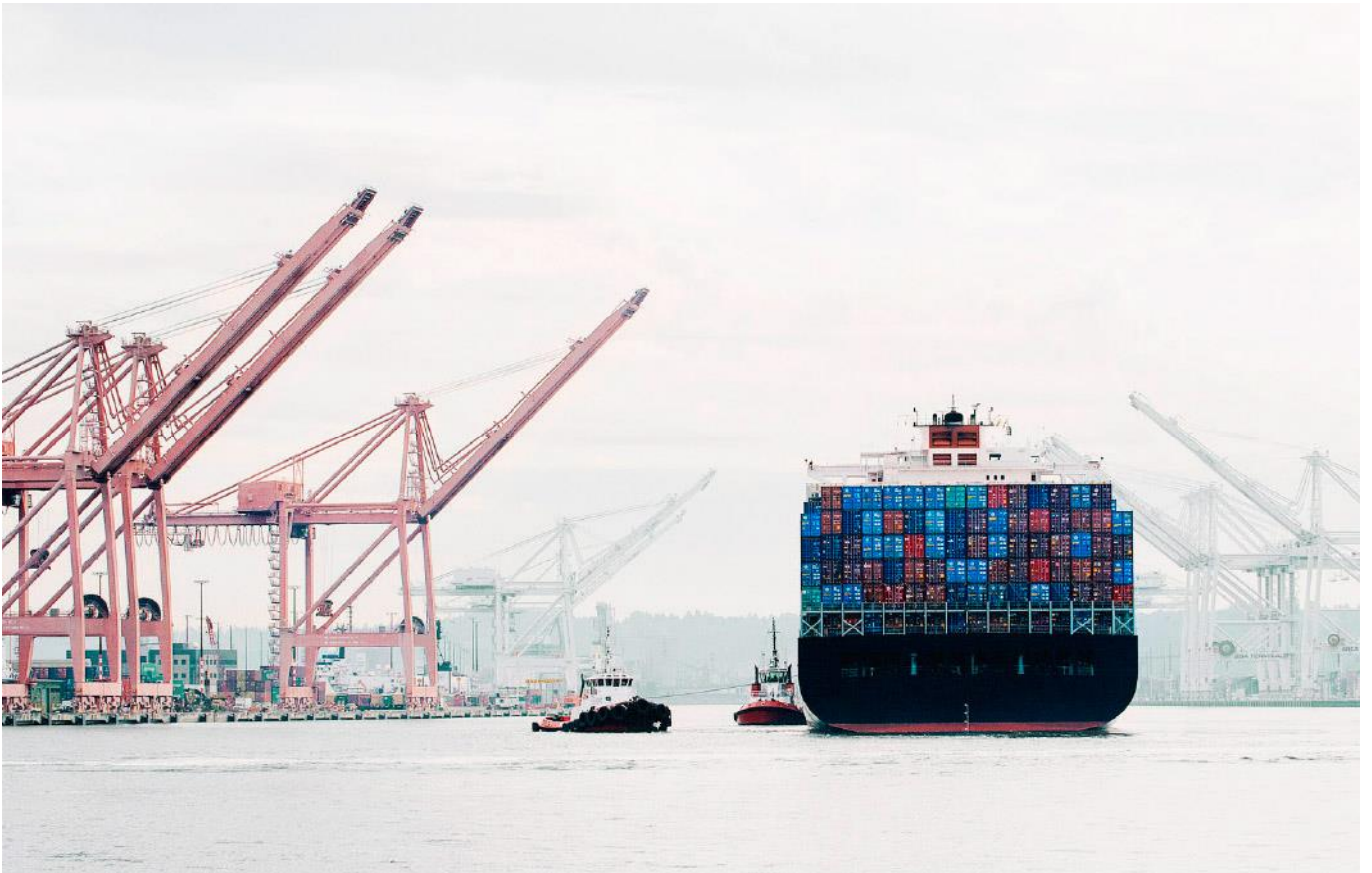


IUMI Policy Agenda





IUMI Policy Agenda

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UNDER REVIEW

1. Arctic sailings

Brief description

Ice conditions make Arctic sailings a relevant option for more commercial vessels transiting between Europe and Asia and the number of cruise vessels in polar waters are on the rise. Ice conditions, the role of class, vessel design, remoteness, support networks, availability of icebreakers, SAR, and experience and training of crew are amongst the relevant issues for underwriters in assessing this risk. While it is recognised that maritime and offshore energy activities in the Arctic poses a number of associated risks and challenges, this agenda item is limited to considerations concerning vessel transits and destination shipping in relation to the Polar Code only.

The International Code for Ships Operating in Polar Waters (Polar Code) and the associated new SOLAS chapter XIV and MARPOL amendments entered into force 1 January 2017. Vessels certified under SOLAS, i.e. cargo vessels of 500 GT or more and all passenger vessels, that are constructed on or after 1 January 2017 shall comply with the safety requirements. Vessels constructed before 1 January 2017 shall comply by the first intermediate or renewal survey occurring after 1 January 2018. Training requirements within the STCW Convention and the Code for officers and crew on board vessels operating in polar waters took effect on 2 July 2018.

An interim guidance on methodologies for assessing operational capabilities and limitations in ice (POLARIS) was approved by IMO's Maritime Safety Committee (MSC) in May 2016. Member States and international organizations are invited to report on their experience with the use of POLARIS after four years to consider any necessary amendments.

In June 2021, IMO's Marine Environment Protection Committee (MEPC) adopted a ban on the use of heavy fuel oil in the Arctic region from 1 July 2024. For vessels with double hull, entry into force will be 1 July 2029. There is also an option for states with an Arctic coastline to waive the requirement for ships flying its flag and operating in its water until 1 July 2029.

Currently, there is a consideration for an instrument to address non-SOLAS vessels operating in polar waters. MSC instructed in June 2019 the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) to consider the feasibility and consequences of applying chapters 9 and 11 of the Polar Code to non-SOLAS vessels and how best to enhance the safety of these vessels, including possible amendment of SOLAS and/or the Polar Code. NCSR progresses the work on mandatory navigation and voyage planning requirements through a Correspondence Group in view of completion in 2022.

As an interim measure, the IMO Assembly adopted in November/December 2019 a resolution urging Member States to implement, on a voluntary basis, safety measures of the Polar Code on vessels not certified under the SOLAS Convention. The MSC approved in May 2021

recommendatory safety guidelines for fishing vessels of 24m in length and over and pleasure yachts above 300 gross tonnage not engaged in trade. Similar guidelines are being considered for pleasure yachts engaged in trade and cargo vessels, both of 300 GT and above and less than 500 GT, operating in polar waters.

IUMI participates in the Arctic Shipping Best Practices Information Forum of the Arctic Council that was formed in 2017. The Forum supports the implementation of the Polar Code, and a public web-portal is available with accurate information from authoritative sources including the Arctic States, intergovernmental organisations, classification societies, the shipping industry, marine insurers, and non-governmental organisations.

Relevant authority / organisations and documents

- **IMO MEPC & MSC** with input from Sub-Committees (HTW, SSE, SDC, NCSR)
 - **Polar Code**
 - Resolution MSC Res.385(94), adopted 21 November 2014.
 - SOLAS Ch. XIV (MSC Res.386/94).
 - MEPC 68/21/Add.1/Corr.2, adopted 15 May 2015.
 - **MSC.1/Circ.1519**: Guidance on methodologies for assessing operational capabilities and limitations in ice (POLARIS), 6 June 2016.
 - **MSC.1/Circ.1612**: Guidance for navigation and communication equipment intended for use on ships operating in polar waters, 14 June 2019.
 - **MSC.1/Circ.1614**: Interim guidelines on life-saving appliances and arrangements for ships operating in polar waters, 26 June 2019.
 - **A31/Res.1137**: Interim measures for ships not certified under the SOLAS Convention operating in polar waters, 17 January 2020.
 - **SDC7/WP.5**: Safety measures for non-SOLAS ships operating in Polar waters, report of the working group, 5 February 2020.
 - **PPR8/6**: Development of guidelines on measures to reduce risks of use and carriage of heavy fuel oil as fuel, report of the Correspondence Group, 18 December 2020.
 - **NCSR8/5**: Safety measures for non-SOLAS ships – application of chapters 9 and 11 of the Polar Code, report of the correspondence group, 15 January 2021.
 - **NCSR8/5/1**: Response to the report of the correspondence group, submitted by FOEI, Pacific Environment and WWF, 12 February 2021.
 - **MSC.1/Circ.1641**: Guidelines for safety measures for fishing vessels of 24 m in length and over operating in Polar waters, 24 June 2021.
- **Arctic Council** comprising Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the U.S.
 - **Arctic Shipping Best Practices Information Forum web-portal**
 - **Guideline for Arctic Marine Risk Assessment**, April 2020.
- **The Arctic Monitoring and Assessment Programme** – status of, and threats to, the Arctic environment.
- **Arctic “Best Practice Declaration”**. IUMI letter of support 19 April 2013.
- **Arctic information database** - Centre for High North Logistics.

- **Northern Sea Route:**
 - **NSR Administration**
 - **Russian Government:** Northern Sea Route Development Plan for the period until 2031, 21 December 2019.
 - **Northern Sea Route Information Office**
- **Insurance industry:**
 - **Lloyd's / Chatham House:** Arctic Opening: Opportunity and Risk in the High North, 1 April 2012.
 - **Cefor:** Arctic Sailings Check List, October 2012.
 - **Gard:** Climate change creates a new trade route – and new risks, 16 February 2014.
 - **Marsh:** Arctic shipping: Navigating the risks and opportunities, August 2014.
 - **Skuld:** Arctic checklist, 16 February 2015.
 - **IUMI:** Position paper on Arctic sailings, 29 August 2018.
 - **MS Amlin:** Navigating in ice conditions, December 2021.
- **ABS:** Navigating the Northern Sea Route Advisory, January 2014. :
- **CMI Polar Shipping Working Group / Hafnia Law Firm:** Report on the Legal Framework for Civil Liability for Vessel Source Oil Spills in Polar Regions, 2 February 2016.
- **Oil Companies International Marine Forum (OCIMF):** Northern Sea Route Navigation – Best Practices and Challenges, December 2017.
- **ICS & OCIMF:** Guidelines for the Development of a Polar Water Operational Manual, November 2019.

Timeline / important dates

- Russian Northern Sea Route Administration established 15 March 2013.
- Arctic Coast Guard Forum: Joint statement on creating a strategic framework for an operationally-focused consultative organization, 10 June 2016.
- US / Canada: Ban on Arctic drilling in key Arctic and Atlantic offshore areas, 20 December 2016.
- Polar Code entered into force 1 January 2017.
- IMO Assembly: 25 November – 5 December 2019.
- SDC 7: 3-7 February 2020.
- PPR 7: 17-21 February 2020.
- NCSR 8: February 2021.
- MSC 103: 3-14 May 2021.
- MEPC 76: 14-25 June 2021.
- NCSR 9: 21 June -1 July 2022
- Possible entry into force of amendments (if agreed) to SOLAS and/or the Polar Code for non-SOLAS vessels: 1 January 2024.
- Ban on the use of heavy fuel oil in the Arctic region from 1 July 2024. For vessels with double hull & ships flying flag of an Arctic coastline state and operating in its waters: 1 July 2029.



- 5th annual meeting of the Arctic Shipping best Practices Information Forum, 16-18 November 2021.

IUMI will:

- Participate in discussions with industry, IMO and coastal states on necessary standards and infrastructure in Polar waters.
- Support the urgent consideration for a mandatory instrument to address non-SOLAS vessels operating in polar waters.
- Participate in the Arctic Shipping Best Practice Information Forum, which is responsible for the information web-portal launched to support implementation of the Polar Code.

2. Autonomous / unmanned transports

Brief description

Unmanned transports are gaining acceptance from industry and public entities as research and innovation bring the possibility of driverless trucks and vessels closer to realization. This raises some legal and liability issues that need to be resolved.

Insurers also need to address the risks related to innovative technologies and the internet of things. New types of failure modes may be introduced due to the lack of knowledge and unforeseen interdependencies in the system design, operation complexity, and environmental challenges. Cyber-attacks, connectivity, interactions between components and between technical systems and humans, and autonomy assisted accidents are among the challenges.

To become insurable, the use of autonomous systems must rely on proper industry standards, certification and classification regimes. Verification of safe performance is crucial.

Vessels

An unmanned vessel can be both remote controlled or fully automated, and it has been suggested that the first crewless vessel will be in service by the end of the decade. Most likely, there will be a number of variations and a stepwise progress, including the use of automated technologies with a reduced number of crew on board and for certain manoeuvres.

Numerous industry and government-run projects are driving the development, but for unmanned vessels to become a reality the regulatory framework must also be in place. Requirements concerning the person having command of a vessel, sufficient manning, training and proper lookout must be considered in international conventions (SOLAS, STCW, COLREG). In June 2017, IMO's Maritime Safety Committee (MSC) agreed to undertake a regulatory scoping exercise to determine the extent of the need to amend the regulatory framework to enable the safe, secure and

environmental operation of maritime autonomous surface ships (MASS) within the existing IMO instruments.

In December 2018, MSC agreed to maintain the initial four degrees of autonomy although focusing on levels two and three: (2) Remotely controlled ship with seafarers on board and (3) Remotely controlled ship without seafarers on board. A proposal on how to characterize and classify ship autonomy is currently considered by the International Organization for Standardization (ISO).

Interim guidelines for trials of MASS were finalized by MSC in June 2019. As a basic principle, these trials shall meet at least the same level of safety, security and environmental protection as required for conventional vessels.

In May 2021, MSC 103 approved the outcome of the regulatory scoping exercise (RSE) for the use of MASS, and invited Member States and international organizations to submit output proposals on the best way forward to address MASS. MSC 104 (October 2021) included in the biennial agenda of the Committee for 2022-2023 and the provisional agenda for MSC 105 a new output on 'Development of a goal-based instrument for maritime autonomous surface ships (MASS)', with a target completion year of 2025. MSC 104 further agreed that the first step in this new output would be the finalization of a road map to have a common understanding of the following steps, and that the title of the output might need to be adjusted based on the outcome of discussions at MSC 105.

In April 2018, the IMO Legal Committee (LEG) agreed to include a new output entitled "Regulatory scoping exercise and gap analysis of conventions emanating from the Legal Committee with respect to Maritime Autonomous Surface Ships (MASS)", with a target completion year of 2022.

There are also several other initiatives relating to legislation and insurance of autonomous vessels. These include; Comité Maritime International (CMI) has formed an International Working Group on Unmanned Vessels, Association Mondiale de Dispatcheurs (AMD) are considering how the adoption of unmanned vessels may impact marine insurance claims and the application of general average, and International Group of P&I Clubs (IG) has formed a working group to consider liability matters. BIMCO is drafting a standard contract for autonomous vessels, adapted from the SHIPMAN 2009 agreement, titled AUTOSHIPMAN and expected to be published in 2021. The contract will include provisions for autonomous vessel-related services and the operation of a remote control centre.

Trucks

The rapid progress of sensor technology and software processing has enabled truck manufacturers to introduce varying levels of autonomy to the trucking sector. Autonomous trucks can enable fewer accidents and fatalities, increase operational efficiency for fleet owners (for example, reduced truck downtime), and reduce labour costs. Furthermore, a high share of greenhouse gas emissions and local air pollutants is attributed to heavy-duty trucks. Autonomous features such as platooning can enable reduced fuel consumption. These factors are driving the demand for self-driving trucks.

In 2014, the Society of Automotive Engineers (SAE) defined 6 levels of driving automation ranging from 0 (fully manual) to 5 (fully autonomous). These levels have been adopted by the U.S. Department of Transportation.

- **Level 0: Fully manual vehicle**
Level 0 vehicles rely on the driver for every driving action; they might include some basic features such as cruise control or warning systems to prevent impending accidents.
- **Level 1: One single automated aspect**
Examples for such driver assistance systems include automatic braking to avoid collisions and lane-keep assist technology; they are quite ubiquitous in today's vehicles.
- **Level 2: Automated steering and acceleration capabilities**
Though the vehicle is allowed to automate certain parts of the driving experience, but the driver remains in complete control of the vehicle at all times. Examples of level 2 include helping vehicles to stay in lanes and to brake automatically as well as self-parking features.
- **Level 3: Environment detection**
With this level of automation, the vehicle is capable of driving autonomously over long distances (e.g., on freeways) and can make informed decisions for themselves such as overtaking slower moving vehicles but the driver must be able to take back control within seconds after a warning.
- **Level 4: No human interaction required**
Level 4 vehicles can complete entire journeys without driver intervention, but it might be confined to limited spatial areas (e.g., freeways) or under specific circumstances (e.g., traffic jams). According to some, there is thus still the need for a cockpit with steering wheels and pedals for the situations when a driver might assume control. This level of automation might not even require an actual steering wheel; a remote operator can take over control in some instances.
- **Level 5: Human driving is completely eliminated**
A level 5 vehicle is capable of completing an entire hands-off, driverless journey, it can basically go anywhere, anytime, under any condition. There are no geographical constraints as there are for Level 4 vehicles and no cockpit is needed anymore, making every person inside the vehicle a passenger. To ensure this level of automation, these vehicles rely heavily on advanced vehicle-to-vehicle and vehicle-to-environment communications.

Freight shipments with trucks driving in “trains” along the highway are now being tested. Truck platooning, in which two or three trucks drive in a column connected by Wi-Fi with the first truck determining the speed, enables shorter gaps between trucks. This frees up space for other vehicles, and is expected to ensure better traffic flow and speed of deliveries. Truck platooning is also said to realise up to ten per cent fuel savings, as well as reducing CO² emissions.

In Europe, the approval for a fully automated commercial vehicle with SAE Level 4 still faces massive hurdles. One sticking point is UNECE R 79 for steering systems, which gives the driver primary responsibility for driving the vehicle. The existing EU law concerning the approval and market surveillance of motor vehicles are based on this rule, and thus, always require a person in command of the vehicle and thus the full controllability of the vehicle. Pending harmonization under EU law, some EU member states (e.g., Germany) are willing to establish a national legal framework to create suitable conditions for the introduction of regular operations.

Samples

The European Truck Platooning Challenge demonstration project was successfully completed in 2016. While the test showed that technology already has come a long way, it also made it clear that in going forward there is a need for EU harmonisation of rules of the road and rules for drivers.

In January 2017, Singapore Ministry of Transport and PSA Corporation signed agreements with two automotive companies to design, develop and test an autonomous truck-platooning system for use on Singapore's public roads (between ports).

In 2019, ZPMC Smart Solutions Group completed a phased R&D testing of five all-electric unmanned vehicles in the Tangshan Port Container Terminal (China).

In 2021, the Swedish Transport Agency granted Scania, the Swedish manufacturer of trucks, permission to run self-driving trucks transporting goods on the E4 motorway between Södertälje and Jönköping in Sweden, the first permission on public roads in Europe. The trucks will enter commercial service with the Scania Transport Laboratory and will be loaded with goods for Scania's production operations. The system will cover technology according to level 4 on the 5-point SAE scale for self-driving vehicles. Scania has been testing self-driving trucks for mining transportation since 2018 in the Pilbara region in Western Australia, moving more than one billion tons of waste and iron ore material. As a result, these trucks have proved to be more efficient than regular trucks and also provide considerable safety benefits as there have been zero road accidents with the trucks used.

Relevant authority / organisations and documents

- **IMO:**
 - **MSC98/20/2:** Maritime Autonomous Surface Ships, Proposal for a regulatory scoping exercise, submitted by Denmark, Estonia, Finland, Japan, the Netherlands, Norway, the Republic of Korea, the United Kingdom and the United States, 27 February 2017.
 - **MSC98/20/13:** Comments on MSC98/20/2, submitted by the International Transport Workers' Federation (ITF), 13 April 2017.
 - **MSC99/INF.3:** Final report – analysis of Regulatory Barriers to the use of Autonomous Ships, submitted by Denmark, 18 January 2018.
 - **LEG105/11/1:** Proposal for a regulatory scoping exercise and gap analysis with respect to Maritime Autonomous Surface Ships (MASS), submitted by Canada, Finland, Georgia, the Marshall Islands, Norway, the Republic of Korea, Turkey, CMI, ICS and P&I Clubs, 19 January 2018.
 - **MSC99/INF.5:** Report of a survey on what maritime professionals think about autonomous shipping, submitted by IFSMA and ITF, 9 February 2018.
 - **MSC.1/Circ.1604:** Interim guidelines for MASS trials, 14 June 2019.
 - **LEG107/8:** Summary of results of analysis of IMO instruments under the purview of the Legal Committee, submitted by CMI, 13 December 2019.
 - **MSC102/5/16:** Summary of result analyses of IMO instruments under the purview of the Maritime Safety Committee, submitted by CMI, 11 February 2020.

