

# IDENTIFICATION OF MISMATCHES ON A STRUCTURAL BASIS (D1.2.2)



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## SkillSea WP1 reports

Work Package 1 delivers the following reports: (D denotes Deliverable)

Number	Name	Content
D1.1.1	<b>Methodology</b>	Outline of methodology used in reports
D1.1.2	<b>Current skills need</b> Also referenced as: Current needs Current skills	Skills needs as found by surveying maritime professionals
D1.1.3	<b>Future skills and competence need</b> Also referenced as: Future skills Future needs	Skills needs as perceived by industry leaders and visionaries
D1.2.1	<b>Skills and competence gap, current and future</b> Also referenced as: Skills and competence gap	Summary of 1.1.2 and 1.1.3 above
D1.2.2	<b>Identification of mismatches on a structural basis</b>	Reviewing findings in previous reports and relating them to the structure of obtaining skills in the shipping industry
D1.2.3	<b>Impact on occupational profiles</b>	How findings in previous reports impact occupational profiles
D1.3	<b>Recommendations for education and training</b> Short: <b>Recommendations for MET</b>	Summary of findings of previous reports and impact and recommendations for METs

*Table 1: Overview of SkillSea WP1 deliverables*

References to reports will be with name and number or name alone or number alone, depending on context.



## Glossary

This glossary does not provide official definitions but explanations based upon recognised information sources.

Term	Definition
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
MET	Maritime Education and Training
EU	European Union
IMO	International Maritime Organisation
ISM	International Safety Management
EMSA	European Maritime Safety Agency
NMA	National Maritime Authority
NEA	National Education Authority
ICS	International Chamber of Shipping
MAIIF	Marine Accident Investigators' International Forum
BIMCO	The Baltic and International Maritime Council
OCIMF	Oil Companies International Marine Forum
NI	The Nautical Institute
ISF	The International Shipping Federation
IFSMA	International Federation of Ship Masters' Associations
IGP&I	International Group of P&I Clubs
IMPA	International Maritime Pilots' Association
OPITO	Offshore Petroleum Industry Training Organisation
GOMO	Guidelines for Offshore Marine Operations
NORSOK	The Norwegian Shelf's Competitive Position
COC	Certificate of Competency
CBT	Computer-based Training
CAV	Competency Assessment and Verification
EQF	European Qualification Framework
Master	Highest ranking deck officer on the ship, Captain
WBL	Work-Based Learning



## Executive Summary

The shipping sector in Europe is of great importance to the European economy and has been a catalyst for economic development and prosperity.<sup>1</sup> The sector relies on well trained and highly skilled maritime professionals to ensure the safety and efficiency of its operations and the SkillSea project has been developing strategies to safeguard a sustainable supply of European maritime expertise. With the shipping industry undergoing significant changes as a consequence of the drive towards decarbonisation and digitalisation, there is an acute need to 'future-proof' the education and training of key personnel. This report examines the obstacles that currently reduce the opportunities for the successful adaptation and transformation of maritime education and training. It proposes measures to address the structural mismatches between the industry's needs and the nature and scope of the current requirements for maritime professionals' skills and qualifications, as well as the training programmes that seek to deliver the necessary levels of expertise.

The IMO and the STCW Convention have been very successful in establishing a global standard for the minimum competence level of seafarers. METs, vocational schools and universities, no matter which EQF<sup>2</sup> levels they offer, comply with the STCW Convention and have successfully established training courses to prepare qualified seafarers in Europe. When graduating, seafarers are qualified against the same STCW standards and are equally competent concerning formal certificate requirements.

The education and training of seafarers has evolved over the years. New and improved rules have been adopted in steps, with the establishment in 1978 of the IMO STCW Convention setting a common global standard. Since then, the competency requirements laid down by STCW have been revised in 1995, and in 2010. The next revision was predicted to be due in the period 2021-2025 and while there is no concrete timeline set, the pressure to conduct a comprehensive review from the shipping industry is mounting.<sup>3</sup>

We have, in the report D1.1.2 Current skill needs, identified significant gaps between qualifications according to STCW and expectations in the maritime business. Obsolete skills in the STCW Convention are identified, and important missing topics are listed.

Significant shortcomings are identified in the report D1.1.3 Future skills and competence needs. Digitalisation is transforming the shipping industry. 'Smart' ships are coming into service, creating demand for a new generation of competent, highly skilled maritime professionals. Such technological advances, together with growing demand for green solutions and demographic changes, may disrupt the labour markets. Some jobs will change or disappear, and others demand re-training where new and updated skills are needed.

We see that the shipping industry services a considerable market for training and the minimum level delivered in educational programmes.

While reviewing the entities establishing and overseeing maritime competence requirements and those delivering training programmes and educating maritime professionals, we have seen that the system has four layers:

1. IMO international requirements are set through conventions and codes.
2. National and regional authorities approve implementation of the codes and industry bodies that set additional requirements and provide solutions to them.
3. Maritime education and training (MET) academies and general educational institutions train seafarers for their seagoing certificates and additional skills when furthering their career at sea or transitioning to land. The last element is the least available of all.
4. The fourth layer is the maritime professionals' on-the-job training and accumulation of sea time on various ships and sailing areas.

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<sup>1</sup> Oxford Economics - The Economic Value of EU Shipping - Update 2020 - Report

<sup>2</sup> <https://www.cedefop.europa.eu/en/projects/european-qualifications-framework-eqf>

<sup>3</sup> <https://www.ics-shipping.org/current-issue/a-review-of-the-stcw-convention-2020/>

In this report, to aid METs and vocational schools preparing for the future, we first present the *de facto* mismatches across European countries. We present our comparison of different levels and lengths of training programmes. Second, based on this comparison, we suggest how METs could develop the identified skill sets. Given that seafarers benefit from the diversity of METs, vocational schools, and universities, our purpose is to seek a systematic way to improve seafarers' skills. We assert that developing new curricula to meet the demand for new skill sets in current training and education programmes will empower seafarers to attain competency above baseline STCW standards. It will also reduce the (potential future) gaps due to rapid technological changes in the shipping industry, which require the highest competence.

**We find the key structural mismatches to be:**

1. The maritime sector's need for high levels of competence is clearly visible through a large and growing number of training courses and programmes offered by the shipping industry and associated METs to their members and to maritime professionals in general. There is no efficient or timely pathway to communicate the industry's needs in a coordinated manner to METs, maritime authorities and the IMO STCW, who are all part of establishing such new competence courses and programmes.
  - a. This leads to a huge variety and high number of courses that overlap in content and purpose, offering no systematic educational outcome for the seafarer.
  - b. The fragmented nature and lack of system means there is no coordinated or timely recognition of increased competence.
  - c. This burdens the seafarer and/or the ship owner with considerable additional cost and time spent off rotation to conduct additional training to be properly qualified for a role on a specific ship type or in a specific trade.
2. Competence obtained towards or exceeding the STCW minimum is not recognised by higher education institutions unless it is part of a BSc or MSc education. When not part of a university study programme, the additional training for achieving STCW certification does not give credits (ECTS) towards a university degree.
3. Training that goes towards STCW certificate updates, such as those resulting from the STCW 2010 Manila amendments, can only be conducted in the certificate-issuing country. This means that seafarers that are working with certificate endorsements in other countries must travel back to their home country to conduct the additional training.<sup>4</sup> This is the case for seafarers working in EU member countries, but outside of their home country and audited by EMSA.

This is a barrier to internationalisation and mobility, as seafarers crossing borders pose a potential burden for their employer when the certificate needs updating.

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<sup>4</sup> It is also well known in the MET environment that some countries put up barriers in terms of not approving courses and CoPs and demand that they are conducted in their own/the certificate-issuing country.



## 1 Introduction

The IMO and the STCW Convention have successfully established a global standard defining the minimum competence level for seafarers. In the report D1.1.2 Current skills need, the significant gaps between qualifications according to STCW and expectations in the maritime business are recognised. Obsolete skills in the STCW Convention are identified, and critical missing topics are listed.

Significant shortcomings are identified in the D1.1.3 Future skills and competence needs report. Accordingly, digitalisation is transforming the shipping industry. 'Smart' ships are coming into service, creating demand for a new generation of competent, highly skilled maritime professionals. Such technological advances, together with green solutions, and demographic changes, may disrupt the labour markets. Some jobs will change or disappear, and others demand re-training where new and updated skills are needed.

The reports list a range of skills identified as lacking by seafarers, professionals in shoreside shipping companies and the industry itself. These are strongly related to digital technologies, green shipping, innovation, operations in highly digital environments, sea-land mobility, and talent attractiveness. (D1.1.3, chapter 3).

In the application, we stated the following:

*This report outlines the mismatch of the compulsory curriculum – IMO A (and some B) in MET academies, vs the competence programmes delivered by training centres and competence provided by the maritime shipping industry and on-the-job training programmes.*

To investigate this, we map European METs' educational programmes covering STCW – both mandatory minimum and additional competence – and a representative sample of competency programmes offered by the shipping industry and targeting maritime professionals, and relate both to structural issues. We believe these are indicators of a mismatch.

We are not assuming all training programmes offered by METs beyond STCW minimum are indicators of mismatches. It is expected that some additional training above the STCW minimum must be acceptable to avoid overloading the students with competence that is only relevant to a narrow segment of shipping.

On the other hand, if the STCW minimum delivered approximately what the industry needed, there would be a reasonable amount of additional competence for seafarers to accumulate, typically ship-specific competence, to reach a satisfactory level.

In this report, we have used the definition from the QREA report for skills mismatches<sup>5</sup>: “Skills mismatches are discrepancies between the demand and the supply of skills in the labour market, where the skills that employers are looking for are different from the skills offered.”

From the QREA report, we find<sup>5</sup>: “Technological change (along with globalisation and demographic change) is having a structural impact on the demand (and on the supply) of skills.”

Further, the key outcome of this report “Identification of (skills) mismatches on a structural basis” will be investigated in this report in the context that the mismatches are visible as training programmes offered additionally to STCW minimum., as STCW competence or as offered and required by industry.

The structural mismatch of skills is not easily identified or mitigated. The QREA<sup>5</sup> report further states: “The causes of macroeconomic skills mismatches<sup>6</sup> can be both cyclical and structural.”

There may be enough graduates in this situation, but many are unable to find employment because the employers do not see them sufficiently capable of being hired<sup>7</sup>. A structural mismatch can also be present if there is systemic undersupply or oversupply of graduates that are considered qualified<sup>8</sup>. Then it is a challenge of educating the correct number of graduates that are also qualified.

The shipping industry has become a significant industrial segment, with a wide range of ship types relying on a wide range of equipment and technologies. According to the UNCTAD<sup>9</sup>, in early 2019, the total world fleet stood at 95,402 ships accounting for approximate two billion deadweight tons (dwt) of capacity, and two million seafarers employed throughout the world merchant fleet. To have current and relevant competence to operate these ships, it is clear that seafarers need to train.

## 1.1 Note on methodology

In our document D1.1.1 the methodology to develop this document was not described in detail. In this report we are looking at the current state of the educational system and the actors that set requirements and deliver seafarer training and education. We look at:

- a. Maritime education in Europe, and the European Qualifications Framework (EQF) and its implications for seafarers’ education.
- b. The minimum mandatory education for seafarers, as required from the IMO STCW Code.
- c. The additional education that is mandatory for certain types of ships and operational modes, also as per the IMO STCW Code but also according to other IMO codes (and conventions).
- d. The education delivered by the shipping industry to seafarers in its employment.

We investigate the outcome of these educational processes in terms of what they deliver. To conduct this we use mainly *Descriptive research*.<sup>10</sup>

*Descriptive research can be explained as a statement of affairs as they are at present with the researcher having no control over variable. Moreover, “descriptive studies may be characterised as simply the attempt to determine, describe or identify what is, while analytical research attempts to establish why it is that way or how it came to be”[1]. Three main purposes of descriptive studies can be explained as describing, explaining and validating research findings. This type of research is popular with non-quantified topic.*

*Descriptive research is “aimed at casting light on current issues or problems through a process of data collection that enables them to describe the situation more completely than was possible without employing this method.”[2] To put it simply, descriptive studies are used to describe various aspects of the phenomenon. In its popular format, descriptive research is used to describe characteristics and/or behaviour of sample population. It is an effective method to get information that can be used to develop hypotheses and propose associations.*

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5 Quarterly report on the -Euro Area (QREA) vol 19, No. 2 (2020)

6 According to the World Bank: “Macroeconomics connects together the countless policies, resources, and technologies that make economic development happen. Without proper macro management, poverty reduction and social equity aren’t possible” In this context a macroeconomic skills mismatch has broad causes in policies, resources and technology.

7 Skills mismatch measurement in ETF partner countries.pdf p8 <https://www.etf.europa.eu/sites/default/files/2019-05/Skills%20mismatch%20measurement ETF%20partner%20countries.pdf>

8 Tackling regional skill shortages. <https://doi.org/10.1080/13636820.2021.1931945>

9 <https://safety4sea.com/unctad-industry-shifting-towards-a-new-normal/>

10 <https://research-methodology.net/descriptive-research/>

The next step is to see whether there are discrepancies with respect to what the purpose of the education is against what it is actually delivering and what is required by the industry.

When the education is not delivering what the industry or the seafarer is expecting or needing it can be considered a structural mismatch.

## 2 The regulatory framework

### 2.1 The IMO STCW Convention and framework

#### 2.1.1 General

The Convention is commonly referred to as including both the Convention and the Code, since the paragraphs in the Convention are referred to the Annex with Code.

Under the STCW Convention, all seafarers need to meet minimum standards of competence, age, medical fitness, and approved sea-going service. Each national administration sets these standards, but as a minimum, they should reflect STCW standards and STCW Code.

To obtain an STCW certificate, it is necessary to complete a training programme approved by the issuing administration or complete an approved seagoing service period where on-the-job training takes place, often termed work-based learning or WBL. For most certificates, a combination of both is necessary.

#### 2.1.2 STCW Convention

The IMO regulations known as the STCW contain both a Convention and the Annex, including the Code. The Convention can be described as the governing principles and comprises 17 short articles covering eight pages. It also includes the attachments to the convention – Attachment 1: The 2010 Manila Amendments and Attachment 3: The Final Act of the 2010 Manila Amendments summarising the changes implemented following this meeting, covering all 50 pages. Attachment 2 is placed in the Code.

#### 2.1.3 STCW Code

This section covers the detailed regulations and starts with the two pages of Attachment 2/Resolution 2 from the 2010 Manila Amendments, where updates to common goals for the STCW are stated, and dates for implementation of the main changes agreed upon in the 2010 Manila Amendments.

The rest of the Code part is Part A Mandatory Standards, 215 pages, and Part B Recommended Guidance both on the Convention and the Code, covering 87 pages.

#### 2.1.4 Certificate of Competence (CoC)

In Attachment 1 to the Convention, updates are listed, including clarification of Certificate of Competence (CoC):

*Certificate of Competence means a certificate issued and endorsed for masters, officers and GMDSS radio operators in accordance with the provisions of chapters II, III, IV, or VII of this annexe and entitling the lawful holder thereof to serve in the capacity and perform the functions involved at the level of responsibility specified therein.*

**Here it is stated that a CoC is achieved by fulfilling the requirements of chapters II, III, IV and VII.** This may be the core requirement but more competence is required; these are from chapter VI and cover: A-VI/1 Basic Safety training; A-VI/2 Lifeboat training; A-VI/3 Firefighting; and A-VI/4 Medical training. From the above it follows that the courses of chapter VI are CoPs but appear to be required to achieve the CoC – a slight contradiction.



