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To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union
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Subject:	COMMISSION STAFF WORKING DOCUMENT Union submission to the International Maritime Organization's 1st Intersessional Working Group on the Comprehensive Review of the STCW Convention and Code on identified gaps and provisions related to the majority of the specific areas for the comprehensive review

Delegations will find attached document SWD(2024) 179 final.

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EUROPEAN
COMMISSION

Brussels, 9.7.2024
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COMMISSION STAFF WORKING DOCUMENT

Union submission to the International Maritime Organization's 1st Intersessional Working Group on the Comprehensive Review of the STCW Convention and Code on identified gaps and provisions related to the majority of the specific areas for the comprehensive review

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PURPOSE

This Staff Working Document contains a draft Union submission to the International Maritime Organization's (IMO) 1st Intersessional Working Group on the Comprehensive Review of the STCW Convention and Code (ISWG/STCW 1). The IMO has indicatively ISWG/STCW 1 scheduled from 7 to 11 October 2024.

The draft submission includes in its Annexes gaps addressing issues related to the majority of the specific areas identified for the comprehensive review of the STCW Convention and Code. The co-sponsors have prepared a separate document addressing inconsistencies and different interpretations in the STCW Convention and Code.

EU COMPETENCE

The training and certification of seafarers is regulated at international level by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW Convention) of the International Maritime Organization (IMO), which was subject to a major revision at a Conference of Parties to the STCW Convention held in Manila in 2010 (Manila amendments). Further amendments to the STCW Convention were adopted in 2015 and in 2016.

Directive (EU) 2022/993¹ on the minimum level of training of seafarers incorporates the STCW Convention into Union law. It requires Member States to ensure that seafarers are trained as a minimum in accordance with the requirements of the STCW Convention as laid down in Annex I to the Directive (Article 3 of Directive (EU) 2022/993), including, where appropriate, the applicable provisions of the STCW Code (Article 1(21) of Directive (EU) 2022/993).

In light of all of the above, the present draft Union submission falls under EU exclusive competence, pursuant to article 3(2) TFEU as the review of the STCW Convention and Code, which, once finalised and related amendments are adopted, risks affecting or altering Union legislation and in particular Directive (EU) 2022/993.² This Staff Working Document is presented to establish an EU position on the matter and to transmit the document to the IMO prior to the required deadline of 6 September 2024.

¹ OJ L 169, 27.6.2022, p. 45.

² An EU position under Article 218(9) TFEU is to be established in due time should the IMO Maritime Safety Committee eventually be called upon to adopt an act having legal effects as regards the subject matter of the said draft Union submission. The concept of '*acts having legal effects*' includes acts that have legal effects by virtue of the rules of international law governing the body in question. It also includes instruments that do not have a binding effect under international law, but that are '*capable of decisively influencing the content of the legislation adopted by the EU legislature*' (Case C-399/12 Germany v Council (OIV), ECLI:EU:C:2014:2258, paragraphs 61-64). The present submission, however, does not produce legal effects and thus the procedure for Article 218(9) TFEU is not applied.

COMPREHENSIVE REVIEW OF THE 1978 STCW CONVENTION AND CODE

Identified gaps and provisions related to the majority of the specific areas for the comprehensive review

Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands (Kingdom of the), Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the European Commission, acting jointly in the interest of the European Union

SUMMARY

Executive summary: Based on the methodology established by HTW 10, this document provides gaps identified by the co-sponsors while conducting a review of the STCW Convention and Code. It includes in its Annexes gaps addressing issues related to the majority of the specific areas identified for the comprehensive review of the STCW Convention and Code. The co-sponsors have prepared a separate document addressing inconsistencies and different interpretations in the STCW Convention and Code.

Strategic direction, if applicable: 6

Output: 6.17

Action to be taken: Paragraph 11

Related documents: HTW 6/13; MSC 104/15/5; MSC 105/20; HTW 9/15; MSC 107/20; HTW 10/10 and HTW 10/WP.3, ISWG/STCW 1/2/X

Background

1 The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, was adopted with the objective of promoting safety of life and property at sea and the protection of the marine environment by establishing international standards of training, certification and watchkeeping for seafarers. Parties and their administrations, as defined in Article 2 of the STCW Convention, undertake to meet the obligations prescribed therein.

2 The 1978 STCW Convention entered into force on 28 April 1984. Amendments thereto were adopted in 1991, 1994, 1995, 1997, 1998, 2004, 2006, 2010, 2014, 2015, 2016, 2017, 2018 and 2020. Major amendments were adopted in 1995 and 2010.

3 MSC 105 considered document MSC 104/15/5 (Australia et al.) which proposed a new output concerning a comprehensive review of the STCW Convention and Code.

Following consideration, MSC 105:

- .1 agreed to include in the biennial agenda of the HTW Sub-Committee for 2022-2023 and the provisional agenda for HTW 9 an output on "Comprehensive review of the 1978 STCW Convention and Code", with a target completion year of 2026;
- .2 recalled its earlier decision to prioritize the development and finalization of STCW training provisions on bullying and harassment in the maritime sector, including sexual assault and sexual harassment, as part of this output; and
- .3 instructed the HTW Sub-Committee to start with a preliminary assessment of the scope of the work to be conducted, identifying specific areas to be reviewed, and to prepare a road map for approval by the Committee before initiating the development of draft amendments.

4 At its 9th session, the HTW Sub-Committee agreed to draft aims and principles to guide the work of the comprehensive review which also constituted a preliminary assessment of the scope of the work to be conducted during the comprehensive review of the STCW Convention and Code (HTW 9/15 Paragraph 7.24). MSC 107 subsequently approved the draft aims and principles to guide the work on the comprehensive review of the STCW Convention and Code, prepared at HTW 9.

5 At its 10th session, the HTW Sub-Committee finalized a list of specific areas for the comprehensive review, including the articles of the Convention, prepared a draft methodology, including the prioritization of the areas to be addressed in the comprehensive review and finalized a road map for the comprehensive review (HTW 10/WP.3, paragraph 31), which were approved at MSC 108, in conjunction with the approval of the establishment of an intersessional working group on the Comprehensive review of the 1978 STCW Convention and Code to take place in the third quarter of 2024 to further progress the work of the comprehensive review, subject to endorsement by C 132.

Discussion

6 Based on the methodology for a structured approach to the comprehensive review of the STCW Convention and Code established by HTW 10, the co-sponsors have engaged with national stakeholders to conduct a review of the STCW Convention and Code to identify existing gaps and provisions that should be addressed.

7 As a result of this review, issues emanating/resulting from external factors including trends and new developments, (Criterion 1) and/or issues emanating/resulting from existing provisions based on implementation experiences, (Criterion 2), are set out in the annex.