- **MSC103/5/3:** Updates to proposed terminology for MASS, submitted by ISO, 15 March 2021.
- **MSC.1/Circ.1638:** Outcome of the regulatory scoping exercise for the use of maritime autonomous surface ships (MASS), 3 June 2021.
- **MSC104/15/25:** Introduction of MASS in IMO instruments – proposal for a new output, submitted by France, Japan, Russian Federation, United Arab Emirates and IACS, 2 July 2021.
- **MSC104/15/26:** Proposal for a new output on the development of international provisions for MASS, submitted by Belgium, Canada, Denmark, Finland, Germany, Marshall Islands, Norway, Singapore, United States, BIMCO and IMCA, 2 July 2021.
- **LEG108/WP.7:** Regulatory scoping exercise and gap analysis of conventions emanating from the Legal Committee with respect to MASS, report of the LEG WG, 28 July 2021.
- **MSC105/7:** Proposal by the Chair for a draft road map for maritime autonomous surface ships, 10 January 2022.
- **University of Gent:** Article in Journal of International Maritime Law on the law of unmanned merchant shipping – an exploration, Professor Dr Eric Van Hooydonk, 2014
- **Maritime UK & LR:** MASS UK Industry Conduct Principles and Code of Practice (V5), November 2021
- **Maritime Unmanned Navigation through Intelligence in Networks (MUNIN)**
- **Norwegian Forum for Autonomous Vessels**
- **Denmark:**
 - Pre-study. Cooperation between Danish Maritime Authority & the Technical University of Denmark (MSC 98/INF.13).
 - Danish Maritime Authority/Rambøll/Core Advokatfirma: Analysis of regulatory barriers to the use of autonomous ships, December 2017.
- **The European Truck Platooning Challenge**
- **ONE SEA Autonomous Maritime Ecosystem (Finland):** Finnish Maritime Industries, ecosystem for autonomous marine transport in the Baltic Sea in 2025.
- **European Parliament:** Resolution on Civil law rules on robotics, 16 February 2017.
- **CMI:** International Working Group on “Maritime Law for unmanned craft”; MSC 99/INF.8: Work conducted by the CMI WG, 13 February 2018.
- **Classification societies:**
 - **Lloyd’s Register:** Cyber-enabled ships – ShipRight procedure assignment for cyber descriptive notes for autonomous & remote access ships, Version 2.0, December 2017.
 - **Bureau Veritas:** Guidelines for Autonomous Shipping, December 2017.
 - **DNV GL:** Autonomous and remotely operated ships (DNVGL-CG-0264), September 2018.
- **CORE Advokatfirma & Cefor:** Maritime autonomous surface ships – zooming in on civil liability and insurance, 10 December 2018.
- **European Maritime Safety Agency (EMSA):** Study of the risks and regulatory issues of specific cases of MASS (SAFEMASS), DNV GL report, 25 March 2020.

- **MarLab Marine Autonomous Surface Ships Data Project**
- **UK Department of Transport: Future of transport regulatory review consultation: Maritime autonomy and remote operations**, September 2021.

Timeline / important dates

- MUNIN: 2012 until August 2015.
- IUMI webinar: Legal aspects, Dr M. Guth, Dabelstein & Passehl, 11 May 2017.
- MSC scoping exercise June 2017 - June 2020.
- EU research programme Horizon 2020: 2018-2020.
- LEG scoping exercise agreed April 2018. Target completion year 2022.
- IUMI webinar: Update on regulatory developments for Maritime Autonomous Surface Ships (MASS), Dr L. Wiedenbach, ASD, 29 January 2019.
- MSC 103: 3-14 May 2021.
- MSC 104: 4-8 October 2021.
- MSC 105: 20-29 April 2022.
- Target completion year within MSC for a new mandatory code: 2025.

IUMI will:

- Monitor ongoing industry and government-run projects, and provide input as appropriate.
- Monitor scoping exercises performed by the IMO and take part in discussions on regulatory amendments.
- Encourage classification societies to take an active role in both technical and operational risk aspects of increasingly autonomous vessels.
- Encourage the development of industry standards, certification schemes and class requirements for autonomous systems and remote control centres.
- Participate in the LEG web platform working group.

3. Cyber risks

Brief description

The growing use and reliance on information technology, of data networks, transmissions and connectivity in the daily work within the marine and energy sectors increase their exposure to cyber related risks. Ransomware attacks may result in economic loss or costs of rebuilding lost data. Stand-alone ransomware insurance products are now available both within the marine and non-marine insurance markets to protect against this risk. Consequential damages to hull, cargo and third-party liabilities from a cyber-attack on board a vessel or mobile offshore unit poses a different and more costly risk. The limited data on the frequency, severity of loss or probability of physical damage, is a challenge to underwriters.



The risks can be either malignant or due to innocent breach caused by a lack of awareness or insufficient understanding about systems and how they interact with each other. Both need to be dealt with, starting with top-level commitment and the proper implementation of risk assessment procedures.

Techopedia² defines cyber-attacks as deliberate exploitation of computer systems, technology-dependent enterprises and networks. Cyber-attacks use malicious code to alter computer code, logic or data, resulting in disruptive consequences that can compromise data and lead to cyber-crimes, such as information and identity theft. Cyber-attack is also known as a computer network attack (CNA).

A successful cyber-attack can have several implications relevant to insurance: Loss of life, personal injury, pollution, loss of property, business interruption, loss of production, loss of data and loss of reputation. From a cargo perspective, there are in particular concerns related to the potential risks and implications of cyber-attacks directed at unmanned truck convoys and mega hubs.

In December 2016, the USCG published a cyber-security policy letter regarding the criteria and process for the reporting of suspicious activity and breach of security, and added cybersecurity to the list of security items covered by the 2002 Maritime Transportation Security Act (MTSA). This could also mean penalties of up to USD 25,000 per cyber preparedness violation.

The EU Network and Information Security Directive (NIS) necessitates amongst others large ports and (static) maritime transport services in the EU to demonstrate that they have taken measures to manage cyber security risks. Companies are also required to report cyber incidents. Penalties for breaches can be substantial, and for instance the UK has announced that firms could face up to GBP 17 million fines if they fail to protect against cyber-attacks.

The International Organization for Standardization (ISO) intends to complement the work on cybersecurity, using the ISO/IEC 27000 series.

IMO

IMO's Maritime Safety Committee (MSC) supported in November 2014 a Canadian / U.S. recommendation to develop voluntary guidelines on maritime cyber security practices. The "*Guidelines on maritime cyber risk management*" were approved in July 2017, and provide high-level recommendations on maritime cyber risk management to safeguard shipping from current and emerging cyber threats and vulnerabilities. Furthermore, the guidelines refer to additional guidance and standards, including the IUMI supported industry guidelines that are mentioned below.

In June 2017, MSC adopted a resolution on maritime cyber risk management in safety management systems. Member Governments are encouraged to ensure that cyber risks are

² <http://www.techopedia.com/definition/24748/cyberattack>



appropriately addressed in safety management systems no later than the first annual verification of the company's Document of Compliance after 1 January 2021.

Industry guidelines

Version 4 of the "*industry guidelines on cyber security onboard ships*" was published in December 2020. IUMI is actively involved in the development, and co-sponsored a proposal requesting IMO's Maritime Safety Committee (MSC) to take the industry guidelines into account when considering measures to enhance maritime cyber security. An update to these guidelines was issued in June 2021.

Unlike other international standards and guidance on cyber security, the industry guidelines focus on the distinctive issues on board vessels. Rather than technical guidance, the guidelines are designed for use by owners, managers and seafarers to develop understanding and awareness of key aspects of cyber security. The company will find support to establish procedures, plans and instructions, including checklists as appropriate, for relevant key shipboard operations that will be complementary to existing security and safety risk management requirements contained in the ISM and ISPS Codes.

In December 2017, BIMCO and Comité International Radio-Maritime (CIRM) presented a proposed industry-wide standard for software maintenance. The International Organization for Standardization (ISO) was approached, and this has resulted in draft standard ISO 24060 that focuses on the concept of a "Ship Software Logging System (SSLS)", specifying requirements for a tool to automatically log all information about software installed on shipboard Operational Technology equipment. If approved, the standard could serve as a technical tool to support implementation of the CIRM/BIMCO industry standard.

IACS

IACS founded in June 2016 a Cyber Systems Panel. The Panel is focusing on developing recommendations as a first step, to be followed later by new unified requirement on system integration for safety critical shipboard systems. The Panel is also exploring a possible certification scheme for software providers for essential systems by IACS members. An update of UR E 22, covering on board use and application of programmable electronic systems, is under consideration by a project team. IUMI is among the industry partners in a joint working group with IACS on cyber systems.

During September and December 2018, the IACS Cyber Panel published its twelve initial Recommendations addressing; Software maintenance, Manual backup/local control capabilities, Contingency Post Failure, Network architecture, Data assurance, Physical security, Network security, Vessels system design, Inventory list of computer-based systems, Integration, Remote update / access, and Communication and interfaces. In May 2020, IACS published a Single Standalone Recommendation On Cyber Resilience (No. 166), which consolidates the previous 12 recommendations and applies to the use of computer-based systems which provide control alarm, monitoring, safety or internal communication functions subject to the requirements of a classification society.

In 2022, IACS works, mainly through its Cyber Panel together with the IACS JWG on Cyber systems, on the following projects:

1. UR Cyber resilience of ships which shall translate Rec. 166 into an Unified Requirement, publication planned in Q1 2022;
2. UR Cyber resilience of on-board systems and equipment which shall translate Rec. 166 into an Unified Requirement, publication planned in Q1 2022;
3. Establishment of a new Project Team “Data Quality” to develop a recommendation for a generic, superior method/approach on how to determine the data quality required to serve the purpose of a given application, release planned for 2024;
4. Development of an IACS Recommendation on the incorporation of cyber risks into the ISM in order to help shipowners on how to do risk assessment for cyber system and what should be done for mitigation of the risks and to Provide a common framework to carry out risk assessment based on which risk mitigation measures are implemented;
5. Establishment of a new Project Team “Cyber Survey” which aims to develop a new Recommendation or UR about Cyber Surveys;
6. Work on the evolution of the existing UR E22, aiming to finalize the update in 2022.

Industry Standards for Software Maintenance (BIMCO, CIRM, ISO)

The Comité International Radio-Maritime (CIRM) and BIMCO are seeking to propose that IMO develops a resolution or circular on software maintenance, and are in the process of drafting a proposal to MSC 106.

In August 2021, the International Organization for Standardization (ISO) published ISO 24060 (Ships and marine technology - Ship software logging system for operational technology). ISO 24060 was developed by ISO/TC 8/SC 11 and is based on Appendix 5 of the CIRM/BIMCO Industry Standard, and defines a ship software logging system (SSLS) for software installed on a vessel’s OT systems. The SSLS maintains an automated software log by monitoring its network connections for software version messages sent by operational equipment. SSLS also stores electronic versions of service reports in association to one or more log entries. This new technical standard is intended to support the CIRM/BIMCO Industry Standard on Software Maintenance of Shipboard Equipment.

In September 2021, BIMCO and CIRM proposed development of the next standard in the ISO 24060 series. In November 2021, ISO/TC 8/SC 1 approved the associated new work item proposal. ISO 24060-2 - Ship software logging system for operational technology - Part 2: Electronic service reports is to be based on Appendix 4 of the CIRM/BIMCO Industry Standard, and will specify a standardised digital format for service reports to be used after finalization of a shipboard software maintenance event, thereby enabling it to be integrated directly with the ship’s SSLS and make sure that it is recorded in the onboard software log.

Relevant authority / organisations and documents

- **IMO – Maritime Safety Committee (MSC), Sub-Committee on Navigation, Communication and Search and Rescue (NCSR) & Facilitation Committee (FAL):**
 - **Resolution MSC.428(98):** Maritime cyber risk management in safety management systems, adopted 16 June 2017.
 - **NCSR5/22/4:** Industry standard on software maintenance of shipboard equipment, submitted by BIMCO and CIRM, 14 December 2017.
 - **MSC103/9/1:** The industry guidelines on cyber security on board ships, version 4, submitted by ICS, IUMI, BIMCO, OCIMF, INTERTANKO, INTERCARGO, InterManager, WSC and SYBAss, 26 February 2021.
 - **MSC103/INF.8:** Update on IACS' work on requirements for cyber resilient ships, submitted by IACS, 26 February 2021.
 - **MSC-FAL.1/Circ.3/Rev.1:** Guidelines on maritime cyber risk management, 14 June 2021.
- **United States:**
 - **Coast Guard:**
 - Guidance on Maritime Cybersecurity Standards, Federal Register/Vol 79, No. 239 12 December 2014 & No. 243, 18 December 2014.
 - CG-5P Policy letter: Reporting suspicious activity and breaches of security, 14 December 2016.
 - Navigation and Vessel Inspection Circular (NVIC) 05-17: Guidelines for addressing cyber risks at MTSA regulated facilities, 12 July 2017.
 - Safety Alert 06-19: Cyber incident exposes potential vulnerabilities onboard commercial vessels, 8 July 2019.
 - **National Institute of Standards and Technology:** NIST Cybersecurity framework
 - **US Government Accounting Office (GAO):** Report on “Maritime Critical Infrastructure protection”, June 2014.
- **Be Cyber Aware at Sea**
- **European Union:**
 - **European Network and Information Security Agency (ENISA):** Analyses of cyber security aspects in the maritime sector, November 2011.
 - **EU Directive 2016/1148:** Concerning measures for a high common level of security of network and information systems across the Union, 6 July 2016.
 - **TRANSSEC (Transport Resilience and Security Expert Group)**
 - **European Insurance and Occupational Pensions Authority (EIOPA):** Cyber risk for insurers – challenges and opportunities, 2019.
 - **EC DG MOVE:** Transport Cybersecurity Toolkit, 16 December 2020.
- **IACS:**
 - New UR on system integration for safety critical shipboard systems (under consideration)
 - Certification of software providers under consideration.
 - Revised UR E 22 regarding on board use and application of programmable electronic systems under consideration.
 - Recommendation on Cyber Resilience (No. 166), May 2020.

- **Joint Hull Committee** in conjunction with **Stephenson Harwood**: Cyber risk paper, 2 September 2015.
- **ABS**: Guidance note on the application of cybersecurity principles to marine and offshore operations, Volume 1: Cybersecurity, February 2016.
- **UK Department for Transport & Maritime and Coastguard Agency**: Port cyber security code for operations and staff members, 16 August 2016.
- **DNV**:
 - Recommended practice 0496 – Cyber security resilience management for ships and mobile offshore units in operation, September 2016.
 - Technical & Regulatory News No. 20/2020: ISM Cyber Security is coming soon - check your preparedness, 6 October 2020.
- **International Association of Engineering Insurers (IMIA)**: Cyber Risks – Engineering Insurers Perspective, 16 September 2016.
- **Willis Towers Watson**: Client Alert – Navigating cyber risk in the transportation sector, October 2016.
- **BIMCO, CLIA, ICS, INTERCARGO, INTERTANKO, IUMI & OCIMF**: [The guidelines on cyber security on board ships, 4th edition, 23 December 2020.](#)
- **BIMCO & CIRM**: [Industry Standard on Software Maintenance of Shipboard Equipment, Version 1.0, December 2017.](#)
- **The World Association for Waterborne Transport Infrastructure, PIANC Task Group no 204**:
 - Awareness paper on cybersecurity in inland navigation, 2019.
- **Joint Rig Committee** in conjunction with **DNV GL**: Upstream Oil & Gas Cyber Risk: Insurance Technical Review, May 2018.
- **ISO 27001**: [International standard for information security management systems \(ISMSs\).](#)
- **Danish Maritime Authority**: Cyber and information security strategy for the maritime sector 2019-2022, January 2019.
- **FIATA**: Best practices – prevention of cybercrime, 28 March 2019.
- **ClassNK**: Cyber Security Management System for Ships, April 2019.
- **BIMCO**: Cyber Security Clause, 31 May 2019.
- **Digital Container Shipping Association (DCSA)**: Cyber security guide, March 2020.

Timeline / important dates

- MSC 98: 7-16 June 2017 – MSC Resolution: Guidelines.
- BIMCO Cyber Security Clause: May 2019.
- IACS: Three new interconnected cyber focused unique requirements, second half of 2021/early 2022.

IUMI will:

- Support the industry guidelines on maritime cybersecurity practices and their implementation, and take part in future revisions.
- Support IACS' work on cyber security, including participation in the Cyber Panel related industry working group.

- Encourage regulatory standardisation for cyber security.

4. Environmental, Social and Governance (ESG) issues

Brief Description:

The business of marine insurers is to provide insurance cover against “named perils” or against “all risks”. Shareholders of insurance companies and members of mutuals expect the management to run the business in a sound and viable manner. The assureds expect insurers to be financially able to cover claims, and use insurance for this purpose as a risk management tool. To understand and mitigate the risks, insurers will perform risk assessments based on information available to them and offer risk mitigation and loss prevention services. *“The insurance industry’s core business is to understand, manage and carry risk”* (preamble of the UN Environment Programme Financial Initiative’s Principles for Sustainable Insurance). With increasing importance attached to a forward-looking and sustainable business conduct, a growing number of insurers take environmental, social and governance (ESG) factors into consideration during their decision-making processes. Investors, regulators, and society at large are placing increasing focus on sustainability within corporations.

The growing pressure and urgency across all sectors of society to respond and find solutions to ESG issues has led to some rethinking within the marine insurance industry. Individual companies are reconsidering their targets and responsibilities beyond their core businesses to incorporate sustainability. These insurance companies work on a better understanding and overarching principles to identify and define ESG standards that align with their values and commitments as a company. This approach will also guide what information they will seek from clients and other third parties. Considerations may comprise aspects of underwriting, claims handling, loss prevention, investment strategies, recruitment and education. Acknowledging the importance of ESG issues for the industry, some insurance companies have already integrated ESG issues and principles into their corporate strategy and established reporting procedures to ensure compliance with a company’s defined ESG standards.

A number of IUMI’s current policy topics have an ESG angle, e.g. Arctic sailings and fuel oil safety. This section in the Policy Agenda deals only with what falls under the responsibility of the Policy Forum and includes a lobbying angle. IUMI’s overall role and involvement on ESG matters has been tasked to a separate ESG Working Group that was formed in 2021.

ESG initiatives with (marine) insurance relevance

Global initiatives such as United Nations (UN) Sustainable Development Goals (SDGs) have led to a rise in awareness of ESG issues. In the insurance context, the UN Environment Programme Financial Initiative’s (UNEP FI) Principles for Sustainable Insurance (PSI) are central. UNEP



intends the four principles to serve as a global framework for the insurance industry to address ESG risks and opportunities. The four principles are:

1. Embed environmental, social and governance issues relevant to our insurance business in the decision-making.
2. Work together with clients and business partners to raise awareness of environmental, social and governance issues, manage risk and develop solutions.
3. Work together with governments, regulators and other key stakeholders to promote widespread action across society on environmental, social and governance issues.
4. Demonstrate accountability and transparency in regularly disclosing publicly our progress in implementing the Principles.

The Principles have led to one of the largest collaborative initiatives between the UN and the insurance industry—the PSI Initiative. Over 200 organisations worldwide have adopted the four Principles for Sustainable Insurance, including insurers representing about 30% of world premium volume. The purpose of the PSI Initiative is to better understand, prevent and reduce ESG risks, and better manage opportunities to provide quality and reliable risk protection. In February 2020, IUMI became a supporting institution of the UNEP FI PSI.