### 2.1.5 STCW Certificates of Proficiency (CoP)

In Attachment 1 to the Convention, updates are listed, including clarification of Certificate of Proficiency (CoP):

*STCW Certificates of Proficiency means a certificate, other than a certificate of competency issued to a seafarer, stating that the convention's relevant requirement of training, competencies, or seagoing service has been met.*

A CoP is in most cases additional to a CoC for officers, except for the chapter VI courses mentioned above which have become mandatory to obtain a licence, even if they are considered CoPs.

In other words, CoPs are documents additional to CoCs issued to the officer to certify that he or she has met the required standard of competence in a specific duty. These certificates include certificates for personnel serving on certain types of ships (tankers and passenger ships) and those assigned with safety, security, and pollution prevention duties. They certify that the holder meets STCW standards of competence in specific functions related to safety, care of persons, or cargo.

### 2.1.6 STCW certification and applicability

STCW Codes (chapter 4.1, table 3) The STCW Code lists in sections A-I to A-VIII the requirements for Certificate of Competence (CoC) and Certificate of Proficiency (CoP).

Only the CoC is required to obtain a certificate, but additional CoP(s) may be required to actually sail on certain ships in certain areas.

For example, a seafarer sailing as a first officer in the Antarctic area on an LNG-fuelled ship will be qualified by having the CoC of an Officer of the Watch, Management level (STCW A-II/3). In addition, the CoP courses of the Polar Code (STCW A-V/4), and IGF Code (STCW A-V/3) are needed. In addition, the shipping company may require the officer to have additional training courses, such as "In-House Anti-Piracy Awareness Training", see chapter 4.2.2.

### 2.1.7 Seagoing service

Prior to the initial issue of a certificate a seafarer has a requirement to conduct on-the-job training, called seagoing service:

STCW Convention regulation II/1: Have approved seagoing service of not less than 12 months as part of an approved training programme which includes onboard training that meets the requirements of section A-II/1 of the STCW Code and is documented in an approved training record book, or otherwise have approved seagoing service of not less than 36 months;

B-II/1: In approving seagoing service required by the Convention, Parties should ensure that the service concerned is relevant to the qualification being applied for, bearing in mind that, apart from the initial familiarization with service in seagoing ships, the purpose of such service is to allow the seafarer to be instructed in and to practice, under appropriate supervision, those safe and proper seagoing practices, procedures and routines which are relevant to the qualification applied for.

In maritime education, academies issue a diploma upon graduation, but in addition to educational qualifications, to obtain a valid certificate, the candidate must complete or have completed seagoing service/on the job training which is usually referred to as sea-time, where a number of specific competences are achieved. A minimum of 12 months sailing is required for deck and 6 months for engine.

There are two issues of concern with this:

1. When is sea time conducted?
2. How is sea time organised? Is it guaranteed or is there an option that sea time is not possible, leaving the graduate without a certificate of competence?

From the overview in the attached document "EU METs.xlsx", we find that there are a number of ways to arrange this.

For 1) *When is sea time is conducted*, we see a number of different models, but one of the most popular (Belgium, Croatia, Spain, Sweden, Norway) requires six months of sea time after graduation, while the other six months can be conducted during or before the education. Training in this period is on watchkeeping duties, followed by an assessment to achieve Officer Of the Watch (OOV) certification.

Some academies have this sea time integrated into the study programme (Denmark, Netherlands, UK) while some arrange for students to be contracted for sea time with shipping companies before studies commence, but the actual sea-time is completed after graduation from the MET. In both these cases, sea time is guaranteed for all who are admitted to the study programme.

In many countries and institutions (such as Norway and Croatia), it is up to the student to organise sea time, although they will receive support from the institution to achieve this. If the student is not successful in organising sea time, they do not qualify for the certificate and it is impossible to obtain a position at sea. This has been recognised as a problem, as it leads to some graduates never getting employment at sea.

In Norway a pilot project<sup>11</sup> is underway in 2022 in which sea time is integrated into the study programme and will be offered to the candidate upon admission. Previously, all students have been required to find a cadet position and obtain sea time on their own initiative, which has led to a proportion of students not obtaining a certificate and thus not being able to work at sea. The same situation applies to Croatia and several other countries.

### Conclusion:

Sea time/seagoing service is an integral part of a seafarer education towards a valid certificate. The fact that many EU countries and METs do not offer sea time as part of the study programme can cause students to complete their maritime education without gaining a maritime certificate. **This is a structural weakness. Access to seagoing service is one of the limiting factors in educating seafarers.**

### 2.1.8 STCW endorsement

STCW endorsement is a document issued to ship masters and officers, either as part of the certificate (CoC) or Certificate of Proficiency as a separate document. The purpose is to give holders of a certificate from one country a valid equivalent certificate in another country where one is seeking employment.

The certificate endorses that the national certificate has been issued in accordance with all STCW requirements. According to 2010 regulations, it is now required that the respective maritime administrations only issue all endorsements after thoroughly verifying the authenticity of any certificates and documentary evidence. Endorsements are only given to seafarers from countries on the White List. See next chapter.

Endorsement is described in Article VI-2 of the Convention:

*The issuing administration shall endorse certificates for masters and officers issued in compliance with this article in the form as prescribed in regulation 1/2 of Annex. If the language used is not English, the endorsement shall include a translation into that language.*

It is further elaborated in the Convention and the Code:

- Convention: In attachment 1, to the 2010 STCW Conference, regulation 1/2, Certificates and endorsements.
- Code: In Chapter, I General provisions, Section A-1/2 Certificates and endorsements.

In other words, endorsement states that a country must accept a valid certificate from a country on the White List and issue an endorsement allowing the seafarer to work in that country.

It is a paradox that seafarers holding an endorsed certificate cannot conduct a CoC upgrade in the country that has endorsed the certificate but must return to their country of certificate origin and conduct the CoC upgrade course there. The reason given is that the maritime administration (MA) has to approve METs that deliver CoCs, and the MA that has issued the original certificate has not approved the METs in the endorsing country.

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<sup>11</sup> <https://www.hvl.no/en/studies-at-hvl/study-programs/courses/nab3039>

A simple solution to this structural problem would be to mutually recognise CoC additional courses from METs across countries.

### Conclusion:

When it is possible to endorse certificates from the country of certificate origin, it should be possible to add CoC upgrade courses to the endorsed certificate. Instead of going back to the country of certificate origin, add CoC upgrade courses and re-do the endorsement. This could be limited to the countries on the White List, see below.

#### 2.1.9 STCW White List

The White List is a list of countries that comply with the STCW Convention in a satisfactory manner. The significance of this is that only seafarers from countries on the White List are eligible for endorsement.

From imo.org,<sup>12</sup> we have the following description of the White List:

*The first so-called "White List" of countries deemed to be giving "full and complete effect" to the revised STCW Convention (STCW 95) was published by IMO following the 73rd session of the Organization's Maritime Safety Committee (MSC), meeting from 27 November to 6 December 2000.*

*It is expected that ships flying flags of countries that are not on the White List will be increasingly targeted by Port State Control inspectors. A Flag State Party on the White List may elect not to accept seafarers with certificates issued by non-White List countries for service on its ships as a matter of policy. If it does accept such seafarers, they will be required by 1 February 2002 also to have an endorsement issued by the flag state to show that the flag state recognizes their certificate.*

*By 1 February 2002, masters and officers should hold STCW 95 certificates or endorsements issued by the flag State. Certificates issued and endorsed under the provisions of the 1978 STCW Convention will be valid until their expiry date.*

*The list will be kept under review and may be added to as other countries meet the criteria for inclusion.*

## 2.2 The European Qualifications Framework

To put maritime education in context, it is helpful to outline the EQF<sup>13</sup> framework.

Adopted in 2008, the European Qualifications Framework (EQF) sought to unify qualifications across all EU member states, providing a helpful way to cross-reference qualifications with other countries. This proved a boon for businesses seeking to employ staff from beyond the border and vice versa.

The EQF is a framework to make education across Europe comparable and transferrable. The EQF has three descriptive learning outcomes:

- **Knowledge:** in the context of EQF, knowledge is described as theoretical and/or factual.
- **Skills:** In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).
- **Responsibility and autonomy:** In the context of the EQF, responsibility and autonomy are described as the learner's ability to apply knowledge and skills autonomously and with responsibility.

It consists of eight levels related to the qualifications framework of the higher education area. The Framework for Qualifications of the European Higher Education Area (EQFHA) provides descriptors for three cycles agreed by the ministers responsible for higher education such that:

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<sup>12</sup> <https://www.imo.org/es/OurWork/HumanElement/Paginas/STCW-Convention.aspx>

<sup>13</sup> <https://europa.eu/europass/en/description-eight-eqf-levels>



EQF Level	Education
EQF levels 4	Academic or Vocational (secondary)
EQF levels 5	College Vocational
EQF levels 6	First cycle (Bachelor's Degree BSc), requiring 180 ECTS, usually a three-year study programme
EQF levels 7	The second cycle (Master's Degree MSc) requires additional 120 ECTS, usually two-year study programme
EQF levels 8	Third cycle (Doctorate Degree PhD) requiring 30 ECTS, a thesis and scientific publications.

*Table 2: EQF Levels*

Concerning the EQF, maritime education conforming to IMO STCW requirements is not well integrated with the above system. The METs providing a diploma leading to a certificate of competency at a minimum level and which are not part of a BSc or MSc degree do not provide ECTS, but some countries acknowledge this training and allow a shorter BSc programme to be conducted.

Neither are the additional training courses provided by the industry. Whether conforming to IMO STCW or not, these are not part of the EQF system (when not delivered as part of a degree programme) and do not provide any ECTS. This challenge is analysed and visualised in the report Spotlight on VET<sup>14</sup> by the European Centre for the Development of Vocational Training (Cedefop). A summary is given for each European country and is visualised for Romania in figure 2 as an example but is very much similar for maritime education in EU countries.

<sup>14</sup> <https://www.cedefop.europa.eu/en/publications/4168>

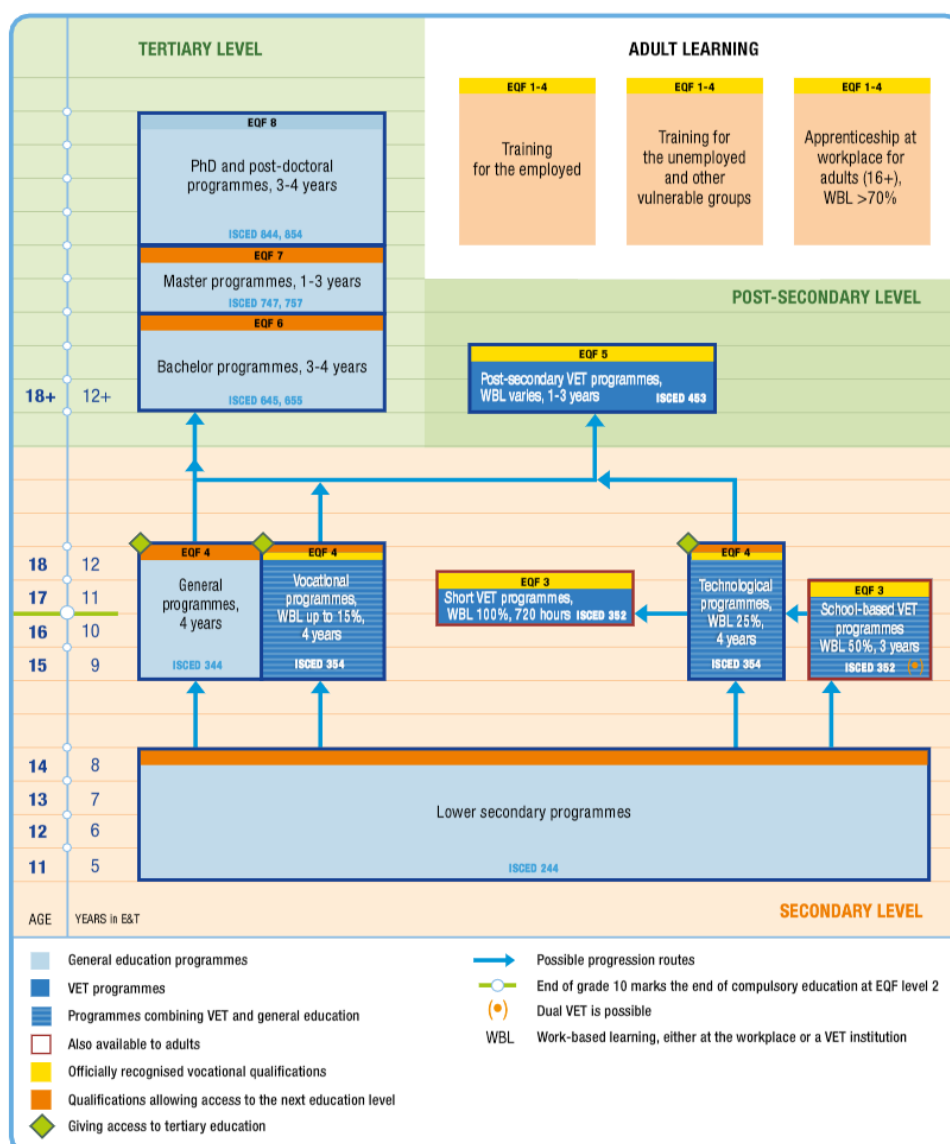


Figure 1: Spotlight on VET by CEDEFOP. Example illustrated for Romania

Although VET education does not earn the student ECTS credits, it may affect programme duration when entering a Bachelor programme in some countries. In Austria, Cyprus, the Czech Republic, Estonia, and Hungary, this is the case. In Germany, France, Latvia, Luxembourg, Malta, Netherlands, and the UK, VET is connected to a separate track of VET-based BSc and MSc with work-based learning (WBL) content. These go parallel with academic BSc and MSc, and progression to PhD is possible except in the UK.

