships up to 200 mtr LOA
- Class 5 Pilots: Pilots licensed to pilot ships up to 170 mtr LOA
- Class 6 Pilots: Pilots licensed to pilot ships up to 140 mtr LOA

Conditions to pass from Class 6 to Class 5

- served for at least 10 months as a Class 6 Pilot;
- must have accompanied a Pilot for at least 100 moves (25 of which must be during the night) on ships over 140 mtr LOA.

Conditions to pass from Class 5 to Class 4

- served for at least 10 months as a Class 5 Pilot;
- must have accompanied a Pilot for at least 50 moves (13 of which must be during the night) on ships over 170 mtr LOA.

Conditions to pass from Class 4 to Class 3

- served for at least 10 months as a Class 4 Pilot;
- must have accompanied a Pilot for at least 30 moves (10 of which must be during the night) on ships over 200 mtr LOA.

Conditions to pass from From Class 3 to Class 2

- served for at least 10 months as a Class 3 Pilot;
- must have accompanied a Pilot for at least 15 moves (5 of which must be during the night) on ships over 250 mtr LOA.

Conditions to pass from From Class 2 to Class 1

- served for at least 10 months as a Class 2 Pilot.

The Pilot upgrading his license can present proof of his training by the ninth month so his application can be processed by the Port Authority in time to upgrade his license when due.

A copy of the recorded moves shall be presented to the Port Authority on application for upgrade.

The Port Authority issues the upgrade unless the Pilot has during the previous 10 months been found negligent in the conduct of his duties by the Disciplinary Committee appointed by the Board.

In the cases where a Disciplinary Committee finds a Pilot negligent in the conduct of his duties, the Authority will determine that period of time, which shall not be longer than a further 10 months, during which the Pilot concerned must continue to operate in the Class from which he is applying for an upgrade before such Pilot is able to re-apply for such upgrade.

If a Pilot fails to upgrade his license for each category within a period not exceeding 18 months, the license may be revoked.

Under no circumstances may a Pilot pilot a ship in excess of the limits stipulated in his license.

Notwithstanding the restrictions the Authority may, at its discretion and having regard to the circumstances and the specification of any ship, on the request of the Chief Pilot and subject to the Pilot's consent, authorise a Pilot to pilot ships outside the parameters of his license.

The request for a Pilot or Pilots shall be made by the Ship’s Master or Agent to the Port Authority in accordance with directives issued by the Port Authority.
Authority and in accordance with the Pilotage agreement.

Should a ship require a Pilot or other related service at short notice, she shall make the appropriate signals as prescribed in the IMO International Code of Signals.

The Pilot shall, when assigned to an operation, be deemed to have full control over mooring men and pilot launch crew assigned with him to that operation.

The service provider shall be the owner of the pilot launches and shall be responsible for the management and operation of the pilot launches as provided for in the pilotage agreement.

A pilot when assigned to an operation is deemed to have full control over the pilot launch.

No ship shall hoist or display a pilot flag indicating that a pilot is on board unless such ship is a pilot launch on duty, or is being piloted by a licensed Pilot.

A Pilot shall not berth or shift any ship from her berth without the approval of the Port Authority.

When providing pilotage services, each Pilot shall implement a high standard of care and skill as established by the Code of Conduct.

The Authority may provide shore based pilotage provided that:

- The shore based pilotage service is provided only in areas as established by the Authority;
- The shore based pilotage service is rendered by the service provider through its licensed pilots for the purpose of:
  1. Piloting ships to the pilot launch; and / or
  2. Piloting ships when pilots cannot embark or disembark at sea.

Shore based pilotage shall only be provided when:

- Required and accepted by the Master of the ship and allowed by the Port Authority; and
- The Pilot rendering the shore based pilotage considers it possible.

Masters of ships employing shore-based pilotage shall be obliged to accept a Pilot as soon as embarkation is possible.

The Port Authority in consultation with the service provider shall establish the norms under which such service shall be rendered.

2.2.2 Spanish National Legislation

Spanish Pilotage is regulated by a variety of standards established in the framework of the relevant international legislation and include National Standards and the Rules of the Colegio Oficial Nacional de Prácticos de Puerto.

Subject to the provisions of the regulations, the Maritime Authority may grant licenses to act as Pilots if the people involved meet the following criteria:

- Must possess the professional title of Captain of the Merchant Marine, and certify at least two years of leadership in vessels larger than 1,000 GT within the last ten years professional activity immediately preceding the exams; and
- Are younger than 65 years of age10.

Captains have to pass:

- A medical examination;
- A physical test;
- Two tests: one in the General Direction of Merchant Shipping (Madrid) on Maritime legislation (national and international) and English; another in the harbour about local rules and manoeuvers; and
- A training period of a maximum of 6 months, which is assessed by the Maritime Administration with the report of the Corporation of Pilots and Port Authority.

There are two types of compulsory medical examinations for Maritime Pilots:

- Initial: to evaluate physical and psychological state of the aspiring professional; and
- Ongoing: to check level of medical fitness.

The validity of such tests are of 2 years for Pilots up to the age of 55 and one year thereafter. Between the ages of 65 and 70 the tests are compulsory every 6 months11.

10 Order FOM 2417/2007
11 Retirement is compulsory at 70 years of age.
Pilots must also pass the following physical tests:

- Swimming: 50 meters freestyle dive in a maximum of two minutes;
- Race of 1,000 meters, on track, within a maximum of 6 minutes; and
- Climbing 5 meters in a vertical ladder in freestyle.

The Certificate of improvement, valid for three months, will be signed by a Bachelor of Science in Physical Education.

When the candidates pass the training period, the Maritime Administration will issue a Certificate as Pilot. The Port Authority also authorises the Pilot to provide pilotage services in port.

Spanish Pilots must pass a training course every 5 years to retain the Pilot’s license.

The Course has been mainly developed on the basis of:

- IMO Resolution A. 960 (27) Recommendations on Training and Certification and operational procedures form maritime pilots other than deep-sea pilots.

The courses are not referenced under the European Qualification Framework and similar courses undertaken in other countries’ training centres cannot be recognised.

The Authority cancels the license issued to a Pilot when the Pilot changes port, retires on reaching the retiring age as prescribed or if such Pilot fails to pass the medical evaluation.

The Authority may also suspend or revoke the license issued to a Pilot as a consequence of a Disciplinary Committee of a punishment consisting in the suspension or revocation of the license.

No person is licensed to serve as a Pilot if he has been found guilty of any criminal offence, which in the opinion of the Authority is deemed to be detrimental to the provision of Pilotage services as a whole.

In accordance with the provisions of Law 27/92 and RD 393/96, the Maritime Authority has competence about pilotage and is in charge of the following standards:

- Specific Regulation (Pilots Act - Royal Decree 393/96 Reglamento General de Practicaje).
- Exams specifications (Orden FOM 2417).
- Medical examinations (Resolution of the General Director of Merchant Marine).

The Maritime Authority is in charge of the following functions:

- stating if the Pilot Service in a Port is necessary /compulsory;
- ensuring that Pilot candidates fulfil professional requirements;
- training; and
- arbitrating in case of a disagreement between Pilots and the Port Authority on a manoeuvre.

The Master shall also bring to the notice of the Pilot any defects in, and any matter to the ship, her machinery and equipment, of which the Master is aware and which might materially affect the navigation of the ship.
In accordance with the provisions of Law 27/92 and RD 393/96, Port Authority establishes:

- the particular conditions of the service for each Port;
- the number of Pilots who are required to provide the service;
- the candidates to practice in the port according with the principles of equal merit and ability;
- the authorisation to provide service;
- tariffs; and
- control of the service.

The liability that may be incurred by Pilots or Port Authorities in the management of pilotage service shall not exceed, in case of accident, the amount of €20 per unit of gross tonnage of the ship providing the service, with a maximum limit of €1,000,000.

For this purpose, the term ‘gross tonnage’ shall be as defined in the International Conventions signed by Spain and the national regulations that may apply.

Without prejudice to the liability of the Master or ship owner it is established in Article 618 of the Commercial Code, that the Pilot will be responsible for damage to the ship itself or other vessels, with the limit stated in the previous section, caused by inaccuracy, errors or omissions.

If the captain refuses to follow the advice of practical and, consequently, it would produce damage to the ship or third parties, this will be considered his full responsibility.

When the Pilot considers risky a manoeuvre risky because of currents, bad weather or any other cause, he may advise against the manoeuvre, justifying his decision in front of the Port Authority, leaving the resumption of the manoeuvre and the continuation of pilotage services to the Authority’s discretion.

If the Pilot, for reasons of maritime safety, disagrees with the resolution adopted by the Port Authority, the discrepancy is resolved by the Harbour Master as provided in Article 21 of RD 393/96.

Pilots must give notice immediately to the Maritime Captain and Port Authority of any event occurring in connection with the provision of pilotage which affects or could affect, the maritime safety, safety of human life at sea or marine environment, including deficiencies in ships during manoeuvres in and out of port or during nautical manoeuvres within it.

Pilotage services will be at the disposal of the respective Maritime Captains for emergency reasons or maritime safety, in areas in which Spain exercises sovereignty, sovereign rights or jurisdiction.

In terms of legislative reference, pilotage is under the supervision and regulation of the Maritime and Port Authorities.

Pilotage is performed in Spain according with the following regulations:

- Royal Decree (RD) 2/2011 approving the revised text of Law 27/92 of State Ports and Merchant Marine.
- Royal Decree. 393/96 of 1 March, which approves the General Pilotage Regulations.
- Resolution of 29 July 1998 establishing the medical examinations to verify the suitability of the pilots and physical tests for admission to the Pilotage service.
- Order FOM 1621/2002 of 20 June, regulating the conditions for granting exemptions from pilotage port service.
- Order FOM 2417/2007 of 25 July, which regulates the recognition of professional qualifications for the provision of port pilotage services.
- The resolution of 20 November 2007 of the General Direction of Merchant Marine for approving the programme material to be adjusted to the exercise test for the recognition of professional qualifications for the provision of port pilotage services.
- The resolution of 14 March 2008 of the General Direction of Merchant Marine Shipping, laying down the permanent training of pilots.
Apart from the National Legislation listed above, pilotage in Spain is also subject to the regulations concerning the Colegio Oficial Nacional de Practicos de Puerto, namely:

- Law 42/2003 de creación del Colegio Oficial Nacional de Prácticos de Puerto.
- Real Decreto 797/2005, de 1 de julio, aprobó el Estatuto General del Colegio Oficial Nacional de Prácticos de Puerto.
- Internal regulation.
- Code of Good Practice.

2.2.3 Turkish National Legislation
The Turkish main regulation covers the qualifications, training, certification and working methods of Maritime Pilots.\(^{19}\)

Pilotage in Turkey is provided to the ships navigating, anchoring, proceeding from anchorage, mooring or departing to and from a buoyage system, coming alongside or unmooring to and from a shore or off-shore facilities in the pilotage areas as stipulated by the administration in order to ensure the safe navigation and manoeuvring of the vessels along with safeguarding life, goods and the environment.

The Maritime Pilot is defined by the regulation as the “Person holding one of the maritime pilot licenses mentioned in this regulation acting as an advisor to the master on matters related to the safe navigation and manoeuvring of his vessel in line with the international maritime practices within the authorised pilotage area of the authorised maritime pilot's license he is holding and piloting the vessel with his services being limited to navigation and manoeuvring while in essence the responsibility rests with the Master”.

The second part of the regulation deals with qualifications levels and the principles related to training and access to the profession.

Maritime Pilot qualifications are divided into two categories: “The Dock Maritime Pilot” and the “Turkish Straits Maritime Pilot.”

These qualifications are granted at two different grades: the “Maritime Pilot” and the “Senior Maritime Pilot.”

The Maritime Pilot serves vessels of all types up to 20,000 gt and the Senior Maritime Pilot serves...
vessels of all types and sizes within the authorised pilotage district.

The pilotage district in which Maritime Pilots are authorised to serve is written down in their licenses.

In order to obtain a Maritime Pilot’s license for any pilotage district for the first time, applicants must:

- have Turkish citizenship;
- have access to civil rights;
- have a license degree from the maritime faculties of the universities;
- hold an “Unlimited Ocean-going Master Licence” and must prove with a letter of service that he had served in the role of Master for at least one year;
- prove that he is medically fit for sea service according to the related articles of this regulation;
- provide a medical certificate proving that he speaks fluently and intelligibly;
- have completed the “Fundamental Training for Maritime Pilot” with success according to the related articles of this regulation;
- not be 50 years of age or over;
- have a valid “Marine Traffic Operator” or “Chief Maritime Traffic Operator Licence” covering the district for which the application to become a maritime pilot candidate is being sought, if the maritime pilot qualification is being sought for the first time;
- take the “On The Job Training” and acquire a letter of recommendation;
- obtain an English Language Certificate; and
- have obtained a pass or higher in the “Maritime Pilot Examination”.