In 2020, the UNEP FI launched the first guideline for “Underwriting environmental, social and governance risks in non-life insurance business”. The guide is not intended as a formal standard which organizations are required to comply with or follow directly. It is instead an optional support tool to help organizations grasp this wide-ranging topic, particularly those with no or limited ESG expertise. The guideline was subject to a public consultation in 2019, and the full 1.0 version of the guide was published in June 2020.

Another marine related initiative is the UN’s agreement to start negotiations for legally binding agreement developed as a part of the United Nations Convention on the law of the seas (UNCLOS): the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement. The negotiations began in 2017 and were scheduled to conclude in 2020, but due to delays in light of COVID-19 the fourth session has been delayed until 2022.

The EU is also making significant strides to move its sustainability ambitions forward with the EU Taxonomy Regulation of 18 June 2020. The purpose is to provide companies, investors and policymakers with appropriate definitions and encourage investments in environmentally sustainable economic activities. This is to be achieved with the creation of a taxonomy, i.e. the introduction of a uniform procedure with which the economic activity of companies is classified into categories. The Taxonomy Regulation establishes six environmental objectives:

- Climate change mitigation
- Climate change adaptation
- The sustainable use and protection of water and marine resources
- The transition to a circular economy
- Pollution prevention and control
- The protection and restoration of biodiversity and ecosystems

According to Article 8 of the Taxonomy Regulation, EU companies that are required to submit a non-financial statement must disclose how and to what extent their activities are linked to environmentally sustainable economic activities. The disclosure requirement applies above a certain company size (currently 500 employees), and includes lines of marine insurance. For this purpose, it must be determined whether and to what extent a particular insurance activity is taxonomy-compliant, i.e., meets certain taxonomy criteria. The details are regulated in two delegated acts. These delegated regulations specify, on the one hand, which economic activities are relevant and, on the other hand, how the contents are to be disclosed. From January 2022, information on the taxonomy-eligible economic activity must first be provided. From 2024, there is then a reporting obligation for taxonomy compliance in the annual report for the previous financial year.

The Poseidon Principles for Marine Insurance (PPMI) were launched in December 2021 with IUMI as a supporting partner. The Principles establish a forward-looking framework to engage with the shipping industry and support net-zero insurance. They are designed to assess and disclose the climate alignment of marine hull insurers' underwriting portfolios.

Marine insurance related ESG issues

Bribery and corruption

In February 2020, IUMI co-sponsored a paper to the IMO with a proposal to develop a guidance to address bribery and corruption in the maritime sector. A key objective in this work should be to align actions in the maritime sector with the UN Convention against Corruption (UNCAC). The Facilitation Committee (FAL 44) established in October 2020 a Correspondence Group on "Guidance to Address Maritime Corruption" under the coordination of the Marshall Islands. The group's primary aim is to develop draft guidance to implement anti-bribery and anti-corruption practices and is still ongoing.

Climate change

Climate change is considered one of the most pressing issues of our time. It has also been identified by IUMI as a major concern to marine insurers. The effects of global warming are already evident and are changing the nature of the insured assets. The frequency of weather-related catastrophes has increased significantly which drives up losses and leaving some assets uninsurable. The potential impact of climate change is therefore a fundamental issue for regulators. International shipping emitted around 1,056 million tonnes of CO₂ annually in 2018 and is responsible for approximately 3% of global greenhouse gas emissions. The Paris Agreement on Climate Change and the work of the International Maritime Organization (IMO) are examples of regulatory efforts to address climate change.

In April 2018, the IMO adopted the Initial IMO Strategy on the reduction of GHG emissions from vessels. The Initial Strategy provides an international policy framework setting out a pathway to reduce and eventually phase out GHG emissions from international shipping as soon as possible. This includes the reduction of CO₂ emissions per transport work (carbon intensity) by at least 40% by 2030 and the reduction of the total annual GHG emissions by at least 50% by 2050.

The Fourth IMO GHG Study 2020 is the first IMO greenhouse gas study published since the adoption of the Initial IMO Strategy on reduction of GHG emissions from ships. It demonstrates that whilst further improvement of the carbon intensity of shipping can be achieved, it will be difficult to reach IMO's 2050 GHG reduction ambitions through energy-saving technologies and speed reduction of ships. Therefore, under all projected scenarios, in 2050, a large share of the total amount of CO₂ reduction will have to come from the use of low-carbon alternative fuels.

In December 2019, shipowners' organisations submitted a proposal to establish an IMO GHG reduction research and development programme to accelerate decarbonisation. The Marine Environment Protection Committee (MEPC) approved in November 2020 a measure demanding energy efficiency requirements on existing vessels starting from 2023, and the introduction of carbon intensity targets for vessels that will become mandatory in 2026. The measures were adopted in June 2021, while R&D funding was left undecided.

The European Union is discussing its own regional legislation. On 7 July 2020, the European Parliament's Environment Committee voted to include CO₂ emissions from the maritime sector in the EU Emissions Trading Systems. Part of the revenues are proposed to be used for an Ocean Fund to support innovative green technologies and protect the marine ecosystems. Binding requirements to reduce the annual average CO₂ emissions per transport work for all vessels by at least 40% by 2030 were also introduced. The proposals were adopted by the Plenary in September 2020. A proposal for a revised Emissions Trading System with the inclusion of shipping was launched by the European Commission as part of the Fit for 55 package in July 2021. In addition to taxing international shipping emissions and domestic owners, the package includes a requirement for owners to buy cleaner fuels and ports to ramp up supply of shore power and liquefied natural gas (LNG) as fuel.

A significant push for decarbonisation in the maritime industry is not only underway within regulatory authorities but also in form of various industry initiatives comprised of a diverse range of maritime stakeholders, e.g. the Poseidon Principles for Marine Insurance referred to above. These efforts are necessary as the existing fleet is going to be non-compliant with IMO requirements soon. Changes in vessel design, fuel and propulsion types, and infrastructure will affect the risk landscape for marine insurers going forward. Marine insurers must be prepared to assess new risks and potential safety concerns. Moreover, they are likely to play a role as facilitators for decarbonisation by providing guidance and advice to their insureds.

Conflict minerals

Supply chain due diligence requirements regarding so-called conflict minerals aimed at greater transparency, are applicable or introduced by (supra) national law makers.

EU Regulation 2017/821, which came into force on 1 January 2021, puts in place a framework for EU-based importers of certain metals and minerals origination from conflict-affected and high-risk areas (CAHRAs). The purpose is to ensure that trade into the EU is not funding conflicts and human rights abuses.

Importers, traders, smelters and refiners of

- concentrates and ores containing 3TG (tin, tantalum, tungsten and gold), and
- metals containing or consisting of 3TG

have to carry out obligatory due diligence checks on suppliers and origin of the materials.

The importers, including those who are not established in the EU, must declare minerals and/or metals for release and circulation in the EU. Smelters and refiners who exercise any form of extraction and/or metallurgy processing aiming at producing a metal from a mineral, are under the same due diligence obligation. Downstream users who do not directly import any of these materials are exempted from this obligation.

The supply chain due diligence obligations can be summarized as follows:

- adopt a supply chain policy for 3TG and communicate this to suppliers and the public; this includes risk assessment, a strategy to respond to identified risks, third party independent audits in the supply chain,
- implement due diligence standards as per OECD guidance³;
- senior management to establish strong company management systems to control, hold records of the process and report,
- incorporate appropriate contractual provisions in the supply chain,
- provide for information and disclosure to authorities, and
- establish a complaint procedure for stakeholders including access to an external expert.

Similar provisions are part of the US 'Dodd-Frank' Act section 1502 aiming at the Democratic Republic of Congo (DRC) and neighbouring countries.

Illegal, unregulated, unreported (IUU) fishing

Seafood is a nutritious meal for millions of people across the world and an essential food protein in many developing countries. A major problem for sustainable fisheries management is illegal, unregulated and unreported fishing (IUU fishing). Vessels engaged in IUU fishing activities do not comply with safety measures on board, do not use legal fishing gear, do not follow fisheries management regulations and/or do not comply with regulations on quotas, fishing areas, closed seasons or prohibited species. The IUU catch is not recorded in catch registers. This is an important aspect because fishing stocks are estimated based on these registers.

Marine insurers can support the suppression of IUU fishing activities by refusing or cancelling insurance to vessels which have been blacklisted for involvement in illicit actions. The ocean conservation group Oceana in cooperation with UNEP FI's PSI have engaged with marine insurers and associations including IUMI to develop guidelines to control or mitigate the risk of insuring vessels and companies associated with IUU fishing. There are also initiatives to develop an insurance policy provision managing IUU risks and a tool (likely a website) to assist insurers in evaluating the risk that a vessel may be engaging in or supporting IUU fishing.

³ <https://www.oecd.org/corporate/mne/mining.htm>

IUMI supports the adoption of the Cape Town Agreement (CTA) of 2012 on the Implementation of the Provisions of the 1993 Protocol relating to the Torremolinos International Convention for the Safety of Fishing Vessels. This IMO treaty to address fishing vessel safety is not in force yet. The absence of an international mandatory regime makes effective control and monitoring of fishing vessels difficult. The CTA sets minimum requirements on the design, construction, equipment, and inspection of fishing vessels of 24 meters in length and over. The agreement further facilitates better control of fishing vessel safety by flag, port and coastal States. Swift ratification of the CTA is therefore desirable and supported by IUMI.

Plastic litter

Over 300 million tons of plastic are produced every year for use in a wide variety of applications. At least 8 million tons of plastic end up in the oceans annually. Researchers estimate a plastic leakage into the ocean in 2040 of 29 million tons. Under the influence of UV radiation, wind, currents and other natural factors, plastic fragments into small particles, termed microplastics (particles smaller than 5 mm) or nanoplastics (particles smaller than 100 nm). Marine species ingest or are entangled by plastic debris which causes severe injuries and death. Plastic pollution threatens food safety and quality, human health, and coastal tourism.

The main sources of marine plastic are land-based. However, ocean-based plastic originates primarily from the fishing industry, nautical activities and aquaculture. In 2018, the IMO's Marine Environment Protection Committee (MEPC) adopted the IMO Action Plan to address marine plastic litter from ships. It aims to enhance existing regulations and introduce new supporting measures to reduce marine plastic litter from vessels. One aspect of the Action Plan is the consideration of a compulsory mechanism to declare the loss of containers at sea.

The contents of lost containers contribute to marine litter. The carriage of so-called "nurdles" (pre-production plastic pellets) is a particular concern. Nurdles are in widespread use and large quantities of containers of this commodity are being shipped. In October 2011, the *'Rena'* ran aground on the coast of New Zealand resulting in the loss of containers of plastic resin pellets. In Hong Kong after Typhoon Vicente in July 2012, containers with over 150 tonnes of plastic resin pellets were lost at sea which later washed up on the southern Hong Kong coast. In 2017, a spill of approximately 2 billion plastic resin pellets (49 tonnes) from a shipping container in Durban, South Africa, required extended clean-up efforts, with pellets also washing up on the shore in Western Australia. Similarly, the *'Trans Carrier'* spill in the German bight resulted in a loss of 13 tonnes of nurdles and pollution of Danish, Norwegian and Swedish coastlines. In May 2021, the MV X-Press Pearl spilt 11,000 tonnes of plastic pellets off the shore of Colombo, Sri Lanka. If nurdles are lost overboard, the consequences to the environment are significant as they float and can be widely distributed. Marine wildlife often mistake nurdles for food, causing injury and entering the food chain.

One way to address this issue is to raise awareness for the negative impact of nurdles on the marine environment if lost overboard. In doing so, insurers can refer their customers to the guidelines produced by Operation Clean Sweep, an initiative promoted by the Plastic Industry Association and the American Chemistry Council. The guidelines include best practices of handling nurdles, including avoiding stowing resin pellets container on deck.

Regulatory change should be effected to make it mandatory that this commodity is to be shipped underdeck only. One option would be to consider microplastic particles or synthetic resin pellets separately in the classification for "environmentally hazardous substances" primarily due to the pollution hazard. In the case of marine pollutants, these are to be classified according to section 2.9.3 of the IMDG Code "Environmentally hazardous substances (aquatic environment)". These are harmonised with MARPOL 73/78 Annex III and with UN GHS (Globally Harmonized System of Classification, Labelling and Packaging of Chemicals). Such an approach would help to prevent the loss of containers filled with nurdles and would increase awareness for the substantial environmental risks plastic pellets are associated with.

Ship recycling

Ships are considered hazardous waste under international environmental law such as the Basel Convention and the EU Ship Recycling Regulation. According to the NGO Shipbreaking Platform, 630 ocean-going commercial ships and offshore units were sold to the scrap yards in 2020. Of these vessels, 446 large tankers, bulkers, floating platforms, cargo and passenger ships were dismantled on three beaches in South Asia, amounting to approx. 90% of the gross tonnage broken up globally. The process of dismantling often does not occur in safe and environmentally sound working conditions. The practice of "beaching" vessels to break them up poses significant risks to the health and safety of the workers. It also causes environmental damage due to the toxic materials released during the process.

The IMO's Hong Kong Convention is aimed at ensuring that ships when being recycled do not pose any unnecessary risk to human health and safety or to the environment. The Hong Kong Convention was adopted in May 2009 but has not yet entered into force. Regulations in the Convention cover the design, construction, operation and preparation of ships to facilitate safe and environmentally sound recycling and the establishment of an appropriate enforcement mechanism for ship recycling, incorporating certification and reporting requirements. Ships to be sent for recycling will be required to carry an inventory of hazardous materials which will be specific to each ship. IUMI supports the ratification of the Hong Kong Convention to ensure a minimum standard of safety and environmental standards during the dismantling of ships.

The EU put in place its own regulatory measure. From 31 December 2018, the EU Ship Recycling Regulation mandates the recycling of all large sea-going vessels sailing under an EU flag to take place in yards included in the European List of ship recycling facilities. The regulation aims to make ship recycling safer and environmentally sound. The 7th edition of the European List of ship recycling facilities published in November 2020 contains 43 yards, including 34 yards in Europe, 8 yards in Turkey and 1 yard in the USA.

The EU Ship Recycling Regulation has implications for marine insurance. Insurers involved in actions which may be considered illegal exports of ships to yards not included on the European List of ship recycling facilities may be held liable. Being associated with unsustainable practices such as "beaching" of vessels may further lead to reputational risks. IUMI is raising awareness for this issue by holding presentations and [webinars](#) on the topic. IUMI further supports the work of the Ship Recycling Transparency Initiative (SRTI) which aims at ensuring better labour and

environmental standards by requiring shipowners to disclose their ship recycling policies and practices.

Livestock transports

Livestock carriers are a special type of ship intended to transport cattle, sheep and other animals. Most of the vessels engaged in this trade are converted from a general cargo vessel, i.e. not specifically designed for the purpose of carrying live animals. Converted livestock carriers are often fitted with multiple decks to accommodate the cattle. This set-up enhances the windage area and impacts the stability of the vessels. As these ships are often converted only after sailing in the trade they have been designed for originally, the fleet of livestock carriers has a fairly high average age which is often associated with fatigue in the strength of the structure as well as old main engines and propulsion systems. The track record of livestock carriers involved in major incidents is therefore relatively poor. Examples include the sinking of the Gulf Livestock 1 in the East China Sea in September 2020 with 43 crew and 6,000 cattle onboard and the capsizing and subsequent sinking of the Queen Hind in Romania in November 2019 with 14,000 sheep onboard.

The welfare of live animals during maritime and road transport poses additional safety as well as ethical concerns. Often, appropriate care cannot be afforded to the large number of animals being transported, leaving them exposed to food and water deprivation, rough seas, heat and cold stress. Overflow of faecal material regularly leads to faecal soiling of feed and water troughs as well as coat contamination. Due to the severe stress and suffering of the animals during long voyages, the New Zealand government in April 2021 banned live cattle exports by sea, with a two-year period to phase out the trade. Other countries such as the UK are considering to ban live animal exports and introducing further elements of animal welfare in transport, such as reducing maximum journey times, giving animals more space and headroom during transport, and stricter rules on transporting animals in extreme temperatures or by sea.

The PSI's ESG Guide for Non-Life Insurance includes risk mitigation examples and good practice related to animal welfare for the live transport of animals. Marine insurers covering these risks are encouraged to review the treatment of animals during transport and to promote best practice among their insureds.

Summary

Based on the many initiatives and expectations concerning ESG and how this is handled also by marine insurers, IUMI will play a role by facilitating a dialogue within the IUMI membership on ESG issues involving public stakeholders, authorities and industry partners as appropriate.

Relevant authority / organizations and documents:

- **Cape Town Agreement** of 2012 on the Implementation of the Provisions of the 1993 Protocol relating to the Torremolinos International Convention for the Safety of Fishing Vessels, 1977, 11 October 2012.
- **International Maritime Organization (IMO)**, MEPC and PPR: (www.imo.org/en/OurWork/Environment/Pages/Default.aspx#ave)

- **Resolution MEPC.310(73):** Action Plan to address marine plastic litter from ships (MEPC73/19 - Annex 10), adopted 26 October 2018.
- **LC 41/9:** Update on recent development with respect to marine litter and microplastics, note by Secretariat, 5 July 2019.
- **JWG 4/9:** Cooperation and dialogue on environmental issues relating to fisheries, note by Secretariat, 24 September 2019.
- **MEPC75/7/4:** Proposal to establish an International Maritime Research and Development Board, submitted by BIMCO, CLIA, ICS, INTERCARGO, INTERFERRY, INTERTANKO, IPTA and WSC, 18 December 2019.
- **MEPC75/INF.5:** Preliminary analysis of what R&D work activities could be undertaken by IMRB, submitted by ICS, BIMCO, INTERTANKO, CLIA, INTERCARGO, IPTA, INTERFERRY and WSC, 18 December 2019.
- **MEPC75/8:** Update on recent interagency cooperation and capacity-building activities on marine plastic litter, submitted by the Secretariat, 18 December 2019.
- **MEPC75/8/3:** Report of the Correspondence Group on development of a strategy to address marine plastic litter from ships, 27 December 2019.
- **FAL44/13:** IMO guidance to address bribery and corruption in the maritime sector, submitted by Liberia, Marshall Islands, Norway, United States, Vanuatu, ICS, IUMI, IAPH, BIMCO, IMPA, IFSMA, INTERTANKO, IG, InterManager, IPTA, IHMA, IBIA, FONASBA, ITF and NI, 7 February 2020.
- **MEPC75/WP.3:** Final report of the seventh meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships, 10 November 2020.
- **FAL45/14/1:** Report of the Correspondence Group on Guidance to Address Maritime Corruption, 26 March 2021.
- IMO Fourth Greenhouse Gas Study 2020.
- **MEPC77/8/3:** Follow-up work emanating from the action plan to address marine plastic litter from ships, submitted by Sri Lanka, 1 October 2021.
- **United Nations**
 - **Environmental Programme Financial Initiative (UNEP FI)**
 - Principles for Sustainable Insurance, 2012
 - Guidelines to control or mitigate the risk of insuring vessels and companies associated with illegal, unreported and unregulated (IUU) fishing, 2018.
 - PSI ESG Guide for non-life insurance, Version 1.0, June 2020.
 - Final report on the project to pilot the TCFD recommendations, January 2021.
 - **UN Sustainable Development Goals (SDG)**
 - **Paris Agreement on Climate Change**
- **European Union:**
 - **Conflict minerals regulation** , 22 November 2016.
 - **2020/C 349/01:** Guidelines on the enforcement of obligations under the EU Ship Recycling Regulation relating to the Inventory of Hazardous Materials of vessels operating in European waters, 20 October 2020.
 - **Taxonomy:**
 - Corporate Sustainability Reporting Directive, adopted by EC 21 April 2021.
 - Fact sheet

- **Fit for 55 package**, 14 July 2021.
- **United States:**
 - Dodd-Frank Act Section 1502
- **Neptune Declaration:** Declaration on seafarer wellbeing signed by IUMI in January 2021.
- **IACS:** Position paper – Developing and implementing technical measures to support GHG emission reduction targets, 8 March 2021.
- **Maritime Technologies Forum**, launched 26 April 2021.
- **Operation Clean Sweep**
- **ECSA:** Position paper on the fuel EU maritime proposal, October 2021.
- **COP26:** Clydebank Declaration for green shipping corridors, 10 November 2021.
- **Poseidon Principles for Marine Insurance**, launched 15 December 2021.