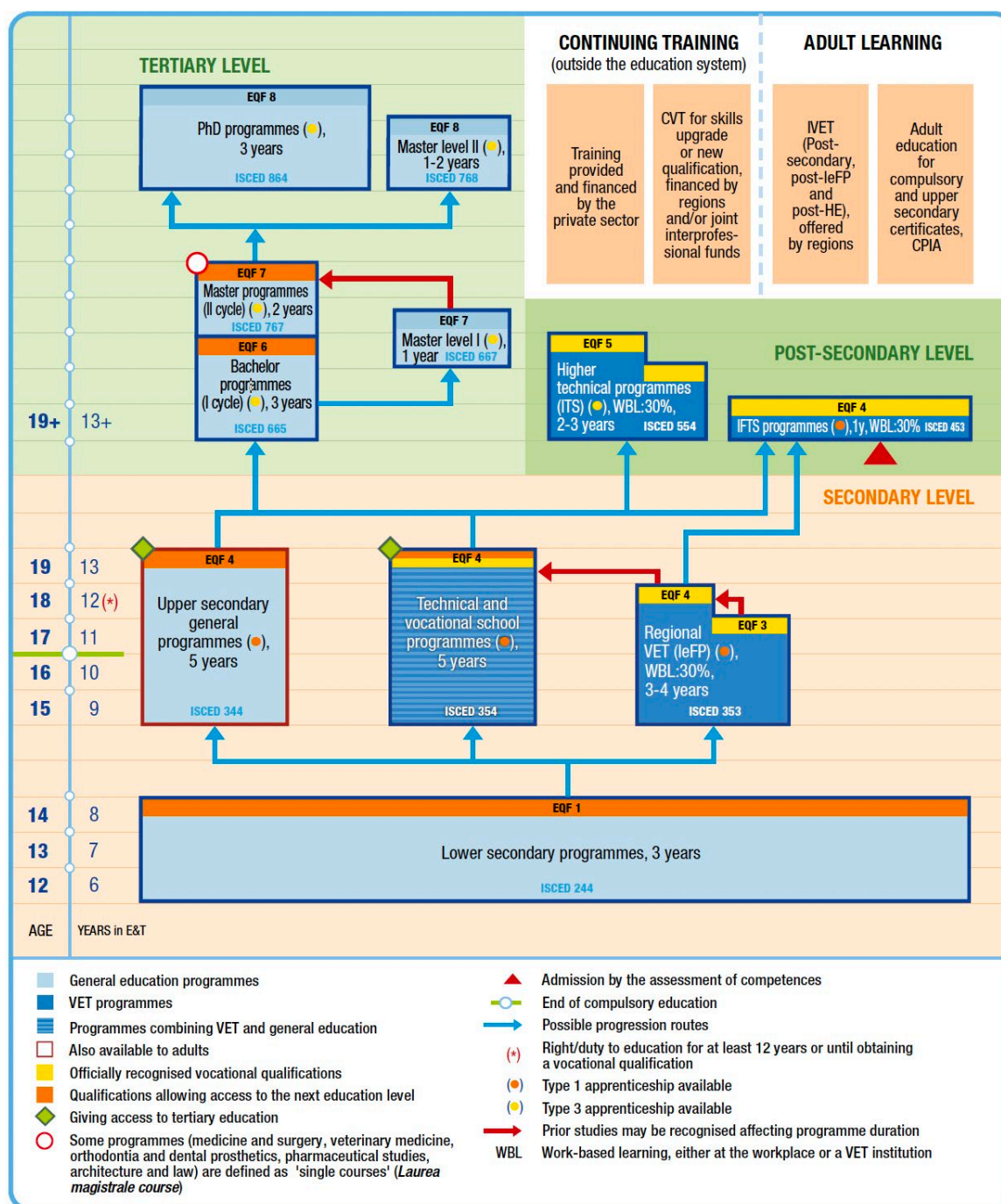


Figure 2: Example of country (Italy) where EQF level 5 is not leading to higher education.

## 2.2.1 Conclusions

Seafarers who conduct their education in vocational (non-degree) programmes do not earn any ECTS credits towards a first cycle/BSc degree in higher education. It may however shorten the length of a BSc programme for some countries. This is a structural weakness, as a majority of seafarers have to restart their education at the tertiary level.

In other words, in most countries where seafarers conduct vocational studies they do not earn any ECTS credits towards a BSc degree. In some countries the students are offered a shortened BSc education (Netherlands)

## 2.3 METs STCW curricula

### 2.3.1 MET academies and universities

MET academies deliver many types of training:

1. STCW minimum mandatory level CoC and as part of a study programme, BSc or MSc, following the Bologna Process. Typically, a university of applied sciences. Public or private.
2. STCW minimum mandatory level CoC as vocational education, not part of BSc or MSc. Some or no additional subjects to STCW minimum mandatory. Typically, a vocational school or college. Public or private.
3. STCW minimum CoP for certain ship types and regions, etc. These are shorter courses and not educational programmes. University, vocational academy or independent company. Public or private.
4. In addition to the STCW training, training is required for certain types of ships, regions, or operations. Most of these are private. See chapter 4.3 Shipping industry associations and interest groupings. Those who deliver the training required by the shipping industry, in general, respond to market needs or serve the needs of its members.

MET academies are either public or private. Those which are private have ownership that ranges from independent (e.g., RelyOnNutec), that cater to all, to being owned by a shipping organisation that primarily serves its members (e.g., BIMCO) or to be owned by one shipping company with the primary goal to serve that company (e.g. Maersk Training). Most, if not all, are open to participation from anyone willing to pay the participation fee.

### 2.3.2 STCW programmes and courses

In the file **EU METs.xlsx** we have mapped the STCW-related maritime training and education programmes across Europe and found that METs in EU member countries and EEA countries have listed 2,109 STCW-related educational programmes and courses. In this context we find it useful to reference the definitions of CoC and CoP, see chapters 2.1.4 and 2.1.5. The educational programme is the education required to obtain a certificate qualifying for a position, a Certificate of Competency (CoC).

A course is additional competence for certain ship types or regions, a Certificate of Proficiency (CoP). The CoP only gives specific qualifications when added to a CoC for officers. Note that CoPs may be part of the STCW minimum requirements for certain types of ships and regions.

The list includes a total of 132 BSc & MSc programmes that also lead to a maritime certificate of competence, which are three- or five-year programmes, respectively. A total of 449 programmes which are vocational, without a degree, are listed. It can be noted that there are between three to four times as many degree programmes giving a CoC than non-degree programmes leading to a CoC. This does not directly equate to number of study places or graduates, but serves as a good indication of the numbers being educated through degree or non-degree programmes.

Additionally there is no difference between the STCW-related content that is referenced by METs which give a degree and those that are vocational.

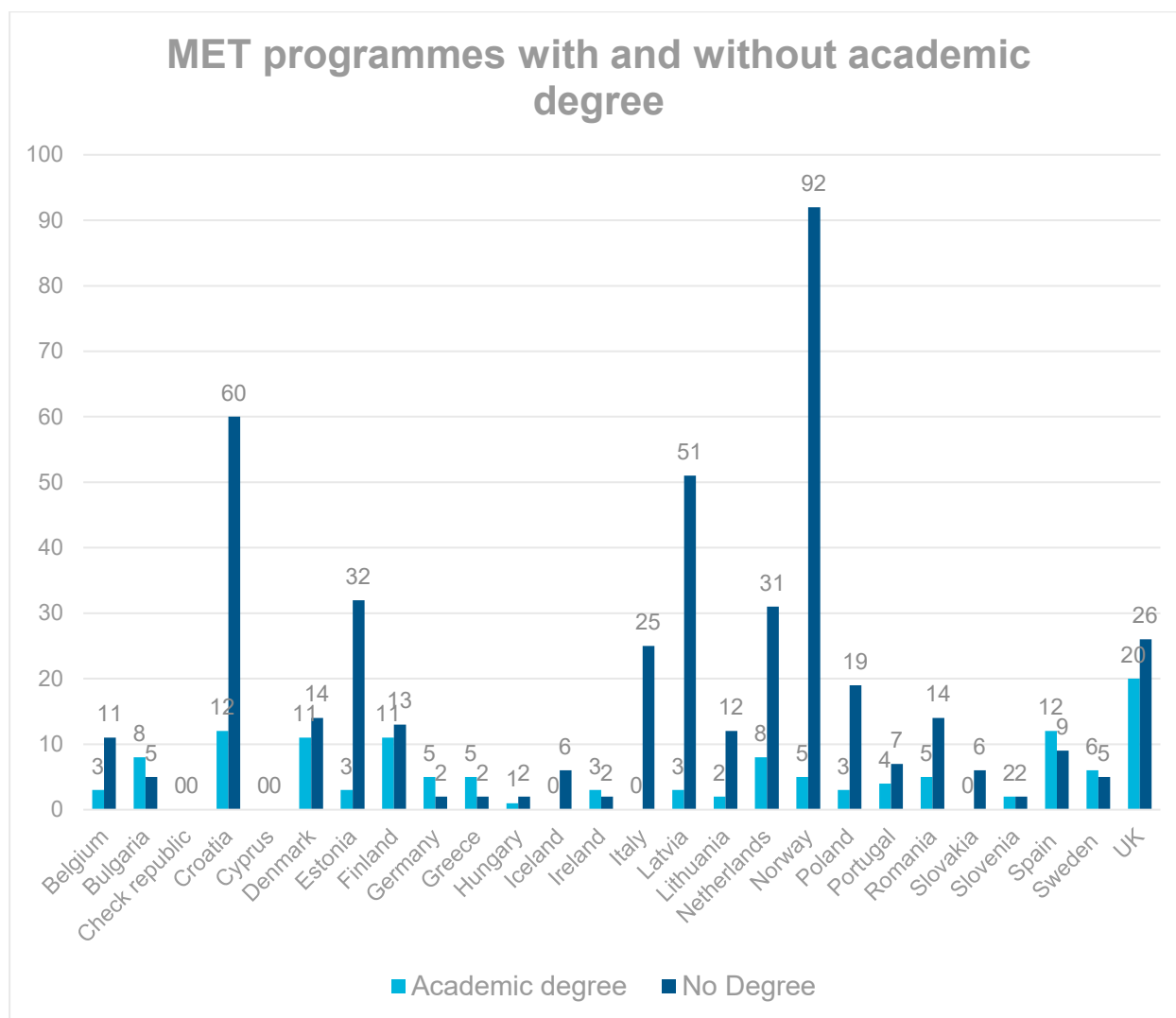


Figure 3: Degree vs non degree maritime educational programmes

<b>Total courses &amp; programmes in dataset:</b>		<b>2109</b>
<b>Educational programme or course</b>	<b>#</b>	
Deck officer operational and management level	258	
Engineer officer operational and management level	289	
Electro-technical officer and rating (ETO, ETR)	34	
<b>All officer programmes (including ETO &amp; ETR):</b>	<b>581</b>	
Degree programmes, MSc & BSc	132	
Non-degree programmes, vocational	449	
<b>Educational programmes referring to A-II and A-III, i.e. mandatory CoC</b>	<b>581</b>	<b>581</b>

CoP courses, mandatory		
Courses referring to A-IV, mandatory radio training	120	
Courses referring to A-VI/1, mandatory safety training	246	
Courses referring to A-VI/4, mandatory first aid	143	
Courses referring to A-VI/2, mandatory lifeboat	109	
<b>Total mandatory CoP courses</b>	<b>618</b>	<b>618</b>
<b>Courses referring to other STCW references, not mandatory minimum</b>	<b>867</b>	<b>910</b>
<b>SUM</b>		<b>2109</b>

Table 3: Number of educational programmes and courses, see EU METs.xlsx

### 2.3.3 Vocational programmes, no academic degree

In European countries 449 out of 581 maritime educational programmes are offered but are not part of a degree programme. These are distributed as follows.

Country	Academic	No
Belgium	3	11
Bulgaria	8	5
Check republic	0	0
Croatia	12	60
Cyprus	0	0
Denmark	11	14
Estonia	3	32
Finland	11	13
Germany	5	2
Greece	5	2
Hungary	1	2
Iceland	0	6
Ireland	3	2
Italy	0	25
Latvia	3	51
Lithuania	2	12
Netherlands	8	31
Norway	5	92
Poland	3	19
Portugal	4	7
Romania	5	14
Slovakia	0	6
Slovenia	2	2
Spain	12	9
Sweden	6	5
UK	20	26
SUM	132	448

Table 4: Degree vs non-degree programmes

We note that four countries do not have any maritime education connected with a degree (Iceland, Italy, Check Republic and Slovakia).

We also see from the list of programme content that there is no significant difference between degree and non-degree courses concerning STCW codes. For example:

Country	Academy	Programme	STCW	Degree
Belgium	Antwerp Maritime Academy	Nautical sciences	II/1	BSc
Belgium	VDAB Zeebrugge	Officer of a navigational watch	II/1	No
Finland	Etala-Ktomenlaakso Vocational College	Watchkeeping officer	II/1	No
Finland	Aland University of Applied Sciences	Bachelor's Degree in Nautical Science	II/1	BSc
Spain	University Of Laguna	Piloto de Primera de la Marina Mercante	II/2;para 1-2 MA	No
Spain	University Of La Coruna	Piloto de Primera	II/2; para 1-2 CM II/2;para 3-4 CM	BSc

Table 5: Examples of STCW codes references by degree and non-degree study programmes.

### Conclusion:

From the above, we can conclude that maritime education is split between degree and non-degree education, with approximately 3.5 times more non-degree programmes. Combined with the fact that non-degree maritime study programmes give little or no recognition towards academic education, this presents a structural mismatch that limits opportunities for maritime professionals to develop their careers further.

We find no significant difference in STCW-related programme content by comparing the data given for the BSc and MSc programmes with the non-degree programmes.

In other words, both degree and non-degree education deliver the same STCW-minimum competence.

## 2.4 Bachelor's degree programmes

Although the names of the training programmes may differ, BSc programmes all contain the mandatory STCW courses to achieve a Certificate of Competence (see table 4). In addition, the study programmes may contain optional courses. For example, the mandatory minimum STCW Deck programme leading to an unlimited certificate would contain the following mandatory training content:

### 2.4.1 Mandatory minimum Deck

These are the courses required to complete an educational programme. Together with usually 12 months of sea time, these will be sufficient to earn the Officers in Charge of a Navigational Watch certificate. (Engine, Electrician and Ratings are not listed for simplicity)

STCW II/1:	CoC	<u>Officers in Charge of a Navigational Watch</u> on ships of 500 gross tonnage or more
STCW II/2:	CoC <sup>15</sup>	<u>Masters and Chief Mates</u> on ships of 500 gross tonnage or more
STCW IV/2:	CoC	Mandatory minimum requirements for certification of <u>GMDSS Radio Operators</u>
STCW VI/1:	CoP	Safety familiarisation, basic training and instruction for all seafarers.
STCW VI/2-1:	CoP	Issue of certificates of proficiency in survival craft, rescue boats other than fast rescue boats.
STCW VI/3:	CoP	Training in advanced firefighting.
STCW VI/4:	CoP	Mandatory minimum medical first aid and medical care
STCW I/9:	Medical certificate	Medical standards, including minimum In-service physical and eyesight requirements for seafarers

Table 6: Mandatory minimum competence (CoC) for deck officer of the watch (OOW)

<sup>15</sup> II/2 applies to the management level, II/1 to operational level.



## 2.4.2 Additional Deck (CoP)

Some of the STCW courses below must be completed to serve on specific ship types or regions. As seen from the attached EU METs Updates.xlsx, Degree vs no D tab, these are not offered as part of the educational programme. Here no educational programmes list any of the codes V or VI as part of the programme, as they are not mandatory minimum. Hence, these courses are added later, and the seafarer or ship owner/operator covers the cost.