Once the candidate is approved, he becomes an apprentice Maritime Pilot and takes part in a number of manoeuvres depending on the type of port or passage area. This is considered to be the “on the job training” which is required before the candidate can become a fully licensed Pilot.

In order to complete the “on the job training” to become a Straits Maritime Pilot at Istanbul and Çanakkale Straits, apprentices must be present day and night for the manoeuvre of at least 160 ships of 5000 GT or over up and down both ways of the Istanbul Strait (in approximately equal number) within a minimum of four months. At least half of these manoeuvres must be carried out on vessels of 150 mt length or over. “On the job training” has to be carried out in a way that includes the complete passage of the Istanbul Strait. In addition, apprentices should be present day and night for the manoeuvre of at least 100 ships of 5000 GT or over up and down both ways of the Çanakkale Strait (in approximately equal number) within a minimum of four months. “On the job training” has to be carried out in a way that includes the complete passage of Çanakkale Strait.

The authorised pilotage organisation issues a letter of recommendation to the apprentice Maritime Pilot by evaluating the written assessments taken from all the Maritime Pilots with whom he had been on board. Apprentice Maritime Pilots who fail to get such a recommendation cannot qualify for the Maritime Pilot examination and must do the “on the job training” all over again. However, such training cannot be repeated more than once. Apprentices who fail on the job training twice cannot apply for any Maritime Pilot qualification again.

Apprentice Maritime Pilots completing the on the job training are entitled to a Maritime Pilot license if they meet the other conditions listed in the provisions of the regulation and complete the additional training. Dock Maritime Pilots certified this way can provide pilotage services to all vessels within their respective authorised service districts by having their licenses endorsed «for all vessels» by the administration.

In circumstances where the required number of vessels have not been boarded for piloting in the period specified in this regulation, the duration of the “on the job training” is prolonged until the required number is reached. If the required minimum number of vessels have been piloted within a shorter period than that specified, the minimum period of time for the “on the job training” still has to be completed.

All apprentice Maritime Pilots must follow training in Vessel Traffic Services relating to the formation and function of the VTSC for 10 working days, for no more than 6 hours daily including a total of 30 hours of active training for 5 days if the pilotage service district for which they are going to serve is partly or totally within the domain of VTS.
The records pertaining to this training are approved by the organisation which runs the VTS services and sent to the relevant Harbour Master.

All apprentice Maritime Pilots undertake active training on the tugs belonging to the authorised tug organisation during their “on the job training” for at least 15 days within the pilotage district of the “on the job training” they are undertaking. The records pertaining to this training are approved by the authorised tug organisation and sent to the relevant Harbour Master.

Maritime Pilot Examinations
The Maritime Pilot examination is carried out in two phases: oral and written.

Practical examinations are carried out during the berthing manoeuvre of a vessel in the relevant port for the “Dock Maritime Pilot Licence” of qualification and during the relevant strait passage for the “Turkish Straits Maritime Pilot Licence” qualification.

Maritime Pilots in service in a pilotage organisation have to take part in the mandatory “In-service training seminars” at least once every two years.

Each pilotage organisation is obliged to make the necessary arrangements for employed Maritime Pilots to take part in mandatory “in-service training seminars” and to present its “annual training plan” to the administration.

In order to be upgraded to the Qualification of Senior Maritime Pilot, a Maritime Pilot must have served at least four years as a Maritime Pilot, must have “trained for upgrading” from an institution authorised by the administration and must have a recommendation from the authorised pilotage organisation.

The Turkish Legislation envisages two different types of training to be undertaken by Maritime Pilots. The first set of training is called fundamental training and is undertaken by those candidates who wish to acquire a Maritime Pilot License. The second type of training is held for all operating Pilots and is called in service training.

The fundamental training is composed of 70 hours of courses divided as follows:
- 49 hours of theory
- 21 hours simulations to be conducted on manned models at duly authorised training centres. The simulations shall cover a vast range of manoeuvring patterns.

In order to provide a service under a Maritime Pilot licence without tonnage limitation under the conditions stated in the fifth item of the Article 8 of this Regulation, additional minimum of 40 hours of training in a simulator environment or on manned-model must be undergone with an institution authorised by the administration.

This training, intended for the manoeuvres of vessels having big tonnages, must include slow speed control and control of transverse movement; control of touch with the pier fenders; positioning the vessels according to the loading systems of the port; meeting in close quarters and control of interaction on overtaking; techniques of berthing to off-shore facilities by using anchors or by way of Mediterranean mooring; pulling and pushing
directions of piloting tugs and power control. All training modules must be carried out practically.

The Subjects of In-service Training and Training for Upgrading

Maritime Pilot "in-service training seminars" and "training for upgrading" addresses topics such as, but not limited to, current matters regarding ships manoeuvring and piloting; incidents and examples occurring in different pilotage districts relating to the safety of navigation and ships manoeuvring; improvements in the national and international maritime legislature; developments in navigational equipment and technologies; the utilisation of new navigational equipment; risk management at sea and fatigue management.

The training blends practice with theory supported by simulation, ensuring a professional and participatory atmosphere.

The additional subjects that are addressed in training for upgrading are determined by the administration.

Maritime Pilots may refuse to provide their services if they find out that the vessel they are piloting might constitute a threat to the safety of navigation or the environment if it continues navigation, anchoring in the harbour, berthing or unberthing in the pilotage district.

Additionally, Maritime Pilots have the right to refuse to provide their services if the pilot ladder they need to use for embarking and disembarking, the illumination or other necessary equipment is not safe and in line with the rules.

2.3 Recommended training to Marine Pilots

In the first article of the IMO A960 Recommendation it is stressed that a Maritime Pilot needs specialised knowledge and experience and on the basis of this requirement governments are encouraged to ensure that they have competent pilotage authorities set up within their administration:"It is recognised that pilotage requires specialised knowledge and experience of a specific area and that States with many diverse waterways and ports have found it appropriate to administer pilotage on a regional or local basis".

“Governments should encourage the establishment or maintenance of competent pilotage authorities to administer safe and efficient pilotage systems”.

Through Article 2, IMO A960 gives Pilotage Authorities, irrespective of the form of their organisation, a number of duties and responsibilities, including linking the assessment of standards and provision of training, which should also take into consideration reports on accidents and incidents.

Through Article 7, IMO indicates the syllabus for pilotage certification or licensing to be followed by National Authorities and Pilots Organisations. However, the Regulation indicates only the technical minimum requirements in terms of the content of such a syllabus without interfering with the rules for accessing the profession and its specific description, which is the competence of the state.

Article 5 of the IMO Recommendation A 960 establishes that the pilotage authority is responsible for training, thus giving these organisations competence and responsibility in this crucial area. The article enters into the merit of the training to be delivered by listing a set of areas where pilots’ competences should be enhanced. It also defines some of the training methods to be used, such as simulations, manned models and know-how transfer from more experienced pilots.

“The competent pilotage authority is responsible for training and certification or licensing standards. The standards should be sufficient to enable pilots to carry out their duties safely and efficiently. Standards for initial training should be designed to develop in the trainee pilot the skills and knowledge determined by the competent pilotage authority to be necessary for obtaining a pilot certificate or license. The training should include practical experience gained under the close supervision of experienced pilots. This practical experience gained on vessels under actual piloting conditions may be supplemented by simulation, both computer and manned model, classroom instruction, or other training methods”.

Moreover, the Recommendation establishes that both initial pilots training as well as continuous
professional development should cover the regulatory requirements, effective communications and best practices in the pilotage area.

In terms of lifelong learning for Maritime Pilots, A960 lists a set of subjects and areas that should be tackled and supported by the Pilots’ Organisations, in particular the list includes:

- Maritime English.
- Communication with Authorities and other vessels.
- Emergency situations and contingency plans with local authorities.
- Bridge Resource Management for Pilots.
- Simulations on emergencies.
- Shiphandling using manned models.
- New bridge equipment and navigation aids.
- Legislation and Regulations.
- Personal safety training.
- Personal survival at sea.
- Emergency first aid.

Article 6 of the Recommendation makes a distinction between training and continuous professional development. The minimum standard set by the Recommendation is that Maritime Pilots should undergo continued proficiency testing at least every five years and Pilotage Authorities should be competent in this matter.

The Recommendation establishes the general aims of such training, whereby the Maritime Pilot is required to:

- continue possessing recent and updated navigational knowledge related to the area of competence;
- continue meeting the medical fitness standards; and
- possess knowledge of current legislation.

Public and private training providers have developed specific training for pilots over the last years on the basis of the A960. Moreover, Pilots as well as other seafarers have been interested in the technological developments of their profession and can therefore benefit from specific courses designed to help them better face the new challenges of the maritime sector. Finally, there are new requirements and standards that affect all marine related professions and specific training paths have been designed, especially under STCW. Within the framework of the CERTIPILOT project and in order to better understand the training available for Maritime Pilots, a study has been conducted on the various options and subjects that are of interest for the profession. CERTIPILOT does not establish compulsory training criteria or courses and it does not interfere with the competence of each National Authority in the identification of the training required to become a Maritime Pilot.

On the contrary, CERTIPILOT wants to be an instrument to better link the training available to the specific competences and skills that Maritime Pilots need to enhance and strengthen their profession. CERTIPILOT is an instrument for the Pilots and their organisation, which can facilitate the identification of training needs and the specific skills or knowledge to be addressed by linking them with the available training. This exercise is based on a learning outcome approach so that it will be possible to refer the training to the ECVET and EQF systems.

Maritime Pilots undergo vocational training on the basis of the IMO A960 Recommendation and on the basis of the criteria established by the competent National Authorities. In the European Union, Vocational Training is also regulated by specific legislation which is relevant for the 28 Member States. The key elements of the vocational training legislation are encapsulated in the ECVET and EQF systems, which allow for the harmonisation of the sector and facilitate the transparency and recognition of qualifications.

Pilotage is a very dynamic profession; hence for a Pilot to continue developing and evolving his skills to reach high standards of efficiency, he requires the upgrading of his knowledge in various branches of the profession.

In this section, Pilot Training is divided into 6 different categories:

- Simulation.
- Effective Communication.
- Legal framework.
- Electronic Navigational Aids.
- STCW Course.
- Specialised courses.
# 1. Simulation

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### 2.3.1 Simulation

#### 2.3.1.1 Computer based simulations

**Simulation - Ship Handling Techniques (Virtual)**

The course uses the distinctive combination of both manned models and the Ships Bridge Simulator to provide continuing professional development for Pilots. They are able to extend their knowledge and expertise, with particular reference to special situations encountered within their sphere of operations. This course maximises the opportunities provided by these two complementary training media. It can be customised in time and content to meet particular requirements.

**AziPod & Kamewa manoeuvring Techniques**

The course includes extensive simulator “hands-on” training in the “transit mode” (active rudders), “independent” manoeuvring mode and the “joystick” mode of AziPod systems. Instructors work directly with the company representatives or attendees to develop realistic training scenarios that accurately reflect the training needs and requirements.

**Content of the Training Programme**

- The theory and use of tractor tugs in the escort role.
- The theory, use and operation of Azi Pod Propulsion units.
The theory, use and operation of Kamewa Joystick steering units.

Emergency Ship Handling - Beaching Techniques
To enable participants to develop their skills and understanding of the principles and practices of ship handling with emphasis on emergency procedures and manoeuvres which includes steering, engine and bow thruster failures. The course will be tailored to suit individual candidates and may also include interaction and escort towage principles using radio controlled tugs if required.

This aim will be achieved through a concentrated period of practical exercises in the Manned Models, supported by a series of lectures.

Radar Training Simulation
Candidates are trained to develop the necessary skills to safely use a radar, including ARPA when performing pilotage duties. The course aims to familiarise Pilots with the technical aspects of the radar, tuning up and optimising the reception of targets detection, general feature in modern radar, tests to ascertain detection, navigation in restricted visibility, rain and swell, collision avoidance using both manual plotting and ARPA facilities and position monitoring using radar ranges and bearing.

ECDIS Training Simulation
The course has been designed for candidates for certification as officers in charge of a navigational watch and for experienced nautical officers and other persons with navigational responsibilities such as Maritime Pilots. This course is designed to cover the basic elements of ECDIS as required by the international regulations. The course will include classroom instruction and demonstrations utilising visual Desktop Simulation, ECDIS display and position monitoring using Radar equipment. The candidates will demonstrate proficiency in selected ECDIS tasks including ARPA integration and observance of the vessel's progress.