Timeline / important dates:

- IUMI response to UNEP FI PSI consultation on the guideline for underwriting environmental, social and governance risks in non-life insurance business, 30 September 2019.
- Presentation Hermelo Bacani, UNEP FI PSI, during IUMI Toronto Conference, 17 September 2019
- Ministerial Conference on Fishing Vessel Safety and Illegal, Unreported and Unregulated (IUU) Fishing in Torremolinos, Spain, 21-23 October 2019.
- IUMI membership survey on ESG risks and principles, late 2019 / early 2020.
- IUMI becomes a UNEP FI PSI 'Supporting Institution', February 2020.
- BBNJ agreement negotiations due for completion in 2022.
- IUMI webinar UNEP ESG PSI guide, 6 October 2020.
- MEPC 75: 16-20 November 2020.
- EU conflict minerals regulation entered into force 1 January 2021.
- MEPC 76: 14-25 June 2021.
- MEPC 77: 22-26 November 2022.
- MEPC 78: 6-10 June 2022.
- Launch of the Poseidon Principles for Marine Insurance with IUMI as a supporting partner, 15 December 2021.

IUMI will:

- Inform IUMI's membership where appropriate about developments with regard to ESG issues and facilitate where necessary an internal dialogue in order to agree on IUMI positions.
- Explain and communicate IUMI's standpoints to other industry participants and public stakeholders / authorities.
- Participate in the industry and public dialogue on 'ESG risks and principles'.
- Support the ratification of the Cape Town Agreement on the implementation of the Torremolinos Convention for the safety of fishing vessels.

- Support the ratification of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships.

5. EU Offshore Safety Directive

Brief description

The European Commission (EC) proposed in October 2011 a Regulation on the safety of offshore oil and gas prospecting, exploration and production activities aiming amongst others to extend the scope of the Environmental Liability Directive (ELD) to include “all waters under the jurisdiction of the Member States” and mandating financial security. A study was commissioned on *liability security schemes for offshore environmental risks*, drafted by the University of Maastricht.

Joint industry efforts were made to prevent some of the more controversial suggestions of the Regulation and explain the practical implications – and impracticability – of extending the ELD due to:

- most likely an inability to quantify the damages in a longer term, and
- scale of potential loss and selectivity by insurers.

In October 2012, the Industry, Research and Energy Committee (ITRE) of the European Parliament voted in favour of transforming the proposal from a Regulation to a Directive. The Directive was formally adopted in June 2013.

Article 4 of the new Directive states that evidence of provisions to cover potential liabilities shall be included in the application for a licence.

With reference to financial security, the Directive states that:

“(63) Operators should ensure they have access to sufficient physical, human and financial resources to prevent major accidents and limit the consequences of such accidents. However, as no existing financial security instruments, including risk pooling arrangements, can accommodate all possible consequences of major accidents, the Commission should undertake further analysis and studies of the appropriate measures to ensure an adequately robust liability regime for damages relating to offshore oil and gas operations, requirements on financial capacity including availability of appropriated financial security instruments or other arrangements. This may include an examination of the feasibility of a mutual compensation scheme. The Commission should submit a report to the European Parliament and to the Council on its findings, accompanied if appropriate, by proposals.”

Following up on this request, two studies on civil liability, financial resources and compensation claims for offshore oil and gas activities were presented in October 2014 and August 2014. IUMI was consulted as part of the studies, explaining the practical implications, limitations and how the market functions from an offshore energy insurance perspective.

A report on the Commission's assessment of the effectiveness of the liability regimes in the EU in respect of the damage caused by offshore oil and gas operations was released in September 2015. The report concludes that a broadening of liability provisions through EU legislation does not appear appropriate at this juncture. In case new national laws fail to improve the availability of financial security instruments and put in place procedures for ensuring prompt and adequate handling of compensation claims, the Commission informs that it will reassess whether and what further EU action could achieve these objectives.

In March 2016, the European Parliament's Committee on the Environment, Public Health and Food Safety (ENVI) issued a draft opinion, recommending that the (responsible) Committee on Legal Affairs calls on the Commission to consider the establishment of a legislative compensation mechanism for offshore accidents with minimum requirements. Responding to these discussions, IUMI presented in April 2016 a position paper to members of the relevant parliamentary committees. The report of the Committee on Legal Affairs was presented in October with only some minor modifications to the ENVI opinion. The report recognised that "*over-reliance on insurance could potentially result in a closed market for financial security instruments, with the corollary potential for a lack of competition and increased cost*". The possibility of finding an international solution was also encouraged. IUMI remains unpersuaded that a legislative compensation system over and above the existing provisions is needed and continues to believe that a voluntary financial security system is likely to be most effective.

In September 2018, the Commission launched a public consultation to gather views on the implementation of the Directive. IUMI responded to the consultation in December 2018. An assessment of the implementation of the Directive was presented in a report to the European Parliament in November 2020. Concerning liability and the handling of compensation claims, the EC intends to follow-up with further analysis and/or research. The intention will be to assess whether a uniform regime on, for example, the principle of strict liability of installation operators and owners that go beyond the minimum requirements of the Directive would benefit the safety of offshore operations and the follow-up of accidents.

Relevant authority / organisations and documents

- **European Commission**

- **Proposed EC Regulation** 27 October 2011.
- **University of Maastricht** – Civil liability, financial security and compensation claims for offshore oil and gas activities, 22 October 2013.
- **BioIS study** – Civil liability, financial security and compensation claims for offshore oil and gas activities in the EEA, 14 August 2014.
- **COM(2015) 422 final** – Report from the EC to the EP and Council on liability, compensation and financial security for offshore oil and gas operations pursuant to Article 39 of Directive 2013/30/EU, 14 September 2015.
- **Consultation:** Evaluation of the Directive on safety of offshore oil and gas operations, 19 September 2018. IUMI response 19 December 2018.
- **Annual Reports on the Safety of Offshore Oil and Gas operations in the European Union**

- **COM(2020) 732** – Report from the EC to the EP, the Council and the European Economic and Social Committee: Assessing the implementation of Directive 2013/30/EU of the European Parliament and the Council of 12 June 2013 on the safety of offshore oil and gas operations and amending Directive 2004/35/EC & SWD(2020) 260 Commission Staff Working Document, 16 November 2020.
- **European Parliament** – Environment, Public Health and Food Safety Committee (ENVI) & Industry, Research and Energy Committee (ITRE).
 - **Directive 2013/30/EU** of the European Parliament and of the Council of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC.
 - **ENVI Committee:** Draft Opinion, 22 March 2016, final version 12 July 2016.
 - **Committee on Legal Affairs:** Plenary report, 19 October 2016.
- **Position papers – industry:**
 - **Insurance Europe:** 2012.
 - **Norwegian maritime/oil & gas industries:** 30 January 2012.
 - **UK maritime industry:** 18 April 2012.
 - **ECSA:**
 - 2 October 2014.
 - April 2016.
 - 8 May 2017, together with EADC and IMCA.
 - **IUMI:**
 - 24 September 2012.
 - **14 April 2016 – EU Directive**

Timeline / important dates

- Directive 2013/30/EU applies through national laws/regulations from 19 July 2016 for new installations, and 19 July 2018 for existing ones.
- European Parliament resolution 2015/2353(INI), adopted 1 December 2016.

IUMI will:

- Support a voluntary financial security system rather than a legislative compensation system over and above existing provisions.
- Explain the capabilities and limitations of insurance as a financial security instrument, and require a cost-benefit analysis cross-referred with insurance market capabilities if further investigations are to take place.

6. EU Recognised Organisations and Mutual Recognition

Brief description

Article 10 of EU Regulation No 391/2009 on common rules and standards for ship inspection and survey organizations states that *“Recognised organisations shall, in appropriate cases, agree on the technical and procedural conditions under which they will mutually recognize the class certificates for materials, equipment and components based on equivalent standards, taking the most demanding and rigorous standards as the reference.”*

The EU Recognised Organisations (ROs) have established procedures and technical requirements for Mutual Recognition (MR), and coordinates their work through an Advisory Board supported by a Technical Committee.

A hierarchy of six safety levels has been agreed between the ROs. Levels I and II include products with no/very low impact on safety and are uncontroversial. Level III products are currently under consideration, and the most recent MR Technical Requirements were published 1 January 2019 (Tier 7). In May 2020, the EU RO MR Group published a summary report of their activities 2015 – 2019 to furthering the implementation of the MR scheme.

Insurers expect the surveys of safety critical materials, equipment and components to be carried out by the RO classing the vessel. Classification has an important role in ensuring a certain level of safety to the vessel and its equipment, and there is usually a requirement under most individual insurance conditions that the vessel shall be classed with a classification society approved by the insurer before the insurance commences. Should any RO be allowed to certify and approve components and equipment for a vessel at all safety levels and regardless of which society will be responsible for classing the vessels, neither the classification society nor owners or underwriters will really know what quality of vessels they have or what quality of components have gone into them. To allow MR on safety critical materials, equipment and components would undermine the significance of ship classification as a key component of today’s safety regime at sea, and is a major cause of concern among underwriters.

There is also a question related to the acceptance of the EU RO regime by third party flag states. The sovereignty of the flag state under which the vessel operates is at the core of international maritime regulations and widely supported by the global marine insurance industry.

Based on a study from the University of Strathclyde, the European Commission (EC) reported on the status of the implementation to the European Parliament and the Council at the end of July 2015.

The EU RO MR Group released an alternative Product Evaluation Process (PEP) model as well as a PEP Instruction Manual and PEP Guiding Questions in June 2020.

In early 2021, taking the COVID-19 pandemic into account, an addendum to the EU RO Framework Document for the Mutual Recognition of Type Approval was released. Intermediate (annual) audits can be postponed, if needed, depending on local COVID-19 related regulations in force, but in any

case, not longer than 3 months. In exceptional cases an additional postponement of 3 months may be granted. The addendum entered into force 1 January 2021 and shall be valid until 30 June 2021.

Relevant authority / organisations and documents

- **European Union** – Article 10.1 of EU Regulation (EC) No 391/2009 of 23 April 2009 on common rules and standards for ship inspection and survey organisations.
- **EU RO Mutual Recognition Group**
 - EU RO Mutual recognition group report 2015-2019, May 2014.
- **IMO** – Proposed Code for Recognized Organisations (RO Code) and related amendments to SOLAS chapter XI-1 and the 1988 Load Lines Protocol, and resolution MEPC.237(65).
- **IUMI**
 - Letter to Commission 30 October 2013 & reply letter 6 December 2013.
 - Response to questionnaire from Strathclyde University 8 December 2014.
- **University of Strathclyde**
 - Study report to the EC 29 May 2015.
 - Workshop report October 2015.

Timeline / important dates

- RO Code in force from 1 January 2015.
- EC report to Parliament (EP TRAN) on 21 December 2015.
- EU RO MR workshop, Hamburg, 5 September 2018.
- Meeting with EC DG MOVE, Brussels, 8 March 2019.

IUMI will:

- Recommend that mutual recognition is clearly limited to materials, equipment and components of proven low safety criticality. Scope of the MR should not go beyond further analysis and consideration of Level III products.
- Participate in workshops and consultations as appropriate.

7. Fuels

Brief description

The shipping sector accounts for approx. 3% of global CO₂ emissions. International agreements on the need to combat climate change require the reduction of greenhouse gas emissions from shipping. In addition to regulatory pressures from the IMO, other stakeholders such as banks, charterers and the broader public are setting requirements for the environmental performance of vessels, for instance in connection with the financing of new ships and new chartering agreements. Therefore, the industry must examine low and zero carbon ship propulsion systems taking into

account the entire value chain, not just the combustion cycle. Notwithstanding the imperative of the green energy transition, it is crucial to assess potential safety concerns associated with measures to reduce the carbon footprint. In light of the urgency to decarbonise shipping, proper risk management is critical and safety must not become an afterthought.

IMO's Sub-Committee on Carriage of Cargoes and Containers (CCC) initiated in September 2021 the development of guidelines on the safety of vessels using hydrogen as fuel under the International Code for Ships using Gases or Other Low-flashpoint Fuels (IGF Code). A proposal for a new output on the development of non-mandatory guidelines for safety of ships using ammonia as fuel was submitted to the Maritime Safety Committee (MSC) in July 2021. The Maritime Safety Committee (MSC) has deferred a decision on this until April 2022. Meanwhile, CCC has instructed a Correspondence Group to collect information on ammonia.

An important aspect of using alternative fuels safely is not only a comprehensive review of risks associated with the new fuels and propulsion methods, but also thorough consideration of how human performance may be influenced by new equipment, new ways of collaboration, and new procedures and processes for bunkering. At the same time, conventional fuel types will be in use for the foreseeable future and until the transition period is concluded.

This section of the Policy Agenda looks at regulatory measures and challenges related to conventional fuels. The second part provides an overview of safety aspects related to a selection of greener fuels, both conventional and alternative.

A. Regulations and challenges related to conventional fuels

MARPOL 2020 regulation

The MARPOL regulation limiting sulphur oxide emissions from ships with a global cap of 0.5% became mandatory on 1 January 2020.

Prior to this date, concerns had been raised in relation to fuel stability, differences in composition and blending from supplier to supplier and port to port, lower flashpoints than the minimum required by international safety regulations, inadequate safety margins for catalytic fines and ignition delays stemming from inferior combustibility. The Maritime Safety Committee (MSC) agreed in December 2018 to include in its biennial agenda an output on 'Development of further measures to enhance the safety of ships relating to the use of fuel oil', with a focus on safety issues related to flashpoint requirements. MSC 103 re-established in May 2021 the Correspondence Group on oil fuel safety to further consider draft requirements and guidelines until MSC 105 in April 2022. The CG is specifically tasked to consider flashpoint and the delivery of non-compliant fuel by oil fuel suppliers, but also measures related to other oil fuel parameters may be considered.

Guidance is offered by the International Organization for Standardization (ISO), classification societies, the International Council on Combustion Engines (CIMAC) and industry associations. In August 2019, a Joint Industry Group published a Guidance on the supply and use of 0.50%-sulphur marine fuel. The guidance is supported by IUMI as one of the project sponsors. The publication provides guidance for stakeholders across the marine fuels and shipping industries, from fuel

blenders and suppliers to end users. It presents the specific safety and operational issues relating to the supply and use of max. 0.50%-sulphur fuels, an overview of fuel quality principles, and the controls that should be put in place to ensure that safety issues are identified, prevented and/or mitigated. It addresses issues such as fuel compatibility, fuel stability, and fuel handling and storage, and contains a comprehensive review of existing operational factors that can affect safety. There is also an ongoing review of the ISO standard 8217:2017, with publication anticipated in 2023.

To get a better understanding of the quality of the new fuels and possible safety implications following the implementation of the IMO 2020 sulphur regulation, BIMCO, ICS, INTERCARGO and INTERTANKO conducted a survey on fuel quality and safety among shore-based personnel in the period February – May 2020. Of the respondents, 14% had not experienced any off-spec or operational quality issues, while 62% had to some extent experienced increased sludge deposits. The report concludes that the transition to the 0.5% sulphur limit has not been without problems, and as fuel oil properties are fluctuating, quality and safety problems will continue to be a challenge for the global shipping industry.

The Cefor Technical Forum published [their findings](#) on key elements causing problems in relation to the use of the very low sulphur fuel oils (VLSFOs) in April 2021. The additional complexity of the bunkering and handling of the new fuels as well as issues related to tank cleaning, filtering, viscosity, stability and correct use of lube oil are all factors observed to have caused engine damage.

Fuel contamination

Contaminated supplies of biodiesel fuel that were first reported in the US Gulf region in February 2018 led to a range of technical problems, including blocked fuel filters, fuel pump seizures and even loss of main engine power. The cost of an engine damage could be up to USD 800,000 for an individual vessel. The loss of engine power from such contamination may lead to serious incidents such as collisions and groundings.

Testing to ISO 8217 levels will not necessarily show if the fuel is contaminated or not, as the suitability of biofuels requires gas chromatography and specialised equipment in a laboratory to determine any contamination. This test will generally take 7 to 10 days, and there are currently not enough laboratories to perform the necessary testing. Consequently, vessels are forced to sail with fuel in separate tanks and rely on the ability of the crew and equipment to make the fuel fit for use.

IUMI believes that the current system with the end-user taking all the risk is unacceptable. Rather than the end user, refineries should be compelled to do the testing and confirm the delivery of non-contaminated fuels. In parallel, the ISO review of low-sulphur fuels should also include an amendment of the ISO 8217 to deal with biofuels.

A joint MEPC-MSC circular addressing the delivery of compliant fuel oil by suppliers was approved by MEPC 74 and MSC 101 in May and June 2019, respectively. The circular recommends that Member States take appropriate action to ensure that fuel oil suppliers under their jurisdiction deliver compliant fuel.

In December 2018, BIMCO published a Marine Fuel Sulphur Content Clause for Time Charter Parties. The Clause states that charterers are obliged to provide fuel that complies with MARPOL requirements, and also use suppliers and bunker barge operators who comply with the same. Shipowners remain responsible for the fuel management.

B. Low/zero carbon fuels

Ammonia

Ammonia offers a potential long term solution for the maritime industry's transition towards a low carbon value chain. Green ammonia can be produced from renewable power by electrolysis of H₂O, making it a zero carbon fuel. However, due to the extreme toxicity of the fuel it is critical to assess the safety issues of ammonia in order to mitigate risks for people, assets and the environment. Risks such as toxicity and flammability must be addressed for both key equipment, spaces dedicated to ammonia storage and alternative vessel designs. Unless satisfactory safety systems and operations are implemented, the properties of ammonia may lead to an increased overall risk level associated with its use as fuel on vessels.

Battery-powered propulsion

Battery-powered propulsion is suitable for stop-and-go operating cycles such as ferries. Ferry operators in Europe, North America and Asia have been testing and deploying hybrid propulsion systems for the last decade, and the technology has been adopted for passenger vessels of various sizes.

Thermal runaway constitutes the largest risk for batteries used in maritime operations. Thermal runaway occurs if the lithium-ion cells used in marine batteries are subjected to mechanical abuse, suffer from internal manufacturing defects, or operate over or under the correct voltage or internal temperature. In these situations, heat may be generated within the lithium-ion cells which may increase to a point whereby it melts the separators inside the cells. This reaction can result in the temperature increasing until the cell emits toxic and flammable gasses. If ignition occurs, these gasses can create a fire which can be difficult to extinguish. In large concentrations, these gasses are also capable of causing explosions. Preventing thermal runaway is therefore key, for instance through the use of active cooling systems and internal thermal barriers as part of an effective safety management system.

Biofuels

Biomass is a renewable fuel source. Its use for marine fuels can be considered a carbon neutral way of generating energy because the organic matter used to produce biofuels roughly absorb as much CO₂ during their lifetime as they release when burned. Biofuels are produced from organic matter that is largely unsuitable for food or feed. However, their potential to reduce the amount of arable land earmarked for normal food production is contentious.

For biodiesel, fuel lubricity, conductivity and corrosion are areas of concern. Due to oxidation, it tends to lose lubricity over long periods of time, which may cause wear on essential components. Because electrical conductivity can cause static charges, it is likely to need anti-static additives.

Corrosion from the degradation of biodiesel can weaken steel holding tanks and pipelines over time, compromising storage and transportation. Biofuels with high acidity can cause increased wear on engine components, so the engine manufacturer should be consulted when considering the use of fatty acid methyl esters (FAME) in a conventional engine. In the latest specification, ISO 8217:2017 recommended limiting the proportion of FAME in distillate fuel oil blends to 7%, creating the first industry standard for fuel oil with a provision for biofuel.

Fuel cells

Fuel cells produce energy from an electro-chemical process. Two reactants, typically hydrogen and oxygen, merge within the fuel cell to produce water, releasing electrical energy and thermal energy in the process. Although hydrogen is the most commonly used fuel in fuel cells, methanol and ammonia are viable alternatives. The reactants consumed by the fuel cell are stored externally and are supplied to the fuel cell in a similar way as in conventional diesel engines. Hence, a fuel cell has the potential to produce power as long as it has a supply of reactants.