CODE	Competence	Applies to
STCW V/1-1-1:	CoP	Masters, officers and ratings, basic oil and chemical tankers
STCW V/1-1-2:		Masters, officers and ratings, advanced oil tanker cargo
STCW V/1-1-3:		Masters, officers and ratings, advanced chemical tanker cargo
STCW V/1-2:		Masters, officers and ratings on liquefied gas tankers
STCW V/1-2-1:		Masters, officers and ratings on basic liquefied gas tankers cargo ops
		Masters, officers and ratings on advanced liquefied gas tankers ops.
STCW V/2-1:		Masters, officers, ratings and other personnel on passenger ships, crowd control
STCW V/2-2:		Masters, officers, ratings and other personnel on passenger ships, crisis management
STCW V/3-1:		Masters, officers and ratings on ships subject to IGF Code advanced training
STCW V/3-2:	CoP	Masters, officers on ships subject to IGF Code advanced training
STCW V/4-1:		Masters and deck officers on ships operating in <u>polar waters</u> , <u>Basic Training (Polar Code)</u>
STCW V/4-2:	CoP	Masters and deck officers on ships operating in <u>polar waters</u> , <u>Advanced training (Polar Code)</u>
STCW VI/2-1:	CoP	Issue of certificates of proficiency in fast rescue boats.
STCW VI/3:	CoP	Training in advanced fire-fighting
STCW VI/5:	CoP	Issue of certificates of proficiency for ship security officers
STCW VI/6:	CoP	Security-related training and instruction for all seafarers

*Table 7: Additional competence for deck officers - (CoP)*

In addition, a wide range of competence and training recommendations are listed in the B section of STCW. These are also not typically part of the educational programmes and must be added later and the cost covered by the seafarer or owner/operator. Examples of such courses are:

- STCW section B V/f: Guidance on training and experience for personnel operating dynamic positioning systems (basic and advanced)
- STCW section B V/e: Guidance on training and experience for personnel onboard offshore supply vessels

### Conclusion:

The STCW, successful in setting a minimum standard of competency, lists a high number of competency programmes that are mandatory minimum for ship types and roles, but which are not part of the basic education of seafarers.

Of the section A coded competences, there are 15 mandatory minimum competency programmes that are not CoC. There are also four competency programmes that are mandatory for issuing of a certificate that are CoP (and should in reality be CoC?). These are for all intents and purposes treated as CoCs. In the B section there are further seven competences that are recommended, and these are left to the shipping industry to deal with, such as Dynamic Positioning which is handled by the Nautical institute. Others are handled by other industry associations, see following chapters.



## 2.5 Master of Science (MSc) degree programmes<sup>16</sup>

Maritime education institutions provide MSc programmes in the maritime sector, but few are connected with the certificate requirements of seafarers. We have found some exceptions to this, and it is in Belgium, Bulgaria, Denmark, Croatia, and Portugal where the maritime studies that lead to a navigator or engineering certificate<sup>17</sup> when completed at the BSc level can be continued with another two years of study to achieve MSc level. The candidate then emerges with both a maritime certificate from the deck department or engine department and an MSc degree.

Country	MET	Program name	STCW Ref.
<b>Belgium</b>	Antwerp Maritime Academy	Nautical science	II/2; para 1-2 MA
<b>Bulgaria</b>	Nicola Y. Vaptsarov Naval Academy	Navigation	II/2; para 1-2 MA, II/2; para 3-4 MA
		Marine engineering	III/2 CE
<b>Croatia</b>	University of Rijeka	Maritime studies	MSc in Science
<b>Denmark</b>	Svendborg International Maritime Academy	Senior officer – master mariner	II/2; para 1-2 MA, II/2; para 3-4 MA, III/1
<b>Denmark</b>	Svendborg International Maritime Academy	Senior officer – dual purpose marine chief engineer and master mariner	II/2; para 1-2 MA, II/2; para 3-4 MA, III/2 CE
		Senior officer – dual purpose marine chief engineer	III/2 CE, II/1
<b>Portugal</b>	ENIDH - Escola Superior Nautica Infanter D. Henrique	Deck and bridge operations	II/2; para 1-2 MA
<b>Portugal</b>	ENIDH - Escola Superior Nautica Infanter D. Henrique	Marine engineering	III/2 CE

*Table 8 Master degree programmes with CoC*

### Conclusion:

Five EU countries provide MSc education that leads to a maritime certificate. These study programmes could serve as models for further investigation as to what should be included in a Higher Standard Education, see D 1.2.1.

VET academies do not have a purpose or mission to carry out innovation or research like universities, and are fully focused on education. They therefore have little or no resources for research and development. Developing new competence programmes is thus very difficult to accomplish in VET academies.

From the attached document All European METs (pdf), we have a comprehensive overview of the educational systems, including VET education of member countries. Here we see that vocational education on levels 4 and 5, and 6 are connected with the higher education system at the BSc level. This means a maritime professional, in most cases, must restart their education by starting a BSc education from scratch if they are to pursue higher competence, as their maritime education is not recognised with ECTS credits.

<sup>16</sup> In this document we are looking into whether METs deliver Master of Science degrees that are integrated with the maritime diploma and certificate. This is not to be confused with the term Master or Ship Master which is used for the highest-ranking officer operating the ship. Captain is also used instead of Ship Master.

<sup>17</sup> <https://www.enautica.pt/en/courses-4/master-courses-10/>

## 2.6 Industry competency requirements

### 2.6.1 Training and education in addition to STCW

Many METs and maritime organisations offer maritime-related education and training in addition to the STCW, or not part of the STCW certificate requirements system but closely related.

Some are valuable competencies onboard ships, and some are related to land and ship management. The courses listed below are examples and show that many training programmes are offered outside of STCW. Some of them will be candidates to become STCW courses. This suggests that the STCW minimum training offered falls very much short of the industry's needs, and giving maritime professionals relevant courses would narrow the gap left for the industry to close.

To illustrate how the industry handles this, we list below two cases; one tanker and one cable lay vessel competence matrixes from a crewing company. Details listed in chapter 5.2, Competence matrix. The competence matrixes<sup>18</sup> (see appendix 4.2) illustrate the additional competence required for a crew onboard a cable lay vessel and a tanker when employed through an international ship management company. For distribution on position, see the appendix.

For the cable lay vessel:

- 19 competencies are CoCs and are the mandatory minimum and thus part of basic education
- 23 are COC or CoP added to a mandatory minimum and need to be conducted at the expense of the shipping company or the seafarer
- 33 are other competence not directly specified by IMO STCW but required by industry

In summary, this shows that the seafarer and the ship owner are obliged to add a considerable amount of competence to the basic education, both STCW courses and non-STCW courses, in order to be fully qualified to fill a position on the referenced cable lay vessel.

### 2.6.2 Non-STCW courses from private METs and industry associations

We summarise a selection of industry associations and private METs that offer training above and beyond STCW, details below:

- 115 educational programmes lasting up to 24 months, Lloyd's Maritime Academy
- Intertanko offers 72 technical competencies: five for navigation, nine for mooring operations, 45 for cargo operations and 13 for engine
- 15 Masterclasses offered by the Baltic and International Maritime Council – BIMCO
- 12 courses by IMCA
- OCIMF courses
- 14 Nautical Institute
- 19 Leadership courses, 120 other courses and 12 STCW courses from Maersk Training<sup>19</sup>
- 31 courses Ask Safety
- 30 courses Rely on NuTeck
- Seven educational programmes in insurance, from the International Group of P&I Clubs (IGP&I)
- 119 courses from the Offshore Petroleum Industry Training Organisation – OPITO
- Unspecified number of courses related to GOMO and NORSOK.

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<sup>18</sup> OSM Crew Management 2013/2014

<sup>19</sup> <https://www.maersktraining.com/courses/>

## Conclusion

In all, the organisations above– which is far from a complete list of industry associations that offer training to seafarers – offer 571 courses and programmes above and beyond STCW. This is a considerable amount and shows that STCW is far from delivering everything the shipping industry needs.

## 2.7 Training requirements and their implementation

We have found in previous reports, summed up in D1.2.1, that in the future much more additional competence will be required of maritime professionals, both to further the seagoing career and to transition to work ashore. These competencies are not currently part of or required by the STCW Convention but are coming from formal and informal sources such as industry organisations, industry best practices, new technology developments, new advanced operations and more.

The figure below shows the elements of maritime competence and training in terms of where the requirements come from:

- the red-top layer establishes the international competence requirements
- the green layer relates to national and regional requirements
- the yellow layer relates to national and local requirements within nations
- the blue layer signifies international as well as regional, and national requirements

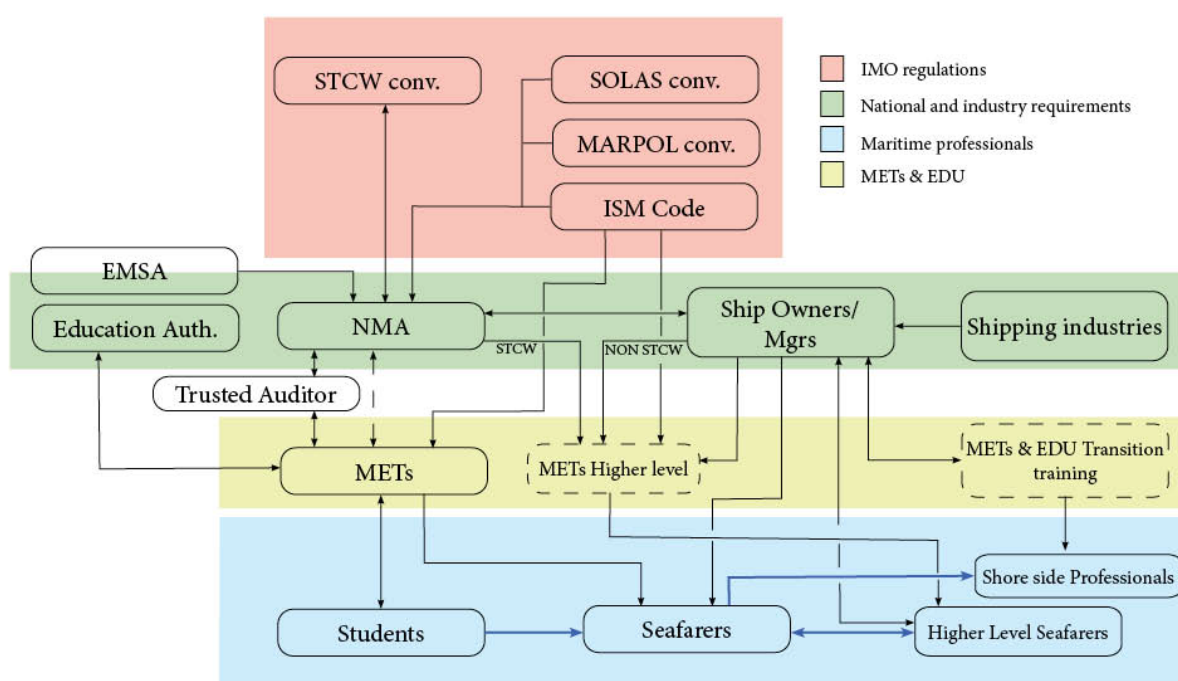


Figure 4: Maritime training and education overview

The figure illustrates what we have found in this analysis. The top layer sets the requirements and is interpreted through two layers – green and yellow – and by many different bodies on the way to the blue layer of seafarers who are then, by definition, at the same level of competence for the same occupational profiles. This is formally correct as per certificates even if there are differences: some educational programmes deliver STCW only while others have added additional subjects to achieve BSc and even MSc qualifications. These additional competencies do not count towards the STCW certification.

This model is understandably causing a number of differences in achieved competence due to the layers. The red layer setting the standard influences standards in two ways. This causes a lot of effort from many players to supplement and add to the level of STCW. Most notably, the IMO issues Guidance and Model Courses to help countries implement training to meet STCW requirements. These are only issued as supporting documentation, and many states implement the courses differently, which is perfectly fine. But on the other hand, this has caused confusion and difficulties both for ship owners and seafarers when recommendations are suddenly treated as requirements<sup>20</sup>

As can be seen from this report, the shipping industry's response is to establish their training programmes and even training academies, where the majority of training is outside of STCW requirements.

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<sup>20</sup> <https://www.ics-shipping.org/docs/default-source/resources/safety-security-and-operations/industry-recommendations-for-ecdis.pdf?sfvrsn=6>

### 3 Conclusions

In this report, we have reviewed STCW-related courses and programmes and training programmes offered by the shipping industry in addition to STCW.

*We find the key structural mismatches to be:*

- (1) The industry need for competence materialises and is clearly visible through a large number of training courses and programmes offered by the shipping industry and associated METs to their members and to maritime professionals in general. There is no efficient pathway to communicate these industry needs in a coordinated manner to METs, maritime authorities and the IMO, who are all part of the process to establish such new competence courses and programmes. This leads to a huge variety and high number of courses that overlap in content and purpose, and there is no coordinated recognition of increased competence in terms of ECTS, for example, or similar.
- (2) Competence obtained towards or in addition to the STCW minimum is not recognised by higher education institutions unless it is part of a BSc or MSc education. When not part of a university study programme the STCW education does not give credits (ECTS) towards a university degree. Despite this, we find no significant difference in STCW related programme content by comparing the data given for the BSc and MSc programmes with the non-degree programmes. For example, vocational maritime training and education in Italy is similar to BSc nautical studies in other countries but does not lead to a bachelor's degree. In other words, both degree and non-degree education deliver the same STCW-minimum competence, but the non-degree programme does not provide study credits. **This is a barrier to developing the seafarer career, lifelong learning and accessing higher education in general.**
- (3) Training that goes towards STCW certificate updates, such as those resulting from the STCW 2010 Manila amendments, can only be conducted in the certificate-issuing country. This means that seafarers who are working under certificate endorsements in other countries must travel back to their home country to conduct the additional training. **This is a barrier to internationalisation and mobility, as seafarers crossing borders pose a potential burden for their employer when the certificate needs updating.**
- (4) Seafarers' educational programmes all cover the mandatory minimum to achieve a certificate, but do not include many of the mandatory minimum for certain ship types and sailing areas, as these mandatory minimum competence requirements are optional mandatory minimum competence requirements. Students enrolling in education in Europe will discover that they need additional training to fulfil a role at sea in terms of a number of additional courses paid out of their pocket or by the ship owner, to be fully qualified. This varies depending on the ship type they are sailing on and country educated in and represents a structural mismatch, as it would be expected that all mandatory minimum competence is included in the education.
- (5) Sea time/seagoing service is an integral part of seafarer education towards a valid certificate. The fact that many EU countries and METs do not offer sea time as part of the study programme can cause students to complete a maritime education that does not lead to a maritime certificate. Access to seagoing service is one of the limiting factors in educating seafarers.
- (6) Five EU countries provide MSc education that leads to a maritime certificate. These study programmes could serve as models for further investigation as to what should be included in a Higher Standard Education, see D1.2.1.
- (7) Maritime education is split between degree and non-degree education, with approximately 3.5 times more non-degree programmes. Combined with the fact that non-degree maritime study programmes give little or no recognition towards academic education, this is clearly a structural mismatch affecting the ability of maritime professionals to develop their careers further. We find no significant difference in STCW related programme content by comparing the data given for the BSc and MSc programmes with the non-degree programmes. In other words, both degree and non-degree education deliver the same STCW-minimum competence.
- (8) In a sample of industry associations that offer training to seafarers, we find that they offer 571 courses and programmes above and beyond STCW. This is a considerable amount and shows that STCW is far from delivering everything the shipping industry needs.