Search & Rescue
The course is tailor made to familiarise candidates with the use of the IAMSAR Vol III.

This course is divided into 2 modules, which includes the theoretical module comprising onboard preparations when assisting in a search, procedures when a distress is received, action plan and messages to be sent, different search patterns, combination searches with an air craft or other vessels, drift of a survival craft, visibility of a survival craft, care of survivors, actions in case of aircraft ditching; and a second module which is focused on a real time simulation where candidates must demonstrate their ability to process an incoming distress signal and co-ordinate a search pattern in the presence of a complete bridge team.

Bridge Resource Management for Pilots
This course provides the principles and practices of Bridge Resource Management. Topics covered include an overview of Bridge Resource Management Situational Awareness, Communications, and Risk Management. While the course is directed primarily to BRM from a Pilot's perspective, Pilots must interact with Masters and Watch Officers who work under regulations and guidance developed by international bodies, national administrations and company policies. Pilots should be made aware of the demands placed on bridge personnel by reviewing BRM requirements for ships in international trade, while also understanding that best local practices may differ from such generalised
guidance addressed to Masters and Watch Keeping Officers.

- The course objectives are the following:
  - Organisation
  - Passage Planning
  - Error Chain
  - Check Lists
  - Master/Pilot Exchange
  - Human Element
  - Fatigue
  - Regulatory requirements
  - Communications
  - Best practices in specific areas
  - Review BRM principles
  - Examine recent accidents
  - New practices and technology
  - Studies dealing with BRM

**Use/limitations of various tugs**

This is a training programme designed to familiarise Pilots with the various types of tugs, their designs, purposes and their use in Ship Handling.

The course comprises the following units:

- Harbour tugs.
- Assisting methods.
- Pivot Points, Towing Point and Stability aspects.
- Capabilities and limitations of tugs.
- Bollard pull requirements.
- Interaction and Tug Safety.
- Tug Safety.
- Towing equipment.
- Quick release systems.
- Simulation.

**Tractor Tugs**

The three-day tractor course provides knowledge and practical training in the theory, operation, and application of Voith Schneider and Z-Drive or "Reverse" Tractors. The course covers a number of areas in both the classroom and on the shiphandling simulator to demonstrate the capabilities and limitations of tractors.

The course comprises the following units:

- Understanding how tractors could change the operation of the port by handling larger ships, reducing environmental restrictions, or by reducing the number of tugs required to handle a certain size ship.
- Providing the knowledge to define the manoeuvring mission of the port, and then to choose the proper tractor to meet this standard.
- Tractor Commands and standard definitions.
- Comparing tractor performance with conventional tugs.
- Phases of tractor design and performance including the three significant phases in the Voith design and four phases of Z-Drive designs that have been developed in the last ten years.
- Benefits of and when to use the unique higher speed tractor tug manoeuvres.
- What works and what doesn’t when assisting or escorting ships.
- Chock and bitt strength issues.
- A review of the latest tractor techniques such as Tandem Tractors or "T2".

**Tug Escort Training**

The primary objective of this training is to improve teamwork and communication between Pilots, ship Masters, and tugboat operators engaged in escort operations. The course scenarios make maximum use of multiple interactive own-ship simulation.

Topics covered include:

- Escorting regulations and guidelines.
- Tug inventory and capabilities including winches.
- Strength of bitts and chocks.
- Tug escort techniques.
- Communications and terminology.
- Master-Pilot exchange.
- Operating procedures.
- Best practices.
- Escort drills.

**Emergency Towing Operation**

The course is designed to enable management and deck operators to develop their existing skills, knowledge and understanding of vessel behaviour and handling vessels designed for response services related to emergency towing operations.
This is achieved through a concentrated period of exercises on a full scale simulator bridge supported by a programme of lectures and instruction.

The theory covers basic principles and rules regarding towing vessels and equipment, towing operations, manoeuvring of towing vessels and national /international regulations related to these kinds of operations.

Operation scenarios in open sea / arrival coastline / port of refuge are also covered.

Courses can be personalised to suit company specific needs. This may be using specific “own ships” and selected scenarios / procedures in particular areas.

Course objectives. The course will enable the course participant to:
- Understand and handle emergency towing operations safely according to national and international regulations.
- Practice towing operations under various weather conditions / scenarios will also be covered.

**Pilot Professional Development Course**

This tailor made course is primarily for experienced Pilots who wish to further their knowledge of shiphandling techniques or who may wish to investigate or experiment with different scenarios. Options may include working with twin screw vessels having either inward or outward turning propellers or the utilisation of tugs in different configurations.

**2.3.1.2 Simulation - Manned Model Training**

**Ship Handling Techniques**

This course was designed for Pilots, Masters and Ship’s Officers who have never been on manned models before.

It includes shiphandling teaching and training. Each day of the week is devoted to a particular subject:
- Study of turning in deep and shallow water.
- Study of the role of the pivot point in ship manoeuvres.
- Berthing with or without current.
- Mooring at an SPM / FPSO with waves and current.
- Manoeuvring with anchors (dredging and mooring).
- Meeting and overtaking in a canal.

**Advanced Ship Handling Techniques**

For those who have already been on manned models, this course includes training aimed at enhancing their ability to anticipate emergencies.

Participants may draw up their own programme with the instructors in order to examine in greater detail certain aspects of operations that are particular to their own pilotage district.

**Emergency Ship Handling**

The course is conducted for part of the time on the lake with remote controlled escort tugs (two Voith Schneider tugs and a Z-peller tug, all with around 60 t bollard pull). The course units include:
- Drift and manoeuvring in swell and/or current.
- Rudder failure in a canal.
- Emergency stopping in a canal with anchors.
- Docking and undocking dredging anchor.
- Zigzag manoeuvre with tug at stern and engine/rudder failures.
- Proceeding through channels with engine/rudder failures, using the escort tug to stay in the channel.

**Azi Pods Course**

The course is focused on use of pods and includes exercises such as:
- Following an alignment ahead and astern.
- Entering and backing into a slip.
- Passing through a lock with bow thruster and one pod failing.
- Use of anchors with one pod failing.
- Crash stop with and without use of anchors.

**2.3.2 Communication**

**Bridge Resource Management for Pilots**

(Refer to Simulation section)

**Mentor Training for Pilots**

This one-day seminar provides Senior Pilots with the basic knowledge and understanding of their role as onboard trainers of apprentice Pilots.

Participants will learn basic adult learning theory and how to apply instructional techniques to onboard training situations. Classroom discussions are followed by practical exercises in the simulator and stress the importance of effective communication, motivation, conflict resolution, and the development of clear learning objectives.

**Media response workshop**

This workshop is designed to provide the attendee with the basic knowledge, skills, and abilities for interaction with the news media during and after a crisis event. This is designed as a “hands-on” workshop. The attendee will be expected to participate in videotaped mock interviews.

**Course objectives:**
- Describe a communication model.
- List the goals of crisis communications.
- Describe effective communication techniques for the media.
- Demonstrate effective communication techniques for responding to the media.

This workshop is designed to provide basic knowledge and improve individual skills required to deal effectively with various news media during and after a crisis event.
Certificate in Stress Management

This useful and informative course presents many practical insights into stress; what causes it, how it can be overcome and how to avoid it.

Stress is examined from psychological, social and occupational perspectives. Effective strategies and exercises are presented which can be adapted to meet a wide range of needs.

Learning objectives:
- Define Stress, its causes and effects.
- Explain methods of identifying stressors.
- Identify ways of managing and reducing pressure and stress- avoiding burnout.
- Give an insight into modern approaches to Stress Management

Course Contents
- Introduction to Stress.
- Decisional Stress and Burnout.
- Recognizing Stress.
- Stress and Personality.
- Life Stages and Personal Stressors.
- Family Stressors.
- Conflict and Conflict Management
- Stress and the Workplace
- Time Management

2.3.3 Legal framework

Advanced Collision Regulations for Pilots

This course focuses on areas where the application of the Rules may lead to misunderstanding or confusion. It assists pilots and masters in recognising borderline situations and determining the best course of action, from a legal standpoint and a safety standpoint.

This training takes advantage of full-mission simulation. Attendees will use the simulator to recreate four different scenarios based on past casualties. Following each scenario, there will be a debriefing and discussion session. While the legal implications of various courses of action will be presented, this is not an admiralty law class. It is a practical course with useful information for anyone that directs the movement of vessels (Pilots, Masters, and vessel traffic service).

Fatigue, Sleep and Medication

This seminar will assist attendees in understanding how medications, sleep patterns / disorders decrease situational awareness. Basic information on sleep and fatigue will be discussed. Participants will review the effects of prescription and over-the-counter medications on piloting performance and fatigue. Additionally, positive and negative utilisation of caffeine and energy drinks as stimulants will be discussed.

Course objectives:
- Appreciate how the use of “over-the-counter,” and herbal medication(s) are addressed.
- Understand circadian rhythms and relationship to work schedules.
- List the five normal sleep stages.
- Appreciate concept of ‘sleep debt.
- List at least three types of sleep problems and their possible effects on safety.
- Appreciate the need to effectively communicate with their health care provider(s) and/or pharmacist.
- Discuss with the health care provider or pharmacist the possible effects of those medications on the ability to pilot a vessel.
- Use standard patient information, package inserts or other reference materials, discuss with their health care provider or pharmacist the possible effects of prescribed (other than Controlled Substances) medications, over-the-counter, or herbal supplements on the ability to pilot a vessel.
- Understand at least three potential effects of medications and herbal supplements on sleep and alertness.
- Develop at least four personal fatigue countermeasures.
- Evaluate the use of caffeine / energy drinks as an alertness tool.

Pollution Prevention Course

A course that covers multiple authorities, such as Harbour Authorities, pollution cleaning contractors, tugs, pilots and coast guards.

Course units include:
- Introduction.
- Shoreline Response Centre.
- Problems of Oil Spill Response.
- Methods of Response - Booming.
- Methods of Response - Inshore Recovery.
- Methods of Response - Shoreline Clean up.
- Health and Safety.
- The management of waste in marine spills.
- Abbreviations and useful Website Links.
- Example Timetable.

**Pilotage Regulations**

This training has to be customised to individual countries. It is mainly focused on Pilotage regulations which may include the following aspects:

- Functions of the Pilot.
- Pilot’s License.
- Suspension and revocation of Pilot License.
- Classes of Pilots.
- Recruitment of Pilots.
- Liability of Pilots.
- Duties of the service provider.
- Duties of the Chief Pilot.
- Code of Conduct and disciplinary committee & penalties.

- Accident reporting.
- Shore based pilotage and Pilot exemption certificate.

The aim of this training is to acquaint Maritime Pilots with their local port legislation. It highlights the legal implications which may arise in the aftermath of an accident.

**2.3.4 Electronic Navigational Aids**

**Automatic Identification Systems & ECDIS Training**

The goal of this training course is to provide attendees with basic knowledge, understanding, and proficiency in Electronic Chart Display and Information Systems (ECDIS) and Automatic Identification Systems (AIS) as they relate to use by Maritime Pilots.

The programme has been designed using the guidelines provided in the International Maritime Organization’s (IMO) Model Course 7.03 for ECDIS. The AIS portion of the course has been developed using manufacturers and government technical
data. Practical applications (“hands-on” training) are provided.

Learning objectives:
- List ECDIS limitations.
- Describe the legal aspects and responsibilities in the use of ECDIS.
- Demonstrate basic functions of ECDIS.
- Determine critical alarms and non-critical alarms on ECDIS.
- Explain the potential interpretation errors of display AIS information and take action to avoid.
- Summarise how AIS works.
- Detect incorrect AIS information when compared to ARPA information.
- Manage the display of AIS information on an ECDIS.

This comprehensive course curriculum covers the topics of Electronic Chart Display and Information Systems, Electronic Charting Systems including the use of Portable Pilot Units, Automatic Identification Systems (AIS), Types of AIS, Information provided by AIS, and the application of AIS to the COLREGS, in Collision Avoidance and in Pilotage.

**E Navigation for Pilots & Portable Piloting Navigation Systems PPNS**

This course has been designed to offer Pilots and Senior Officers the opportunity to gain insight and knowledge into the recent advances in electronic navigation systems.

Special emphasis is placed on how the technologies are being “integrated” onboard modern vessels and the resulting consequences.

The seminar can be combined with the 1-day AIS and/or serve as the theory portion of a custom PPNS course.