Hydrogen, methane and other gaseous fuels that are lighter than air need special ventilation arrangements to prevent the creation of hazardous areas. For many types of fuel cells, the non-hydrogen supply is externally reformed to hydrogen and other by-products prior to introduction into the fuel cell, so the hydrogen portion of the fuel system needs special consideration. Fuel management, identifying the risks to personnel and managing the hazardous areas associated with the ships' physical layouts, operations and maintenance are key safety challenges with fuel cell systems. Toxic exposure, asphyxiation and explosions are among the risks to crews and the vessel.

Hydrogen

Hydrogen is a potential alternative fuel for ship propulsion. It requires energy to produce hydrogen which could originate from conventional fuels or non-fossil sources such as wind, hydro-electric or nuclear to make it low/zero carbon. For hydrogen, challenges relate to extremely low temperatures (-253°C) if stored as a liquefied gas, and high pressure (250–700 bar) if stored as compressed gas. The hydrogen molecule is the smallest of all molecules, making it challenging to contain. It also has a wide flammability range and ignites easily. The properties of hydrogen may therefore lead to an increased overall risk level associated with its use as fuel on ships unless satisfactory safety systems and operations are implemented.

Asphyxiation and explosions are potential risks for the crew and the vessel. For the onshore and offshore personnel, an extensive assessment of the hazards associated with physical layout, operations, maintenance, transfer and carriage of the fuel are necessary to ensure safe operations. Onboard ventilation, alarm systems and fire-protection strategies and other measures to limit the likelihood and effects of leakage will need to be designed into hydrogen-dedicated assets.

Liquid natural gas (LNG)

Liquefied natural gas (LNG) is the cleanest-burning fossil fuel currently available at scale; its use as a marine fuel is supported by advanced engine technologies that have been proven in practice. As a fuel, it reduces nitrogen oxide (NO_x) emissions, eliminates most sulfur oxides (SO_x) and particulate matter, and contributes to carbon dioxide (CO₂) reduction. However, methane slip is a

cause for concern because methane, when considered as a greenhouse gas, is much more potent than CO₂.

Familiarity with the properties and characteristics of methane is critical to understanding the safety hazards associated with the use of LNG as a marine fuel. It is not considered to be corrosive nor toxic. Instead, the hazards are related to its storage, transport and combustion, and they also include cryogenic temperatures, vapour flammability and asphyxiation. Due to heat leakage through the insulation into the LNG cryogenic tanks, some of their contents continuously evaporate and generate boil-off gas, which increases tank pressure, potentially raising the risk of LNG and methane vapour releases. Those vapours are flammable and have the potential to asphyxiate workers. If a vapour spill comes in contact with a ship's structure, it causes brittleness and fracturing.

In a liquid state, LNG is not considered flammable and cannot ignite. However, LNG vapours become flammable when the percentage of methane in air reaches 5-15% and it can ignite when introduced to an ignition source. The auto-ignition temperature of methane is relatively high (595°C). When released from LNG, methane vapours will at first be heavier than air and then rapidly become lighter than air as it warms beyond -100°C. It is therefore crucial that safeguards are in place to prevent a flammable mixture from occurring, and to ensure that any sources of ignition are nowhere near.

Nuclear

This source of power has been considered in the past and work was paused after Fukushima. Given the problems associated with other alternative fuels, research into the viability of nuclear propulsion for vessels is being actively undertaken with much hope focused on molten salt reactors.

Relevant authority / organisations and documents

- **IMO – MEPC & MSC**
 - **MARPOL Regulation 14 & Annex VI:** “Prevention of Air Pollution from Ships, allowing for special (SO_x) Emission Control Areas”.
 - **MSC93/INF.8:** Safety implications arising from the supply of “Out of Specification” Marine Fuels, submitted by ICS and IPTA, 13 March 2014.
 - **MEPC70/INF.12:** Study on fuel oil quality, submitted by INTERTANKO, 22 July 2016.
 - **MEPC71/5/3:** Report of the correspondence Group on Fuel oil quality, submitted by the United States, 31 March 2017.
 - **ISWG-AP1/2/12:** Safety implications associated with 2020 fuels and their respective challenges, submitted by Liberia, Marshall Islands, ICS, BIMCO, INTERTANKO, INTERCARGO and WSC, 15 May 2018.
 - **MEPC 73/5/17:** Joint industry guidance on potential safety and operational issues related to the supply and use of 0.50% maximum sulphur fuels, submitted by ISO, OCIMF, IPIECA, IMarEST, RINA and IBIA, 31 August 2018.

- **MSC100/8/1:** Effective implementation of existing provisions for fuel quality and safety in IMO conventions, submitted by Liberia, ICS, INTERTANKO, IPTA and INTERFERRY, 28 September 2018.
- **MSC100/8/2:** Safety implications and respective challenges associated with 2020 compliant fuels, submitted by Bahamas, Liberia, Marshall Islands, Panama, BIMCO, INTERCARGO and INTERTANKO, 28 September 2018.
- **MEPC.1/Circ.875:** Guidance on best practice for fuel oil purchasers/users for assuring the quality of fuel oil used on board ships, 26 April 2018.
- **MEPC.1/Circ.875/Add.1:** Guidance on best practice for fuel oil suppliers assuring the quality of fuel oil delivered to ships, 9 November 2018.
- **MEPC.1/Circ.878:** Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI, 9 November 2018.
- **MSC100/WP.11:** Report of the Drafting Group on Fuel Oil Safety Matters, 5 December 2018.
- **MSC101/8/2:** Development of further measures to enhance the safety of ships relating to the use of fuel oil, submitted by ICS, INTERTANKO, INTERCARGO and IPTA, 16 April 2019.
- **Resolution MEPC.320(74):** 2019 Guidelines for consistent implementation of the 0.50% sulphur limit under MARPOL Annex VI.
- **MEPC.1/Circ. 881:** Guidance for port state control on contingency measures for addressing non-compliant fuel oil, 21 May 2019.
- **MEPC.1/Circ. 884:** Guidance for best practice for member state/coastal state, 21 May 2019.
- **MEPC.1/Circ.864/Rev.1:** 2019 Guidelines for on board sampling for the verification of the sulphur content of the fuel oil used on board ships, 21 May 2019.
- **CCC6/INF.6:** FSA study on the use of low-flashpoint oil fuels, submitted by the EC and Member States, 10 June 2019.
- **MSC101/WP.10:** Development of further measures to enhance the safety of ships relating to the use of fuel oil, Report of the Working Group, 11 June 2019.
- **MSC-MEPC.5/Circ.15:** Delivery of compliant fuel oil by suppliers, 24 June 2019.
- **MEPC75/5/2:** Bunker Supplier Licensing Schemes, submitted by ICS, BIMCO, INTERTANKO and WSC, 27 December 2019.
- **MSC102/6:** Development of further measures to enhance the safety of ships relating to the use of fuel oil, report of the Correspondence Group, 18 February 2020.
- **MSC102/INF.19:** Lessons learned from the mechanical incident caused by non-compliant fuel oil that contains deleterious chemicals, submitted by China, 10 March 2020.
- **MSC102/6/2:** Comments on document 102/6, submitted by the Cook Islands and ICS, 24 March 2020.
- **MSC.1/Circ. 1622:** Guidelines for the acceptance of alternative metallic materials for cryogenic service in ships carrying liquefied gases in bulk and ships using gases for low-flashpoint fuels, 2 December 2020.

- **MSC.1/Circ. 1599/Rev.1:** Revised interim guidelines on the application of high manganese austenitic steel for cryogenic service, 4 December 2020.
- **MEPC76/5:** Review of 2020 marine fuels quality, submitted by ISO, 29 January 2021.
- **CCC7/3/Rev.1:** Amendments to the IGF Code and developments of guidelines for low-flashpoint fuels – report of the Correspondence Group, 30 April 2021.
- **CCC7/3/9:** Comments on CCC7/3/Rev.1 and proposal for developing guidelines for the use of ammonia and hydrogen as fuels, 14 June 2021.
- **MSC104/15/9:** Development of non-mandatory guidelines for safety of ships using ammonia as fuel, submitted by Japan, Singapore, ICS and INTERCARGO, 2 July 2021.
- **MSC104/15/30:** Necessity of deliberations on operational safety measures and fire safety measures, submitted by Japan, 30 July 2021.
- **A32/12/2:** The development of safety requirements at the needed pace and detail to support the achievement of a decarbonization goal, submitted by IACS, 23 November 2021.
- **EU**
 - **Sulphur Directive 1999/32/EC** with amendments.
 - **COM(2021)562:** Proposal for a regulation on the use of renewable and low-carbon fuels in maritime transport and amending Directive 2009/16/EC ('FuelEU'), 14 July 2021.
- **CIMAC**
 - **Congress 2013, Paper no. 51:** "Onboard fuel oil cleaning, the ever-neglected process How to restrain cat-fine damages in two-stroke marine engines". Paper presented by experts from MAN Diesel and Turbo (Denmark), DNV Petroleum Services (Singapore), NanoNord (Denmark), Alfa Laval Tumba (Sweden).
 - **Position Paper 6/2015:** New 0.1% sulphur marine (ECA) fuels, June 2015.
 - **WG7 Fuels:**
 - Guideline - Cold flow properties of marine fuel oils, January 2015.
 - Fuel quality Guide - Ignition and combustion, 2011.
 - 2018 marine fuel incidents, November 2018.
 - Guideline – Marine fuel handling in connection to stability and compatibility, November 2019.
 - **Position Paper 01/2020:** Zero carbon energy sources for shipping (ISWG-GHG7/5/1, submitted by EUROMOT, 5 February 2020)
 - White Paper 1: Production pathways for hydrogen with a zero carbon footprint
 - White paper 2: Zero and net zero carbon fuel options
- **UK P&I Club Risk Focus:** Loss of power
- **Joint Hull Committee** information pack: Marine engine damage due to catalytic fines in fuel, joint paper with Braemar (The Salvage Association), 26 September 2013
- **U.S.**
 - **Environmental Protection Agency (EPA):** North American Emission Control Area: <http://www.epa.gov/otaq/oceanvessels.htm#north-american>

- **Coast Guard:** Safety Alert 10-18: U.S. Gulf Coast bunker contamination, 8 June 2018.
- **Wärtsilä** Fuel Oil Requirements (Heavy Fuel Oil).
- **MAN:** Service Letter SL2014-593/DOJA, December 2014.
- **Gard** Loss Prevention Circular No. 01-14: Prevention of engine damage due to catalytic fines, February 2014.
- **IACS Machinery Panel: No. 151 Recommendation for petroleum fuel treatment systems for marine diesel engines, July 2017.**
- **ISO:**
 - **8217:2017** – Specifications of marine fuels, 21 March 2017.
 - **ISO/PAS 23263:2019:** Petroleum products – Fuels (class F) – Considerations for fuel suppliers and users regarding marine fuel quality in view of the implementation of maximum 0.5% sulfur in 2020, September 2019.
- **U.S. Coast Guard:**
 - Safety Alert 13-15: Ultra Low Sulphur Fuel Oil & Compliance with MARPOL Requirements, 19 November 2015.
- **IUMI: Position Paper on Catalytic Fines and Engine Damage, 8 March 2016** (<https://iumi.com/opinions/position-papers>).
- **INTERTANKO** Critical review: Contaminated Bunkers damage hundreds of ships. Do authorities really care?, 10 August 2018.
- **International Chamber of Shipping:** Provisional guidance to shipping companies and crews on preparing for Compliance with the 2020 'Global Sulphur Cap', September 2018.
- **BIMCO:**
 - 2020 Marine sulphur content clause for time charter parties, 10 December 2018.
 - 2020 Fuel transition clause for time charter parties, 10 December 2018.
- **Joint Industry Guidance: The supply and use of 0.50%-sulphur marine fuel, 20 August 2019.**
- **Exhaust Gas Cleaning Systems Association (EGCSA):** Global marine SOx emissions regulation map: <https://www.egcsa.com/map-regulations/>
- **BIMCO, ICS, INTERCARGO and INTERTANKO:** 2020 Fuel Oil Quality and Safety Survey, 19 August 2020.
- **Cefor:**
 - Technical Forum Memo 9: Post-IMO 2020 experiences, 7 April 2021.

Timeline / important dates

- **Sulphur limits:**
 - Californian waters: 0.1% sulphur limit as of 1 August 2012.
 - European and North American ECAs: 0.1% sulphur limit as of 1 January 2015.
 - MARPOL – outside ECAs: 0.5% sulphur limit as of 1 January 2020.
 - China:
 - Coastal territorial waters, except coastline Hong Kong, Macao and Taiwan: 0.5% sulphur limit as of 1 January 2019.
 - Inland water ECAs: 0.1% sulphur limit as of 1 January 2020.
 - Regulated waters of Hainan Island: 0.1% sulphur limit as of 1 January 2022.

- South Korean ECA:
 - Certain ports introduces 0.1% sulphur limit from 1 September 2020.
 - 0.1% sulphur limit when navigation in the ECA area from 1 January 2022.
- IACS Unified Requirement: 2Q 2016.
- MEPC 74: 13 - 17 May 2019.
- MEPC 75: 16-20 November 2020; adoption of guidelines and treatment of MARPOL samples.
- MSC 104: 4-8 October 2021.
- MSC Correspondence Group consideration of fuel oil safety until MSC 105 in 2022.
- MSC 105: 20-29 April 2022.
- IMO Energy Efficiency Existing Ship Index (EEXI) enters into force 1 January 2023.
- New ISO 8217 standard expected to be published in 2023.

IUMI will:

- Encourage an amendment of the 60mg/kg limit for cat fines and the inclusion of biofuels in the ISO standard.
- Support a review by MSC of the safety aspects of implementing the 0.5% sulphur limit that took effect from 2020.
- Suggest that refineries are compelled to test and confirm the delivery of non-contaminated fuels.
- Increase awareness for alternative low and zero carbon fuel types and propulsion methods, and contribute towards any necessary safety regulation amendments.

8. Liability

Brief description

The insurance of marine liabilities helps to protect third party rights. Since the liability (e.g. for environmental damages caused by an oil-spill) can be extraordinarily high, sufficient insurance coverage for these liabilities is crucial. Many international liability conventions rule compulsory insurance requirements, and direct action against insurers is partly ruled as well.

Marine liability insurance is mainly provided by Protection and Indemnity Clubs (P&I Clubs) organized as mutual insurers with shipowners as members. The 13 largest P&I Clubs are organized under the umbrella of the International Group of P&I Clubs (IG).

While the member companies of IUMI's member associations predominantly provide insurance coverage for property damages to the hull and machinery of vessels or offshore energy units, and cargoes in transit, some of the companies also offer marine liability insurance through reinsurance arrangements or directly through covers such as 'fixed premium P&I'.

Limitation of liability

At the May 2019 IMO Legal Committee meeting (LEG 106), the Committee considered document LEG 106/13 (submitted by Greece, Marshall Islands, the ICS and the International Group of P&I Clubs), proposing a new output to develop a Unified Interpretation (UI) on the test for breaking the owner's right to limit liability under the IMO liability and compensation conventions.

Document LEG 106/13 was submitted in response to instances where the judiciary in national jurisdictions had broken the established and longstanding limits of liability contained in the comprehensive IMO limitation, liability and compensation regime. The most notable example of this was in the 2016 case of the *Prestige*, where the Spanish Supreme Court held that the misconduct of the Master deprived the shipowner of the right to limit liability for pollution damage under the 1992 Civil Liability Convention.

To recap, the applicable conventions under consideration are:

- Article 4 of the International Convention on Limitation of Liability for Maritime Claims, 1976
- Article V(2) of the International Convention on Civil Liability for Oil Pollution Damage, 1992
- Article 9 of the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances, 2010 (currently not in force).

The ability to apply limitation is seen as an essential *quid pro quo* for shipowners in agreeing strict liability under the IMO conventions. Any weakening of this or uncertainty over when limits can be overridden has significant implications for shipowners and their insurers. Recognising this, LEG agreed to develop the UI to provide increased clarity and a common understanding on the 'virtually unbreakable' nature of the test to break limits. Concrete proposals were requested for consideration at LEG 107 (November / December 2020).

To facilitate this, a Remote Intersessional Group of LEG participants was formed to:

- Develop the text of a draft UI on the test for breaking the owner's right to limit liability under the IMO conventions, reflecting the decisions taken at LEG 107 on the principles of the test;
- Develop the text of a draft resolution, as the vehicle for the adoption of the UI; and
- Submit a report to LEG 108, with a view to finalisation of the UI, the text of the resolution and the vehicle for the resolution at that session.

The International Group of P&I Clubs and ICS, supported in writing and at LEG meetings by IUMI via the Legal & Liability Committee and Secretariat, have spearheaded the drafting of a proposed UI. This focuses on re-enforcing the very high thresholds required for breaking limitation. The current draft aligns the level of culpability required to that of 'wilful misconduct', which is a well understood concept in marine insurance policies. It is also a higher threshold than gross negligence.

In July 2021, LEG 108 finalized a draft resolution on the Unified Interpretation on the test for breaking the owner's right to limit liability under the IMO conventions, based on the text prepared by the Correspondence Group, and submitted this for adoption by the Council in November 2021 and Assembly in December 2021.

Overall, whilst recognising that decisions made at the national State level may still throw up what industry may consider anomalous interpretations of the IMO conventions, IUMI strongly supports this initiative to provide greater clarity to IMO convention signatories and to re-enforce the message that the limitations of liability should be strenuously upheld.

Potential gaps in liability insurance for 'non-IG insurers'

In April/May 2014, the IMO Legal Committee (LEG 101) adopted Guidelines for accepting insurance companies, financial security providers and IG P & I Clubs to verify the compulsory insurance requirements. With a reference to these guidelines, six member states suggested in a submission to LEG 107 in March 2020 that further consideration may be desired of problems encountered in some oil pollution incidents involving insurers that are not members of the IG. The belief is that this is an issue that affects not only the 1992 CLC, but also other IMO liability conventions.

The issue is also being examined by the governing bodies of the IOPC Funds, and during the 108th session of the IMO Legal Committee in July 2021, the IOPC Funds provided an update on the problems encountered in some oil pollution incidents involving 'non-IG insurers'. 147 incidents were identified of which 44 incidents either had no insurer or the insurer was unidentified. Of the remaining 103 incidents, 20 incidents were found to be insured by non-IG insurers and 6 of these resulted in the IOPC Funds providing compensation before the shipowner's limit of liability had been reached. Even though the majority of the incidents only pertain to the Civil Liability and Fund Conventions, it is in the IOPC Funds' view a more general problem that needs to be addressed to ensure that victims can be properly compensated in the event of a marine incident. In the case of incidents covered by the Civil Liability and Fund Conventions, victims can be compensated by the IOPC Funds if oil pollution damage occurs in a State that is a member of the Fund conventions. However, this safety net does not exist for the other liability and compensation conventions where no fund exists and only the shipowner and their insurer can provide compensation. These problems can be grouped into three categories:

- Proper implementation of international conventions: State Parties to the Conventions have an obligation to ensure that they have properly implemented the Conventions, including any subsequent amendments.
- Proper understanding of international convention requirements: Not all parties involved in the international conventions may have a proper understanding of the requirements. For example, non-IG insurers may not be aware that the conventions provide a right to direct-action against an insurer.
- Proper application/enforcement of international conventions: For international conventions with compulsory insurance requirements, States are required to ensure that ships flying their flag do not operate without having the appropriate State issued certificate validating

that insurance or other financial is in place. States are also required to ensure that ships entering or leaving ports in their States have a valid State issued certificate. When States are issuing Convention certificates, they need to ensure that the insurance in place, including the amount, complies with the Convention requirement. The amount of insurance is intended to cover all of their liabilities under the specific international conventions, but also requires dedicated amounts.

LEG 108 further noted the intention of Canada to submit a proposal for a new output at LEG 109, and expressed support for discussing these insurance problems. To address the issues, it is proposed that material be developed to assist Flag States, Port State control officers, shipowners, and insurers. Revisions could also be made to existing IMO guidelines to ensure proper understanding, implementation and application of the liability and compensation conventions.