## 4 Attachments

### 4.1 STCW Codes

The STCW Code lists in sections AI – AVIII the requirements for Certificate of Competence (CoC) and Certificate of Proficiency (CoP) as follows:

STCW Chapter Mandatory (M)/ Optional (O) or Comply (C)	Section STCW	Man. min <sup>21</sup>	Description
C	<b>Chapter 1: General Provisions</b>		
C	STCW I/1:		Definitions and clarifications
C	STCW I/2:		Certificates and endorsements
C	STCW I/3:		Principles governing near coastal voyages
C	STCW I/4:		Control procedures
C	STCW I/5:		National provisions
C	STCW I/6:		Training and assessment
C	STCW I/7:		Communication of information
C	STCW I/8:		Quality standards
M	STCW I/9:		Medical standards, including minimum In-service physical and eyesight requirements for seafarers
C	STCW I/10-16		Certificates and training
	<b>Chapter 2: STCW Code for Standards Regarding the Master and Deck Department (Certification)</b>		
M	STCW II/1:	CoC	<u>Officers in Charge of a Navigational Watch</u> on ships of 500 gross tonnage or more
M	STCW II/2:	CoC <sup>22</sup>	<u>Masters and Chief Mates</u> on ships of 500 gross tonnage or more
M	STCW II/3:	CoC	<u>Officers in Charge of a Navigational Watch and Masters</u> on ships of less than 500 gross tonnage, engaged on near-coastal voyages
O	STCW II/4:	CoP	<u>Ratings Forming Part of a Navigational Watch</u>
M	STCW II/5:	CoC	<u>Ratings as Able Seafarer Deck</u>
	<b>Chapter 3: STCW Code for Standards Regarding Engine Department (Certification)</b>		
M	STCW III/1:	CoC	<u>Officers in Charge of an Engineering Watch</u> in a manned engine-room or as designated duty engineers in a periodically unmanned engine-room
M	STCW III/2:	CoC	<u>Chief Engineer and Second Engineer</u> officers on ships powered by main propulsion machinery of 3,000 kW propulsion power or more.
M	STCW III/3:	Coc	<u>Chief Engineer officers and Second Engineer</u> officers on ships powered by main propulsion machinery of between 750 kW and 3,000 kW propulsion power
O	STCW III/4:	CoP	<u>Ratings Forming Part of an Engineering Watch</u> in a manned engine-room or designated to perform duties in a periodically unmanned engine-room
M	STCW III/5:	CoP	<u>Able Seafarer Engine</u> in a manned engine-room or designated to perform duties in a periodically unmanned engine-room.
O	STCW III/6:	CoC	<u>Electro-Technical Officers</u>
M	STCW III/7:	CoP	<u>Electro-Technical Rating</u>
	<b>Chapter 4: STCW Code for Standards Regarding Radio Operators (Certification)</b>		

<sup>21</sup> Mandatory Minimum requirement for a position

<sup>22</sup> II/2 applies to the Management level, II/1 to operational level. Separate requirements for ships over 3000 GT was added in the 2010 Manila Amendments where it was noted that administrations could add national requirements and minimum sea-time as chief mate of 12 months and master of 36 months was added.

M	STCW IV/2:	CoC	Mandatory minimum requirements for certification of <u>GMDSS</u> Radio Operators
<b>Chapter 5*: STCW Code for Standards Regarding Special Training Requirements for Personnel on Certain Types of Ships</b>			
O	STCW V/1-1-1:	CoP	Masters, officers and ratings, basic oil and chemical tankers
O	STCW V/1-1-2:		Masters, officers and ratings, advanced oil tanker cargo
O	STCW V/1-1-3:		Masters, officers and ratings, advanced chemical tanker cargo
O	STCW V/1-2:		Masters, officers and ratings on liquefied gas tankers
O	STCW V/1-2-1:		Masters, officers and ratings on basic liquefied gas tankers cargo ops
O	STCW V/1-2-2:		Masters, officers and ratings on advanced liquefied gas tankers ops.
O	STCW V/2-1:		Masters, officers, ratings and other personnel on passenger ships, crowd control
O	STCW V/2-2:		Masters, officers, ratings and other personnel on passenger ships, crisis management
O	STCW V/3-1:		Masters, officers and ratings on ships subject to IGF Code basic training
O	STCW V/3-2:	CoP	Masters, officers on ships subject to IGF Code advanced training
O	STCW V/4-1:		Masters and deck officers on ships operating in <u>polar waters</u> , Basic Training (Polar Code)
O	STCW V/4-2:		Masters and deck officers on ships operating in <u>polar waters</u> Advanced training (Polar Code)
<b>Chapter 6*: STCW Code for Standards Regarding Emergency, Occupational Safety, Security, Medical Care and Survival Functions</b>			
M	STCW VI/1:	CoP	Safety familiarisation, basic training and instruction for all seafarers.
O/M	STCW VI/2-1:	CoP	Issue of certificates of proficiency in survival craft, rescue boats other than fast rescue boats.
O/M	STCW VI/2-1:	CoP	Issue of certificates of proficiency in fast rescue boats.
O/M	STCW VI/3:	CoP	Training in advanced firefighting.
M	STCW VI/4:	CoP	Mandatory minimum medical first aid and medical care
O	STCW VI/5:	CoP	Issue of certificates of proficiency for ship security officers.
O	STCW VI/6:	CoP	Security-related training and instruction for all seafarers.
<b>STCW Code - Additional Resources under STCW Convention</b>			
<u>STCW Sections B-V/a to B-V/f:</u>			
O			Sections B-V/a, B-V/b, B-V/c, B-V/d, B-V/e, and B-V/f - additional special training requirements for personnel on certain types of ships
<u>STCW Table B-I/2:</u>			
O			List of Certificates or Documentary Evidence Required Under the STCW Convention

*Table 9: STCW codes, CoCs are mandatory minimum, CoPs are optional/additional for officers*

\* According to 2.2.4 Certificate of Competence – CoC2, only chapters II, III, IV, or VII give CoC

## 4.2 Industry competence tables

### 4.2.1 Cable lay vessel

The table lists compulsory certificate training and additional training that must be in place before a candidate is considered qualified.





- M – Mandatory concerning STCW code, either from education, CoC or additional CoP
- P – Principal – required by customer/principal, CoP/additional
- C – Company – required by shipping management company, CoP or additional
- CoC – Certificate of Competence, mandatory minimum at the time the matrix was created
- CoP – Certificate of Proficiency, additional training.
- O – Other additional training.

		Certificate
M	CoC	Basic Safety Certificate - STCW 95 A-VI/1
M	CoC	Chief Cook Certificate of Competency
M	CoC	Chief Engineer Officer COC - Motor - STCW Re...
M	CoC	Chief Engineer Officer End. - Motor - STCW Re...
M	CoC	Chief Mate COC - STCW Reg. II/2
M	CoC	Chief Mate End. -STCW Reg II/2
M	CoC	General Operator Certificate of Competency
M	CoC	General Operator Endorsement
M	CoC	Master Mariner COC - STCW Reg. II/2
M	CoC	Master Mariner End. -STCW Reg. II/2
M	CoC	Medical Care - STCW 95 A-VI/4.2
M	CoC	Medical First Aid Certificate - STCW 95 A-VI...
M	CoC	Officer in Charge of a Navigational Watch CO...
M	CoC	Officer in Charge of a Navigational Watch End... (
M	CoC	Officer in Charge of an Engineering Watch CO...
M	CoC	Officer in Charge of an Engineering Watch End...
M	CoC	Second Engineer Officer COC - Motor- STCW Re...
M	CoC	Second Engineer Officer End. - Motor - STCW R...
M	CoC	Profic. in Surv. Craft & Rescue Boats Cert. -...
		Training additional to mandatory minimum training
M	CoP	Profic. in Surv. Craft & Rescue Boats Cert. -...
M	CoP	Ratings forming part of a Navigational Watch...
M	CoP	Ratings forming part of an Engineering Watch...
M	CoP	Advanced Fire Fighting Certificate - STCW 95...
M	CoP	Dynamic Position Operator Certificate, Full
M	CoP	Ship Security Officer Certificate (STCW A-VI...
M	CoP	Compressed Air Emergency Breathing System In...
M	CoP	Proficiency in Designated Security Duties (S...
M	CoP	Security Awareness Course ( STCW A-VI/6-1)
M	CoP	Authorized Gas Tester Level 3 OPITO Approved
M	CoC*	Bridge (Maritime Crew) Resource Management C...
M	CoP	Civil Aviation Authority Offshore Operator
M	CoP	Control of Substances Hazardous to Health (E...
M	CoC*	ECDIS Course (IMO Model 1.27)
M	CoC*	Engine Resource Management (STCW 2010) (
M	CoP	Environmental Awareness for Oil and Gas Pers...
M	CoP	Fugro Corporate QHSE Introduction (Elearning...
M	CoP	Furuno ECDIS FEA 2107/FEA 2807
M	CoC*	High voltage course
P	CoP	Hydraulic Ship Crane Operator (G20) Course (
P	CoP	Hygienic Course (Fugro)

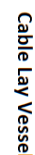


	o	Incident /Accident Investigation / Root Caus...
M	o	K-Pos Maintenance Course
M	o	Lifting Operations and Lifting Equipment Reg...
P	o	Manual Handling -E-learning
P	CoP	Medical Emergency - First Aid (STCW A-VI/4.1...
P	o	Offshore Crane Operator G5 Course
P	o	Onboard Familiarization Course (Fugro) Portable Appliance Testing
P	o	Provision and Use of Work Equipment Regulati...
P	o	Risk Assessment Course E-learning Shipboard Safety Officer
P	o	Slinger and banksman course
C	o	Star Information & Planning System Course
C	o	Wire Rope Socketing (RESIN) Course
C	o	Working at Height (Elearning)
C	o	Basic Instrumentation & Process Control (In-H...
C	o	Bridge Equipment Familiarization (In-House)
C	CoP	Dynamic Positioning - Basic Course
C	o	Electrotechnology Course
C	o	In-House Anti-Piracy Awareness Training
C	o	In-House Hydraulics & Pneumatics
C	o	In-House Refrigeration
C	o	ISM Course
C	o	Maritime Resource Management
C	o	Navigation for Deck Officers (In-House)
C	o	P.E.O.S and H.R
C	o	Shiphandling (In-House)
C	o	Ship's Catering Services - NC2
C	o	Ship's Catering Services NC1
P	o	Work Attitude and Value Enhancement Seminar
P	o	Basic Offshore Safety & Emergency Course, OL...
P	o	Basic Offshore Safety & Emergency Course, OP...
P	o	Helicopter Landing Officer Course OLF (2 yr)
P	o	Helicopter Underwater Escape Course
P	o	Rescue at Height - Rescue Genie Course
P	o	Sparrows 3 (Offshore Crane Operator Stage 3)
P	o	Line Training - HLO OLF

*Table 10: Compulsory certificate training and additional training*

\* The table and matrix are from 2014, and at that time these courses were additional CoC courses added to seafarers' education following the STCW 2010 Amendments.

- 19 competencies are CoCs and are the mandatory minimum and thus part of basic education
- 23 are COC or CoP added to a mandatory minimum and need to be conducted at the expense of the shipping company or the seafarer.
- 33 are other competence not directly specified by IMO STCW



**Legend**

✓ - Required on Rank

**Requirement**

M - Mandator

P - Principal

C - Company

I - Internal

#### 4.2.2 Tanker

The competency matrix for a tanker by an international ship management company<sup>18</sup>. For distribution on position see next page.

The competence from the heading “End of compulsory certificate training...” is additional to training that can be expected from a candidate qualified through normal maritime education. Courses down to “**Course**” are STCW competencies that are not a mandatory part of general education and are only relevant for specific ship types or duties not found on general ships.

M – Mandatory from education

P – Principal – required by customer/principal

C – Company – required by shipping management company

		Certificate
M	CoC	(N/A) Advanced Fire Fighting Certificate - STCW 95...
M	CoC	(N/A) Basic Safety Certificate - STCW 95 A-VI/1
M	CoC	(N/A) Chief Cook Certificate of Competency
M	CoC	(N/A) Chief Engineer Officer COC - Motor - STCW Re...
M	CoC	(MH) Chief Engineer Officer End. - Motor - STCW Re...
M	CoC	(N/A) Chief Mate COC - STCW Reg. II/2
M	CoC	(MH) Chief Mate End. -STCW Reg II/2
M	CoC	(N/A) General Operator Certificate of Competency
M	CoC	(MH) General Operator Endorsement
M	CoC	(N/A) Master Mariner COC - STCW Reg. II/2
M	CoC	(MH) Master Mariner End. -STCW Reg. II/2
M	CoP	(MH) Medical Care - STCW 95 A-VI/4.2
M	CoP	(N/A) Medical First Aid Certificate - STCW 95 A-VI...
M	CoC	(N/A) Officer in Charge of a Navigational Watch CO...
M	CoC	(MH) Officer in Charge of a Navigational Watch End...
M	CoC	(N/A) Officer in Charge of an Engineering Watch CO...
M	CoC	(MH) Officer in Charge of an Engineering Watch End...
M	CoC	(N/A) Second Engineer Officer COC - Motor- STCW Re...
M	CoP	(N/A) Profic. in Surv. Crafts & Resc. Boats Cert. -...
M	CoC	(MH) Second Engineer Officer End. - Motor - STCW R...
	CoP	<b>End of Compulsory certificate training, the start of additional</b>
M	CoP	(MH) Profic. in Fast Rescue Boats Cert. - STCW 95 A...
M	CoP	(N/A) Ratings forming part of a Navigational Watch...
M	CoP	(MH) Ratings forming part of a Navigational Watch ...
M	CoP	(N/A) Ratings forming part of an Engineering Watch...
M	CoP	(MH) Ratings forming part of an Engineering Watch ...
M	CoP	(N/A) Ship Security Officer Certificate (STCW A-VI...
M	CoP	(MH) Ship Security Officer End. (STCW A-VI/5)
M	CoP	(N/A) Tankerman Certificate Highest Grade, Chem
M	CoP	(N/A) Tankerman Certificate Highest Grade, Oil
M	CoP	(N/A) Tankerman Certificate Lowest Grade, Chem
M	CoP	(N/A) Tankerman Certificate Lowest Grade, Oil
M	CoP	(MH) Tankerman Endorsement Highest Grade, Chem
M	CoP	(MH) Tankerman Endorsement Highest Grade, Oil
M	CoP	(MH) Tankerman Endorsement Lowest Grade, Chem

M	CoP	(MH) Tankerman Endorsement Lowest Grade, Oil
P	CoP	(N/A) Tankerman Certificate Highest Grade, Chem
P	CoP	(N/A) Tankerman Certificate Highest Grade, Oil
M	CoP	(N/A) Proficiency in Designated Security Duties (S...
M	CoP	(N/A) Proficiency in Security Awareness (STCW A-VI...
P	CoC*	(N/A) Bridge (Maritime Crew) Resource Management C...
P	CoC*	(N/A) ECDIS Course (IMO Model 1.27)
P	o	(N/A) ECDIS Transas 4000 Maker Specific
P	o	(N/A) Ex and Exi Basic
P	o	(N/A) Ice Navigation Course
P	o	(N/A) Safety Officer Course
P	o	(N/A) Ship's Maneuvering and Handling
C	o	(PH) Basic Instrumentation & Process Control (In-H...
C	o	(PH) Bridge Equipment Familiarization (In-House)
C	o	(PH) Electrotechnology Course
C	o	(PH) In-House Anti-Piracy Awareness Training
C	o	(PH) In-House Bridge Simulator Steering Course
C	o	(PH) In-House Hydraulics & Pneumatics
C	o	(PH) In-House Refrigeration
C	o	(PH) ISM Course
C	o	(PH) Liquid Cargo (In-House)
C	CoC*	(PH) Maritime Resource Management
C	o	(PH) Navigation for Deck Officers (In-House)
C	o	(PH) P.E.O.S and H.R
C	o	(PH) Shiphandling (In-House)
C	o	(PH) Ship's Catering Services - NC2
C	o	(PH) Ship's Catering Services NC1
C	o	(PH) Work Attitude and Value Enhancement Seminar

*Table 11: Competency matrix for a tanker*

- 19 competencies are CoCs and are the mandatory minimum and thus part of basic education
- 22 are COC or CoP that are additional to a mandatory minimum and need to be conducted at the expense of the shipping company or the seafarer.
- 22 are other competence required by industry

# Tanker

Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 606, 608 Master	566, 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✓ Denotes Required on Rank, M – Mandatory, P – Principal, C – Company, I – Internal

### 4.3 Shipping industry associations and interest groupings

Shipowners and ship managers are organised in a number of groups, and some of them are very influential in setting training standards, including establishing their own academies. Most, if not all, of these training programmes are additional to STCW and aimed at the safety and efficiency of operations and ship management.