8 During the deliberation of the review of the STCW Convention and Code, the co-sponsors have identified several gaps, which affect simultaneously provisions found in the Annex to the STCW Convention, as well as the STCW Code (part A and part B). In particular, the annexes focus on gaps related mainly to the following specific areas for the comprehensive review, as agreed by HTW 10:

- .1 Digitalization of documentation, including certificates issued under STCW
- .2 Emerging technologies in education and training
- .3 Facilitation, flexibility and quality of onboard, shore-based and workshop skills training, including use of simulators
- .4 Requirements for sea time or practical experience in relation to new and emerging technologies including the use of simulation
- .5 Psychological safety, bullying and harassment, including SASH, gender diversity and gender sensitization

- .6 Mental health
- .7 Alternative certification under chapter VII
- .8 Watchkeeping arrangements and principles to be observed (chapter VIII)
- .9 Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments
- .10 Cybersecurity

9 In parallel, the co-sponsors have prepared a second document ISWG/STCW 1/2/X by Austria et. al, which contains gaps related to inconsistencies and different interpretations.

10 The co-sponsors have included the identified gaps into the following three annexes for consideration by the ISWG:

Annex 1: Gaps identified in the annex to the STCW Convention

Annex 2: Gaps identified in the part A of the STCW Code

Annex 3: Gaps identified in the part B of the STCW Code

Action requested of the ISWG/STCW 1

11 The ISWG is invited to consider the information provided in the document and the annex and take action, as appropriate.

Annex 1

Gaps identified mainly in the Annex of the STCW Convention

1. Training and education concerning the use of simulators

<p>Identified gap, with references to the existing provision, if applicable</p>	<p><u>STCW Convention:</u> Regulation I/1 No. 1.26, Regulations I/12, II/1, III/1</p> <p><u>STCW Code:</u> Section A-I/1, A-I/12, A-II/1 and A-III/1</p> <p><u>STCW Code:</u> Section B-I/1, B-I/12, B-II/1 and B-III/1</p>
	<p>Simulator training, accompanied by new training technologies and digitalization like Virtual Reality (VR), is used in a wide range of safety critical industries (e.g. for airline pilots). Whereas simulators can be a very effective tool to train (e.g. emergency situations, dense traffic situations in night time situations, collision prevention, navigation under reduced visibility) and contributes to an improvement of competences and subsequently the level of safety, However, there are certain areas where seagoing service and the experience of the real life onboard cannot be replaced (e.g., heavy weather, working in remoteness / isolation/ situational awareness under realtime operational pressure and, consequently, a high level of stress).</p>
	<p>The STCW Convention today provides the possibility to substitute seagoing service with simulator time via Article IX through a communication to IMO and its member states. However, there is no framework governing this possibility, which leads to different interpretations and subsequently to difficulties during the process of endorsing Certificates of Competency (CoCs).</p>
	<p>The process of establishing an agreed time for substitution of seagoing time by additional simulator training required as part of the training programme (II-1/III-1 only) should come hand in hand with efforts to increase the quality of the remaining required time at sea. This might be accompanied by the use of new technologies and digitalization like distance learning and teaching, online lessons from maritime institutions, etc. Furthermore, the adjustment of tables in the STCW Code should be considered to facilitate a common understanding and interpretation on which competences can be obtained with which methodology and what amount of time would be required.</p>
	<p>Include an agreed framework for replacement of seagoing service by simulator time in the definitions of the STCW Convention, preferably by adding a new paragraph, as it affects a wide range of regulations within the STCW Convention and sections within the STCW Code. As an alternative, each section would have to be adjusted appropriately.</p> <p>Respectively, provisions concerning the minimum technical specification for simulation equipment as well as the qualifications and experience of instructors and assessors and the competences and associated knowledge, understanding and proficiency in which</p>

	<p>seagoing time can be replaced with time spent in simulators (e.g. Collision Avoidance, Emergency Management, Communication) should be revised, partly tightened (e.g. in regards to technical aspects and maximum number of students) and specified.</p> <p>The replacement of seagoing time with simulator training should remain a possibility for Parties and not become a requirement. The amount of seagoing time required in general as specified in the specific regulations and sections could hereby remain with an added reference to the possibility of a limited replacement of seagoing time with simulator time.</p>
Principle(s)	<p>1. Consider all provisions of the Convention and Code in order to be comprehensive</p> <p>3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications</p> <p>4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations</p> <p>5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification</p> <p>7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies</p> <p>10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment</p> <p>13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training</p>
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	<p>1. Emerging technologies on ships and ship operations</p> <p>3. Emerging technologies in education and training</p> <p>4. Facilitation, flexibility and quality of onboard, shore-based and workshop skills training, including use of simulators</p> <p>6. Requirements for sea time or practical experience in relation to new and emerging technologies including the use of simulation</p>

2. Digitalization of documentation, including certificates issued under STCW and e-certification

<p>Identified gap, with references to the existing provision, if applicable</p>	<p><u>STCW Convention:</u> Regulations I/2, I/9 and I/10 <u>STCW Code:</u> Section A-I/2, paragraph 9.1, Section A-I/9, Section B-I/2, paragraph 4</p>
	<p>The objective of reviewing this area is to ensure that all certificates and documentation under the STCW Convention and Code are included in and covered by the mutual understanding of electronic certificates.</p> <p>Certificate of Competency, Certificate of Proficiency, Documentary Evidence and Medical certificates and any other documents issued under the STCW, must be accepted in electronic format. Medical certificates format in part A-I/9 also require a signature of the seafarer. The approval by MSC 107 of Guidelines on the use of electronic certificates of seafarers (MSC.1/Circ.1665), in conjunction with the adoption of the related amendments to the STCW Convention and Code (Resolution MSC 540(107) and MSC 541(107)), entering into force by 1 January 2025, has secured a foundation for future electronic documentation and certification for seafarers.</p> <p>As provided and ensured by the above guideline and amendments, it is important that the STCW Convention and STCW Code remains a flexible framework for any Administration, regarding the issue of documentation and certification, after the completed review and revision process.</p> <p>We consider this an overall and general part of the entire review phase, that if any area of the Convention and Code are found not providing the possibility of electronic documentation and certification, this should be identified, addressed and amended in the revision process.</p> <p>Following the amendments that will enter into force in 2025 it is relevant to review the status of the certificates listed in Section A-I/2 paragraph 9.1 and consider reference to electronic certificates. Destroyed or reported lost, when it concerns electronic certificates may not necessarily apply.</p> <p>In accordance with MSC.1/Circ 1665 on "GUIDELINES ON THE USE OF ELECTRONIC CERTIFICATES OF SEAFARERS", definition 3.1 states that "Electronic certificate means a certificate issued in an electronic format established/approved by the Administration to ensure viewing compatibility for all intended verifiers." This means a flexible approach to formats, intended for allowing Administrations to use any format providing most value and viewing compatibility. Based on this, format of electronic certificates should not be further defined, being this is already covered by the amendments and guideline, as to allow for technical development and future technologies. Nevertheless, for the reasons mentioned above, consideration should be taken on whether it should be included in Part B, to facilitate the work of some Administrations which may have more difficulties.</p>
	<p>In section B-I/2 paragraph 4 in the format of the CoPs the photograph may not be needed for electronic certificates. Although part B of the STCW Code is a recommendation, it shall be aligned.</p> <p>In line with what was proposed for the amendments entering into force in 2025, signatures should not be required for electronic medical</p>