Following LEG 108 and in preparation of LEG 109 in March 2022, a group of Flag States, the IG and IUMI prepared a paper inviting the Committee to agree on a new output for the 2022-2023 biennial agenda with a target completion date of 2024. The purpose is to develop guidance for the proper implementation and application of IMO liability and compensation conventions. Potential fields of action could be:

- The review of the Guidelines for accepting insurance companies (Circ. No. 3464),
- The development of educational and practical information sources,
- The exploration of an optional template for States to share with non-IG insurers. This template could be similar to the blue cards issued by IG clubs, but would be non-binding,
- Awareness training for both Flag and Port state controls on the compulsory insurance requirements of the IMO liability conventions.

Relevant authority / organisations and documents

Limitation of liability

- **IMO - Legal Committee**
 - **LEG106/13:** Proposal to add a new output under the work programme on 'Unified interpretation on the test for breaking the owner's right to limit liability under the IMO Conventions', submitted by Greece, Marshall Islands, ICS and International Group of P&I Clubs, 11 January 2019.
 - **LEG108/8:** Report of the Correspondence Group, 23 April 2021.
 - **LEG108/8/1:** Comments by the Secretariat on document LEG 108/8, 28 May 2021.
 - **LEG108/WP.8:** Report of the drafting group on the draft resolutions, 29 July 2021.

Non-IG insurers

- **IMO – Legal Committee**
 - **Circular Letter 3464:** Guidelines for accepting insurance companies, financial security providers and the IG P & I Clubs, July 2014.

- **LEG 107/6:** Compulsory insurance requirements under IMO conventions and insurance problems, submitted by Canada, Denmark, Italy, Japan, Norway and Republic of Korea, 9 January 2021.
- **LEG 108/5:** Review of insurance problems with non-IG insurers, submitted by IOPC Funds, 20 April 2021.
- **IOPC Funds**
 - **IOPC/OCT18/5/5/1:** The 20 incidents involving the IOPC Funds and non-IG insurers are available in this document.
 - **IOPC/NOV20/5/5/1:** Conclusions of the sixth joint Audit Body and the recommended measures and future tasks to be undertaken in respect of the risk relating to 'non-IG insurers'.

Timeline / important dates

- LEG 106: 27-29 March 2019.
- LEG 107: 27-30 November, 1 December 2020.
- LEG 108: 26-30 July 2021.
- IMO Council, 34th extraordinary session, 8-12 November 2021.
- IMO Assembly, 6-15 December 2021.
- LEG 109: 21-25 March 2022.

IUMI will:

- Monitor developments via the IUMI Legal & Liability Committee and Policy Forum.
- Liaise directly with the IMO LEG as required to represent members' interests.
- Support a new output on addressing problems with so called 'non-IG insurers'.
- If agreed, support the work of the IMO Legal Committee in developing further clarity and education to avoid problems with so called 'non-IG insurers'.
- Explain to IMO Member States and other interested bodies such as the IOPC Funds the practical aspects of insurance related to marine liability insurance of insurance entities not belonging to the IG.

9. Low pressure fuel systems

Brief description

More than one third of all fires on board vessels start in the engine room. Leaking oil pipes or equipment placed very closely to a potential ignition source – a so called hot spot – has been identified as the cause of several of these engine room fires.

Measures to control such leaks are described in SOLAS Reg.II-2/4. The regulation includes, amongst others, requirements to

- use suitable materials in piping conveying flammable oils,
- minimise the number of joints in such piping,
- use screening and jacketed high pressure fuel oil pipes to prevent flammable oil sprays, and
- properly insulate hot surfaces.

While the risk of fires from high pressure systems has decreased with the implementation of new design rules for the fuel pipes in 2003, the low pressure pipes/systems remain a significant risk.

To further consider measures that would be effective to reduce the risk of fires from low pressure fuel systems and mitigate the consequences, IACS and IUMI formed a correspondence group comprised of technical experts from the membership of both associations.

Identification of hot spots, use of thermography, and proper installation of insulation were among the preventive measures identified for further discussion and review by IACS.

Relevant authority / organisations and documents

- **IMO – MSC:**
 - **MSC/Circ.601:** Fire protection in machinery spaces, 29 January 1993.
 - **Resolution MSC.31:** SOLAS amendments, 23 May 1994.
 - **MSC/Circ.647:** Guidelines to minimize leakages from flammable liquid systems, 6 June 1994.
 - **MSC/Circ.851:** Guidelines on engine-room oil fuel systems, 1 June 1998.
 - **MSC.1/Circ..1321:** Guidelines for measures to prevent fires in engine-rooms and cargo pump-rooms, 11 June 2009.
- **IACS:**
 - **Rec.No.18/Rev. 2:** Fire prevention in machinery spaces of ships in service – Guidance to owners, February 2021.
 - **Rec.No.58/Rev. 2:** Fire protection of machinery spaces, February 2021.
 - **UR35/Rev.8:** Fire protection of machinery spaces, June 2005.
- **Cefor: [Technical Forum Memo 6: Fire risks due to leakage from low pressure fuel pipes, 22 May 2017.](#)**

Timeline / important dates

- Report from IACS-IUMI correspondence group, IUMI-IACS meeting 18 May 2021.
- Presentation by Sverre Andersen (NHC) in IACS-industry technical meeting 20 July 2021.

IUMI will:

- Take part in discussions on how to prevent and mitigate fire risks due to leakage from low pressure fuel systems.

10. Places of Refuge

Brief description

Current practice concerning places of refuge (PoR) is a concern to insurers.

The incident with fire-stricken container vessel “*MSC Flaminia*”, which in 2012 was left adrift for weeks until finally granted a port of refuge in Germany, prompted a new European Commission (EC) Cooperation Group on Places of Refuge.

After an explosion and fire aboard the “*M/T Stolt Valor*” at a distance of 40 nm from Kingdom of Saudi Arabia in March 2012, a place of refuge was denied by the coastal States in spite of repeated requests.

Following these incidents, and further prompted by the “*Maritime Maisie*” being held at sea off the coast of Japan for weeks after a collision and fire in December 2013, IUMI was, together with the International Chamber of Shipping (ICS) and the International Salvage Union (ISU), campaigning to urge governments to adopt the IMO places of refuge guidelines.

Four years after the “*MSC Flaminia*” incident, new emergency response procedures for vessels in distress were agreed across the EU. Several industry stakeholders, including IUMI, participated together with EU Member States, the European Commission (EC), and EMSA in the drafting. The EU guidelines are intended to ensure better coordination and exchange of information that will lead to better advised and quicker decision making. There shall be no denial of access on anything (commercial or financial) other than safety grounds.

The true success of the EU operational guidelines will be demonstrated as actual incidents occur. Lessons learned will give input to the expected continuous improvement of the guidelines. IUMI participates in the EC’s ‘Cooperation Group on Places of Refuge’ that provides input to these considerations.

In August 2018, EU Member States together with the EC and industry organisations, including IUMI, proposed in a submission to the IMO’s Maritime Safety Committee (MSC) a review of the IMO PoR guidelines. MSC subsequently agreed to include in its post-biennial agenda an output on ‘Revision of the Guidelines on places of refuge for ships in need of assistance (resolution A.949(23))’. In January 2020, the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) subsequently agreed to form a Correspondence Group (CG) to progress the work. After intense debate at NCSR 8 in April 2021, the Sub-Committee re-established the Correspondence Group. The CG is instructed to further develop the draft revision of the Guidelines with a view to finalization by NCSR 9 in 2022 and consider what issues should be brought to the attention of MEPC and the LEG committees.

Relevant authority / organisations and documents

- **IMO – MSC & MEPC & LEG & CCC:**
 - **MSC77/8/2:** Places of refuge, submitted by IUMI, 14 February 2003.
 - **Resolution A.949(23):** Guidelines on places of refuge for ships in need of assistance, 5 March 2004.
 - **MEPC64/INF.30** (27.7.2012) from ROPME/MEMAC and MSC91/21 (24.9.2012) from ICS, BIMCO, INTERCARGO, IPTA and INTERTANKO, concerning the “*M/T Stolt Valor*” incident.
 - **LEG101/11/4:** Places of refuge for ships in need of assistance, submitted by ICS, IGP&I, IUMI & ISU, 14 March 2014.
 - **III1/INF.33:** Port of refuge, Maritime Maisie, submitted by Hong Kong, China, 14 May 2014.
 - **MSC93:** Statement made by Intertanko.
 - **CCC1/INF.2:** Investigation on the fire and explosion on board the MSC Flaminia, submitted by Germany, 3 June 2014.
 - **MSC94/20/1:** Guidelines on PoR – proposed additional text, submitted by Liberia, the Marshall Islands, IMPA, IFSMA, INTERTANKO, INTERCARGO and INTERMANAGER, 10 September 2014.
 - **MSC95/INF.8:** Information on the work within the European Union on operational guidelines for places of refuge following recent incidents, submitted by EU Member States, the European Commission, IUMI, BIMCO, ICS, ISU, INTERTANKO and IGP&I, 31 March 2015.
 - **MSC96/24/5:** Information on the EU Operational Guidelines on places of refuge, submitted by EU member states, EC, ICS, IUMI, BIMCO, ISU, INTERTANKO and IGP&I, 8 March 2016.
 - **MSC100/17/1:** Proposal for a new output for a revision of resolution A.949(23) on Guidelines on places of refuge for ships in need of assistance, submitted by EU member states, EC, ICS, IUMI, BIMCO, ISU, INTERTANKO and IGP&I, 3 August 2018.
 - **NCSR7/13:** Preliminary draft text of the revised guidelines, submitted by EU members states, EC, ICS, IUMI, IAPH, BIMCO, IACS, ISU, INTERTANKO and IGP&I, 15 October 2019.
 - **NCSR8/8:** Report of the Correspondence Group on Revision of the Guidelines on places of refuge for ships in need of assistance, 15 January 2021.
 - **NCSR8/8/1:** Comments on document NCSR 8/8, submitted by IACS, 11 February 2021.
 - **NCSR8/J/5:** Draft Assembly Resolution, April 2021.
- **EC/EU:**
 - Directives 2009/17/EG (23.4.2009) and 2002/59/EG (27.6.2002), mandating EU Member States to provide places of refuge for stricken vessels in order to prevent greater damage to the environment.
 - EU Operational Guidelines on Places of Refuge, Version 4, 31 January 2017
 - Joint declaration EU guidelines PoR, 27 January 2016.



- **U.S. Coast Guard:**
 - Places of Refuge Policy - Commandant Instruction 16451.9, 17 July 2007.
- **ICS, ISU & IUMI:** Joint press release 13 February 2014.
- **ICS, IGP&I, IUMI, ISU & Asian Shipowners' Forum:** Joint position paper April 2014.
- **IACS:** Recommendations for the operation of shore-based emergency response services, 26 May 2016.

Timeline / important dates

- EU Operational Guidelines on Places of Refuge, 13 November 2015.
- EC event with members of European Parliament and industry, Brussels, 27 January 2016.
- EC High Level Steering Group – Expert sub-group: 'Cooperation group on places of refuge', 12 January 2021.
- NCSR 8: 19 – 23 April 2021.
- Table Top Exercise, Copenhagen, 6-7 October 2021.

IUMI will:

- Actively promote better accommodation of vessels in distress through the implementation and enforcement of existing measures.
- Support the EU Operational Guidelines on Places of Refuge and their implementation.
- Support and take part in a revision of IMO guidelines for Places of Refuge.
- Participate in table-top exercises and the EC HLSG Expert sub-group 'Cooperation Group on Places of Refuge'.

11. Safety of container vessels

Brief description

The increasing size of container vessels and recent incidents contribute to the high awareness and importance placed by insurers on several issues related to the safety of these vessels. Fires count among the worst hazards of the global shipping industry, and every ineffective attempt to extinguish a fire puts the crew at risk. Damage to the environment, cargo and the vessel also increases. Misdeclaration of cargo and insufficient firefighting capabilities are currently two of the main challenges related to this peril.

Container contents

The contents of a container must be known if it is to be transported safely, but misdeclaration is a recurring safety problem. This applies equally to road, rail, brown and blue water transport.

Containers often contain a wide range of hazardous and toxic substances. It is reported that approximately 20% of containers in transportation are misdeclared. An analysis from the Cargo

Incident Notification System (CINS) shows that in just over a quarter of the incidents where causation was detected were attributable to cargo being misdeclared. This may lead to insufficient handling of the container, and worst case an incorrect firefighting strategy that may increase the danger of combustion of the goods in the container.

In July 2019, IUMI co-sponsored a submission to the IMO Sub-Committee on Carriage of Cargoes and Containers (CCC) containing a proposal to undertake a comprehensive review of maritime special provisions that are often used to exempt goods from the safety provisions of the International Maritime Dangerous Goods (IMDG) Code. This was agreed by CCC in September 2019, and a Correspondence Group subsequently submitted a report in June 2020. The Correspondence Group was permitted to continue their considerations under the approved terms of reference and submitted an addendum to the original report in May 2021. Further work of a Correspondence Group on IMDG Code matters continues until CCC 8 in 2022.

Firefighting system on container vessels

Insufficient firefighting capacity on board large container vessels poses a challenge that is only increasing with the size of these vessels.

Based on a 2008 impact assessment, the IMO's Maritime Safety Committee (MSC) approved in June 2013 new requirements for fire protection of on-deck cargo areas. The amended SOLAS regulation II-2/10 requirements only apply to new vessels constructed on or after 1 January 2016. In addition to all other fire protection arrangements as per existing regulations, vessels designed to carry five or more tiers of containers on or above the weather deck shall from then on also be provided with mobile water monitors and at least one water mist lance.

Although these changes were a step in the right direction, a concern remains with the firefighting equipment on existing vessels. With the growing size of container vessels, the challenge of insufficient firefighting arrangements is becoming even greater.

Consequently, IUMI recommended in a position paper from September 2017 that responsible authorities, class and relevant industry stakeholders engage in discussions on how to further improve the fire detection, protection and firefighting capabilities on board container vessels. Together with Germany, Bahamas, BIMCO and CESA, IUMI co-sponsored a submission to the IMO Maritime Safety Committee's 102nd session with a view to amending SOLAS. Due to COVID-19 and the interruption of IMO meetings, the adoption of the new output was postponed until MSC 103 in May 2021. MSC 103 agreed, based on paper MSC102/21/3 and 102/21/7, to include in the biannual agenda of the Sub-Committee on Ship Systems and Equipment (SSE) for 2022-23 and the provisional agenda for SSE 8 in February/March 2022 an output on "Development of amendments to SOLAS chapter II-2 and the FSS Code concerning detection and control of fires in cargo holds and on the cargo deck of containerships", with a target completion year of 2025, in association with the Sub-Committee on the Carriage of Cargoes and Containers (CCC), as and when requested by SSE. The amendments shall apply to new ships and they shall enhance provisions for early fire detection and effective control of fires in containerized cargoes stowed on and under deck of containerships. The amendments shall enter into force on 1 January 2028, provided they are adopted before 1 July 2026. A group of experts had been formed by IUMI to

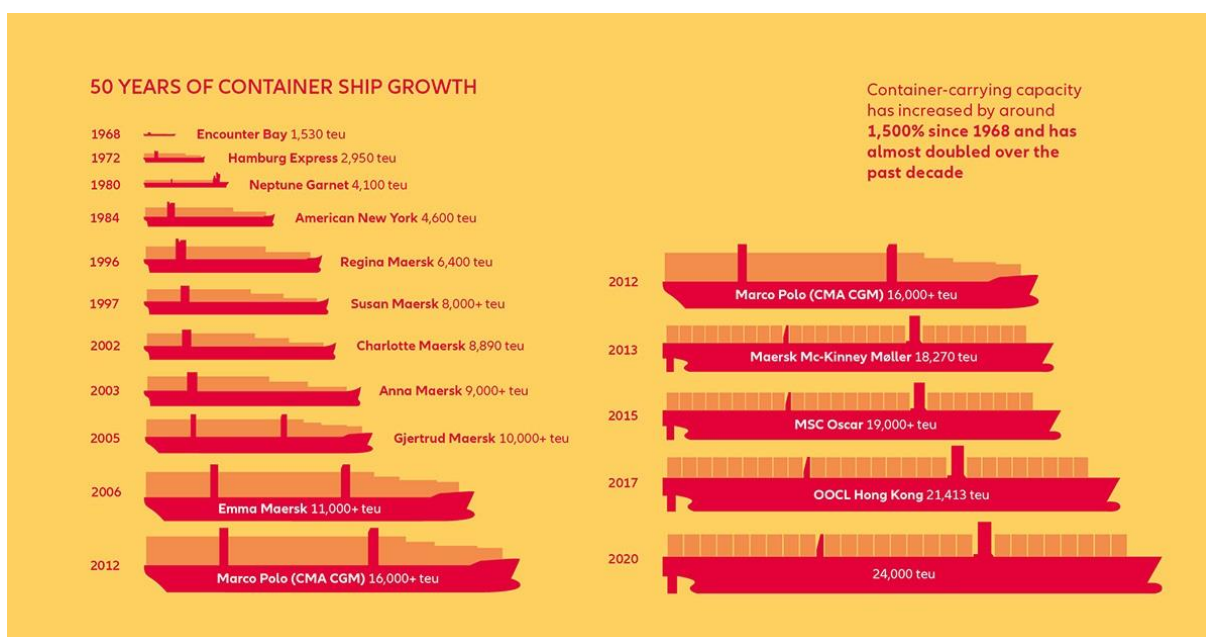
outline a road map for amending SOLAS. Based on input from this group, six flag states, IUMI, BIMCO and IACS submitted in November 2021 a paper with a proposed outline and initial assessment of gaps and regulations to SSE.

In December 2021, EMSA launched a ‘Study Investigating Cost Efficient Measures for Reducing the Risk from Cargo Fires on Container Vessels (CARGOSAFE)’, which follows the structure of a Formal Safety Assessment (FSA) and includes the tasks of hazard identification, risk analysis, risk control options, cost effectiveness assessment, and making recommendations for decision making. The timetable foresees the project to run for 60 weeks. The outcomes of this study will be fed into the IMO procedures.

Loss of containers

According to the World Shipping Council, an average of 1,382 containers were lost overboard on an annual basis between 2008 and 2019. This is in sharp contrast to several incidents where ships have lost large numbers of containers overboard at sea in late 2020 and early 2021. High profile accidents include the One Apus which lost a total of 1,816 containers (November 2020) and the Maersk Essen which lost 750 containers (January 2021) during their respective voyages. These events show the necessity to review the root causes of the incidents. A complex set of technical and operational aspects play a role requiring a careful assessment.

Container ships have grown at an incredible pace over the past 40 years. While the maximization of economies of scale and the overall impact of transportation costs is impressive, this does come with increased risk.



Source: Allianz Global Corporate & Specialty, Safety & Shipping Review

The growing size of container vessels has led to large beams and container stack heights which result in relatively large metacentric heights (GM). This makes the vessels very stable/stiff which in

rough weather conditions can cause high rolling accelerations. The effect of strong winds on the on-deck container stacks, also known as ‘sail area’ or ‘air draft’, further increases the windage area causing extreme momentum. Specific wave patterns may also lead to violent movements such as parametric or synchronous rolling, exerting severe loads on the container lashing and securing gear.

The stowing, lashing and securing of containers is another factor potentially contributing to the loss of containers at sea. The distribution of weight within a container stack has an impact on the stability of a vessel. If the weight of a container is not properly declared it may be stowed in an unsuitable location within the stack, causing its collapse. When considering the impact of improper container weight and number of containers transported by these ships, the multiplied effect is an important consideration. Enforcement of the IMO’s verified gross mass (VGM) regulation is therefore critical to the safe operation of containerships.

Improper or damaged lashing and securing equipment, twistlocks and containers can also cause the collapse of a container stack. A chain is only as strong as its weakest link, hence one element in the container stowage and securing process may lead to the collapse of a container stack which in turn may clash with its neighbouring container stack causing the breakdown of several stacks.