Learning objectives:
- Understand the limitations and cautions of the system.
- Initialise and update vessel and voyage data.
- Acknowledge various alarms.
- Display target information on an MKD/ECS/ECDIS.
- Utilise target information to maintain a safe passage.
- Display received messages.
- Check the operational status of the equipment.
- Familiarise themselves with the equipment on their vessel prior to sailing.

**NARAS – Management Level**

The aim of the training at this level is to equip the operator with the fundamental knowledge and skills needed to keep a safe navigational watch and to use radar, ARPA and other electronic aids to maintain safety of navigation.

On completion and within the context of the principles to be observed in keeping a navigational watch, the trainee should be able to:
- Understand and use the information presented by electronic navigation systems, including radar and ARPA.
- Determine the ship’s position and maintain safety of navigation.
- Understand the importance of effective bridge teamwork procedures and apply the principles to be observed in keeping a safe navigational watch.

Objectives of this training:
- Take correct (and reasonable) decisions in accordance with the International Regulations for Preventing Collisions at Sea.
- Appreciate the dangers of allowing a situation to develop through failure to take early and positive counter-measures.
- Justify actions taken, and learn from own actions and those of others.
- Use navigational and collision avoidance data in a coordinated and interrelated manner for the safe navigation of the vessel.
- Obtain and apply correctly data from the navigational instruments available to him.
- Effectively take charge of “own ship”.
- React effectively during emergency situations.
- Appreciate those environmental and operational factors which could restrict the manoeuvrability of “own ship” or other ships.
- Apply the principles of effective bridge teamwork.

**Use of Radar in Restricted Visibility**
A comprehensive course to refresh the Pilot’s understanding of how to safely operate the radar when navigating in restricted visibility with the aim of enabling competent use of radar as an aid navigation and avoiding collision.

The units covered in this programme include:
- Principles of radar, tuning for maximum detection of targets.
- Controls.
- Different displays.
- Target plotting, manually and automatically using ARPA.
- Radar navigation.
- Collision avoidance.

**ECDIS Generic Training Module 1.27**
(Refer to Simulation section)

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### 2.3.5 STCW Courses

**Personal Survival Techniques (STCW 95 A-VI/1-1)**
This one-day course is designed to form part of the mandatory basic safety training for seafarers.

It deals with the actions to be taken by individuals to protect themselves in emergency situations and includes practical training in the use of lifejackets and inflatable liferafts.

Exercises are carefully supervised by qualified staff and can be undertaken by non-swimmers.

**Advanced Fire Fighting (STCW 95 A-VI/3)**
The course forms part of the training requirements for both deck and engineering officers who wish to qualify for a Certificate of Competency. It also meets the needs of other seafarers who are designated to control fire-fighting operations.

Theoretical classes are followed by practical exercises on the fire ground and in the fire fighting unit.

The syllabus deals with fire-fighting procedures both at sea and in port and places particular emphasis on organisation, tactics and effective command including liaison with shore based fire fighters. It also covers topics such as ventilation control, hazards involving dangerous goods and the effects of fire-fighting water on ship stability.

A variety of practical exercises involving fighting fires of different types and intensity are included.
with attendees being assessed on their ability to successfully control fire-fighting operations.

**Personal Safety & Social Responsibility (STCW 95 A-VI/1-4)**
The course forms part of the mandatory basic safety training for all seafarers assigned safety or pollution prevention duties.

Its objectives are to give basic induction training in safety procedures and accident prevention and to familiarise personnel with the employment conditions and working environment on board vessels.

**Medical First Aid (STCW 95 A-VI/4-1)**
This course is for seafarers designated to provide first aid on board ship and those needing certificates of competency. The level of knowledge gained will be sufficient to enable the seafarer to take immediate action in the case of injury or illness.

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**Global Maritime Distress & Safety Systems (STCW’95 – A-IV/2)**
The course covers three main areas:
- Regulations and procedures.
- Demonstration and maintenance of equipment.
- ‘Safety of Life at Sea’ and practical operations.

The certificate qualifies the holder to operate a suitably licensed marine radiotelephony, radio telex or satellite mobile earth station.

The course allows the candidate to acquire detailed practical knowledge of the equipment of a ships station, Digital Selective Calling (DSC), the principles of Narrow Band Direct Printing, Telex over Radio Systems and to INMARSAT systems.

Operational procedures and practices and the satisfactory exchange of communications relevant to the safety of life at sea are also covered in the syllabus.

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The certificate qualifies the holder to operate a suitably licensed marine radiotelephony, radio telex or satellite mobile earth station.
2.3.6 Specialized Training

**Tanker Familiarisation Training (STCW 95 A-V/1)**
The course is based on the syllabus given in paragraphs 2 to 7 Sections A-V/1 of the STCW Code. At the end of the course the student will have the relevant technical knowledge to serve on a tanker and be assigned specific duties and responsibilities related to cargo or cargo equipment.

Topics covered include:
- Characteristics of cargoes.
- Flammability and Volatility.
- Basic Toxicity.
- Sources of Ignition.
- Reactivity.
- Tanker Design.
- Dangerous Space Entry.
- Instrumentations.
- Pollution controls and legislation.
- Cargo cycle.

**LNG Familiarization**
This course is aimed at shore-based staff or anyone who will be involved with LNG itself, the vessels and operations without specific detail of the operations. The course can be delivered at the clients’ premises and can be tailored to suit individual company needs (by prior arrangement).

Course units include:
- Background to LNG.
- Properties of LNG.
- Hazards of LNG.
- LNG Ship Overview.
- Ship Safety systems.
- Regulations for Gas Carriers.
- LNG Cargo Operations.
- LNG Emergencies.

**Specialised Tanker Training Programme Oil (STCW 95 A-V/1)**
This four and a half days course provides specialist training in subjects appropriate to the duties of senior officers and any person with immediate responsibility for loading, discharging, care in transit or handling of bulk oil cargoes.

Tanker terminal and ship management personnel will build on previous experience and gain a detailed appreciation of the safety aspects involved in the handling and carriage of oil cargoes.

**Specialised Tanker Training Programme Liquefied Gas (STCW 95 A-V/1)**
The course provides specialist training in subjects appropriate to the duties of senior officers and any person with immediate responsibility for loading, discharging and care in transit or handling of bulk liquefied gas cargoes.

Tanker terminal and ship management personnel will build on previous experience and gain a detailed appreciation of the safety aspects involved in the handling and carriage of liquefied gas cargoes.

**Specialised Tanker Training Programme Chemical (STCW 95 A-V/1)**
The course provides specialist training in subjects appropriate to the duties of senior officers and any person with immediate responsibility for loading,
discharging, care in transit or handling of bulk chemical cargoes.

Tanker terminal and ship management personnel will build on previous experience and gain a detailed appreciation of the safety aspects involved in the handling and carriage of chemicals.

**Crisis Management and Human Behaviour Training (STCW 95 A-V/2)**

This course is suitable for Masters, chief officers, chief engineer officers, second engineer officers and any person having responsibility for the safety of passengers in an emergency.

The course covers emergency plans and procedures, the identification of stress, communication and control methods for situations involving passengers and crew members.

**Ship Security Officer (STCW 95 A-VI/5)**

The course covers security both onboard the ship and the interface between ship, operating company and port facility.

The course commences with an introduction to the background of the ISPS Code and relevant legislation. During the first day, the course will discuss the company security organisation, the roles of the CSO and SSO, security requirements and security administration. Following an explanation of security drills, security exercises and crowd management techniques, the course considers security protection and emergency preparedness.

During the second day, the course concentrates on ship security assessments, the ship security plan, methods of conducting audits and ship and port facility security measures. The afternoon is devoted to methods of physical searches and how to handle sensitive security related information and communications.

The third morning completes the tuition with descriptions of behavioural patterns of people likely to threaten security, recognition and detection of weapons and the testing and calibration of security equipment and systems. The course concludes in the afternoon with a final written examination.
A qualification based on occupational standards for maritime Pilots

Designing Occupational Standards as the basis for the qualification

The first step to develop the qualification in Risk Prevention and Environmental Protection was the development of Occupational Standards in line with the system being adopted by the Maltese National Commission for Higher Education, a system which is being used in various EU member states, it being directly connected to the European Qualification Framework.

Prior to developing the specific occupational standard for the qualification, an occupational standard regarding the job of Maritime Pilots has been designed in order to allow the project team to identify the gaps in the competencies needed for the job of Maritime Pilots particularly involving risk prevention and environmental protection in ports and passage areas.

Definition and Use of Occupational Standards for the qualification

Work-based standards have become the preoccupation of countries keen to improve their economic performance. Having such standards allows countries to build VET provision from a secure and agreed platform of shared understanding about performance in key job roles across important sectors. Occupational standards are being used to underpin VET provision, helping to ensure the vocational and occupational relevance of qualifications and bringing a level of coherence to national qualification frameworks by helping to reduce duplication and proliferation of qualifications.

Estimates have put the number of published standards globally at over half a million and these are just the ones produced by over 1,000 recognised standards development organisations worldwide.20

Countries as far and wide as USA, Australia and New Zealand have invested significant sums of money and intellectual capital in the development of such standards. In the European Union, a number of member states have also dedicated significant efforts towards this aim, enabling some countries to create extensive and detailed standards frameworks.

Occupational standards are statements specifying the standard of performance that an individual is expected to achieve when carrying out a function in the workplace. The standard is seen as a benchmark for those performing the same job function in any workplace because it embodies the most appropriate way to perform the task and is supported by the necessary knowledge and understanding needed to meet the standard consistently.

Occupational standards often combine both the procedural and outcome perspectives, describing what must be done together with what needs to be achieved. They enjoy legitimacy because they represent an agreed understanding by employers, trade associations, professional bodies and other

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20 Australia History of Standards
relevant stakeholders of what constitutes good practice. They draw their currency from the fact that they represent shared understanding and are revisited and updated relatively regularly to ensure they remain industry relevant. As industry and employment sectors evolve and their needs change, so too must the standards that underpin the sectors.

When compiled as appropriate sets of occupational standards they effectively define what it means to be competent in a specific job role. Competence is about taking skills and knowledge and applying them to show the understanding and ability necessary to carry out a work function.

An occupational standard must incorporate the related qualities of breadth and transferability. It is a job description specified in a generic manner to ensure a broad applicability to all organisations and contexts where that function is carried out.

All professions should have public statements about what their qualified members are competent to do and what can reasonably be expected of them by the public.21

Once standards have been agreed and established they can be used for a number of different purposes, particularly in further education and training, human resource management and staff development. For example, standards can be used as follows:

- as a benchmark against which companies (including Maritime Pilots associations, companies and cooperatives) can compare their internal practices and procedures;
- to develop or refine performance appraisal systems;
- to inform self-assessment;
- to establish staff grading and promotion criteria;
- as an organisational development tool;
- to assist in workforce planning;
- to facilitate mentoring and coaching in the workplace;
- to offer continuing professional development, and
- to develop qualifications and training programmes.

Those responsible for developing qualifications and training programmes, particularly in vocational education and training (VET) can ensure the vocational relevance of the their qualifications and training by drawing from occupational standards when designing them. This helps ensure VET qualifications and training remain vocationally relevant and will ultimately ensure that learners develop the appropriate skills, knowledge and understanding needed by employers. This will in turn help learners progress into employment and become active and effective contributors to the success of the organisation they join.

Common Competence Occupational Standards as a Foundation

The Occupational standard, including the common competencies (those generally necessary to carry out the job of Maritime Pilot) and the specific competencies (those particularly relevant for Maritime Pilots in relation to risk prevention and environmental protection) have been designed through brainstorming and a wide consultation among the project’s partners. The aim of this exercise was to identify the related knowledge, skills and competencies of Maritime Pilots including the specific knowledge, skills and competencies related to risk prevention and environmental protection. The framework was designed by the same end users and has been open for public consultation which makes CERTIPILOT a good practical example of the bottom-up approach for the development of innovative qualifications.

The first step was to identify and design the Occupational Standards for the Common Competencies to act as the foundation for the specialised Occupational Standards related to risk prevention and environmental protection.

An example of a proposed Common Competence Occupational Standard:

<table>
<thead>
<tr>
<th>Common Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPMSEPCC 501</td>
</tr>
<tr>
<td>Able to establish a good rapport and communicate clearly with the Ship’s Captain, the Bridge Team, Technical Nautical Services, Authorities, Port Control.</td>
</tr>
</tbody>
</table>

**Overview**

This competence is about establishing a good rapport and communicating clearly with the ship’s Captain, the Bridge Team, Technical Nautical Services, Authorities, Port Control. It is about non verbal communication and good verbal communication using Common language and English language.