	<p>certificates.</p> <p>Consider proposing to move the format of the CoPs [from part B to part A of the STCW Code]. During EMSA's visits and inspections different types of documents have been identified and they were written in a way that was confusing, especially those that would allow the seafarer to work on board tankers (tanker certificates). This could potentially facilitate the endorsement. It should be noted that the endorsement format as it is established in Section A-I/2 for regulation I/10 is not valid for the endorsement required for the CoPs for tankers, so a format for such endorsement may be considered to be proposed. A new format for electronic certificates should also be considered. The text included in the form of the STCW might be difficult to read and not necessary when having the certificate in a mobilephone.</p>
Principle(s)	<p>1. Consider all provisions of the Convention and Code in order to be comprehensive</p> <p>5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification</p> <p>6. Seek the reduction of unnecessary administrative burdens</p>
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	2. Digitalization of documentation, including certificates issued under STCW

3. Registration of Cadets/Persons onboard for training purposes

Identified gap, with references to the existing provision, if applicable	<p><u>STCW Convention</u>: Regulation I/2.14</p> <p>Persons who are training onboard are not included in the list of registered persons by the Administration and should therefore be addressed as well.</p> <p>Include in Regulation I/2.14 cadets in the register of certificates</p>
Principle(s)	<p>13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training</p> <p>15. Ensure that the standards within the Convention and Code for the training and certification of seafarers facilitate, to the extent possible, the mobility of seafarers across different ship types and trades</p> <p>16. Consider the cumulative impact of requirements for seafarer education, training and certification</p>

Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	4. Facilitation, flexibility and quality of onboard, shore-based and workshop skills training, including use of simulators
	6. Requirements for sea time or practical experience in relation to new and emerging technologies including the use of simulation

4. Structure and monitoring of onboard training

Identified gap, with references to the existing provision, if applicable	<p><u>STCW Convention:</u> Regulations I/6, I/8, I/11 and I/14</p> <p><u>STCW Code:</u> A-I/6, A-I/8, A-I/11 and A-I/14</p>
	<p>Document MSC 101/21/1 proposes to establish a new output to develop measures to ensure the quality of onboard training as a part of the mandatory seagoing service required in the STCW Convention. A lack of structure and a lack of monitoring procedures have been identified as an underlying reason for a lack of quality of onboard training.</p>
	<p>In order to facilitate more coherent development of an approved seagoing service as part of the approved training programme (on-board training), modernisation could focus on the on-board training register and the possibility of developing digital tools to monitor on-board training. This should be accompanied by strengthening the role of the companies and the persons conducting training or assessment on board (training officers) in this respect. This would enable the educational and training institutions reliably assess the Training Record Books ensuring that the on-board tasks are actually carried out by the student, while reinforcing the responsibility of the companies in this respect.</p>
	<p>Companies should also ensure that the trainees and the responsible officers on board have sufficient time for performing their duties arising from the STCW Convention and Code.</p> <p>The ISM Company should also have a role in this process for both knowledge sharing from the office as well as facilitation. This should be part of the STCW regulations and Code and is also relevant for the developments under alternative certification.</p>
	<p>Establish procedures detailing the planning, supervision and monitoring of the training on board. Include digital tools to monitor the onboard training.</p>

Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
	5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification
	6. Seek the reduction of unnecessary administrative burdens
	13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training
	16. Consider the cumulative impact of requirements for seafarer education, training and certification
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	3. Emerging technologies in education and training
	4. Facilitation, flexibility and quality of onboard, shore-based and workshop skills training, including use of simulators
	6. Requirements for sea time or practical experience in relation to new and emerging technologies including the use of simulation

5. Use of distance learning to assist onboard training

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention</u> : Regulations I/6, I/8, I/11 and I/14 <u>STCW Code</u> : Section A-I/6, A-I/8, A-I/11 and A-I/14
	One measure that would certainly be welcomed by maritime education and training institutions and especially by seafarers is distance learning. E-learning would be a very useful tool for training to maintain competence and for updating knowledge (re-skilling) and upskilling when it is not necessary to carry out practical or academic classroom training because of its complexity or the use of equipment necessary to carry out such training. E-learning could assist onboard training because frequent (e.g. weekly) sessions could assist the learning process and therefore improve the quality of onboard training by assisting assigned training officers with learning tools for complex topics. As this will be part of the seafarer's training, the Parties should ensure sufficient monitoring while respecting the work and rest hours.
	Distance learning programmes in combination with guidance for the onboard responsible master and officers would benefit the learning objectives of seagoing service. The ISM Company should also have a role in this process for both

	knowledge sharing from the office as well as facilitation. This should be part of the STCW regulations and Code and is also relevant for the developments under alternative certification.
	Develop -distance learning courses to maintain competences and for re/up-skilling purposes.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
	5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	6. Seek the reduction of unnecessary administrative burdens
	13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training
	16. Consider the cumulative impact of requirements for seafarer education, training and certification

6. Alignment of medical standards with MLC, 2006

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention</u> : Regulation I/9 paragraph 6
	Paragraph 6 should be aligned with the text of MLC, 2006 Standard A1.2 <i>"If the period of validity of a certificate expires in the course of a voyage, the certificate shall continue in force until the next port of call where the seafarer can obtain a medical certificate from a qualified medical practitioner, provided that the period shall not exceed three months."</i>
	Furthermore, Regulation I/9 may also include a provision as per Standard A1.2.4 of the MLC, 2006: <i>"Practitioners must enjoy full professional independence in exercising their medical judgement in undertaking medical examination procedures."</i>
	Align the provisions with MLC, 2006 Standard A1.2

Principle(s)	8. Seek to use a consistent terminology and taxonomy throughout the Convention and Code
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	11. Addressing different interpretations
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