On the operational side, calculation methods are used to determine the maximum capacity of containers to be loaded for a vessel. These models are based on “in-design conditions” which preclude, for instance, unfavourable sea conditions. “Off-design” conditions must be averted by the crew at an operational level, e.g. through weather routing and passage planning. The accuracy of these calculation models is an essential safety component. The models also underlie economic considerations to maximize a vessel’s capacity. The rules for the calculations must therefore be based on a level playing field which ensures that they keep within safe boundaries.

Other contributing factors may involve human error, including, but not limited to, errors in cargo stowage plans, improper adherence to container stack plans, correctly following lashing plans, re-securing of lashings during voyages, poor cargo stowage within containers, adherence to weather routing, and prudent vessel navigation while in heavy weather.

Climate change and the increasing frequency of severe weather both at sea and ashore is a factor. Improvements in marine weather forecasting and weather routing services are beneficial in planning for severe weather.

Cargo underwriters have been and will continue to be impacted by the loss of containers overboard. The high number of casualties within a short period of time is unprecedented. IUMI takes the view that although it is premature to define this as a systemic threat, every container lost is one container too many. Losses are not just limited to the containers lost overboard. There is also cargo damaged as a result of container stack collapses, damages to the vessels, and environmental impact. Resulting Cargo, Hull & Machinery, Protection & Indemnity and Marine Liability losses as well as uninsured losses have a significant economic impact. There is also concern that salvage capabilities have not kept pace with the increase in vessel size. Therefore, the various aspects

relevant to the safe carriage of containers must be reviewed and action taken to correct the shortcomings.

In May 2021, the IMO Maritime Safety Committee (MSC) agreed to develop measures to facilitate detection, reporting, positioning, tracking and recovery of containers lost at sea as a new work item. The work is expected to commence in 2023 through the Sub-Committee on Carriage of Cargoes and Containers (CCC). The issue is also addressed by the MARIN Institute's TopTier Project. MSC 104 noted the information provided on this issue, and invited interested Member States to participate in this joint industry project.

Relevant authority / organisations and documents

- **IMO - Maritime Safety Committee (MSC) and Sub-Committees on Ship Systems and Equipment (SSE) and Carriage of Cargoes and Containers (CCC)**
 - **CCC1/INF.2:** Investigation on the fire and explosion on board the MSC Flaminia, submitted by Germany, 3 June 2014.
 - **MSC.1/Circ. 1497:** IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units (CTU Code), 16 December 2014.
 - **MSC.1/Circ. 1498:** Informative material related to the CTU Code, 16 December 2014.
 - **CCC6/10/1:** Revision of the inspection programmes for cargo transport units carrying dangerous goods, submitted by New Zealand and ICHCA, 5 July 2019.
 - **CCC6/6/17:** Non-declaration and misdeclaration of dangerous goods – special provisions in the IMDG Code, submitted by Liberia, ICS, IUMI, BIMCO, ICHCA, IGP&I, IVODGA and WSC, 5 July 2019.
 - **CCC6/J/8:** Draft terms of references for a correspondence group under Agenda item 6 on a review of maritime special provisions, 9-13 September 2019.
 - **MSC102/21/3:** Proposal for a new output to evaluate the adequacy of fire protection, detection and extinction arrangements on board containerships to fight container fires, submitted by Marshall Islands, Singapore, IACS and WSC, 7 February 2020.
 - **MSC102/INF.2:** Information on insurance related economic aspects associated with containership fires, submitted by IUMI, 7 February 2020.
 - **MSC102/INF.3:** Analysis of current safety regulations concerning fire-fighting on board containerships, submitted by IUMI, 7 February 2020.
 - **MSC102/21/7:** Proposal for a new output for the fire protection on containerships regarding the review of relevant parts of SOLAS chapter II-2 with regard to fire protection in the cargo area on and under deck, submitted by the Bahamas, Germany, IUMI, BIMCO and CESA, 11 February 2020.
 - **MSC102/21/13:** Proposal for a new output on containers lost at sea, submitted by Vanuatu, 14 February 2020.
 - **FAL44/2020 & CCC7/6/1:** The role of the Rotterdam Rules in safety and facilitation, submitted by CMI, 14 February 2020.
 - **MSC102/21/19:** Comments and proposal for a new output on containers lost at sea, submitted by EU Member States & EC, 20 March 2020.

- **MSC102/21/24:** Comments on documents MSC 102/21/3 and MSC 102/21/7, submitted by Liberia, ICS, ICHA, IG, IVODGA, ITF and WSC, 24 March 2020.
- **CCC7/6/2:** Report of the Correspondence Group on a review of Maritime Special Provisions, 5 June 2020.
- **CCC7/6/12:** Documentation requirements for exempted dangerous goods, submitted by Liberia, BIMCO, ICHCA, ICS, IG, IVODGA and WSC, 24 July 2020.
- **MSC103/20/10:** Draft SOLAS amendments for the mandatory carriage of electronic inclinometers on container ships and bulk carriers, submitted by France, Germany, the Netherlands and ICS, 1 March 2021.
- **CCC7/6/2/Add.1:** Report of the Correspondence Group on a review of Maritime Special Provisions, 30 April 2021.
- **MSC103/WP.1/Rev.1:** Draft report of MSC 103, 17 May 2021.
- **MSC104/17/4:** Preventing loss of containers at sea, submitted by Australia, France, Germany and Netherlands, 28 July 2021.
- **SSE8/10:** Proposal for a road map amending SOLAS chapter II-2 to address firefighting capabilities on board container vessels, submitted by Bahamas, France, Germany, Marshall Islands, Norway, Singapore, IUMI, BIMCO and IACS, 26 November 2021.
- **SSE8/10/1:** Proposals for enhancing the capabilities of containerships for early fire detection in cargo holds and on cargo decks, submitted by China, 24 December 2021.
- **SSE8/10/2:** Comments on document SSE 8/10 – proposing draft guidelines for water mist lance, submitted by Denmark, 26 November 2021.
- **SSE8/10/3:** Comments on document SSE 8/10, submitted by Germany, Liberia, Panama, Philippines, ICS, IACS, IG, ITF and WSC, 7 January 2022.
- **IUMI:**
 - Press release 20 September 2016; call for further industry cooperation to tackle containership fires.
 - Memo & press release 19 September 2017: Fire-fighting on container vessels (<https://iumi.com/opinions/position-papers>).
 - IUMI Discussion Paper on Containers lost at Sea, December 2021.
- **Cargo Incident Notification System (CINS):**
 - Guidance - Safety considerations for ship operators to risk-based stowage of dangerous goods on containerships, 25 November 2019.
 - Guidelines for the carriage of seed cake in containers, January 2020.
- **ABS:**
 - Fighting Fire on Container Ships, 2016.
 - Guide for fire-fighting systems for cargo areas of container carriers, October 2019.
- **German Federal Bureau of Maritime Casualty Investigation:** Investigation Report 15/19 – Fire in the area of the deck cargo on board the container ship Yantian Express in the Atlantic Ocean on 3 January 2019, 30 January 2020.
- **Tokyo MoU:** Safety Bulletin 03/20 – Safety risks of casualties caused by cargoes, May 2020.
- **CINS / IGP&I:** Guidelines for the carriage of seed cake (including seed meal) in containers, June 2020.

- **National Cargo Bureau:** White paper – A comprehensive holistic approach to enhance safety and address the carriage of undeclared, misdeclared and other non-compliant dangerous goods, 6 July 2020.
- **Cargo Integrity Group:** Quick guide to the UN-sponsored Code of Practice for Packing of Cargo Transport Units (the CTU Code), September 2020.
- **European Maritime Safety Agency:**
 - Analysis of marine casualties and incidents involving container vessels, September 2020.
 - Invitation to tender no EMSA/OP/2021 for study investigation cost efficient measures for reducing the risk from cargo fires on container vessels (CARGOSAFE), 15 June 2021.
- **Transport Safety Investigation Bureau – Singapore:** Final report – Fire on board Maersk Honam at Arabian Sea on 6 March 2018, 5 October 2020.
- **CONTAIN:** Pilot project report – Exploring the challenges of containership fires, Danish Institute of Fire and Security Technology, 25 January 2021.

Timeline / important dates & decisions

- **CTU Code:**
 - Endorsed by
 - the Inland Transport Committee of the UNECE, at its seventy-sixth session, 25 to 27 February 2014,
 - the IMO Maritime Safety Committee, at its ninety-third session, 14 to 23 May 2014, and
 - the Governing Body of ILO, at its 322nd session, 30 October to 13 November 2014.
- Final report Committee on large Container Ship Safety (Japan): March 2015.
- Entry into force of amended FSS Code & SOLAS regulation II-2/10: 1 January 2016.
- IUMI webinar: Mark Russell (Gard) on firefighting of container vessels and misdeclaration of container content, 2 November 2017.
- MSC 101 – IUMI lunch presentation, 5 June 2019.
- Gard conference, Arendal, 17-18 October 2019.
- Tripartite meeting, Tokyo, October 2019.
- SSE 7: 2-6 March 2020. IUMI lunchtime presentation by Are Solum (Gard), 4 March 2020.
- MSC 103: 3-14 May 2021.
- SSE 8: 28 Feb-4 March 2022.
- SSE target completion year output on container fires: 2025.
- SOLAS amendment container fires: 1 January 2028, provided amendments are adopted within 1 July 2026.
- MSC 104: 4-8 October 2021.

IUMI will:

- Support a holistic approach to preventing and mitigating fires starting in the cargo on board container vessels.

- Support measures that improve the monitoring of containers and their contents.
- Support internationally harmonized legislation and national regulations based on the CTU Code.
- Monitor and support measures to ensure the structural safety of large container vessels.
- Support an amendment of SOLAS to improve fire safety.
- Support the NCB recommendations from July 2020 to address the carriage of undeclared, misdeclared and other non-compliant dangerous goods.

12. Safety of RoRo vessels

Brief description

Due to the “Norman Atlantic” fire just before New Year 2014 and the fire on the “Sorrento” in April 2015, IMO increased its focus on the evacuation and safety of RoRo vessels. The Maritime Safety Committee (MSC) highlighted the need for an international response to the casualty reports from the marine accident investigations and act to enhance the current safety regime.

Marine underwriters have witnessed that the frequency of fires in the Car/RoRo segment is at a level twice the frequency of fires on most other vessel types. Cargo fires are the most frequent type of fires, which could be related to the fire risk of cars in general, as well as challenges with detecting, locating and extinguishing fires on these vessels. Refrigeration units, transportation and charging of electric and other alternative fuel vehicles, stowaways and passengers on ro-ro decks are other factors that potentially increase the fire hazard.

Interferry released in March 2016 Operational Best Practice Guidance on ferry safety for ro-ro passenger ships. The key finding of their review is that more attention should be given on response time in case of an incident.

MSC 97 agreed in November 2016 to include in the 2016-2017 biennial agenda of the Sub-Committee on Ship Systems and Equipment (SSE), with the support of the Sub-Committees on Ship Design and Construction (SDC) and Human Element, Training and Watchkeeping (HTW), an output on “Review SOLAS chapter II-2 and associated codes to minimize the incidence and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger ships”. SSE agreed in March 2017 on a two-step approach: 1) the development of Interim Guidelines, and 2) the development of amendments to SOLAS and associated codes. The interim guidelines for minimising the incidences and consequences of fires on ro-ro spaces and special category spaces of new and existing ro-ro passenger vessels were approved by MSC 101 in June 2019. The guidelines cover prevention/ignition, detection/decision, extinguishing fires, containment and integrity of life-saving appliances and evacuation.

In December 2018, MSC approved a circular with revised guidelines for the design and approval of fixed water-based systems for ro-ro spaces and special category spaces, with application date 1 January 2021. MSC 102 approved in November 2020 amendments to the revised guidelines for

the design and approval of fixed water-based fire-fighting systems for ro-ro spaces, extending the maximum height for these fire-fighting systems from 9 to 10 metres for alignment with the definition of special category spaces.

SSE agreed in March 2020 to re-establish the Correspondence Group on Fire Protection to consider amendments to SOLAS and relevant IMO instruments for new and existing ro-ro passenger vessels. The CG presented its recommendations in November 2021 for further consideration by SSE 8 in February/March 2022.

Carriage of lithium-battery vehicles present a particular challenge when a fire has broken out. In March 2020 during SSE 7, a document about risks associated with the transport of lithium-ion battery powered vehicles was introduced. As a follow up, interested Member States and international organisations can submit proposals for a relevant new output to address these risks. IUMI is supportive of further consideration of this as a new output which would also look at other alternative fuel vehicles. A decision on this new output is deferred until April 2022 (MSC 105).

Relevant authority / organisations and documents

- **IMO – Maritime Safety Committee (MSC) & Sub-Committee on Ship Systems and Equipment (SSE)**
 - **MSC96/INF.3:** Electric mobility on ro-ro and ro-pax ships. Report of the Formal Safety Assessment study, 9 February 2016.
 - **MSC96/16/1:** Formal Safety Assessment - Considerations on the revision of SOLAS regulation II-2/20 – fire safety in connection with the transport of vehicles with electric generators or electrically powered vehicles, submitted by the EC and Member States, 8 March 2016.
 - **MSC97/19/3:** Work programme – Fire safety of ro-ro passenger ships, submitted by EU Member States and the EC, 1 August 2016.
 - **SSE5/INF.4:** Information from several relevant studies, submitted by EC and the EU Member States, 8 December 2017.
 - **SSE6/6/1:** Review of relevant recent accident investigation reports from the EU, submitted by the EC and EU Member States, 30 November 2018.
 - **MSC.1/Circ.1430/Rev.1:** Revised guidelines for the design and approval of fixed water-based fire-fighting systems for ro-ro spaces and special category spaces, December 2018.
 - **MSC.1/Circ.1615:** Interim guidelines for minimizing the incidence and consequences of fires in ro-ro spaces and special category spaces of new and existing Ro-Ro passenger ships, 26 June 2019.
 - **SSE7/6:** Report of the intersessional meeting of the Experts Group on Formal Safety Assessment, 5 December 2019.
 - **SSE7/6/6:** Draft amendments to SOLAS regulation 11-2/20 regarding ships carrying lithium-ion battery vehicles, submitted by China, 8 January 2020.
 - **MSC104/15/19:** Proposal for a new output to evaluate the adequacy of fire protection, detection and extinction arrangements in vehicle, special category and ro-ro spaces in order to reduce the fire risk of ships carrying new energy vehicles, submitted by China, 2 July 2021.

- **SSE8/6:** Review of SOLAS Ch II-2 and associated codes to minimize the incidence and consequences of fires on Ro-Ro spaces and special category spaces of new and existing Ro-Ro passenger ships, report of the Correspondence Group, 26 November 2021.
- **SSE8/6/2:** Comments on document SSE 8/6, submitted by EU Member States and EC, 23 December 2021.
- **SSE8/6/5:** Comments on Correspondence Group Report SSE 8/6, submitted by ICS and INTERFERRY, 7 January 2022.
- **Interferry:** RoRo Deck Fire Safety - Operational Best Practice Guidance, 8 March 2016 (MSC96/6/2).
- **DNV GL:** Fires on Ro-Ro decks, 20 June 2016.
- **European Maritime Safety Agency (EMSA):** FIRESAFE – study investigating cost effective measures for reducing the risk from fires on ro-ro passenger ships, SP Technical Research Institute of Sweden, Bureau Veritas, Stena Rederi, December 2016 (SSE4/INF.8).
- **IUMI: Position Paper: Fires on ro-ro passenger vehicle decks, 7 February 2017 (<https://iumi.com/opinions/position-papers>).**
- **Alternative Fuel Vehicle Project:** Report: Safe transportation of alternative fuel vehicles, 13 June 2017.
- **Standard Club:** A master's guide to Fire Safety on Ferries, April 2018.
- **LASH FIRE** international R&D project.

Timeline / important dates

- MSC 97: 21-25 November 2016.
- IACS/IUMI Technical Cooperation Group: 6 June 2017.
- EMSA FIRESAFE study II, 2018.
- MSC 101: 5-14 June 2019.
- SSE 8: 28 Feb – 4 March 2022.
- LASH FIRE: September 2019 – August 2023.
- LASH FIRE conference, EMSA, 14 December 2021.

IUMI will:

- Support Interferry RoRo Deck Fire Safety Operational Best Practice Guidance.
- Support ongoing work at the IMO to improve safety of RoRo vessels and Car Carriers.
- Support a new output at the IMO for consideration of risks associated with the transport of lithium-ion battery powered vehicles.

STANDING ITEMS

13. Macroeconomic factors

Brief description

Trade agreements

Multinational marine insurers are affected by a wide range of barriers of doing business abroad; limited movement of data across borders, unfair competition from state-owned enterprises, lack of transparency and need for due process of law, and forced local ownership and discrimination in obtaining business licenses and permits. Some countries also require that import or export shipments have to be insured by a locally registered insurer, while buyers are only allowed to buy insurance coverage for import shipments abroad or on basis CIF. Any agreement which leads to a reduction of the aforesaid restrictions would contribute to enable marine insurers to achieve their full potential.

Recent developments with a view to a “trade war” between large importing and exporting nations are affecting the movement of goods and trade flows. Consequently, this is also affecting marine insurance and the cargo market in particular.

WTO & TiSA

The World Trade Organization (WTO) is the global international organization dealing with the rules of trade between nations. The WTO agreements are important to ensure that trade flows as smoothly, predictably and freely as possible.

Since the World Trade Organization (WTO) established the General Agreement on Trade in Services (GATS) in 1995, trade in services has evolved dramatically due to technological advances, changing business practices, and deeper global integration. The dynamism and importance of trade in services contrast strongly with the slow pace of multilateral negotiations in this area. When the Doha Development Round of a multilateral trade negotiation reached an impasse, the idea of the Trade in Services Agreement (TiSA) was launched by the U.S. and proposed to a group of WTO members; the so-called Really Good Friends (RGF) group. The group met regularly from February 2012, but the proceedings came to a complete halt in January 2017 with the Presidency of Donald Trump in the U.S.

TiSA represents an opportunity to improve and expand trade in services. Major and fundamental barriers to trade in services are addressed, and a more liberal approach to cross-border regulation in areas such as marine and energy insurance has been suggested. IUMI supports the TiSA process, and encourages the proceedings to resume in the near future.

Brexit

Following the UK vote in June 2016 to leave the European Union there has been ongoing

negotiations about what any future post-Brexit trading relationship might look like. Following the triggering of Article 50 of the Lisbon Treaty in March 2017, the UK initiated the process of formally exiting the EU and this became effective as of 1 January 2021 when the transitional period expired. Additionally, until the end of the transitional period on 31 December 2020, the UK was treated as an EU member state by the EEA-EFTA states. Accordingly, the rights and obligations contained in the EEA Agreement continued to apply between the UK and the EEA-EFTA states. The prevailing view is that the UK ceased to be a party to the EEA Agreement on 31 January 2020, when it withdrew from the EU. Accordingly, after the end of the transitional period, the UK is a third country within the meaning of the EEA Agreement and the territory of the UK is no longer part of the EEA.

Two kinds of negotiations took place simultaneously and, indeed in some areas, remain ongoing.

1. The Withdrawal Agreement – the terms on which the UK departs the EU. Key political issues included the financial settlement, citizens' rights and the Irish border.
2. The Future Economic Partnership – the new relationship between the EU and the UK. Key issues included goods, agricultural, food, fishery products, customs, transport, energy and services including financial services. A trade deal has been agreed but does not cater for financial services.

For financial services, industry bodies have argued for a bespoke trade deal or, failing that, agreed regulatory equivalence to manage the post-Brexit UK / EU relationship. We currently have neither, posing questions on the implications for London market insurers providing cross-border (re)insurance into the EU (and vice-versa) and, also, the wider impact of Brexit on maritime insured's in their day-to-day operation.

To combat the loss of EU passporting rights, most UK based insurers have adapted their corporate structures to operate via subsidiaries within an EU State, at least until there is a future agreement. Dublin and Luxembourg are the two most popular although Brussels, Paris, Munich, Malta and Lichtenstein are all chosen options depending on the business operation of the insurer. Most insurers wish to continue to use resources based in London and to retain minimal risk within the new EU subsidiary, at least in the early years of operation. EU entities wishing to underwrite UK business need to have an authorised branch or subsidiary already in place or be in the process of creating one and therefore in the UK Temporary Permissions Regime (TPR). To continue trading in the UK under the TPR regime, firms must have submitted an application for UK authorisation before the (now expired) deadline in order to be considered 'in' the TPR regime while they await full authorisation.