**Performance Criteria**

- Communicates well verbally and non verbally with the Ship’s Captain.
- Communicates well verbally and non verbally with the Bridge Team.
- Communicates well verbally and non verbally with the Technical Nautical Services and Authorities.
- Communicates well with Port Control.

**Required Knowledge**

Knows:

- Remit for communication with the Ship’s Captain.
- Remit for communication with the Bridge Team.
- Remit for communication with the Technical Nautical Services and Authorities.
- How to communicate with Port Control.

**Required Skills**

Able to:

- Communicate verbally in English.
- Communicate verbally in Common language.
- Communicate non-verbally.
- Communicate with the Technical Nautical Services and Port Control.

The relevance of using Occupational Standards for risk prevention and environmental protection

In the case of Maritime Pilots, the development of the Occupational Standard, more specifically the standard related to risk prevention and environmental protection, can be used for all the above listed reasons and beyond since it can also be used as a tool to contribute to the upgrading of procedures and legislation related to risk prevention and environmental protection through logged feedback on the relevance of the standards.

Maritime Pilots are exposed to the increasing challenges of their profession, which are mainly influenced by the growing maritime traffic and the ships’ technological development. Such challenges can be positively addressed if those professionals who take care of manoeuvring the ships are adequately trained and updated on how to tackle specific circumstances.

The advantages of CERTIPILOT include:

- The fact that EU funds can be accessed for the training undertaken by Maritime Pilots as National Educational Authorities would be able to assess the training under the ECVET and EQF.
- The fact that it can be used as decision-making tool to understand the training needs of a specific professional or groups of professional against an established benchmark.
- The fact that it can be used by National Authorities and Pilotage Associations to design continuous professional development paths for Maritime Pilots.
- The fact that takes into account informal and non-formal training as part of the Maritime Pilots skills portfolio.
- The fact that takes into account the use of simulations to develop pilots’ skills.
- The fact that facilitate the recognition of training undertaken by Maritime Pilots in another Country by the National Educational Authorities.
### Setting the Key Competencies

As described above, prior to designing the qualification the project team first set the occupational standard for risk prevention and environmental protection.

The first step towards developing the standard was to identify the key competencies. Those identified include that a Maritime Pilot shall be:

- Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port.
- Able to give advice to the ship Captain in order to avoid and/or minimise pollution in emergency circumstances in his designated port.
- Able to participate in rescue procedures in emergency circumstances in his designated port.

### The Proposed Occupational Standards for Maritime Pilots in Maritime Safety and Environmental Protection Cap

#### Technical Competences

<table>
<thead>
<tr>
<th>MPMSEPTC 501</th>
<th>Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances.</th>
</tr>
</thead>
</table>

### Overview

This competence is about the ability of Pilots to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances. By emergencies it is understood incidents occurring through external or internal factors which may cause injury or loss of human life, cause pollution, and/or damage to property.

### Performance Criteria

- Maintains good communication with the Captain, Authorities and all the parties involved in the dealing with the emergency.
- Uses and relays the information displayed on the bridge navigational aids or given by the crew.
- Coordinates with the Captain and the Authorities on the most appropriate actions to be taken in that emergency.
- Supports the Captain in different types of emergencies.
- Takes into consideration the effects of weather conditions on that emergency.

#### Required Knowledge

- How to notify the relevant Authorities and call for the required assistance.
- What needs to be communicated to the parties involved in dealing with the emergency (Captain, Bridge team, Authorities, etc.).
- How to anticipate the effects of that emergency.
- How to interpret the information displayed on the bridge navigational aids or given by the crew.
- How different types of emergencies are handled.
- How weather conditions can affect that emergency.

#### Required Skills

- Able to:
  - Maintain good communication with the Captain, Authorities and all the parties involved in the dealing with emergency.
  - To use and relay the information displayed on the bridge navigational aids or given by the crew.
  - Coordinate with the Captain and the Authorities on the most appropriate actions to be taken in that emergency.
  - Support the Captain in different types of emergencies.
  - Interpret the effects of weather conditions in light of the emergency.

<table>
<thead>
<tr>
<th>MPMSEPTC 502</th>
<th>Uses knowledge and skills to avoid and/or minimise pollution.</th>
</tr>
</thead>
</table>

### Overview

This competence is about avoiding, preventing and minimizing pollution.

### Performance Criteria

- Knows and applies local emergency plans to prevent or contain pollution.

#### Required Knowledge

- Local emergency plans concerning anti-pollution.
- The properties of dangerous cargoes.
- The effect of dangerous cargo spillage in the environment.
- The effect of ship fuel/oil tanks spillage in the environment.
- How the spillage of other dangerous substances carried on board affect the environment.

#### Required Skills

- Able to:
  - Apply local emergency plans to prevent or contain pollution.
  - Recognise and prevent situations which may lead to possible pollution.
# Overview
This competence is about assisting the Authorities in rescue operations.

## Performance Criteria
Assisting in the SAR (Search And Rescue) in accordance with international, national and local guidelines and standard procedures.

<table>
<thead>
<tr>
<th>Required Knowledge</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knows:</td>
<td>Able to:</td>
</tr>
<tr>
<td>• Knowledge of international, national and local SAR (Search And Rescue) procedures.</td>
<td>• Apply international, national and local procedures in the SAR (Search and Rescue).</td>
</tr>
<tr>
<td>• Knowledge of emergency response plans.</td>
<td>• Utilise procedures to recover rescued persons.</td>
</tr>
<tr>
<td>• Personal Survival Techniques.</td>
<td>• Recognise and prevents risk/dangerous situations.</td>
</tr>
</tbody>
</table>

Setting an Overview of each area of Competence

Once the competencies of Maritime Pilots in dealing with risk prevention and environmental protection were identified, an overview was set to define the competence in question in brief. The overview for the first area of competence ‘Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port’ has been set as follows:

*This competence is about the ability of Pilots to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances. By ‘emergencies’ it is understood incidents occurring through external or internal factors, which may cause injury or loss of human life, cause pollution, and/or damage to property.*

Setting the Performance Criteria for each area of Competence

Following the setting of the overview for the three identified competencies, the performance criteria for each competence was then identified and set.

For example, the performance criteria set for the first area of competence (Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port) were defined as follows:

- Maintains good communication with the Captain, Authorities and all the parties involved in the dealing with the emergency.
- Uses and relays the information displayed on the bridge navigational aids or given by the crew.
- Coordinates with the Captain and the Authorities on the most appropriate actions to be taken in that emergency.
- Supports the Captain in different types of emergencies.
- Takes into consideration the effects of weather conditions on that emergency.

The performance criteria provide the foundation to identify the related knowledge and skills.
Knowledge and Skills for the three areas of competence

Area of Key Competence 1: Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port

For example the knowledge and skill listed for the first area of competence (Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port) are as follows:

Required Knowledge. Knows:
- How to notify the relevant Authorities and call for the required assistance.
- What needs to be communicated to the parties involved in the dealing with emergency (Captain, Bridge team, Authorities, etc.).
- How to anticipate the effects of that emergency.
- How to interpret the information displayed on the bridge navigational aids or given by the crew.

Required Skills. Able to:
- How different types of emergencies are handled.
- How weather conditions can affect that emergency.

The above illustrates that a Maritime Pilot needs to have the necessary skills and knowledge to be considered competent to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances.
circumstances in his designated port. The same applies for the other two areas of competence, the Maritime Pilot needs to have all the required skills and knowledge to give advice to the ship Captain in order to avoid and or minimise pollution in emergency circumstances in his designated port and to be able to participate in rescue procedures in emergency circumstances in his designated port.

**Area of Key Competence 2: Able to give advice to the ship Captain in order to avoid and or minimise pollution in emergency circumstances in his designated port**

The knowledge and skill listed for the second area of competence (Uses knowledge and skills to avoid and or minimise pollution) are as follows:

**Required Knowledge. Knows:**
- Local emergency plans concerning anti-pollution.
- The properties of dangerous cargoes.
- The effect of dangerous cargo spillage in the environment.
- The effect of ship fuel/oil tanks spillage in the environment.
- How the spillage of other dangerous substances carried on board affect the environment.

**Required Skills. Able to:**
- Apply local emergency plans to prevent or contain pollution.
- Recognise and prevent situations which may lead to possible pollution.

**Area of Key Competence 3: Able to participate in rescue procedures in emergency circumstances in his designated port**

The knowledge and skills listed for the second area of competence (Uses knowledge and skills to avoid and or minimise pollution.) are as follows:

**Required Knowledge. Knows:**
- Knowledge of international, national and local SAR (Search and Rescue) procedures.
- Knowledge of emergency response plans.
- Personal Survival Techniques.

**Required Skills. Able to:**
- Apply international, national and local procedures in the SAR (Search And Rescue).
- Utilise procedures to recover rescued persons.
- Recognise and prevent risk/dangerous situations.

**Using the Occupational Standards to develop the Qualification**

In many EU member states, the first phase of curriculum development and reform is the production of occupational standards. This codifies the employer needs, which can then serve as a basis for the second phase of the process: translating standards into qualifications and curricula. This step requires the use of different methods depending on the structure and content of curricula and on the particular country. This would normally mean the definition of intended learning outcomes and also, sometimes, assessment standards or performance indicators/criteria, content specifications, units and timetables.

**The Maritime Pilots Risk prevention and Environmental Protection CPD Qualification**

**Using a Learning Outcomes Approach**

The European Commission’s strategy for New Skills for New Jobs deals with the need to solve Europe’s skill deficiencies and calls for an opening up of the worlds of education and training by making institutions operating in this area more responsive to learners’ and employers’ needs. In parallel it encourages the development of relevant qualifications that focus on concrete learning outcomes.

Learning outcomes are statements of what a learner knows, understands and is able to do on completion of a learning process. Learning outcomes are defined in terms of knowledge, skills and competence.

1. Knowledge: means the body of facts, principles, theories and practices that is related to a field of work or study. It is described as theoretical and/or factual knowledge.
2. Skills: means the ability to apply knowledge and use know-how to complete tasks and solve problems. They are described as cognitive (logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

3. Competence: means the proven ability to use knowledge, skills and personal, social and methodological abilities in work or study situations and in professional and personal development. It is described in terms of responsibility and autonomy.

Learning Outcomes can be used to establish descriptors of qualifications frameworks, define qualifications, design curricula, guide assessment based on knowledge, skills, and competences, etc. For each level of the European Qualification Framework (EQF), the learning outcomes are established in line with the respective level according to the level descriptors for each level within the EQF. A set of learning outcomes make up a study unit, and a collation of study units make a full qualification. To implement ECVET, it is necessary that qualifications are described using units of learning outcomes so as to be able to relate the outcomes of assessed or validated learning experiences in a common methodology.

The knowledge, skills and competencies identified in the occupational standard have been set as the skills, knowledge and competencies for the Maritime Pilots Risk prevention and Environmental Protection qualifications’ learning outcomes.

The Maritime Pilots Risk prevention and Environmental Protection Qualification titled ‘CPD Award in Risk prevention and Environmental Protection’ has been set as a Continuous Professional Development (CPD) award at European Qualifications Framework (EQF) level.
5. It has been designed into three modules which reflect the three competencies set in the related Occupational Standard. The modules are based on the Learning Outcomes identified by the team. After the assessment of Learning Outcomes ECVET credits are awarded and recorded in the Transcript of Records. The value of the ECVET points is established as follows:

- 25 hours of training = 1 ECVET point
- 1 ECVET point = 1 ECTS point

The modules have been entitled as follows:
1. Manoeuvring and handling ships in exceptional conditions and circumstances.
2. Avoiding, preventing and minimising pollution.

The qualification is for Maritime Pilots, who need to have in hand a Pilot Licence as an entry requirement.

The objectives of the CPD qualification is to equip Maritime Harbour Pilots with knowledge and skills related to Risk Prevention and Environmental Protection through a customised award at level 5 offered over a period of one to two years.

The total hours envisaged for the completion of the qualification are divided as follows:

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact hours</td>
<td>276</td>
</tr>
<tr>
<td>Practical/Hands on</td>
<td>50</td>
</tr>
<tr>
<td>Self-Study</td>
<td>8</td>
</tr>
<tr>
<td>Assessment</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>350</strong> equivalent to <strong>14 ECVET points</strong></td>
</tr>
</tbody>
</table>

Learning outcomes for each module
The learning outcomes set for each module mirror the proposed Occupational Standards. The learning outcomes include a list of the related knowledge and skills. They also include communication and learning skills.