7. Policy on drug and alcohol

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention:</u> Regulation I/14 <u>STCW Code:</u> Section B-VIII/1.8
	The guidance proposes to the companies to consider implementation of policies on drug and alcohol. However, this guidance should be moved to the text of STCW Convention in Regulation I/14.
	Revise the provisions to include them in Regulation I/14 of STCW Convention.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	15. Lessons learned
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)

8. Training to prevent violence and harassment, including sexual harassment, bullying and sexual assault

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention:</u> Chapters II and III <u>STCW Code:</u> Section A-I/14, A-I/16, Chapters II and III
	Chapter II and III of the STCW Convention and Code do not include provisions to prevent violence and harassment, including sexual harassment, bullying and sexual assault neither in the regulations nor in the code for each certificate. Further, if the chapters are amended, it should be taken into account that the training of current seafarers should be addressed as they are trained in accordance with the existing Convention. It has proven necessary to address the problem of violence and harassment, including sexual harassment, bullying and sexual assault much more proactively than the current Convention and Code describes. The issue should be addressed at all educational as well as administrative levels within the Code.
	Finally, it is noted that section A-I/16 of the STCW Code should reflect "prevention of violence and harassment, including sexual harassment,

	bullying and sexual assault ” in the area of “fitness for duty and watchkeeping arrangements” and section A-I/14 “Responsibilities of companies” may include a more specific provision on the matter of violence and harassment, including sexual harassment, bullying and sexual assault.
	Ensure that the provisions include training to prevent violence and harassment, including sexual harassment, bullying and sexual assault, in the training for any new CoC and CoP as well as for the revalidation of certificates issued under existing provisions.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	7. Psychological safety, bullying and harassment, including SASH, gender diversity and gender sensitization
	8. Mental health
	10. Addressing inconsistencies

9. Training of smaller vessels such as commercial yachts

Identified gap, with references to the existing provision, if applicable	<p><u>STCW Convention:</u> Chapter II, III, VII</p> <p><u>STCW Code:</u> Section A-II, A-III, A-VII</p> <p>The provisions should be scrutinized during the review to determine if there is a need for more specialized certificates for specific types of vessels – in particular small vessels such as commercial yachts.</p> <p>The certificate and the relevant competencies could be included in the Chapters of the Regulation (II and III) and in Chapter A and B of the STCW Code or in the alternative certification Chapter VII.</p> <p>Include a specialized certificate for small vessels such as commercial yachts, the corresponding competencies and the minimum knowledge, understanding and proficiency required for the certification.</p>
Principle(s)	<p>1. Consider all provisions of the Convention and Code in order to be comprehensive</p> <p>2. Not to downscale existing minimum standards of training, certification and watchkeeping</p> <p>9. Not address minimum safe manning levels which are regulated by the SOLAS Convention (regulation V/14)</p> <p>10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment</p>

	13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training
	15. Ensure that the standards within the Convention and Code for the training and certification of seafarers facilitate, to the extent possible, the mobility of seafarers across different ship types and trades
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	1. Emerging technologies on ships and ship operations
	3. Emerging technologies in education and training
	17. Alternative certification under chapter VII

10. New training and education on the use of modern sails

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention</u> : Regulations II/1, II/2, II/3, II/4, III/1, III/2, III/3, III/4, III/6 and III/7, Chapter V <u>STCW Code</u> : A-II/1, A-II/2, A-II/3, A-II/4, A-III/1, A-III/2, A-III/3, A-III/4, A-III/6 and A-III/7, Chapter V
	The use of new sails on merchant vessels is becoming more common, reducing the carbon footprint and cutting fuel costs. It is important that students in the deck and engine departments are trained in the use of these new technologies, with knowledge of how to harness and exploit the wind, taking into account its advantages, disadvantages and safe use.
	An alternative option to address this gap would be to include this under Chapter V.
	Include knowledge, understanding and proficiency of a competence for use of modern sails.
Principle(s)	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
	15. Ensure that the standards within the Convention and Code for the training and certification of seafarers facilitate, to the extent possible, the mobility of seafarers across different ship types and trades
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	3. Emerging technologies in education and training

11. New competence for onboard computers on passenger ships or shore-based support as well as co-operation and decision making after a flooding casualty

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention</u> : Regulation V/2 <u>STCW Code</u> : A-V/2
	<p>The Maritime Safety Committee at its 89th session approved the amendments to SOLAS regulation II-1/8-1, which introduces a mandatory requirement for either onboard stability computers or shore-based support for the purpose of providing operational information to the Master of a passenger ship for safe return to port after a flooding casualty.</p> <p>New skills and knowledge are required for effective use of the information provided by the onboard computers on passenger ships or shore-based support as well as co-operation and decision making after a flooding casualty. Such new skills are not covered by existing regulations. Changes may be needed to include a new competence in Regulation V/2.</p>
	Add a new competence, with the relevant knowledge, understanding and proficiency for effective use of the information provided by the onboard computers on passenger ships or shore-based support as well as co-operation and decision making after a flooding casualty.
Principle(s)	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
	11. Ensure that the Convention and Code are fully aligned with the IMO standards on ship's operation, construction and equipment
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations
	6. Requirements for sea time or practical experience in relation to new and emerging technologies including the use of simulation
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

12. Alignment of the requirements for enclosed space entry training with SOLAS

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention</u> : Chapter VI <u>STCW Code</u> : Section A-VI
	<p>Enclosed spaces continue to be a particular risk area for seafarers.</p> <p>SOLAS Ch III Regulation 19 requires all ships to conduct enclosed</p>

	<p>space entry drill but there is no mandatory requirement for training and certification standards to be met.</p> <p>SOLAS CH XI-1 requires the carriage of appropriate portable atmosphere testing instrument or instruments. Seafarers should be trained and certified in the use of this equipment.</p> <p>Requirements for enclosed space entry training should be added to Chapter VI for all seafarers. The competence to apply occupational health and safety precautions & measures and associated KuP's as contained within Table A-V/1-1-1 & A-V/1-1-2 should be added to A-VI/1-2 FPFF and a model course developed.</p>
	Align the provisions with SOLAS Ch III Regulation 19 and Ch XI-1
Principle(s)	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
	11. Ensure that the Convention and Code are fully aligned with the IMO standards on ship's operation, construction and equipment
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	15. Lessons learned
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