Below are listed some significant industry associations and interest groupings that play a part in providing competence above and beyond STCW to seafarers. This is not an attempt to provide a complete list, but it does set out some key providers that organise and represent the shipping industry and a selection of training providers. Other private organisations that deliver maritime training as a business opportunity, purely responding to demand, are not listed here.

#### 4.3.1 International Chamber of Shipping (ICS)

ICS is the principal international trade association for merchant ship owners and operators, representing all sectors and trades and over 80% of the world merchant fleet.

The ICS chairman Esben Poulsson stated in a speech in January 2019 reported by [safetyatsea.net](https://safetyatsea.net)<sup>23</sup>:

*“The IMO convention was reviewed in 2010, with the relatively minor ‘Manila amendments’ adoption, but the previous major overhaul of the STCW regime was last undertaken by IMO member states more than 25 years ago. Poulsson explained that ICS increasingly views the STCW 2010 amendments as an interim revision that added some new training and certification provisions without making the structural changes needed to accommodate developments in training or the competences that would be required to operate ships in the future.”*

Poulsson said it was common for employers to routinely provide additional training and assessments prior to the deployment of officers holding STCW certification. This, he said, called into question whether the convention was “still fit for purpose in the 21st century”.

He called for a “fully revised” STCW regime that would allow the industry to adapt more effectively to fast-paced changes in technology, including increased automation.

ICS works on key issues relevant to their members’ interests: safety and environment, employment affairs, legal, shipping and trade policy.<sup>24</sup>

Even though the ICS does not directly offer training programmes on its website, it is apparent from Mr Poulsson’s statement that the organisation is in support of increasing seafarers’ competence, be it within or outside of IMO.

The ICS document on revising STCW 2020 has since reinforced this.

#### 4.3.2 Lloyd’s Maritime Academy

LMA offers 115 courses, with a duration of up to 24 months and covering a curriculum similar to educational programmes at higher education institutions, including MBA In Shipping and Logistics.

With over 40 years of experience and more than 1,000 graduates every year, LMA understands what each sector requires and what maritime professionals need to know, do, and deliver to succeed in their careers.

Some selected programmes:

- Diploma in Digital Shipping - 12 months
- Certificate in Petroleum economics - 12 weeks
- MSc Marine Technical Superintendent - 24 months
- MBA in Shipping and Logistics – 24 months
- Certificate in international oil and gas contract law – 12 weeks

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<sup>23</sup> <https://safetyatsea.net/news/2019/shipowners-call-for-stcw-revision/>

<sup>24</sup> [http://www.ics-shipping.org/key-issues/all-key-issues-\(full-list\)](http://www.ics-shipping.org/key-issues/all-key-issues-(full-list))

- Advanced certificate in internal auditor in shipping – 12 weeks
- Certificate in dry dock planning and management – 12 weeks
- Diploma in Heavy lift and project cargo operations – 12 weeks
- Certificate in tanker cargo operations – 12 weeks
- Certificate in offshore field development – 12 weeks
- Certificate in supply chain management – 16 weeks
- Certificate in artificial intelligence in shipping – 12 weeks
- Certificate in big data in shipping – 12 weeks
- Certificate in ballast water management – 12 weeks

### 4.3.3 Intertanko

The International Association of Independent Tanker Owners (Intertanko) is a trade association that has served as the voice for independent tanker owners since 1970, representing the interests of its members at national, regional and international levels. It has 192 members, operating 4,088 ships. The strategic work plan of Intertanko makes clear statements under item 2: Crew competence, that it promotes crew competence additional to the STCW Convention.

#### Training requirements

- Develop and monitor appropriate training requirements for seafarers to ensure they can properly operate all new equipment and systems onboard tankers.
- Advice and guidance on training requirements for new equipment and systems are manageable, resulting in reduced training costs and improved tanker safety and pollution prevention.

Intertanko produced ICMG<sup>25</sup> as competency guidance covering recommended core tanker technical skills beyond STCW certificates of competency for tanker officers.<sup>26</sup>

#### e-ICMG

- Ensure your tanker officers have the technical competencies needed to perform their duties to a recognised standard
- Shaped by a steering group of some of the most prestigious tanker operators and ship managers, e-ICMG benefits from the experience of experts operating the broadest range of chemical, crude and product tanker vessels.
- e-ICMG is highly compatible with soft-skill behavioural competency assessment and can be implemented alongside OCIMF-Intertanko 'Behavioural Competency Assessment and Verification for Vessel Operators' guidelines (BCAV).
- Ocean Technologies Group have worked with Intertanko to develop a digital adaptation of ICMG, for use within your competency management system, as e-ICMG
- Produced and verified by Intertanko and its members
- Comprised of 72 technical competencies: five for navigation, nine for mooring operations, 45 for cargo operations and 13 for engine
- Covers chemical, crude and product tanker operations
- Compatible with soft-skill assessment (e.g. e-BCAV)
- Available through the Ocean Technologies Group CMS
- Fully integrated into the Ocean Learning Platform

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<sup>25</sup> <https://oceantg.com/competency-management-system/competency-management-packs/>

<sup>26</sup> <https://oceantg.com/competency-management-system/>



### **Competency Management System**

- Create and implement competency assessment and verification (CAV) and competency management guidance as tools for assessing onboard competency, training requirements and managing promotions.
- Advice and guidance to increase the competence of crews, resulting in fewer accidents, detentions and increased operational efficiency of ships. Additionally, such a system will assist in the transition from a prescriptive crew matrix to one based on competency.

From one tanker operator (Fugro), we have as an example the competence matrix of a tanker from 2015, see chapter 4.2.1

#### **4.3.4 Intermanager**

Has 43 members, covering around 5,000 ships and responsible for 250,000 seafarers worldwide. Its mission statement below indicates that it supports sharing of knowledge.

- To federate and serve the needs of all companies and organisations involved in the management and crewing of ships
- To encourage the highest standards of ship operations through innovation, creativity and the sharing of knowledge
- To provide a platform for discussion on matters of common interest
- To be the common voice of ship managers in the international forums and with international regulators
- To advocate efficiency, quality and ethics in ship management
- To promote a career of seafaring

#### **4.3.5 Intercargo**

##### **Training, Manpower & Human Element**

The International Association of Dry Cargo Shipowners (Intercargo) represents the interests of quality dry cargo shipowners and convened for the first time in 1980 in London. It has been participating with consultative status at the IMO since 1993. Intercargo is concerned about the number of seafarers available to meet the future needs of an expanding bulk carrier fleet and where these professionals might be sourced from. In addition, the adequacy of the existing training regime for the modern safety-conscious bulk carrier sector is being considered.

##### **Intercargo policy**

Intercargo believes that it will be necessary to give far more attention to the quantum and quality of seafarers' training if the future bulk carrier fleet is efficiently operated and accidents reduced.

Intercargo has commenced the formation of a Training and Manpower Correspondence Group to consider a policy with regard to:

- Issues connected with the supply and demand of seafarers for the expanding bulk carrier fleet
- Competency issues vis-à-vis the established STCW training regime
- Issues connected with the human element and how this interacts with casualties and other negative performance indicators noted in Intercargo's Benchmarking Report.



#### 4.3.6 International Marine Contractors Association (IMCA)

The International Marine Contractors Association (IMCA) is a leading trade association representing the vast majority of contractors and the associated supply chain in the offshore marine construction industry worldwide.

The members play a key role in the offshore oil & gas and renewable energy industries. Principally, this is through the engineering, procurement, construction, and installation of offshore wind farms and hydrocarbon production facilities, together with the ongoing life of field support and maintenance requirements of these assets.

IMCA is fully engaged in the energy transition for a sustainable, low carbon future. IMCA plays an important role in collaborating with members and other stakeholders to address the challenges of climate change and ensure environmental sustainability, particularly in the context of our ocean resources.

IMCA was formed in 1995 through the merger of the Association of Offshore Diving Contractors (AODC), established in 1972, and the Dynamically Positioned Vessel Owners Association (DPVOA), established in 1989. Consequently, operational roots and technical credentials are second to none in this industry. IMCA uses a solid technical and safety focus to develop comprehensive best practice operating standards for the industry to improve its performance.

IMCA is the leading voice for the offshore marine contracting industry.

IMCA publishes technical and operational guidance used globally across the offshore energy industry. This work enables IMCA to be a high-profile influencer in the industry, improving performance and driving up standards.

IMCA's vision is to be the global reference for developing all forms of marine energy resources in a low carbon future.

##### **IMCA Training:**

- Diving Supervisors
- Diving Supervisors CPD
- Life Support Technicians
- IMCA D 013 Diving Supervisors and LST
- IMCA D 020 Diver Medic Training
- Training providers
- DMAC Diving Medicine Courses
- IMCA D 001 Dive Technician
- Diver & Diving Supervisor Certification (1394)
- Competence Assessment Surface Divers (799)
- Minimum Criteria Surface supplied diver training (1384)
- Diver Training Certificates – acceptance criteria (1385)

The Dynamic Positioning (DP) Practitioner Accreditation Scheme was introduced in 2019. This scheme is an output of a cross-industry workgroup consisting of DP vessel owners/operators, training providers, DP consultants, major energy companies and relevant organisations. This workgroup was tasked by IMCA's Marine Division Management Committee in 2018 to devise a scheme to improve the consistency and conduct of DP Trials. Additionally, the scheme set an industry recognised level of knowledge for DP Practitioners responsible for developing, witnessing and reporting DP Trials in addition to those responsible for the management of the DP assurance processes.

## **Aims**

- Improve the consistency and quality of DP trials
- Set a recognised level of knowledge for DP Practitioners responsible for developing, witnessing and reporting DP trials, and those responsible for the management of DP assurance processes
- Assure that DP Practitioners attending vessels for trials are accredited to a recognised standard
- Assure that personnel conducting DP assurance duties in both vessel operator and client offices are accredited to a recognised standard
- Meet the requirement of OCIMF's Dynamic Positioning Assurance Framework (2016), which calls for verification that shore-based DP personnel and DP Assurance Practitioners are qualified, experienced and competent

## **Categories**

There are two categories within this accreditation scheme:

- DP Trials and Assurance Practitioner – A person actively involved in producing, witnessing and assessing the results of DP FMEA proving trials and DP annual trials programs
- A Company DP Authority – A person who manages and provides advice on DP assurance processes and is typically employed within a DP vessel operator company or a DP vessel chartering company

### **4.3.7 The Marine Accident Investigators' International Forum – MAIIF**

The Marine Accident Investigators' International Forum (MAIIF) is an international non-profit organisation dedicated to the advancement of maritime safety and the prevention of marine pollution through the exchange of ideas, experiences and information acquired in marine accident investigation. Its purpose is to promote and improve marine accident investigation, and to foster cooperation and communication between marine accident investigators. It has a membership of more than 50 national marine safety investigating authorities and its objectives of MAIIF are:

- To foster, develop, and sustain a cooperative relationship among national marine investigators to improve and share knowledge in an international forum.
- To improve maritime safety and the prevention of pollution through disseminating information gained in the investigative process.
- To encourage through cooperation the development, recognition, implementation and improvement of related international instruments, where appropriate.
- MAIIF members are guided by the principles of IMO MSC Resolution MSC.255(84): The Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) and IMO Resolution LEG.3(91): Guidelines on fair treatment of seafarers in the event of a maritime accident.

## **MAIIF achievements**

- Casualty Analysis Working Group and Correspondence Group
- Casualty Investigation Code Res.MSC.255(84)
- Guidelines to assist investigators in the implementation of the CIC Res.A.1075(28)
- MAIIF Investigation Manual
- Model Course in Casualty Investigation
- Development of Voyage Data Recorders - Resource
- Investigators' in-the-field Job Aid

#### 4.3.8 The Baltic and International Maritime Council (BIMCO)

BIMCO is an owner/operator organisation offering training programmes to cater to the members' needs. <https://www.bimco.org/training>.

It is one of the largest of the international associations representing shipowners, with its 1,900 members in more than 130 countries representing approximately 60% of the world's merchant shipping tonnage.

BIMCO offers three ways for shipping professionals to learn. Each relies on trainers with years of hands-on experience. The courses are highly interactive, and much of the learning is derived from discussing examples from the participant's daily work-life.

- BIMCO Masterclasses
- BIMCO Seminars
- BIMCO Shipping Schools

In addition, e-learning is offered while the coronavirus pandemic restricts travel and meeting in person.

A list of non-STCW courses is offered in Masterclass type of training and Towage and Salvage Masterclass:

- Bills of Lading Masterclass
- Ship Management Masterclass
- Laytime and Demurrage Masterclass
- Offshore, Project and Heavy lift Chartering Seminar
- Time Charter Masterclass
- Carriage Contracts, Liabilities & Cargo Claims Masterclass
- Commodity Trading and Chartering Masterclass
- Maritime law academy - Shipping School
- Voyage Chartering Masterclass
- SUPPLYTIME, WINDTIME & Renewables Seminar
- Charter Party Workshop Masterclass
- Sale and Purchase Seminar

BIMCO issues guidelines such as

- The Guidelines on Cyber Security Onboard Ships,
- Ice Navigation and Seamanship Handbook.

##### **BIMCO about Masterclasses:**

- Duration 2-3 days.
- The topics of the BIMCO Masterclasses are broad and cover a range of issues, such as marine insurance or time chartering.
- Experienced trainers will attend the Masterclass for the entire duration. The discussions and exchange of experiences between the trainers and the participants are integral to the learning objectives.
- All Masterclasses consist of lectures combined with group case studies. The case studies will serve as a future guide for the participants to identify solutions and apply those solutions in their daily work. Case studies are done in small teams, enabling participants to brainstorm solutions, apply their current experience and share knowledge.
- Every participant is encouraged to attend a 60-minute assessment at the end of the Masterclass.



It is an open book test where the participant can demonstrate her understanding of the subject. The assessment will test the participant's ability to interpret, think critically and present an organised and well-written answer.