For example the learning outcomes set for Module 1 ‘Manoeuvring and handling ships in exceptional conditions and circumstances’ include the following:
Knowledge:
- Knowledge on how to notify the relevant Authorities and call for the required assistance.
- Knowledge on what needs to be communicated to the parties involved in the dealing with emergency (Captain, Bridge team, Authorities, etc.).
- Knowledge on how to anticipate the effects of that emergency.
  - Emergency manoeuvre with different types of vessels such as Cargo, Gas and Oil Tankers, Container Ships, Car Carriers, RORO Ferries and Passenger Ships.
  - Use of ships’ anchors to prevent drifting.
  - Use of tugs to prevent drifting.
- Knowledge on how to interpret the information displayed on the bridge navigational aids or given by the crew.
- Knowledge on how different types of emergencies are handled.
  - Handle emergency with Rudder failure.
  - Ship Handling after a Tug failure.
  - Handle emergency with Power loss.
  - Handle emergency with Grounding of Vessel.
  - Handle emergency with Collision with other objects.
- Knowledge on how weather conditions can affect that emergency.
  - Handle emergency with currents of more than 1 knot.
  - Handle emergency with wind force of at least 24 knots in port.
  - Handle emergency with restricted visibility.

Skills:
- Ability to maintain good communication with the Captain, Authorities and all the parties involved in the dealing with emergency.
- Ability to use and relay the information displayed on the bridge navigational aids or given by the crew.
- Ability to coordinate with the Captain and the Authorities on the most appropriate actions to be taken in that emergency.
- Request relevant shore assistance.
- Liaise with relevant authorities concerned by the emergency.
- Ability to support the Captain in different types of emergencies.
  - Handle emergency with Rudder failure.
  - Ship Handling after a Tug failure.
  - Handle emergency with Power loss.
  - Handle emergency with Grounding of Vessel.
  - Handle emergency with Collision with other objects.
- Ability to interpret the effects of weather conditions in the light of that emergency.
  - Handle emergency with currents of more than 1 knot.
  - Handle emergency with wind force of at least 24 knots in port.
  - Handle emergency with restricted visibility.

Communication Skills:
- Participate through use of language, behaviour and non-verbal communication. Active participation during the learning process.
- Develop judgmental skills related to decision that may be required during the manoeuvring and handling ships in exceptional conditions and circumstances.

Learning Skills
- Reflect on levels of personal performance as measured against qualifications learning and assessment criteria.
- Research and seek to learn more about areas related to manoeuvring and handling ships in exceptional conditions and circumstances.
- Self-discipline associated with self-directed and blended learning.

Reading lists
A reading list for each module has been set to enhance the self-study aspect of the qualification.
For example, the reading list for module 1 includes reading material such as
- Port Emergency Response Plan relevant to the licensed area of operation of the pilot.
- Case studies on incidents which have occurred.
- Generic sea survival practical manual and notes.

Teaching of the modules
The modules will be thought through lectures, discussions, hands on practice and simulation and manned models.

The training will be aligned with developments in the education system in Europe, which recognises the need for training to be more focused on results/output - in order to prepare learners for the challenges they face in working in the maritime sector. This emerges from the learning outcomes approach which focuses on the competences that the learner needs to develop at the end of the learning process. For each of the training modules the focus of the each lecture, seminar and simulation will be on what the learner will:
- Know.
- Be able to do.
- Be able to do without supervision, independently and with responsibility.

This approach is designed to ensure that learners are not only exposed to the course content, but also assimilate knowledge, practice the skills learnt, and work towards implementing these skills without supervision, independently and with responsibility. This focus on competences ensures that trainees develop the skills which they need to function as independently as possible in their work settings.

The training, with its focus on output, requires that the trainers to use a wide repertoire of training techniques in order to meet the specific learning styles and capabilities of the trainees.
The teaching methods will include a mix of group work, lecturing, case studies, simulation, used of manned models and interactive sessions.

The training will be delivered in English or language of the country adopting this qualification.

For example the training of module one will cover the following:

- GMDSS Restricted Operator’s Certificate.
- IMO Standard Marine Communication Phrases Training.
- Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur.
- Bridge Resource Management for Pilots Training Course.
- ECDIS Generic.
- ARPA and RADAR Observer course - Mana level IMO Model course 1.08).
- Training on AIS information.

The table below illustrates how each learning outcomes for the knowledge of Module 1 are linked to the type of training.

For similar details for Modules 2 and 3 refer to Appendix 2 Qualification Chart.
<table>
<thead>
<tr>
<th>COMPETENCE 1</th>
<th>Possible type of training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to give advice to the Captain to manoeuvre and handle the ship in</td>
<td></td>
</tr>
<tr>
<td>emergency circumstances in his designated port/area</td>
<td></td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td></td>
</tr>
<tr>
<td>1. How to notify the relevant Authorities and call for the required</td>
<td>GMDSS Restricted Operator’s Certificate</td>
</tr>
<tr>
<td>assistance.</td>
<td></td>
</tr>
<tr>
<td>2. What needs to be communicated to the parties involved in the dealing</td>
<td>IMO Standard Marine Communication Phrases Training</td>
</tr>
<tr>
<td>with emergency (Captain, Bridge team, Authorities, etc.).</td>
<td></td>
</tr>
<tr>
<td>3. How to anticipate the effects of that emergency</td>
<td>Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur</td>
</tr>
<tr>
<td>Emergency manoeuvre with different types of vessels such as Cargo, Gas</td>
<td></td>
</tr>
<tr>
<td>and Oil Tankers, Container Ships, Car Carriers, RORO Ferries and Passenger</td>
<td></td>
</tr>
<tr>
<td>Ships.</td>
<td></td>
</tr>
<tr>
<td>Use of ships’ anchors to prevent drifting</td>
<td></td>
</tr>
<tr>
<td>Use of tugs to prevent drifting</td>
<td></td>
</tr>
<tr>
<td>4. How to interpret the information displayed on the bridge navigational</td>
<td>Bridge Resource Management for Pilots Training Course</td>
</tr>
<tr>
<td>aids or given by the crew.</td>
<td></td>
</tr>
<tr>
<td>5. How different types of emergencies are handled.</td>
<td></td>
</tr>
<tr>
<td>Handle emergency with Rudder failure</td>
<td></td>
</tr>
<tr>
<td>Ship Handling after a Tug Failure</td>
<td></td>
</tr>
<tr>
<td>Handle emergency with Power loss</td>
<td></td>
</tr>
<tr>
<td>Handle emergency with Grounding of Vessel</td>
<td></td>
</tr>
<tr>
<td>Handle emergency with Collision with other objects</td>
<td></td>
</tr>
<tr>
<td>Tailor made Computer Simulation or Manned model training Simulations on</td>
<td></td>
</tr>
<tr>
<td>emergencies related to Rudder, Power, Grounding, Collision and other</td>
<td></td>
</tr>
<tr>
<td>specific emergencies that can occur</td>
<td></td>
</tr>
<tr>
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<tr>
<td>emergencies related to Rudder, Power, Grounding, Collision and other</td>
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<tr>
<td>specific emergencies that can occur</td>
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<tr>
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</tr>
<tr>
<td>emergencies related to Rudder, Power, Grounding, Collision and other</td>
<td></td>
</tr>
<tr>
<td>specific emergencies that can occur</td>
<td></td>
</tr>
<tr>
<td>KNOWLEDGE</td>
<td>SKILLS</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| **6. How weather conditions can effect that emergency.** | Handle emergency with currents more than 1 knot  
Handle emergency with wind force of at least 24 knots in port  
Handle emergency with restricted visibility | Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur  
Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur  
Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur |
| **1. Maintain good communication with the Captain, Authorities and all the parties involved in the dealing with emergency.** | GMDSS Restricted Operator’s Certificate |
| **2. To use and relay the information displayed on the bridge navigational aids or given by the crew.** | GMDSS Restricted Operator’s Certificate |
| **3. Coordinate with the Captain on the most appropriate actions to be taken in that emergency.** | Request relevant shore assistance  
Liaise with relevant authorities concerned by the emergency | Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur |
| **4. To support the Captain in different types of emergencies.** | Handle emergency with Rudder failure  
Ship Handling after a Tug Failure  
Handle emergency with Power loss  
Handle emergency with Grounding of Vessel  
Handle emergency with Collision with other objects | Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur |
| **5. Interpret the effects of weather conditions in the light of that emergency.** | Handle emergency with currents more than 1 knot  
Handle emergency with wind force of at least 24 knots in port  
Handle emergency with restricted visibility | Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur |
### Competence 2

**Able to give advice to the ship Captain in order to avoid or minimise pollution in emergency circumstances in his designated port/area**

#### Learning Outcomes

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Possible Type of Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Local emergency plan concerning anti-pollution.</strong></td>
<td>A Pilot would know his role in the emergency plan and how the plan is implemented being the link between authorities and the vessel causing the incident. Theoretical training on the available means for dealing with a pollution incident in or outside port areas (non-standardised).</td>
</tr>
<tr>
<td><strong>2. The properties and effects of dangerous cargoes.</strong></td>
<td>IMO relevant instrument about properties of dangerous goods – Model Course 1.10</td>
</tr>
<tr>
<td><strong>3. The effect of other pollutants spillage in the environment.</strong></td>
<td>Understanding the impact of the polluting incidents on sea and environment as well as its economic effects. Seminar</td>
</tr>
</tbody>
</table>

#### Skills

<table>
<thead>
<tr>
<th>Possible Type of Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Apply local emergency plans to prevent or contain pollution.</strong></td>
</tr>
<tr>
<td><strong>2. Recognize and prevent situation of possible pollution.</strong></td>
</tr>
</tbody>
</table>

### Competence 3

**Participates in Rescue operations**

#### Learning Outcomes

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Possible Type of Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Knowledge of international, national and local SAR (Search And Rescue) procedures.</strong></td>
<td>Communication to be done before initiating a search and rescue operation; type of search and rescue pattern; First Aid Procedures. Establish a datum Establish the search pattern applicable in the particular circumstances Liaise with SAR coordination centre Acknowledge and execute instructions received from SAR coordination centre Perform First Aid Procedures. Tailor made course dealing with SAR in territorial waters.</td>
</tr>
<tr>
<td>2. Knowledge of emergency response plans.</td>
<td>Types of emergencies and role of the pilot in the response plan (SAR)</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Describe the role of the pilot in the SAR</td>
</tr>
<tr>
<td></td>
<td>Recognise the various parties involved in the SAR</td>
</tr>
<tr>
<td></td>
<td>Recognise the different SAR patterns</td>
</tr>
<tr>
<td>3. Recognize and prevent risk/dangerous situations.</td>
<td>Knowledge of emergency response plans.</td>
</tr>
<tr>
<td></td>
<td>Describe examples of misinterpretation of the information from electronic navigational aids leading to accidents</td>
</tr>
<tr>
<td></td>
<td>Describe accidents caused by fatigue on the ships’ crew</td>
</tr>
<tr>
<td></td>
<td>Describe examples of miscommunication within the SAR</td>
</tr>
<tr>
<td></td>
<td>Recognise the various parties involved in the SAR</td>
</tr>
<tr>
<td></td>
<td>Recognise the different SAR patterns</td>
</tr>
<tr>
<td>4. Personal Survival Techniques.</td>
<td>Basic principles of survival at sea, use of lifesaving appliances such as lifejacket, liferaft, immersion suits, etc.</td>
</tr>
<tr>
<td></td>
<td>Establish a datum</td>
</tr>
<tr>
<td></td>
<td>Establish the search pattern applicable in the particular circumstances</td>
</tr>
<tr>
<td></td>
<td>Acknowledge and execute instructions received from SAR coordination centre</td>
</tr>
<tr>
<td>1. Apply international, national and local procedures in the SAR (Search And Rescue).</td>
<td>Proper application of relevant SAR procedures.</td>
</tr>
<tr>
<td></td>
<td>Establish the search pattern applicable in the particular circumstances</td>
</tr>
<tr>
<td></td>
<td>Liaise with SAR coordination centre</td>
</tr>
<tr>
<td></td>
<td>Acknowledge and execute instructions received from SAR coordination centre</td>
</tr>
<tr>
<td></td>
<td>Tailor made Simulation exercise simulating SAR</td>
</tr>
<tr>
<td>2. Utilize procedures to recover rescued persons.</td>
<td>Use of recovery systems and procedures utilised onboard the pilot boat</td>
</tr>
<tr>
<td></td>
<td>Recover an unconscious survivor from water</td>
</tr>
<tr>
<td></td>
<td>Coordinate with pilot boat crew to recover the survivor</td>
</tr>
<tr>
<td></td>
<td>Tailor made drills on board of the pilot boat</td>
</tr>
</tbody>
</table>
Assessment
The modules will be assessed through ongoing assessments, written tests and through deb briefings. Records will be kept including results for all simulation exercises.