13. Upskilling in alternative certification

Identified gap, with references to the existing provision, if applicable	<p><u>STCW Convention</u>: Chapter VII</p> <p><u>STCW Code</u>: Section A-VII</p>
	<p>It is necessary for a seafarer to complete the education of an entire table (e.g. A-II/1) of the STCW code if an Administration shall certify it. This means that the resources on board may be used in a sub-efficient manner – both in relation to new technology and when it comes to implementation of existing regulation. It should be possible to certify a seafarer who holds a Certificate of Competency/Certificate of Proficiency already for a specific additional function onboard without certifying for an entire education. Potentially, in terms of retention of seafarers in the industry and in terms of the on board working environment, this approach could be beneficial as the crew is not reduced, but the work load is more equally distributed – both across departments and over time – which is in accordance with the principles of regulation VII/3.3 of the Convention.</p>
	<p>Ensure that the crew on board is upskilled and that a more holistic view on the operation of a modern ship is facilitated allowing more flexibility for everybody's gain</p>

Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	9. Not address minimum safe manning levels which are regulated by the SOLAS Convention (regulation V/14)
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
	13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training
	15. Ensure that the standards within the Convention and Code for the training and certification of seafarers facilitate, to the extent possible, the mobility of seafarers across different ship types and trades
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	1. Emerging technologies on ships and ship operations
	3. Emerging technologies in education and training
	17. Alternative certification under chapter VII

14. No standard set for prevention of drug abuse

Identified gap, with references to the existing provision, if applicable	<u>STCW Convention</u> : Regulation VIII/1 <u>STCW Code</u> : Section A-VIII/1.10
	Regulation VIII/1 paragraph 2 refers to drug & alcohol abuse. Section A-VIII/1 paragraph 10 refers to standard for preventing alcohol abuse only. However, there is no minimum standard for drug abuse or definition of what constitutes drug abuse. .
	Include a standard for prevention of drug abuse.
Principle(s)	7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	10. Addressing inconsistencies
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)

15. Rest periods to be aligned with Maritime Labour Convention (MLC,2006)

Identified gap, with references to the existing provision, if applicable	STCW Convention: Regulation VIII/1.1.1 -1.2 rest periods STCW Code: Section A-VIII/1.2.1. - 2.4 and 2.6 - "rest period"
	The provisions of resting hours are duplicated in the MLC,2006 and there is a different ratification status of MLC,2006 and STCW.
	Align the provisions with MLC Standard A.2.3 or clarify them
Principle(s)	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	6. Seek the reduction of unnecessary administrative burdens
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

16. Definition of watchkeeping personnel in relation to technological developments

Identified gap, with references to the existing provision, if applicable	STCW Convention: Regulation VIII/1.1.1
	To accommodate new technologies there might be a need to define currently undefined watchkeeping personnel so it includes e.g. Remote Operators having watchkeeping duties.
	Define the watchkeeping personnel which should be aligned with the technological developments
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
	7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies
	8. Seek to use a consistent terminology and taxonomy throughout the Convention and Code
	11. Ensure that the Convention and Code are fully aligned with the IMO standards on ship's operation, construction and equipment
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	18. Watchkeeping arrangements and principles to be observed (chapter VIII)

	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments
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17. Provisions related to new and emerging technologies

Identified gap, with references to the existing provision, if applicable	<p><u>STCW Convention</u>: Regulation VIII/2.2.1, 2.2.3</p> <p><u>STCW Code</u>: Section A-VIII/1.4, A-VIII/1.9, A-VIII/2 - part 3 & 4 – general</p>
	<p>Regulation VIII/2.2.1 mentions that the officers “<i>when they shall be physically present</i>”, which may hinder the accommodation of new and emerging technologies. This should be discussed and align with development of MASS-Code e.g. bridge zero (B0) principle. Human (OOV) is on duty (on call) on board the ship and/or remote location, but not necessarily physically present at all times on the bridge and/or remote navigation workstation. It should also be discussed if a Remote Operation Centre (ROC) is considered as a “directly associated location”.</p> <p>The same goes for Regulation VII/2.2.3 where it mentions that “<i>officers in charge of an engineering watch... ..under the direction of the chief engineer officer, shall be immediately available and on call to attend the machinery spaces and, when required, shall be physically present in the machinery space during their periods of responsibility</i>”.</p> <p>Regulation VIII/2.2.3 may also hinder the accommodation of new and emerging technologies which should be possible to be done also remotely by equivalent means.</p> <p>Several provisions of the STCW Code might also be affected.</p> <p>In Section A-VIII/1.4, it is mentioned “The requirements for rest periods laid down in Section A-VIII/1.4 paragraphs 2 and 3 need not be maintained in the case of an emergency or in other overriding operational conditions”. In case these provisions would be in any extent applied to remote operators, it should be considered whether this is necessary and justified for Remote Operators who can be relieved more easily than people on board. In order to secure the continuity of operations in emergency situations. it may be justified but not the same way as on board. A distinction needs to be made between emergencies that occur on board and need to be handled by the remote operators, and emergencies in the ROC itself, like a fire in the ROC building; also national jurisdiction of the location of the ROC has to be observed with regard to working arrangements.</p> <p>In Section A-VIII/1.9, it is mentioned that “The hours of rest provided for in paragraph 2.1 may be divided into no more than three periods, one of which shall be at least 6 hours in length and neither of the other</p>

	<p>two periods shall be less than one hour in length. The intervals between consecutive periods of rest shall not exceed 14 hours. Exceptions shall not extend beyond two 24-hour periods in any 7-day period.” In case these provisions would be in any extent applied to remote operators, the relation to the land based HSE requirements should be further explored. The national jurisdiction of the location of the ROC has to be observed with regard to working arrangements.</p> <p>Section A-VIII/2 (part 3 & 4 – general) might need to be revised in relation to the competencies and role of remote operators.</p> <p>In Section A-VIII/2, the definition of watch/watchkeeping is missing. The review should take into account different stages of watchkeeping (on scene, remote, with support of new technical equipment).</p> <p>In addition, Section A-VIII/2.1 and 2.2 (Part 1) might need to be reviewed depending on interpretation, terminology and to what extent these provisions may be applied to Remote Operations. If these provisions are considered to cover conventional deck and engine officers only, then no gap is identified.</p> <p>Ensure that the Regulations accommodate new and emerging technologies.</p>
Principle(s)	<p>1. Consider all provisions of the Convention and Code in order to be comprehensive</p> <p>2. Not to downscale existing minimum standards of training, certification and watchkeeping</p> <p>3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications</p> <p>4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations</p> <p>5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification</p>
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	<p>1. Emerging technologies on ships and ship operations</p> <p>18. Watchkeeping arrangements and principles to be observed (chapter VIII)</p> <p>19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments</p>