- All papers will be marked, and each participant will receive a BIMCO certificate based on the result; Attended; Passed, Merit, Distinction.

#### 4.3.9 Oil Companies International Marine Forum (OCIMF)

The Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies interested in the shipment and terminal of crude oil, oil products, petrochemicals and gas. OCIMF focuses exclusively on preventing harm to people and the environment by promoting best practices in the design, construction and operation of tankers, barges and offshore vessels and their interfaces with terminals. OCIMF has more than 100 members.

OCIMF's mission is to lead the global marine industry in promoting safe and environmentally responsible transportation of crude oil, oil products, petrochemicals and gas and to drive the same values in the management of related offshore marine operations. 'This is done by developing best practices in the design, construction and safe operation of tankers, barges and offshore vessels and their interfaces with terminals and considering human factors in everything we do.'

OCIMF was granted consultative status at the IMO in 1971 and continues to present oil industry views at IMO meetings. The organisation provides a number of training courses:

- OVID New Inspector Courses
- OVID Refresher Courses
- SIRE Inspector Training Course
- SIRE Inspector refresher Course

#### 4.3.10 The Nautical Institute (NI)

Based in the United Kingdom, the Nautical Institute is an international professional organisation for maritime professionals. It was established in 1971 and now has more than 7,000 members in over 110 countries. The NI issues standards for Dynamic Positioning training, supporting 86 METs worldwide that are accredited to conduct DP training under the NI scheme.

In addition to DP training programmes, the NI offers a range of other training courses which are both aimed at STCW certificate requirements and outside of STCW:

##### **On-site courses:**

Navigation Assessor, Onboard Competency Assessment, Rethinking Accident, Investigations - Towards Learning and Prevention, Blockchain for Maritime Decision-makers, Improving Performance Through the Human Element, Marine Incident Investigation & Analysis, Introduction to Shipping, Onboard Assessment. (9)

##### **Online courses:**

Basic Life Support and AED Training, ColRegs & IALA Buoyage, Crisis Management & Human Behaviour, Cyber Security at Sea, ECDIS, Enclosed Space Entry & Emergency Awareness, Environmental Officer, Ex Awareness Training, GMDSS, ISO 14001: Environmental Management, ISO 45001 Occupational Health & Safety Management, ISO 50001: Energy Management, (ISM) Designated Person Ashore, Leadership & Management (3 part course), LNG Bunkering: Respond Level Training, Marine Environmental Awareness, Maritime Labour Convention 2006 - For Ship's Masters, Maritime Security Awareness, Onboard Trainer & Assessor, Risk Assessment at Sea, Safe Container Operations Training, Safety Officer, Survey & examination of lifting appliances, Vessel Resource Management, Vessel Structure and Ballast Tank Inspection, Working with Tugs. (14 Non STCW, 9 STCW).

#### 4.3.11 Global Maritime Education & Training (GlobalMET)

Has 60 member METs worldwide. GlobalMET has consultative status at the IMO, carrying out activities and research in the field of maritime training and education.

The establishment of GlobalMET arose from the participants' desire to support the aims and objectives of IMO for 'safer ships and cleaner oceans' and recognition of:

- The vital importance of maritime education and training in fulfilling the needs of expanding trade and economic growth.
- There is an urgent need for collective efforts in maritime education and training to promote greater safety at sea and protect the marine environment.
- GlobalMET has contributed to establishing several IMO Model courses<sup>27</sup>

#### 4.3.12 The International Shipping Federation (ISF)

ISF is the identity used by the International Chamber of Shipping (ICS) when acting as the international employers' organisation for ship operators. See ICS.

#### 4.3.13 Maersk

We include Maersk here, which due to its size and dominant position in the market, is continuously setting trends as a market leader. Maersk operates seven own maritime training centres focusing mainly on seagoing personnel. In the area of leadership, the company has 27 modules (24 + 3) that are presented in a brochure. All are additional to STCW mandatory minimum requirements. These course modules are offered to other companies to participate in.

##### **Maersk Leadership Courses**

- PPP – personal and professional planning
- PPA – personal and professional assessment
- ICP – individual performance coaching
- module 1 leader self-awareness (incl. type profile)
- module 2 company leader roles & responsibilities
- module 3 value implementation workshop
- module 4 situational leadership (SLII – high impact)
- module 5 motivating performance feedback
- module 6 performance appraisals training
- module 7 onboard coaching and mentoring
- module 8 advanced coaching (GROW – model)
- module 9 crew development training management modules – overview
- module 10 difficult conversations training
- module 11 conflict management
- module 12 safety leadership
- module 13 daily work planning and prioritization

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<sup>27</sup> <https://globalmet.org/work-at-imo.aspx>

- module 14 finance for non-financial managers
- module 15 basic project management
- module 16 basic communications in operational environments
- module 17 relations management
- module 18 work/life balance (stress prevention and handling)
- module 19 cross-cultural awareness (generic workshop)
- module 20 cross-cultural awareness (nationality specific)
- module 21 human factors & performance shaping factors management modules – overview
- module 22 train the trainer
- module 23 team acceleration course
- module 24 team building

These courses have been consolidated to 22 in the last version<sup>28</sup>

#### 4.3.14 ASK Safety

This serves as an example of a small private training provider, of which there are hundreds similar. ASK Safety is a private company providing training for both STCW and non-STCW. For the offshore energy sector, wind and oil. The following courses beyond STCW minimum training are offered:

- |  |  |
|--|--|
| 1. Combined course HLO / Search and Rescue<br>I small FRC -refresher   | Refresher Course (GSK rep)   |
| 2. Conventional lifeboat basic course (OSE135)   | 16. NOG – First aid basic course, OFA 101  |
| 3. Conventional lifeboat refresher course<br>(OSE135)  | 17. NOG – First aid refresher course, OFA 101  |
| 4. Emergency Management – Refresher<br>(OER109)  | 18. NOG – HUET (Helicopter underwater<br>escape training)                                      |
| 5. Emergency management basic course (OER<br>109)  | 19. NOG - Search and Rescue refresher course,<br>OFI 100                                       |
| 6. Emergency site - refresher (OER108)   | 20. NOG/ GSK Basic safety and emergency<br>refresher course for emergency personnel (1<br>day) |
| 7. Emergency Site Course (OER108)  | 21. OLF OF1100 Search and rescue basic<br>course   |
| 8. Fast Rescue Craft (FRC) Basic course<br>(OSE114) without night operation Fast<br>Rescue Craft (FRC) basic course with night<br>operation (OSE114) | 22. OLF OSE129 Coxswain skid launched<br>lifeboat refresher course                             |
| 9. Fast Rescue Craft (FRC) Night Operation   | 23. OLF OSE129 Free-fall lifeboat basic course   |
| 10. Fast Rescue Craft (FRC) Refresher course<br>with night operation   | 24. Upgrade from BOISET / Opito to Norwegian<br>Oil and Gas (Escape chute)                     |
| 11. Fast Rescue Craft (FRC) Refresher course<br>without night operation (OSE114) Fitness<br>test   | 25. G5 Offshore crane  |
| 12. HLO Refresher course (OSC1141)   | 26. G20 Hydraulic crane  |
| 13. HLO, Search & Rescue, combined course -<br>refresher   | 27. G4 Traverse crane  |
| 14. NOG - Basic Safety and Emergency Training<br>Course (GSK)  | 28. Banksman & Slinger course  |
| 15. NOG - Basic Safety and Emergency Training  | 29. CPR resuscitation equipment  |
|  | 30. HSE training for shipboard personnel   |
|  | 31. ISPS Company security officer  |

<sup>28</sup> <https://f.nordiskemedier.dk/2tpakl8gehavaqia.pdf>

#### 4.3.15 RelyonNutec

This serves as an example of a sizeable private training provider, of which there are many similar. The company offers 162 courses<sup>29</sup> for English-speaking candidates, listing here the 30 first. For Norwegian-speaking candidates, 434 courses and for German-speaking 53 courses, etc.

1. FOET with EBS + CA-EBS (NOGEPA 0.5B /OPITO 5858+5850)
2. BOSIET with EBS+ CA-EBS (NOGEPA 0.5A /OPITO 5700+5750)
3. Gas Measurement (NOGEPA 1.4)
4. ERRV Crew Initial Training Shipboard Operations (OPITO)
5. GWO: BST - Offshore (Blended: e-learning + practical)
6. H2S Introduction (NOGEPA 0.8)
7. BT+ AFF + PSCRB (STCW 3-combi refresher)
8. GWO: BST Refresher - Offshore (Blended: e-learning + practical)
9. GWO Basic Technical Training
10. Helicopter Underwater Escape Training (with Compressed Air Emergency Breathing System) OPITO 5295
11. GWO: BST - Manual Handling (Blended: e-learning + practical)
12. GWO: BST - Onshore (Blended: e-learning + practical)
13. GWO Enhanced First Aid
14. Basic Offshore Safety Induction and Emergency Training (BOSIET) with Emergency Breathing System (EBS) Digital Delivery (OPITO 5703)
15. GWO: BST - Sea Survival (Blended: e-learning + practical)
16. GWO: BST Refresher - Onshore (Blended: e-learning + practical)
17. Basic Banksman (NOGEPA 1.9A)
18. GWO: BST - Fire Awareness (Blended: e-learning + practical)
19. Management of Major Emergencies (NOGEPA 2.14A)
20. Proficiency in Fast Rescue Boats (STCW)
21. STCW Medical First Aid & Medical Care
22. GWO Slinger Signaller
23. GWO: BST - Working at Height (Blended: e-learning + practical)
24. Helicopter Underwater Escape Training Emergency Breathing System (OPITO)
25. GWO Advanced Rescue Training (HSIBR+NTBR)
26. Major Emergency Management Initial Response Training (OPITO)
27. Refresher Management of Major Emergencies (NOGEPA 2.14B)
28. GWO: BST - First Aid (Blended: e-learning + practical)
29. Proficiency in Survival Craft and Rescue Boats other than Fast Rescue Boats (STCW)
30. Basic Helicopter Landing Officer (NOGEPA 1.1A) + Member Fire Fighting and Rescue Team Offshore (NOGEPA 2.6A)

#### 4.3.16 The International Federation of Shipmasters' Associations (IFSMA)

IFSMA is headquartered in London. The secretariat is located close to the International Maritime Organisation (IMO). In 1975, IFSMA was granted consultative status as a non-governmental organisation at IMO, enabling the Federation to represent the views and protect the interests of serving shipmasters unfettered and unfiltered by others. To enable IFSMA to function effectively at IMO, it is represented by the Secretary-General and a team of active or former shipmasters who attend the four main committees: the Maritime Safety Committee; Maritime Environmental Protection Committee; Legal Committee; and the Facilitation Committee. This team is also active in the nine sub-committees of IMO, their working and drafting groups, and attending the Council meetings and the assemblies.

IFSMA has a history of submitting relevant papers on various aspects to the committees and sub-committees of IMO, which often result in successful debates leading to MSC Circulars and improvements in various instruments. IFSMA is a strong supporter of the IMO in its quest for safer shipping and cleaner oceans. The Federation desires to assist IMO in achieving a genuinely global implementation and rigorous enforcement of its international treaties so that there is no need for any country to resort to regulatory measures on either a national or a regional basis.

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<sup>29</sup> <https://relyonnutec.com/training/courses/?CountryName=Netherlands&TrainingCenters=8612,3810,3026>



#### 4.3.17 International Group of P&I Clubs (IGP&I)

The 13 P&I Clubs which comprise the International Group (the “Group”) between them provide marine liability cover (protection and indemnity) for approximately 90% of the world's ocean-going tonnage. Through the unique Group structure, the member clubs, whilst individually competitive, share their significant loss exposures and share their respective knowledge and expertise on matters relating to ship owners' liabilities and the insurance and reinsurance of such liabilities. A qualification for the P&I industry produced by the International Group of P&I Clubs:

First launched in 2010, the International Group's P&I Qualification (P&IQ) programme has been hugely successful, with over 2,000 examinations taken and many candidates achieving the whole qualification. Providing high quality, targeted education, it has, over the years, become acknowledged in its own right within the P&I industry and the broader insurance market as a unique and challenging standalone professional qualification.

##### **What topics does the P&IQ cover?**

The P&IQ programme consists of seven modules covering the following topics:

- The Shipping Business
- P&I Insurance History, Operation and Practice
- Underwriting, Loss Prevention and Claims Handling
- People Risks
- Cargo Risks
- Collision, FFO & Pollution
- Towage, Salvage, General Average & Wreck Removal

##### **What qualifications will I receive?**

Candidates can gain three levels of qualification tailored to suit all levels of knowledge and experience as follows:

- The P&IQ Certificate is an introductory qualification ideal for candidates new to the industry or those seeking to enhance existing knowledge or looking for a general background qualification. The P&IQ Certificate is achieved by successfully completing online examinations in Modules 1, 2 and 3 and must be completed before a candidate can move on to take the P&IQ Advanced Certificate.
- The P&IQ Advanced Certificate is of a more specialist nature and builds on the knowledge gained in studying for the P&IQ Certificate. The P&IQ Advanced Certificate is achieved by successfully completing online examinations in Modules 4, 5, 6 and 7 and must be completed before a candidate can move on to take the P&IQ Diploma.
- The P&IQ Diploma is the highest level of qualification. It takes the form of an additional rigorous Module 8 written examination, which will test the ability to apply all the knowledge gained in the previous two levels of qualification to practical scenarios faced by those involved in the P&I Industry. A candidate must have achieved the P&IQ Certificate and Advanced Certificate before moving on to study for the P&IQ Diploma.

##### **How is the programme delivered?**

- P&IQ is delivered online, providing professional learning materials for self-study, eliminating the costs associated with attending training sessions or seminars.
- All exams are delivered directly to candidates via state of the art remotely invigilated exams. This allows candidates anywhere in the world to undertake exams from the convenience of their own office on a software platform, which provides dynamic, auto marking questions without compromising the quality and rigour of the qualification.

#### 4.3.18 International Maritime Pilots' Association (IMPA)

The association was formed on the initiative of pilots' associations from the five continents whose representatives met in Kiel, Germany, in June 1970. IMPA was officially launched in Amsterdam in May the following year. To date, it represents over 8,000 pilot members in 49 countries.

##### **Pilot training and certification**

- The IMO Assembly in 2003 adopted resolution A.960(23) Recommendations on training and certification and operational procedures for maritime pilots other than deep-sea pilots, which includes Recommendation on Training and Certification of Maritime Pilots other than Deep-sea Pilots and Recommendation on Operational Procedures for Maritime Pilots other than Deep-sea Pilots.
- IMO Resolutions encouraging the use of pilots onboard ships in certain areas.
- IMPA has developed an extensive guide on "Recommendations on training and certification and operational procedures for maritime pilots".

#### 4.3.19 Offshore Petroleum Industry Training Organisation (OPITO)

OPITO is the global, not-for-profit, skills body for the energy industry. More than 375,000 people are trained to OPITO standards every year in more than 50 countries through 200 accredited training centres. With operation centres in four regions - UK and Europe, Middle East and Africa, Asia Pacific and the Americas - OPITO is driving safety and competency improvements to benefit the industry. The industry-owned organisation also works with governments, national oil companies, operators and contractors, offering a range of services and products to meet international skills needs and support workforce development.