Units
A Unit / Study Unit is a component of a qualification, consisting of a coherent set of knowledge, skills, and competence of the established learning outcomes that can be assessed, validated and recognised. The assessment should verify and record that the learner has or has not achieved the learning outcomes expected. Once a Unit is assessed, proving that a learner has achieved the learning outcomes established for that Unit, the learner acquires credit for this achievement. The credit achieved for each Unit can then be transferred. Hence, once a Unit is assessed, validated, given credit for and recognised, these contribute to the accumulation of credits and can form a full qualification. Thus Units enable progressive achievement of qualifications through the recognition, transfer and accumulation of learning outcomes. The recognition of units also enables learners to obtain recognition of the learning outcomes achieved in different contacts without the need of re-assessment.

Transferability and recognition of qualification
ECVET Points
ECVET points provide additional information about units and qualifications in a numerical form. The ECVET points are a numerical representation of the overall weight of learning outcomes in a qualification and of the relative weight of units in relation to the qualification. The number of ECVET points allocated to a qualification, together with other specifications such as descriptions of study units in learning outcomes, and information about the level of qualifications, can indicate the scope of the qualification. From the total number of ECVET points allocated to a qualification, each Unit has a relative weight within that qualification. This is thus reflected in the number of ECVET points which are allocated to each unit in order to contribute towards achieving the qualification. When a learner satisfies the criteria for a Unit or a qualification, meaning that s/he has achieved the expected learning outcomes
and these are assessed and validated, s/he is awarded the corresponding ECVET points. These are recorded together with the learning outcomes of each study unit in the person’s personal transcript. ECVET points are linked to the qualification structure and description irrespective of whether someone has achieved the qualification or not. This implies that ECVET points which are allocated to a study unit describe the weight of that unit in a numerical form. Therefore, there is recognition of the ECVET points achieved through completed units, even if the learner has not successfully completed the full number of units needed to obtain the full qualification.

ECVET is dependent upon 8 key features that must be in place for the conversion process. These include: learning outcomes, units, ECVET points, credit transfer and accumulation, the validation of non-formal and informal learning, memorandum of understanding (MoU), learning agreement, and personal transcript.22

The following include the structure of the Maritime Pilots Risk prevention and Environmental Protection Qualification course which has been set in line with the ECVET requirements:

- Qualification Name
- Qualification Title obtained at the end of the course
- Level Rating Status
- Course Type
- Entry Requirements
- General Course Objectives
- Number of Study Units of the Qualification
- Duration of the whole Qualification in hours of total learning

Credit Transfer and Accumulation
Credit refers to the fact that a learner has achieved the expected learning outcomes, which have been assessed and which can be accumulated towards a qualification or transferred to other learning programmes or qualifications. Credit is not to be confused with ECVET points. Credit does not exist on its own without someone having achieved it. In other words, while credit is related to a person and his/her personal achievement, ECVET points are linked to the qualification structure and description independent of whether someone has achieved the qualification or not. ECVET points provide information about the qualification and the units.

In simpler terms, when a person proves to have achieved the set of learning outcomes expected for a particular study unit, the person would have gained the ECVET points allocated to that study unit, and hence would have obtained credits. Therefore ECVET points are numerical representations of the weight of a particular unit in the framework of a qualification. Credit is what a learner obtains for the learning outcomes s/he has proven to have acquired. Credit Transfer then refers to the process through which learning outcomes achieved in one context can be taken into another context. In order to be transferred, learning outcomes have to be assessed. The outcome of the assessment is recorded in a learner’s personal transcript and constitutes credit. On the basis of the assessed outcomes, the credit can then be validated and recognised by another competent institution. Credit accumulation is a process through which learners can acquire qualifications progressively by successive assessments and validation of learning outcomes. In the framework of ECVET partnerships, credit transfer is foreseen in the learning agreement. This learning agreement specifies which learning outcomes are to be achieved during the mobility and how these will be assessed.

Credit Transfer in the Maritime Pilots Risk Prevention and Environmental Protection

Credit is what a learner obtains for the learning outcomes s/he has proven to have acquired. Credit Transfer then refers to the process through which learning outcomes achieved in one context can be taken into another context.
Qualification course can be very useful to facilitate the mobility of learning. For example a module of the CPD award can be completed in one country and the other modules can be completed in another according to the training equipment available such a manned models and simulators.

The calculation of credits is based on the following method:
- 25 hours of training = 1 ECVET point
- 1 ECVET point = 1 ECTS point

**Setting a Learning Agreement**
A Learning Agreement is an individualised document which sets out the conditions for a specific mobility period. It specifies, for a particular learner, which learning outcomes and units should be achieved together with the associated ECVET points. The learning agreement also lays down that, if the learner achieves the expected learning outcomes and these are positively assessed by the “hosting” institution, the “home” institution will validate and recognise them as part of the requirements for a qualification. Therefore, the learning agreement constitutes a commitment to the learner that his/her achievement, if in line with the expectations, will be recognised upon return. This is done without additional assessment or examination of the learning covered during the mobility period. The learning agreement is signed by the following three parties: the home institution which will validate and recognise learning outcomes achieved by the learner; the hosting institution that delivers training for the learning outcomes concerned and assesses the achieved learning outcomes; and the learner to be aware of the forthcoming learning process and to commit oneself to the agreement. The learning agreement should then contain information on the identity of the learner, the duration of the mobility period, information on the learning outcomes to be achieved by the learner and the associated ECVET points corresponding to the relative weight of the unit in the home system. A Learning Agreement should not be mistaken for an MoU. An MoU is a framework document that defines the conditions
under which credit achieved in partner systems can be recognised. It can concern a group or even a large number of qualifications. The Learning Agreement is a more specific document. It is written for a particular case of mobility and describes the learning outcomes concerned as well as how these will be assessed.

Memorandum of Understanding (MoU)

In order to facilitate the above, credit transfer need to be supported by mutual trust between the competent institutions involved. An MoU is an agreement between competent institutions which sets the framework for credit transfer. It formalises the ECVET partnership by stating the mutual acceptance of the status and procedures of the competent institutions involved. It also establishes the partnership’s procedures for cooperation. MoUs are conducted by competent institutions, each of which is empowered, in their own setting, to award qualifications or units or to give credit for achieved learning outcomes for transfer and validation. By setting up an MoU, competent institutions should acknowledge their partners’ approaches to designing units, assessment, validation, and recognition as well as quality assurance. Through this process, they make informed judgments about the conditions under which they can recognise credit achieved in partner systems. Therefore, an MoU contains statements through which the parties concerned accept each other’s status as competent institutions; accept each other’s quality assurance, assessment, validation and recognition criteria and procedures as satisfactory for the purposes of credit transfer. The MoU also expresses the agreement on the conditions for the operation of the partnership, such as objectives, duration and arrangements for review of the MoU, as well as the agreement on the comparability of qualifications concerned for the purposes of credit transfer, using the reference levels established by EQF. It also identifies other actors and competent institutions that may be involved in the process concerned, together with their functions.

MOU Model Sample

| Identification of the Organisations Signing the Memorandum of Understanding |
|---|---|---|---|---|---|---|
| Country [A] | Institution | Typology | Address | Telephone | Fax | Email |
| Country [B] | Institution | Typology | Address | Telephone | Fax | Email |

MoUs are conducted by competent institutions, each of which is empowered, in their own setting, to award qualifications or units or to give credit for achieved learning outcomes for transfer and validation.

---

Organisations Who are Able to Operate in the Framework of the Memorandum of Understanding

In case the MoU could be established for a broader context (agreements including sector-based organisations, regional or national authorities), the table below should be completed with the institutions able to operate in the framework of the MoU.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Typology</th>
<th>Address</th>
<th>Telephone</th>
<th>Fax</th>
<th>E-mail</th>
<th>Website</th>
<th>Represented by (name and function)</th>
</tr>
</thead>
</table>

Information about the Qualification Covered by the Memorandum of Understanding

<table>
<thead>
<tr>
<th>Qualification in Country [A]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Qualification</td>
<td></td>
</tr>
<tr>
<td>EQF/NQF level (if applicable)</td>
<td></td>
</tr>
<tr>
<td>Common Units of Learning Outcomes</td>
<td></td>
</tr>
<tr>
<td>Documents Annexed</td>
<td></td>
</tr>
<tr>
<td>Qualification</td>
<td></td>
</tr>
<tr>
<td>Documents for a more detailed overview of LOs associated with the qualification</td>
<td></td>
</tr>
<tr>
<td>Europass certificate supplement</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Qualification in Country [B]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of qualification</td>
<td></td>
</tr>
<tr>
<td>EQF/NQF level (if applicable)</td>
<td></td>
</tr>
<tr>
<td>Common Units of Learning Outcomes</td>
<td></td>
</tr>
<tr>
<td>Documents Annexed</td>
<td></td>
</tr>
<tr>
<td>Qualification</td>
<td></td>
</tr>
<tr>
<td>Documents for a more detailed overview of LOs associated with the qualification</td>
<td></td>
</tr>
<tr>
<td>Europass certificate supplement</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>
### Competent Institutions with Regard to ECVET Technical Specifications

Partners identify the functions and responsibilities of competent institutions within their context.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifying the unit(s) of learning outcomes suitable for assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivering the education and training programme/learning activities preparing for the missing learning outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessing whether the candidate has achieved the expected learning outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Validating candidate’s credits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognising candidate’s credits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Assessment, Validation, and Recognition

#### Qualification Units in Country [A]
- Assessment
- Documentation
- Validation
- Recognition

#### Qualification Units in Country [B]
- Assessment
- Documentation
- Validation
- Recognition

### Personal Transcript

A Personal Transcript is a document that belongs to the learner. While the learning agreement describes what the learner is expected to achieve, the personal transcript documents what s/he has achieved. It is a record of learning achievements that contains information on learner’s assessed learning outcomes, units, and ECVET points awarded. It also specifies the identity of the learner and the competent institution/s that assessed, validated and recognised the learner’s credit.  

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24 Malta Qualifications Council (2011) *ECVET in Europe: A New European Tool for Promoting, Facilitating and Enhancing Lifelong Learning and Mobility*, Pgs 3 - 7
Example of a Personal Transcript

<table>
<thead>
<tr>
<th>Learner</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First name</td>
<td>Family name</td>
</tr>
<tr>
<td>Date of birth</td>
<td>Place of birth</td>
</tr>
<tr>
<td>ID/Passeport/Social security number</td>
<td>Address</td>
</tr>
<tr>
<td>Title of training programme</td>
<td></td>
</tr>
<tr>
<td>Qualification being prepared</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit (title)</th>
<th>Assessment result</th>
<th>ECVET points</th>
<th>Other (if required)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Hosting institution - |
| Title |
| Address |
| Contact person |

Signature of the host institution

_________________________ Date/Place ____________________________ Stamp

The Competences of Maritime Pilots within the Europass system

As illustrated in Part 1 of this Manual, the Europass Curriculum Vitae is a standardised model that allows the description of individual competences, knowledge and skills on the basis of a pan European format. This tool is used either for applying for a job, in the individual’s own Country or within the EU or else it is used for the application to career development courses. The ECV is a personal tool that the individual compiles autonomously or with the support of specialised personnel.

The ECV adopts innovative options and characteristics that are more likely to match the requirement of the labour market as well as the development of formal, non-formal and informal education.

Firstly, ECV is not only focused on the path that the individual has done but the competences that the person acquired through various types of experience and that can have a value in the labour market. The key element is therefore the set of resources that each individual have and can offer while the occasions, experiences through which such resources have been developed, are included as supporting information to better define the quality and level of the declared competence.

Secondly, ECV allows for the inclusion and enhancement of all types of learning, particularly through experience in non-formal and informal contexts, which complement the competences developed within the formal education. This is also a consequence of a competence-based approach focused on the abilities and capabilities of the individual rather than on the type of career undertaken.

Thanks to the compilation of ECV it is possible to have a common European language for employers, professional development centres, job seekers, professionals, which is focused on the characteristics and abilities of the individual.

In the context of the CERTIPILOT project, the ECV is particularly relevant for the identification of Maritime Pilots’ competences and the recognition of those skills and knowledge acquired through various forms of training. Moreover, the ECV and the application of the CERTIPILOT framework can be useful for Pilots’ Organisations to take stock of the range of competences available within the team and possibly plan individual training paths.