Annex 2

Gaps identified mainly in part A of the STCW Code

1. Gender reference in medical certificates

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-I/9
	Paragraph 7 states that “The medical certificate provided for in regulation I/9, paragraph 3 shall include the following information as a minimum: <i>.2.3 Gender: (Male/Female)</i> Therefore, such seafarer information should also reflect gender equality and inclusivity. Guidelines by other international organizations such as WHO and the United Nations on the definition of sex and gender should also be taken into consideration. Furthermore, reference to gender-related issues in the MLC, 2006, for instance, Standard A3.1 – Accommodation and recreational facilities, paragraph 9 (b) “separate sleeping rooms shall be provided for men and for women;”.
	Ensure the provision reflects gender equality and inclusivity.
Principle(s)	8. Seek to use a consistent terminology and taxonomy throughout the Convention and Code
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	7. Psychological safety, bullying and harassment, including SASH, gender diversity and gender sensitization

2. Standards of competence to address mental health awareness and clarification of medical care and certification requirements

Identified gap,	<u>STCW Code</u> : Sections A-I/9.2.3 and .4, Table A-VI/1-4, A-VI/4-2
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with references to the existing provision, if applicable	<p>The review should identify tools and methods to allow seafarers to recognize risk factors and know how and when to search for appropriate help. Currently, there are no provisions covering this.</p> <p>Mental health awareness should include e.g. recognizing possible problems at an early stage, ways to search help and destigmatizing mental issues.</p> <p>The decision on which Chapter these standards will be included should be determined at the revision phase.</p> <p>One possibility would be to include this in the table A-VI/1-4 - competence in <i>personal safety and social responsibilities</i> and e.g. under the current competence of <i>contribute to effective human relationships on board ship</i>.</p> <p>It should be considered if possible new competences in the table A-VI/1-4 should also apply to existing seafarers in order to have a positive impact on board more quickly. This could perhaps be addressed by transitional provisions if considered necessary.</p> <p>Mental health issues may be included in the medical care training already in Section A-VI/4-2 under the <i>diseases, including: .1 medical conditions and emergencies</i> as well as in Sections A-I/9.2.3 and .4. However, if that is the case, they should be mentioned explicitly.</p> <p>Ensure that the provisions address mental health awareness and consider including transitional provisions for the already certified seafarers</p>
Principle(s)	<p>1. Consider all provisions of the Convention and Code in order to be comprehensive</p> <p>3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications</p> <p>7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies</p> <p>10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment</p>
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	<p>7. Psychological safety, bullying and harassment, including SASH, gender diversity and gender sensitization</p> <p>8. Mental health</p> <p>11. Addressing different interpretations</p>

3. Adjust the training on celestial navigation

Identified gap, with references to the existing provision, if applicable	<p><u>STCW Code</u>: Sections A-II/1 and 2</p> <p><u>STCW Code</u>: Sections B-II/1 and 2</p>
	<p>Section A of the STCW Code includes extensive training on celestial navigation and makes several references to it.</p> <p>Nowadays, a wide range of GNSS foresee in 24/7 real-time positioning of ships world wide. The development of multi-receivers using 3 or more GNSS (GPS, GLONASS, GALILEO, BEIDOU, etc.) including continuous integrity monitoring, foresee in a redundant positioning system. Taking into consideration its limited practical use, celestial navigation takes up relatively much time at the nautical educations.</p>
	<p>However, due to the very limited frequency band GNSS operates within, it is easy to disrupt these positioning systems locally on purpose (e.g. by spoofing). Global conflicts may also result in GNSS (local or worldwide) shut downs by, and on request of, the operating authorities.</p> <p>Therefore, the ability to determine the ships position using celestial bodies is still necessary but could be limited and adjusted.</p> <p>Any changes in Section A-II/1 should be seen in conjunction with the requirement of table A-II/2 of being able to determine and allow for compass errors as A-II/2 explicitly mentions celestial observations too. Further, in Section A-VIII/2, part 4-1, para 34.2, the watchkeeping officer's obligation to determine the standard compass error is established. Simply comparing with another compass will not fulfil this obligation. Thus, these requirements should be considered as a whole.</p>
	Adjust the training on celestial navigation taking into consideration the compass errors.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
	5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification
	7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment

	13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	1. Emerging technologies on ships and ship operations
	3. Emerging technologies in education and training
	22. Addressing outdated training requirements

4. Update training for Medical First Aid & Medical Care

Identified gap, with references to the existing provision, if applicable	<u>STCW Code:</u> Section A-VI/4
	There is no provision for mandatory update or refresher training for seafarers qualified in Medical Care or Medical First Aid. The provision of medical treatment, use of medical equipment and best medical practise is subject to change due to ongoing advances in medical science for the benefit of all. Update training shall allow for any changes to be highlighted to those seafarers or persons who are required to have competence in medical first aid or medical care on-board.
	The STCW Code should provide for refresher training at intervals not exceeding 5 years for seafarers qualified in accordance with Section A-VI/4 para. 1-3 Medical First Aid and seafarers qualified in accordance with para. 4-6 Medical Care onboard ship.
	The guidance noted in model course 1.14 & model course 1.15 recommending seafarers undergo refresher courses at 5 yearly intervals should be taken into consideration and possible reviewed to allow for a refresher course of reduced duration.
	Any changes should be looked at with MLC 2006 Guideline B4.1.1 para.3 which recommends update training at approximately 5 yearly intervals. At ILO, there will be a proposal to move this from the guideline to the standard making the provision mandatory.
Principle(s)	Include refresher training for medical care or medical first aid and align the provisions with the possible amendments to MLC 2006 which may require mandatory refresher training for medical care & medical first aid.
	1. Consider all provisions of the Convention and Code in order to be comprehensive
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification

	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
	12. Ensure that the Convention and Code remain the sole IMO instruments addressing standards for training and certification of seafarers
	13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training
	16. Consider the cumulative impact of requirements for seafarer education, training and certification
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	15. Lessons learned
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

5. Standards of competence to address cyber security awareness

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VI/5, A-VI/6
	<p>Under the IMO Resolution MSC.428(98), cyber risk management is mandatory for the Companies. <i>Guidelines on maritime cyber risk management</i> approved by the IMO Facilitation and Maritime Safety Committee provide high-level cybersecurity risk management recommendations. Still, because of different interpretations of cyber security, the available training courses are very different, and they vary:</p> <ul style="list-style-type: none"> • in time – from some hours to some days; • in level – from basic to Ship Cyber Security Officer; • in content – some courses are approved by the relevant Maritime Administration, some not; • in type – initially and periodically; • etc. <p>A common approach regarding minimum cyber security awareness training requirements for all onboard personnel may need to be established according to their role in security.</p> <p>Also, the recent shipping cyber security incidents have shown the need for training at all levels. Awareness should be commensurate with their responsibilities. Changes may be needed to include a new competence(s) in tables A-VI/5 and/or A-VI/6 and relevant Model Courses.</p>
	Ensure that the provision addresses cyber security awareness and consider including transitional provisions for the already certified seafarers
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping

	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
	5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
	12. Ensure that the Convention and Code remain the sole IMO instruments addressing standards for training and certification of seafarers
	13. Take into account different approaches to organizing and structuring education, training and certification, including formats of delivery of training
	16. Consider the cumulative impact of requirements for seafarer education, training and certification
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	20. Cybersecurity

6. No means of establishing blood alcohol level

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/1.10
	The means of establishing the Blood Alcohol Content (BAC) is not matched with any competence or training. The provision should be reviewed to align with MLC,2006 and the ISM company policy.
	Include means of establishing the Blood Alcohol Content (BAC) and ensure is aligned/clarified with MLC,2006 and ISM Code
Principle(s)	7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	10. Addressing inconsistencies
	11. Addressing different interpretations
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

7. ECDIS is not taken fully into account

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2.5 and 2.6 (Part 2)
	ECDIS differs significantly from paper charts when it comes to planning and executing a voyage.
	Ensure that different types of ECDIS are taken into consideration.
Principle(s)	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments
	20. Cybersecurity
	22. Addressing outdated training requirements

8. Familiarisation of watchkeeping personnel with limitations of equipment

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2.8.5
	Watchkeeping personnel shall also understand the limitations of the equipment. It applies to current and possible new technology.
	Many future Key Enabling Technologies for Autonomy might be introduced gradually to be operated in specific conditions (Operational Envelope) and have limitations outside that pre-defined envelope.
	Revise the provision to include familiarization of the limitations of current or future equipment

Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)

9. No definition of lookout and helmsperson

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2 Part 4-1
	<p>In Section A-VIII/2 Part 4-1 Lookout, the term look out is not defined within the STCW Convention and Code, while competencies for a lookout are defined. Table A-II/4 refers to keeping a proper look-out. To address an inconsistent taxonomy, there might be a need for a definition, especially with the development of MASS Code.</p> <p>STCW Code Section A-VIII/2 Part 4-1 Principles to be observed in keeping a navigational watch refers to the lookout and the helmsperson.</p> <p>STCW Code Section A-II/4 Table A-II/4 has competence for a look-out but there is no corresponding competence for helmsperson but it may be inferred that the competence 'steer the ship and also comply with helm orders in the English language' is relevant for the helmsperson.</p> <p>The helmsperson and the lookout are separate except in small ships where an unobstructed all-round view is provided at the steering position and there is no impairment of night vision or other impediment to the keeping of a proper lookout.</p> <p>The lookout must be able to give full attention to the keeping of a proper lookout and no other duties shall be undertaken or assigned which could interfere with that task.</p> <p>The officer in charge of the navigational watch may be the sole lookout in daylight.</p> <p>A common interpretation of the above is that the bridge may be manned</p>

	by a single officer in charge of the navigational watch, with no other officers or ratings on the bridge during the hours of daylight but this is not explicit.
	Include a definition of look out, helmsperson and small ships, taking into account the technological development and the principles of safe manning A.1047(27).
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies
	8. Seek to use a consistent terminology and taxonomy throughout the Convention and Code
	10. Address training, in principle, related to safety of life and property at sea, security and the protection of the marine environment
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	10. Addressing inconsistencies
	12. Addressing taxonomy and terminologies
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)

10. Technological developments affecting navigational watch

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2 Part 4-1
	<p>In Section A-VIII/2.14 (Part 4-1), it is mentioned that “<i>A proper lookout shall be maintained at all times in compliance with rule 5</i>”. However, there is a possible gap on Rule 5, which states that: “<i>Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.</i>” It must be interpreted so that look-out by sight and hearing can be done also remotely and/or by machine. Already now look-out by hearing is done with the help of technical devices on enclosed bridges and similarly the voice could be transferred e.g. to a ROC. Additionally, after writing this provision, AIS has increased navigational safety significantly.</p> <p>In addition, Section A-VIII/2.16 (Part 4-1) states that “<i>The officer in charge of the navigational watch may be the sole lookout in daylight...</i>” and it may hinder the accommodation of new and emerging</p>

	<p>technologies.</p> <p>Section A-VIII/2.16.3 (Part 4-1) notes that “<i>assistance is immediately available to be summoned to the bridge when any change in the situation so requires.</i>” This could also be considered as a possible gap, subject to interpretations, may be too restrictive regarding new technologies.</p> <p>Section A-VIII/2.18 (Part 4-1) notes that when deciding the composition of the watch on the bridge, it should be taken into account that “<i>at no time shall the bridge be left unattended (18.1), whether the ship is fitted with automatic steering (18.5) and unmanned machinery space (UMS) controls on the bridge (18.7).</i>”. These may hinder the accommodation of new and emerging technologies. A person (OOW) is not necessary to be physically present at all times on the bridge and/or remote navigation workstation. It should be clarified if "Automatic steering & UMS controls" cover even other automated and autonomous systems and if “on the bridge” should be amended to any other physical location to accommodate new technology. UMS control is also mentioned in paragraph 21. Paragraph 29 also mentions that “effective use shall be made of UMS engine controls provided on the bridge”, where it might be too restrictive and could cover the state of possible bridge automation. Paragraph 51 includes requirements for physical presence which may hinder UMS. It is unclear how a safe anchor or harbour watch is maintained at UMS.</p> <p>Section A-VIII/2.24 (Part 4-1) mentions that “the officer in charge of navigational watch shall keep the watch on the bridge” and that “in no circumstances leave the bridge until properly relieved”. These mentions of “bridge” may hinder the accommodation of new and emerging technologies.</p> <p>Section A-VIII/2.27 (Part 4.1) should be reviewed decide if a MASS/remote operator should only be allowed to operate one vessel.</p> <p>Paragraph 30 should also be reviewed to possibly include the knowledge of operation, characteristics, and limitations of automated and autonomous systems used for navigation or add a new paragraph.</p> <p>Paragraphs 32 and 45.2 should be clarified because if interpreted strictly, they might hinder the use of new technologies.</p> <p>Ensure that the provisions accommodate new and emerging technologies and the existence of remote operators since new technology may result in alternative means of achieving safe watchkeeping, even outside daylight hours.</p>
Principle(s)	<p>1. Consider all provisions of the Convention and Code in order to be comprehensive</p> <p>2. Not to downscale existing minimum standards of training, certification and watchkeeping</p> <p>3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications</p>