In partnership with industry stakeholders<sup>30</sup>, OPITO identifies the needs and requirements for new and improved training and competence standards for both onshore and offshore. OPITO produces world-class, industry-driven standards recognised globally and ensures that approved training providers deliver training in compliance with these standards. The training programmes are mainly in the areas of maintenance, operation and emergency response.<sup>31</sup>

##### **OPITO Competence programmes**

- Application of Insulation Systems Competence Assessment Level 2
- Application of Insulation Systems Training
- Authorised Gas Tester Training
- Authorised Gas Tester Training Digital Delivery
- Banksman and Slinger Training - Stage 1
- Banksman and Slinger Training - Stage 3
- Banksman and Slinger Training - Stage 4
- Basic H2S Training
- Further Offshore Emergency Response Team Leader
- Basic Offshore Safety Induction & Emergency Training with (CAEBS) STCW 95/2010 Conversion
- Basic Offshore Safety Induction and Emergency Training (BOSIET) for Renewable Energy (Wind) - Full Access

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<sup>30</sup> The stakeholders also involve unions and ECSA, e.g., ref. ITF in IMO committees, ITF STCW guidance, ITF presentation at IAMU conference, ITF Accredited Representative to the IMO. Also involvement of ETF at EU-level consultations regarding the topic.

<sup>31</sup> <https://downloads.opito.com/downloads/Standards/basic-emergency-response/Standards-Review-Calendar-May-2019.pdf?mtime=20190521161947&focal=none>



- Basic Offshore Safety Induction and Emergency Training (BOSIET) for Renewable Energy (Wind) - Full Access Upgrade
- Basic Offshore Safety Induction and Emergency Training (BOSIET) for Renewable Energy (Wind) - Limited Access
- Basic Offshore Safety Induction and Emergency Training (with CA-EBS)
- Basic Offshore Safety Induction and Emergency Training (with CA-EBS) Digital Delivery
- Basic Offshore Safety Induction and Emergency Training (with EBS)
- Basic Offshore Safety Induction and Emergency Training (with EBS) Digital Delivery
- Basic Onshore Emergency Response
- Blaster Sprayer Competence
- Blaster/Sprayer Training
- BOSIET Bridging Elements
- BOSIET for Renewable Energy (Transition) - Full Access
- BOSIET for Renewable Energy (Transition) - Limited Access
- Command and Control for ERRV Masters and Mates
- Competence Assessor
- Compressed Air Emergency Breathing System (CA-EBS) Initial Deployment Training
- Compressed Air Emergency Breathing System CA-EBS (Delivered in conjunction with TBOSIET)
- Compressed Air Emergency Breathing System CA-EBS (Delivered in conjunction with TFOET)
- Compressed Air Emergency Breathing System CA-EBS (Delivered in conjunction with THUET)
- Control of Work Refresher Training for Performing Authorities
- Control of Work Training for Performing Authorities
- Control Room Operator
- Dangerous Goods By Sea
- Drilling Rigger Competence Assessment/Reassessment Standard
- Elected Safety Representatives Development Training Module 1
- Elected Safety Representatives Development Training Module 2
- Elected Safety Representatives Development Training Module 3
- Elected Safety Representatives Development Training Module 4
- Emergency Breathing System
- Emergency Coordinator for Renewable Energy (Wind)
- ERRV Crew Advanced Medical Aid
- ERRV Crew Daughter Craft Coxswain
- ERRV Crew Fast Rescue Craft Boatman
- ERRV Crew Fast Rescue Craft Coxswain
- ERRV Crew Initial Training Shipboard Operations
- ERRV Further Crew Advanced Medical Aid
- Escape Chute Training
- Fire Proofing Training



- Fire Warden Competence Standard
- Further Offshore Emergency Response Team Member
- Further Offshore Emergency Response Team Member
- Further Offshore Emergency Train
- Further Offshore Emergency Training (FOET) for Renewable Energy (Wind) - Full Access
- Further Offshore Emergency Training (FOET) for Renewable Energy (Wind) - Limited Access
- Further Offshore Emergency Training (with CA-ESS)
- Further Onshore Emergency Response
- Gas Monitor Training
- Gas Monitoring Training Digital Delivery
- Helicopter Landing Officer (HLO) for Normally Unattended Installation (NUI) Operations Further Training
- Helicopter Landing Officer (HLO) for Normally Unattended Installation (NUI) Operations Initial Training
- Helicopter Landing Officer (HLO) Workplace Competence Assessment
- Helicopter Underwater Escape Training
- Helicopter Underwater Escape Training (with CA-ESS)
- Helideck Assistant (HDA) Workplace Competence Assessment
- Helideck Emergency Response Team Leader (HERTL) Further Training - HERTLF
- Helideck Emergency Response Team Leader (HERTL) Training
- Helideck Emergency Response Team Leader (HERTL) Workplace Competence Assessment
- Helideck Emergency Response Team Member (HERTM) Further Training - HERTMF
- Helideck Emergency Response Team Member (HERTM) Training
- Helideck Emergency Response Team Member (HERTM) Workplace Competence Assessment
- Helideck Operations Initial Training
- Internal Verifier
- International Minimum Industry Safety Training
- Lead Fire Warden Competence Standard
- LOLER Competent Person (Competence Re-Assessment)
- LOLER Competent Person Assessment
- Major Emergency Management Initial Response (MEMIR) for Renewable Energy (Wind)
- Major Emergency Management Initial Response Training
- Minimum Industry Safety Training
- Minimum Industry Safety Training (MIST) Further Training Standard
- Minimum Industry Safety Training (MIST) Further Training Standard
- Minimum Industry Safety Training for Experienced Workers
- Offshore Crane Operator - Stage 1 Introductory Training
- Offshore Drilling Industry Greenhand
- Offshore Emergency Response Team Leader



- Offshore Emergency Response Team Member
- Offshore Helideck Assistant (HOA) Initial Training
- Offshore Lifeboat Coxswain
- Offshore Lifeboat Coxswain Further Training (Free Fall)
- Offshore Lifeboat Coxswain Further Training (Single Fall)
- Offshore Lifeboat Coxswain Further Training (Twin Fall)
- Offshore Lifeboat Coxswain Supplementary Fall Training (Single Fall)
- Offshore Lifeboat Coxswain Supplementary Fall Training (Twin Fall)
- Offshore Lifeboat Coxswain Training (Free Fall)
- Offshore Lifeboat Coxswain Training (Single Fall)
- Offshore Lifeboat Coxswain Training (Twin Fall)
- Offshore Radio Operator
- Offshore Safety Representative
- Offshore Safety Representatives Refresher Training
- OIM Controlling Emergencies
- Ongoing Onboard Development & Training Program for ERRV Master and Crew
- Onshore Control Room Operator Emergency Response Assessment
- OPITO Global Engineering Foundation Training Certificate: Introduction to Mechanical and Electrical Engineering
- OPITO Global Renewable Energy Foundation Training Certificate: Renewable Energy Foundation
- Plant Manager/ Incident Commander
- Preparation of Dangerous Goods for Transport by Sea (Refresher Training)
- Rigger Competence - Stage 3
- Rigger Competence - Stage 4
- Rigger Training - Stage 1
- Safe Driving at Work
- Shallow Water CA-EBS Initial Deployment Training
- Swimming Assessment
- Travel Safely by Boat
- Travel Safely by Boat - Further Training
- Travel Safely by Boat - Supplementary Training
- Tropical Basic Offshore Safety Induction and Emergency Training
- Tropical Basic Offshore Safety Induction and Emergency Training Digital Delivery
- Tropical Further Offshore Emergency Training
- Tropical Helicopter Underwater Escape Training

#### 4.3.20 Guidelines for Offshore Marine Operations (GOMO)

GOMO make international guidance on offshore marine operations. Regional guidelines for the UK and the Norwegian offshore sector are also issued. The intention of the chapter on training and competence is to ensure that offshore marine operations are performed to an acceptable standard and in a controlled manner. The competence regimes in the industry are based on both international and national regulating bodies and best practices and guidelines<sup>32</sup>.

##### **Senior Watchkeepers in Charge of Anchor Handling (AH) Operations**

Senior watchkeepers in charge of AH operations require relevant expertise. Watchkeepers allocated to charge of operations with no previous AH experience should perform at least 5 MOU moving operations accompanied by an AH experienced Master, or a suitable combination of rig moves and simulator training in accordance with training matrix and experience log, before they may command an AH assignment. AH, experience gained in a chief officer role is acceptable.

##### **Officers**

Officers involved in AH operations also require relevant expertise. In particular, officers must have a complete understanding of all safety aspects of anchor handling, especially concerning safe use and limitations of the equipment.

If supervising AH work on deck, the officer must have AH experience and be competent in AH procedures and guidelines, AH equipment set-up and function, and be familiar with associated hazards and risks.

Officers working on the bridge during AH and who may have tasks affecting the safety of those working on deck shall be familiar with AH deck work operations and the associated hazards and risks.

##### **Vessel Winch Operators**

The Vessel winch operators should be competent in the winch, safety systems, functions and limitations.

The Ship Owner should be able to document that appropriate on the job training, or a course has been given. A training certificate should be issued by Shipowner or a course centre.

##### **Deck Crew**

During AH operations, personnel assigned independent work on deck should be familiar with guidelines and procedures for this and AH safety. They should also be familiar with the use of UHF/VHF radio.

Able seamen with no previous AH experience must be trained in guidelines, procedures and safe equipment use before assignment to independent AH work on deck. All training is to be documented.

##### **Tow Master**

It is the organisation's responsibility to provide or employ a person to undertake the function of Tow Master to ensure that the individual has the competency and experience to fulfil this function.

It is recommended that persons supporting this function should have participated in the moving of mobile offshore units in the following capacities:

- In relation to semi-submersible units, acted as a stand-alone Barge Supervisor on such units for a minimum of three (3) rig moves or as assistant Tow Master for a minimum of five rig moves. An experienced Tow Master should supervise both roles.
- In relation to self-elevating units, acted as a stand-alone Barge Supervisor on such units for a minimum of three (3) rig moves or as an assistant Tow Master for a minimum of five rig moves. An experienced Tow Master should supervise both roles.

Recent experience gained as a Master or senior watchkeeper on vessels that have been engaged in anchor handling operations of a similar nature should also be considered when assessing the competency of a Tow Master. In this context, "recent experience" should be taken as being within the previous three years, though the earlier experience may also be considered if particularly relevant.

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32 <http://g-omo.info/wp-content/uploads/2020/11/Chapter-5-rev-1.pdf>

In addition, persons acting as Tow Master should have:

- Relevant marine knowledge experience.
- Where necessary, appropriate qualifications which may include STCW certification.
- Full understanding of the proposed operation, including any particular risks which might be involved.
- Appropriate knowledge of Geotechnical/Soil Conditions.
- Knowledge of Offshore Meteorology and Forecasting.
- Knowledge of DP Operations if relevant.
- Knowledge of relevant international and local rules and regulations.
- Ability to communicate effectively in English and/or local working language.

### **Marine Representative**

It is the responsibility of the organisation providing or employing a person to undertake the function of Marine Representative to ensure that:

- The individual has the competency and experience to fulfil the function related to the particular operation.
- The terms of reference for the role are fully understood.
- The individual has been adequately briefed and provided all relevant information.

### **Dual Responsibilities & Reporting Functions**

Dual Responsibilities & Reporting lines must be clarified, and a single line of communication to be established. The Master has overall responsibility for the safety of all operations conducted on the vessel, including simultaneous operations.

### **MOU Winch Operator**

MOU winch operators should be competent in the winch operation, safety systems, functions and limitations. MOU Owner shall be able to document that appropriate on the job training, or a course has been given.

### **Crane Operators (including Subsea Functions)**

Crane operators must be certified and competent in the crane, safety systems, functions and limitations.

Operational experience with cranes installed on the vessel or MOU must be logged, including operation of any heave compensation or other particular features provided.

The vessel or MOU Owner shall be able to document that appropriate training has been given. For examples of training requirements, refer to OMHEC standard or local equivalent.

### **Dangerous and Noxious Liquid Cargoes**

The carriage and handling of dangerous and noxious liquid cargoes by ship is governed by IMO and implemented by the different Flag States and Coastal States.

There are no specified competence standards covering the freight of dangerous and noxious liquid cargoes on Offshore Supply Vessels.

Recommended competency levels for handling these cargoes are as follows:

- **Vessel Personnel**

Masters, Chief Engineers and certain other Officers should have received suitable training relating to SOLAS and MARPOL requirements which includes the relevant parts of the IBC Code as referred to in A.673 (16) (Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances on offshore support vessels) appropriate to the vessels to which they are assigned, the IMDG Code and the OSV Code where relevant.





- **On Shore Personnel**

Personnel working at the onshore base or on the offshore facility responsible for declaration and shipment of dangerous or noxious liquid cargoes should have received similar training so that they have a full knowledge and understanding of the requirements that vessels must comply with carrying such cargoes.

Role	Adequate English	IMDG Code	Lifting Equipment	Slinger Course	Cargo Handling	Bulk Material Handling	Materials Management	Industrial Personnel - Shore	Industrial Personnel	Notes and Additional Requirements
Operation managers Shipping managers Sailing managers Vessel coordinators Logistics coordinators		X	X		X					1. Shall preferably have a maritime background (nautical studies, mate, Master) 2. The defined operation manager, shipping manager, sailing manager, vessel coordinator or logistics coordinator is responsible for coordination and follow-up of all loading or offloading operations involving offshore service vessels at a base, quay or tank installation.
Quay Foremen	X	X	X			X	X			
Personnel packing goods in containers		X*	X		X					* IMDG required if handling goods classified as dangerous goods
Crane Operators			X	X						
Personnel involved in cargo handling		X		X						
Personnel involved in bulk cargo handling					X					1. Familiar with identification of hazardous chemicals and requirements for testing 2. Safe handling of bulk cargo and hazardous chemicals. 3. Handling and containment of spills, and familiar with related external notification procedures.
Installation Maritime Co-ordinator					X					Training shall include vessel types, functioning of manoeuvring and/or positioning systems, vessels' characteristics and limitations (including weather restrictions and vessel load capacity) and maritime terminology.
Installation cargo handling		X								
Personnel involved in tank cleaning								X	X	1. Familiar with identification of hazardous chemicals and requirements for testing 2. Safe operation in tanks and confined areas 3. Handling and containment of spills, and familiar with related external notification procedures.
Other Industrial Personnel									X	As identified by co-ordinators of their operation and their required for the service they perform

Table 11: GOMO Shore Competence Requirements

#### 4.3.21 The Norwegian shelf's competitive position (NORSOK)

The Norwegian petroleum industry develops the NORSOK standards to ensure adequate safety, value-adding and cost-effectiveness for petroleum industry developments and operations. Furthermore, NORSOK standards are as far as possible intended to replace oil company specifications and serve as references in the authorities' regulations.

This set of standards applies to a single country's sea basin, The North Sea. Energy companies that come from many parts of the world need to learn to understand and comply with these national regulations on training and best practice. This is obviously not optimal, although made to safeguard the national environment and HSEQ.



The standard specifies the number of training programmes that seafarers must comply with, such as specific G5-Offshore Crane training and re-training. A group of private companies administrates the content of the training programmes and approval but ultimately answers to rule no. 6.5 of the ISM Code.