The use of ECV for Pilots in relation to the enhancement of their individual resources makes it easier to:
- take stock of individual competences and skills and give them relevance for further education, training or for career development;
- easily link the training undertaken and the experience acquired with the related competences; and
- better identify the portfolio of competences of an individual or a group both for internal and external purposes.

**Competences of the Maritime Pilots trained in Risk prevention and Environmental Protection reflected in the Europass CV**

Below is an example of how the competences of the Maritime Pilots trained in Risk prevention and Environmental Protection can be reflected in the Europass CV:

<table>
<thead>
<tr>
<th>Job related skills</th>
<th>Technical Competence in Risk prevention and Environmental Protection:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port/area</td>
</tr>
<tr>
<td></td>
<td>• Able to give advice to the ship Captain in order to avoid and or minimise pollution in emergency circumstances in his designated port/area</td>
</tr>
<tr>
<td></td>
<td>• Able to give advice to the ship Captain in order to avoid and or minimise pollution in emergency circumstances in his designated port/area</td>
</tr>
<tr>
<td>COMPETENCE 1</td>
<td>Possible type of training</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Able to give advice to the Captain to manoeuvre and handle the ship in emergency circumstances in his designated port/area</td>
<td></td>
</tr>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td></td>
</tr>
<tr>
<td>1. How to notify the relevant Authorities and call for the required assistance.</td>
<td>GMDSS Restricted Operator’s Certificate</td>
</tr>
<tr>
<td>2. What needs to be communicated to the parties involved in the dealing with emergency (Captain, Bridge team, Authorities, etc.).</td>
<td>IMO Standard Marine Communication Phrases Training</td>
</tr>
<tr>
<td>3. How to anticipate the effects of that emergency</td>
<td>Emergency manoeuvre with different types of vessels such as Cargo, Gas and Oil Tankers, Container Ships, Car Carriers, RORO Ferries and Passenger Ships. Use of ships’ anchors to prevent drifting Use of tugs to prevent drifting</td>
</tr>
<tr>
<td>4. How to interpret the information displayed on the bridge navigational aids or given by the crew.</td>
<td>Bridge Resource Management for Pilots Training Course</td>
</tr>
<tr>
<td></td>
<td>ECDIS Generic</td>
</tr>
<tr>
<td></td>
<td>ARPA and RADAR Observer course - mana level IMO Model course 1.08,</td>
</tr>
<tr>
<td></td>
<td>Training on AIS information</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Possible type of training</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>5. How different types of emergencies are handled.</td>
<td>Handle emergency with Rudder failure</td>
</tr>
<tr>
<td></td>
<td>Ship Handling after a Tug Failure</td>
</tr>
<tr>
<td></td>
<td>Handle emergency with Power loss</td>
</tr>
<tr>
<td></td>
<td>Handle emergency with Grounding of Vessel</td>
</tr>
<tr>
<td></td>
<td>Handle emergency with Collision with other objects</td>
</tr>
<tr>
<td></td>
<td>Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur</td>
</tr>
<tr>
<td>6. How weather conditions can effect that emergency.</td>
<td>Handle emergency with currents more than 1 knot</td>
</tr>
<tr>
<td></td>
<td>Handle emergency with wind force of at least 24 knots in port</td>
</tr>
<tr>
<td></td>
<td>Handle emergency with restricted visibility</td>
</tr>
<tr>
<td></td>
<td>Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur</td>
</tr>
<tr>
<td></td>
<td>Tailor made Computer Simulation or Manned model training Simulations on emergencies related to Rudder, Power, Grounding, Collision and other specific emergencies that can occur</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Possible type of training</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>1. Maintain good communication with the Captain, Authorities and all the parties involved in the dealing with emergency.</td>
<td>GMDSS Restricted Operator's Certificate</td>
</tr>
<tr>
<td>2. To use and relay the information displayed on the bridge navigational aids or given by the crew.</td>
<td>GMDSS Restricted Operator's Certificate</td>
</tr>
<tr>
<td>3. Coordinate with the Captain on the most appropriate actions to be taken in that emergency.</td>
<td>Request relevant shore assistance; Liaise with relevant authorities concerned by the emergency</td>
</tr>
<tr>
<td>4. To support the Captain in different types of emergencies.</td>
<td>Handle emergency with Rudder failure; Ship Handling after a Tug Failure; Handle emergency with Power loss; Handle emergency with Grounding of Vessel; Handle emergency with Collision with other objects</td>
</tr>
<tr>
<td>5. Interpret the effects of weather conditions in the light of that emergency.</td>
<td>Handle emergency with currents more than 1 knot; Handle emergency with wind force of at least 24 knots in port; Handle emergency with restricted visibility</td>
</tr>
</tbody>
</table>
## COMPETENCE 2

Able to give advice to the ship Captain in order to avoid and or minimise pollution in emergency circumstances in his designated port/area

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Possible type of training</th>
<th>Delivery method</th>
<th>Assessment method</th>
<th>Hours</th>
<th>Reading List</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Local emergency plan concerning anti-pollution.</strong></td>
<td>A Pilot would know his role in the emergency plan and how the plan is implemented being the link between authorities and the vessel causing the incident</td>
<td>Theoretical training on the available means for dealing with a pollution incident in or outside port areas (non-standardised)</td>
<td>Seminar: by local anti pollution authorities</td>
<td>ongoing assessment during seminar</td>
<td>Theory: 6 hrs</td>
</tr>
<tr>
<td><strong>2. The properties and effects of dangerous cargoes.</strong></td>
<td>Understanding the impact of the polluting incidents on sea and environment as well as its economic effects</td>
<td>IMO relevant instrument about properties of dangerous goods – Model Course 1.10</td>
<td>Lecture or online training</td>
<td>written test</td>
<td>40 hours</td>
</tr>
<tr>
<td><strong>3. The effect of other pollutants spillage in the environment.</strong></td>
<td>A Pilot would be able to perform his role in the emergency plan being the link between authorities and the vessel causing the incident</td>
<td>Oil Pollution response drills in order to get familiar with the clean up procedure</td>
<td>Hands-on</td>
<td>Debriefing session to assess the drill</td>
<td>Hands-on: 8 hours – Briefing/Debriefing: 4 hrs</td>
</tr>
<tr>
<td><strong>1. Apply local emergency plans to prevent or contain pollution.</strong></td>
<td>The candidate will be able to support the captain to avoid bad practices which could cause pollution</td>
<td>Seminar - Pollution Prevention</td>
<td>Seminar: by local anti pollution authorities</td>
<td>Ongoing assessment through active participation of trainees to the seminar. Questioning with all trainees shall be done.</td>
<td>2 hours</td>
</tr>
<tr>
<td><strong>2. Recognize and prevent situation of possible pollution.</strong></td>
<td>The candidate will be able to perform his role in the emergency plan being the link between authorities and the vessel causing the incident</td>
<td>Seminar - Pollution Prevention</td>
<td>Seminar: by local anti pollution authorities</td>
<td>Ongoing assessment through active participation of trainees to the seminar. Questioning with all trainees shall be done.</td>
<td>2 hours</td>
</tr>
<tr>
<td>Competence 3</td>
<td>Learning Outcomes</td>
<td>Possible type of training</td>
<td>Delivery method</td>
<td>Assessment method</td>
<td>Hours</td>
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<tr>
<td>Participates in rescue operations</td>
<td>1. Knowledge of international, national and local SAR (Search and Rescue) procedures.</td>
<td>Communication to be done before initiating a search and rescue operation; type of search and rescue pattern; First Aid Procedures</td>
<td>Tailor made course dealing with SAR in territorial waters</td>
<td>Lectures</td>
<td>Ongoing assessment through active participation of trainees to the lecture. Questioning with all trainees shall be done.</td>
</tr>
<tr>
<td></td>
<td>Establish a datum</td>
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<td></td>
<td>Establish the search pattern applicable in the particular circumstances</td>
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<td></td>
<td>Liaise with SAR coordination centre</td>
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<td></td>
<td>Acknowledge and execute instructions received from SAR coordination centre</td>
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<td></td>
<td>Perform First Aid Procedures</td>
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<tr>
<td></td>
<td>2. Knowledge of emergency response plans.</td>
<td>Types of emergencies and role of the pilot in the response plan (SAR)</td>
<td>Tailor made course dealing with SAR in territorial waters</td>
<td>Lectures</td>
<td>Ongoing assessment through active participation of trainees to the lecture. Questioning with all trainees shall be done.</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Possible type of training</td>
<td>Delivery method</td>
<td>Assessment method</td>
<td>Hours</td>
<td>Reading List</td>
</tr>
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</tr>
<tr>
<td>3. Recognize and prevent risk/dangerous situations.</td>
<td>Understanding the situations that could lead to accidents</td>
<td>Seminar</td>
<td>Ongoing assessment through active participation of trainees to the seminar. Questioning with all trainees shall be done.</td>
<td>2 hours</td>
<td>Case studies on incidents occurred</td>
</tr>
<tr>
<td></td>
<td>Describe examples of misinterpretation of the information from electronic navigational aids leading to accidents</td>
<td>Seminar</td>
<td>Ongoing assessment through active participation of trainees to the seminar. Questioning with all trainees shall be done.</td>
<td>2 hours</td>
<td>Case studies on incidents occurred</td>
</tr>
<tr>
<td></td>
<td>Describe accidents caused by fatigue on the ships’ crew</td>
<td>Seminar</td>
<td>Ongoing assessment through active participation of trainees to the seminar. Questioning with all trainees shall be done.</td>
<td>2 hours</td>
<td>Case studies on incidents occurred</td>
</tr>
<tr>
<td></td>
<td>Describe examples of miscommunication within the Bridge Team leading to accidents</td>
<td>Seminar</td>
<td>Ongoing assessment through active participation of trainees to the seminar. Questioning with all trainees shall be done.</td>
<td>2 hours</td>
<td>Case studies on incidents occurred</td>
</tr>
<tr>
<td>4. Personal Survival Techniques.</td>
<td>Basic principles of survival at sea, use of lifesaving appliances such as lifejacket, liferaft, immersion suits, etc.</td>
<td>STCW Personal Survival Techniques – STCW A-VI1-1</td>
<td>Ongoing assessment: questioning and practical demonstration of aspects taught to ensure underpinning of knowledge</td>
<td>8 hours</td>
<td>Generic sea survival practical manual and notes</td>
</tr>
<tr>
<td>1. Apply international, national and local procedures in the SAR (Search And Rescue).</td>
<td>Proper application of relevant SAR procedures</td>
<td>Tailor made Simulation exercise simulating SAR</td>
<td>Simulation Debriefing after the simulation</td>
<td>3 hours</td>
<td>International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual Volume 3</td>
</tr>
<tr>
<td></td>
<td>Establish a datum</td>
<td>Tailor made Simulation exercise simulating SAR</td>
<td>Simulation Debriefing after the simulation</td>
<td>3 hours</td>
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<td>Establish the search pattern applicable in the particular circumstances</td>
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<td>Simulation Debriefing after the simulation</td>
<td>3 hours</td>
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<td>Acknowledge and execute instructions received from SAR coordination centre</td>
<td>Tailor made Simulation exercise simulating SAR</td>
<td>Simulation Debriefing after the simulation</td>
<td>3 hours</td>
<td>International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual Volume 3</td>
</tr>
<tr>
<td>2. Utilize procedures to recover rescued persons.</td>
<td>Use of recovery systems and procedures utilised onboard the pilot boat</td>
<td>Tailor made drills on board of the pilot boat</td>
<td>Ongoing assessment through active participation of trainees to the drill. Questioning to all trainees.</td>
<td>3 hours</td>
<td>Recovery System Manual of the pilot boat</td>
</tr>
<tr>
<td></td>
<td>Operate recovery systems on board pilot boats</td>
<td>Tailor made drills on board of the pilot boat</td>
<td>Ongoing assessment through active participation of trainees to the drill. Questioning to all trainees.</td>
<td>3 hours</td>
<td>Recovery System Manual of the pilot boat</td>
</tr>
<tr>
<td></td>
<td>Recover an unconscious survivor from water</td>
<td>Tailor made drills on board of the pilot boat</td>
<td>Ongoing assessment through active participation of trainees to the drill. Questioning to all trainees.</td>
<td>3 hours</td>
<td>Recovery System Manual of the pilot boat</td>
</tr>
<tr>
<td></td>
<td>Coordinate with pilot boat crew to recover the survivor</td>
<td>Tailor made drills on board of the pilot boat</td>
<td>Ongoing assessment through active participation of trainees to the drill. Questioning to all trainees.</td>
<td>3 hours</td>
<td>Recovery System Manual of the pilot boat</td>
</tr>
</tbody>
</table>