	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
	5. Address the impact and possibilities from the implementation and use of digitalization and emerging technologies in seafarers' education, training and certification
	7. Address inconsistencies and different interpretations within the Convention and Code, including clarifications already issued by relevant IMO bodies
	8. Seek to use a consistent terminology and taxonomy throughout the Convention and Code
Criterion	Issues emanating/resulting from both external factors and existing provisions
Specific area(s)	1. Emerging technologies on ships and ship operations
	3. Emerging technologies in education and training
	4. Facilitation, flexibility and quality of onboard, shore-based and workshop skills training, including use of simulators
	15. Lessons learned
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

11. Too restrictive bridge control in watchkeeping

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2.22
	Section A-VIII/2.22.4 (Part 4-1) notes that <i>“Relieving officers shall personally satisfy themselves regarding the procedures for the use of main engines to manoeuvre when the main engines are on bridge control”</i> .
	It should be reviewed if “bridge control” is too restrictive. For example, "depending on the control mode of engines" could accommodate different types of control.
	Ensure that the provision is not so prescriptive, ahead of the new and emerging technologies.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications

	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

12. Types of compasses and safety status onboard

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2
	Sections A-VIII/2.22.5.2 and 34.2 (Part 4-1) refer only to <i>gyro- and magnetic</i> compasses. A new paragraph could be added to include the safety status onboard the ship, especially the cargo spaces. In future ships this will be important if more spaces will be unattended and monitored using cameras, infrared cameras etc.
	Include more types of compasses.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)

	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments
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13. Unnecessary requirements when length of watch varies

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2.34
	<p>In paragraph 34.2 “the standard compass error is determined at least once a watch” while in 34.3 “the automatic pilot is tested manually at least once a watch.”. This might be an unnecessary requirement when length of watch varies e.g. from 30 minutes to 12 hours.</p> <p>It should also be reviewed in combination with SOLAS Reg V/24.4 <i>"The manual steering shall be tested after prolonged use of heading and/or track control systems, and before entering areas where navigation demands special caution."</i> This could be covered already or serve as a model for rephrasing.</p>
	Ensure that the provisions take into consideration and are compatible with different lengths of watch
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

14. Echo-sounder device as a valuable navigational aid

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2.36
	Section A-VIII/2.36 (Part 4-1) could highlight other devices that could be beneficial, apart from the echo-sounder, or to remove all-together this mention.
	Include more devices or delete any reference to echo-devices
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)

15. Technological developments affecting engineering watch

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2- part 4-2 - engineering watch
	Depending on the level of automation, technical development may replace engine watchkeeper. This would have effect to the whole part 4-2 and it should also be discussed in combination with the remote operator. A differentiation maybe necessary (remote/on scene). We should avoid hindering the accommodation of new and emerging technologies. More specifically:
	Paragraphs 64 and 69 should be reviewed to possibly include also completely unmanned engine rooms. Paragraph 80 should be reviewed to include also other technologies that can produce the sound signals without air or steam. Paragraph 83 should also be interpreted or amended to cover remote inspections as well in order to accommodate new technologies. provisionsEnsure that the provisions accommodate new and emerging technologies and the existence of remote operators since new technology may result in alternative ways to arrange engine watch safely.

Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

16. Technological developments affecting radio watch

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2 - part 4-3 - radio watch
	Automation and new technologies might have an impact on radio watch arrangements. This should also be discussed in combination with the role of remote operator. There could be a possible interference with ITU Radio regulations and SOLAS IV/Regulation 12.
	Ensure that the provisions accommodate new and emerging technologies and the existence of remote operators since new technology may result in alternative ways to arrange radio watch safely.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

17. Technological developments affecting watchkeeping in port

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section A-VIII/2 -part 5 - watchkeeping in port
	Technological development may bring alternative ways to arrange port watch safely. A differentiation maybe necessary (remote/on scene). Paragraphs 91 and 95.1. should be reviewed. Paragraph 102.1 should also be reviewed to cover remote inspections as well in order to accommodate new technologies. Paragraph 105 should be reviewed since the requirements for physical presence may hinder UMS. It is unclear how a safe anchor or harbour watch is maintained at UMS.
	Ensure that the provisions accommodate new and emerging technologies and the existence of remote operators since new technology may result in alternative ways to arrange watchkeeping in port safely.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

Annex 3

Gaps identified in part B of STCW Code

1. Outdated reference to the ILO/IMO guidelines on the medical examinations of seafarers

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section B-I/9.2
	The reference to the ILO/IMO guidelines on the medical examinations of seafarers is outdated and should be updated.
	Ensure that the updated name of the ILO/IMO guidelines on the medical examination of seafarers is mentioned.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	8. Seek to use a consistent terminology and taxonomy throughout the Convention and Code
Criterion	Issues emanating/resulting from existing provisions based on implementation experiences
Specific area(s)	10. Addressing inconsistencies
	19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

2. Rest periods in watchkeeping

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section B-VIII/1.1
	The provision should be reviewed to decide whether it should cover remote operations. The relation with land based HSE rules should also be explored.

	Revise the provisions to cover remote operations or to align with land based HSE rules.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive 2. Not to downscale existing minimum standards of training, certification and watchkeeping 3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications 4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations 18. Watchkeeping arrangements and principles to be observed (chapter VIII) 19. Alignment of STCW with requirements placed on ships, seafarers, and shipowners by other IMO and relevant international instruments

3. ECDIS is not covered in STCW Code, part B

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section B-VIII/2 part 2, 3, 4 There are no provisions covering ECDIS in part B of the STCW Code. ECDIS differs significantly from paper charts when it comes to planning and executing a voyage. However, there are no provisions in part B of the STCW Code covering ECDIS. Include guidance on ECDIS.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive 2. Not to downscale existing minimum standards of training, certification and watchkeeping 3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications 4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations 18. Watchkeeping arrangements and principles to be observed (chapter VIII)

4. Update guidance on GMDSS

Identified gap, with references to the existing provision, if applicable	<u>STCW Code</u> : Section B-VIII/2 part 4.3
	The provisions on GMDSS should be reviewed for outdated, changed, or obsolete requirements.
	Update the provisions on GMDSS taking into consideration CP, ITU Radio Regulations.
Principle(s)	1. Consider all provisions of the Convention and Code in order to be comprehensive
	2. Not to downscale existing minimum standards of training, certification and watchkeeping
	3. Address new and obsolete competencies and proficiencies, outdated requirements and unnecessary duplications
	4. Address the possibilities of digitalization and emerging technologies and their impact on ships and ship operations
Criterion	Issues emanating/resulting from external factors including trends and new developments
Specific area(s)	1. Emerging technologies on ships and ship operations
	18. Watchkeeping arrangements and principles to be observed (chapter VIII)
	22. Addressing outdated training requirements