For those contracts requiring run-off following Brexit, the UK gives EEA insurers a 15 year period (part of the Financial Services Contracts Scheme). Individual EU States have differing rules for UK insurers running off business, but all ensure that insureds are not disadvantaged.

On a future services deal for insurance, it should be noted that equivalence has significant limitations since Solvency II has no equivalence regime for direct insurance, and the Insurance Distribution Directive - which gives cross border access to brokers - has no equivalence regime

and no third country branch regime. Consequently, an enhanced equivalence regime has been proposed by the London market associations, based on Solvency II precedents, to cover large risks (i.e. including marine).

The difficulty in the negotiations on equivalence is future divergence. Here, the UK Government are pushing for “structured withdrawal of equivalence”, which would make the ongoing assessment of equivalence less political and increase certainty for both the EU and UK in the longer term. The aim is to ensure equivalence could not be withdrawn at short notice. In particular, the insurance industry would like to see the establishment of a Financial Regulatory Forum, enabling a regular exchange of information and consultation between the financial services regulators of the UK and EU, most notably on the implementation of international standards. This Forum could be used to monitor equivalence assessments.

With no current regulatory equivalency in place, from a supervisory perspective the UK will be treated as a “third country” in relation to the EU. In a pre-emptive move, the UK Government has assessed and granted equivalence to EU reinsurers. Therefore, similar reciprocity is awaited with optimism by the London market.

The EU has already reached an agreement with certain UK central counterparties, but the bloc has not confirmed whether it will assess the UK’s equivalence for reinsurance purposes under the Solvency II framework. USA, Japan and Bermuda currently hold reinsurance equivalence with the EU although the Japanese agreement is subject to renewal, having expired on 31 December 2020.

However, UK-based underwriters will still be able to write reinsurance business originating from the majority of EEA countries on a cross-border basis as long as local regulatory requirements are met. That is not the case for German or Polish reinsurance business however, and those risks will have to be written via an EU subsidiary. The UK Government has also published a guidance document for the UK’s equivalence framework for financial services. This outlines the principles and processes which will govern the UK’s equivalence framework from the end of the transition period. In addition, HM Treasury has published a table of its equivalence decisions and an annex showing the lead regulator for each of the decisions.

Whilst the current lack of a financial services deal is disappointing, the two sides committed to a Memorandum of Understanding (MoU) that would allow for close coordination, including the sharing of information, while also ensuring that each side can take autonomous decisions on financial markets regulation. The technical discussions on this were concluded in March 2021 and a broad text agreed but no MoU has been formally published as yet, amid continuing political disputes on the wider aspects of the Brexit withdrawal agreement. Though it is disappointing that progress has stalled in the latter part of 2021, the insurance industry will welcome the fact that a deal has been reached as it will potentially reduce uncertainty and the cost of cross-border business for the real economy customers of financial services firms. It also sets a broad basis for the discussions which are still to conclude on equivalence and regulatory cooperation.

Whether the UK will become a contracting party to the EEA Agreement in the future is currently not apparent. If the EEA territory is expressly referred to in insurance conditions, the territorial scope

of the insurance cover may change. Likewise, the insured interest may change if it is linked to conduct by authorities from states in the EEA area.

Overall, disruption to insurance contracts has been managed and largely limited to back office and operational complexities. On the maritime sector, though the trade and cooperation agreement between the EU and the UK regulates, among other things the conditions for duty-free goods traffic, there is a customs border created between the UK and EU (with special status for Northern Ireland). This may make the processing of customs formalities more complex and bureaucratic, and thus possibly also more susceptible to errors in the execution of customs orders. This can lead to a changed risk situation for insurance products that cover customs claims. The impact on shippers and supply chains of the expected delays at ports caused by border checks, increased paperwork and the availability of qualified staff has not yet flowed through into insurance claims and, thinking optimistically, may be short-lived. As always, the response of the cargo, freight forward or other relevant policies will depend on their specific terms – whether, for example, delay claims are excluded - and the specific policy trigger.

China

The Chinese Government deems Free Trade Agreements (FTAs) as a new platform to further opening up to the outside and to speeding up domestic reforms. This is seen as an effective approach to integrate into the global economy and to strengthen economic cooperation with other economies. It is also considered an important supplement to the multilateral trading system. Currently, China has signed and implemented 16 FTAs, and an additional 8 are being negotiated.

Transport networks

Large investments in transport networks may have an impact on marine insurers by fostering existing trade routes and facilitating new ones.

Belt and Road Initiative

China's Belt and Road Initiative (BRI) focuses on connectivity and cooperation throughout Eurasia and the Pacific, involving some 68 countries. The initiative aims to bridge the "infrastructure gap" in Asia and beyond through a network of roads, ports, bridges, tunnels and pipelines. The BRI comprises "The Silk Road Economic Belt" and the "21st century Maritime Silk Road". China's new foreign investment law that commenced on 1 January 2020 opens foreign company participation in BRI procurement projects.

EU TEN-T

The Trans-European Transport Network (TEN-T) is a European Commission policy directed towards the implementation and development of a Europe-wide network of roads, railway lines, inland waterways, maritime shipping routes, ports, airports and rail-road terminals.

The ultimate objective of TEN-T is to close gaps, remove bottlenecks and eliminate technical barriers that exist between the transport networks of EU Member States, strengthening the social, economic and territorial cohesion of the Union and contributing to the creation of a single European transport area. The policy seeks to achieve this aim through the construction of new physical

infrastructures; the adoption of innovative digital technologies, alternative fuels and universal standards; and the modernising and upgrading of existing infrastructures and platforms.

Establishing legal frameworks for transferable electronic cargo insurance certificates

Transport insurers contribute to the international cross-border movement of goods by providing insurance cover. In particular for documentary letter of credit transactions they issue transport insurance certificates as evidence of the existence of proper insurance cover. For various aspects of the international trade business, a variety of different trade documents has developed, including documentary letters of credit, bills of lading, delivery notes, warehouse receipts. If the trade documents are available in electronic form, this can simplify and speed up the transactions and make them more secure. The stakeholders involved could benefit from a common and complete electronic data set, which would inter alia make the dispatch of paper-based commercial documents superfluous.

For this reason, activities at national and multinational level have recently been intensified in order to “mirror” trade documents in electronic form. The crucial question is whether one succeeds in creating the necessary legal framework for electronic transferable documents. The core issue is to ensure the so-called functional equivalence, which requires equivalence between the electronic record and its paper-based predecessor.

The G7 states recently agreed to undertake domestic scoping exercises and to establish a comprehensible framework for G7 collaboration on electronic transferable records. The G7 states were asked in 2021 to respond to certain questions regarding national solutions for electronic transferable documents. For Germany, eleven associations, including the German Insurance Association (GDV), have described the current legal framework for electronic transferable trade documents in Germany in a paper addressed to the Federal Ministry of Justice and Consumer Protection and submitted proposals for amendments. The German legal framework basically offers the legal requirements for the use of electronic transport documents. However, the so-called digital opening clauses of the Commercial Code (Handelsgesetzbuch/HGB) have not yet been used in practice. The reasons for this are the legal challenges and uncertainties about the requirements, among other things, for functional equivalence between paper-based and electronic documents. The legal situation is different with regard to the electronic transport insurance certificates. Although it also belongs in the catalog of trade documents of the HGB, unlike other trade documents, there is no opening clause for the transport insurance certificate that entitles it to be issued in electronic form.

In addition to the G7 initiative, the UNCITRAL Model Law on Electronic Transferable Records (MLETR) as well as national developments shall be mentioned in this context. The MLETR offers a template developed by the UN Commission on International Trade Law (UNCITRAL) for a legal framework for electronic negotiable trade documents for implementation in national law. It aims to enable the legal use of electronic transferable records both domestically and across borders. The MLETR applies to electronic transferable records that are functionally equivalent to transferable documents or instruments. Efforts are also being made at national level to enable electronic trade

documents to be legally secure. Singapore has already introduced a law, as has Bahrain, and the Abu Dhabi Global Market. The US Uniform Commercial Code (UCC) also provides for recognition of electronic transferable records through amendments. The Law Commission for England and Wales conducted a consultation on proposals to allow for the digitalisation of documents used in trade.

In addition to the approach of creating a statutory solution, there are contract-based solutions for electronic trade documents for the international transport industry, inter alia the solution offered by Tradelens. These solutions rely on a contractual agreement between the parties involved in order to equate electronic commercial documents in their functions and effects with the paper-based originals. The participants agree to a set of multipartite contractual terms and recognize between themselves that electronic documentation can have legal effects similar to those achieved by their paper counterparts. Crucially, however, these rights are only binding on those parties who have signed up to the terms of a particular platform and have effectively contracted with each other to determine who will have possession throughout the transaction.

The cargo insurance certificate is of relevance in the letter of credit transaction. In particular, it is used by the financing bank to have proof that the goods are adequately insured against loss or damage during transport. It is therefore of considerable importance that legal frameworks for the legally secure and reliable use of transferable electronic cargo insurance certificates are created on national level and that the insurance sector gets involved

Relevant authority / organisations and documents

TiSA:

- **WTO** – General Agreement on Trade in Services (GATS), 1995.
- **Industry position papers:**
 - Insurance Europe, 10 June 2013.
 - Global Federation of Insurance Associations (GFIA), 28 November 2013.
 - [IUMI Position Paper - TiSA, 6 November 2014](#).
- **Global Reinsurance Forum:** Reinsurance trade barriers and market access issues worldwide, July 2018.

Brexit:

- **European Commission**
 - European Commission notice on post-Brexit servicing of existing contracts.
 - DG MOVE notice to stakeholders: Withdrawal of the United Kingdom and EU rules in the field of aviation security and maritime security, 5 July 2018.
- **UK Parliament**
 - The European Union (Withdrawal) Act 2018.
 - Chequers White Paper “the future relationship between the United Kingdom and the European Union”.
- **UK Department for Exiting the EU**
 - Government Position Paper: Future customs arrangements, 15 August 2017.
- **London Market Group / UK Government Liaison Group**
 - LMG: A Brexit roadmap for the UK speciality commercial insurance sector.

- **Insurance Europe / Task Force 50 Liaison Group.**
- **HM Treasury:** Guidance document for the UK's equivalence framework for financial services, 9 November 2020.
- **GOV.UK:** Transporting goods between Great Britain and the EU: guidance for hauliers and commercial drivers, 8 January 2021.
- **UK Financial Conduct Authority:** Flowchart – How the TPR and financial services contracts regime will enable EEA-based firms to continue operating in the UK after the end of the transition period.
- **TT Club:** Brexit analysis for supply chain stakeholders.

China Free Trade Agreement Network

BRI:

- **The People's Republic of China:**
 - Vision for maritime cooperation under the Belt and Road Initiative, 20 June 2017.
 - China's Arctic Policy, 26 January 2018.

Trans-European Transport Network (TEN-T)

Electronic certificates:

- **G7 Digital and Technology Track - Annex 4 FRAMEWORK FOR G7 COLLABORATION ON ELECTRONIC TRANSFERABLE RECORDS:**
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/986162/Annex_4_Framework_for_G7_collaboration_on_Electronic_Transferable_Records.pdf
- UNCITRAL Model Law on Electronic Transferable Records (2017):
https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_transferable_records
- Law Commission England and Wales, Digital Assets: Electronic trade documents – a consultation paper: <https://www.lawcom.gov.uk/project/electronic-trade-documents/>
- Singapore Electronic Transactions Act <https://sso.agc.gov.sg/Act/ETA2010>

Timeline / important dates

TiSA:

- Currently on hold.

Brexit:

- Brexit referendum: 23 June 2016.
- Start of Brexit negotiations: 19 June 2017.
- Withdrawal Agreement covering financial settlement, citizens' rights and Northern Ireland: December 2017.
- UK original exit date from EU: March 2019.
- Extension of Brexit until 31 October 2019.

- Majority of MPs vote in favour of Withdrawal Agreement, 20 December 2019.
- Brexit: 31 January 2020.
- Transition period until 31 December 2020.
- Situation continues to evolve.

BRI:

- The People's Republic of China, announcement of the Belt and Road Initiative by President Xi Jinping in September & October 2013.
- IUMI conference: Presentation by Wai Yue Loh, Ince & Co, Tokyo, 20 September 2017.

TEN-T:

- Funding period 2014-2020 for 9 Core Network Corridors.

14. Maritime security / piracy

Brief description

Best Management Practice (BMP) 5, use of private armed security guards, UN and IMO guidelines, national regulations, legality of payment of ransoms, and ISO rules for the use of force are some of the issues still very much on the international maritime security agenda.

The International Maritime Bureau (IMB) Piracy Reporting Centre (PRC) reported 97 piracy and armed robbery incidents worldwide in the first nine months of 2021 - the lowest reported H1 figure since 1994. Violence against crew continuous with 51 crew kidnapped.

Incidents in the Gulf of Guinea dropped from 46 in the first nine months of 2020 to 28 in the same period in 2021. Only one crew member was kidnapped in Q3 2021, compared to 31 during Q3 2020. Despite these gains, IMB warns that the risk to crew remains high in the region. Vessels are advised to remain at least 250 nm from the coast at all times, or until the vessel can transit to commence cargo operations at a berth of safe anchorage. A maritime security working group was convened during the IMO's Maritime Safety Committee (MSC) meeting in May 2021 to discuss further collaboration and possible action to address piracy in the Gulf of Guinea. MSC 103 subsequently agreed to update a resolution for the area in view of adoption by the IMO Assembly in December 2021. Nigeria's Deep Blue Project and the Gulf of Guinea Maritime Collaboration Forum are recent complementary initiatives, created to support the fight against piracy in the region.

In January 2021, the EU Council approved the launching of the first pilot case of the Coordinated Maritime Presences (CMP) concept in the Gulf of Guinea (GoG). The pilot will support efforts by the coastal states and the organisation of the Yaoundé Architecture to address increasing security challenges such as armed piracy and kidnapping for ransom, which undermine maritime security and good governance of the oceans.

ReCAAP ISC reported a total of 37 incidents in Asia in the period January-June 2021, down from 35 incidents in the first half of 2020. However, IMB reported the highest number of incidents recorded since 1991 in the Singapore Straits with 20 incidents of armed robbery in the first nine months of 2021 against 15 in 2020 and just one incident in 2019. There was no incident of abduction of crew in the SuluCelebes Seas and waters off Eastern Sabah in the first half of 2021, but ReCAAP warns that ASG leaders responsible are still at large and the threat remains high. Ship masters and crew are strongly advised to exercise vigilance, maintain constant lookout for suspicious boats in the vicinity, report all incidents immediately to the nearest coastal State, and implement preventive measures recommended in the “Regional Guide to Counter Piracy and Armed Robbery Against Ships in Asia”.

The Callao anchorage in Peru is an area of concern with 15 incidents reported to IMB in the first nine months of 2021 - the highest number since 1991.

There were no reported incidents from Somalia, but IMB continues to advise that vessels and crew remain cautious with the security concerns in the Gulf of Aden and the Indian Ocean still present. In consequence, insurers will continue to ask owners about their security precautions in this region.

The EU Maritime Security Revised Action Plan was adopted in June 2018. The revised Plan underlines that international cooperation at sea is instrumental to achieve safe and secure seas across regions and improve global maritime security. Although NATO reassigned its counter-piracy mission in the Indian Ocean in November 2016, the European Union has extended its counter-piracy operation until 31 December 2022. In June 2017, the IMO Secretary-General, Mr Kitack Lim, called upon governments to continue to provide naval assets to the area, underlining that the situation remains a cause for concern. IUMI notes the continuing support from EU and the Combined Maritime Forces (CMF) and believes the extended security corridor to be prudent.

With drawdown and the passage of time in mind, the 5th edition of the piracy-specific Best Management Practice (BMP5) was published in June 2018. BMP5 compiles a useful and comprehensive guidance which introduces effective measures for the protection of crew, vessels and cargo while transiting the Red Sea, the Gulf of Aden, the Indian Ocean and the Arabian Sea.

In March 2020, a new publication offering Best Management Practices to Enhance Maritime Security for Vessels & Mariners Operating Off the Coast of West Africa including the Gulf of Guinea (BMP WA) was published. The BMP WA is the result of a collaborative work between industry organisations, supported by government and military organisations, to help mariners detect, deter and delay external threats to their safety in this region.

Tensions in the Strait of Hormuz

The countries around the Gulf possess almost half of the world’s oil reserves and have often been a focus of tension. Estimates vary, but at least 20% of the world’s oil and 25% of its LNG pass through the narrow Strait of Hormuz.

The US political strategy of exerting maximum pressure to prevent Iranian nuclear progress is creating new strains for commerce. The situation has evolved considerably since the vessel attacks

at Fujairah/Strait of Hormuz in May/June 2019. In July 2019, Iran openly seized vessels in direct but intentionally proportionate retaliation to Gibraltar's detention of the *Grace 1* for breaching EU sanctions on Syria.

Although international shipping is clearly at risk, the international response has been mixed and disconnected. US navy vessels are in the area, and in 2019 the United States launched a new maritime security initiative for the Persian Gulf region. In early 2020, several EU member states, including Belgium, Denmark, France, Germany, Greece, the Netherlands and Portugal, established a European Maritime Surveillance Mission in the Strait of Hormuz (EMASOH) to maintain freedom of navigation in the area. EMASOH aims to decrease tensions in this region of strategic interest. The operation is open to other countries to join. An escort programme by the UK offers welcome support to UK flagged vessels.

A lasting solution is needed to ensure the safe passage of vessels and crew in the Strait of Hormuz and the Persian Gulf. With no identifiable resolution in sight, underwriters are faced with great uncertainties and have to be alive to developments. Shipowners are largely required to notify their underwriters, who will then have the chance to assess individual voyages to the area.

Relevant authority / organisations and documents

- **International Maritime Organization (IMO)**
 - **Global Integrated Shipping Information System (GISIS)**: Recent reported incidents of piracy & armed robbery.
 - ***MSC Circular 1405/Rev.2 (as amended)***: "Revised interim guidance to shipowners, ship operators and ship masters on the use of privately contracted armed security personnel on board ships in the High Risk Area", released 25 May 2012.
 - ***MSC 92/INF.14***: "International model set of rules for Rules for use of Force" (RuF), submitted by Marshall Islands, ICS, ISO and BIMCO, 9 April 2014. Also used as input to ISO TC 8.
 - ***MSC.1/Circ.1406/Rev.3***: Revised interim recommendations for flag states regarding the use of privately contracted armed security personnel on board ships in the High Risk Area, 2 June 2015.
 - ***MSC.1/Circ.1585***: Reporting of incidents of piracy and armed robbery against ships in the Gulf of Guinea, 5 July 2017.
 - ***MSC.1/Circ. 1601***: Revised Industry Counter Piracy, December 2018.
 - ***MSC102/10/3***: Security in the Gulf of Guinea, submitted by ICS, BIMCO, OCIMF, INTERTANKO and INTERCARGO, 10 March 2020.
 - ***Circular Letter No. 4382***: Piracy in the Gulf of Guinea, 10 February 2021.
 - ***Resolution A.1069(28)***: Prevention and suppression of piracy, armed robbery against ships and illicit maritime activity in the Gulf of Guinea.
 - ***MSC103/10/1***: Prevention and suppression of piracy, armed robbery against ships and illicit maritime activity in the Gulf of Guinea, submitted by Secretariat, 2 March 2021.
 - ***MSC103/WP.9***: Report of the Working Group, 13 May 2021.

- **MSC104/8/2:** Revision of the High Risk Area, submitted by ICS, BIMCO, OCIMF, INTERTANKO and INTERCARGO, 13 August 2021.
- **International Organization for Standardization (ISO)**
 - ISO/PSA 28007:2012 Ships and marine technology – Guidelines for Private Maritime Security Companies (PMSC) providing privately contracted armed security personnel (PCASP) on board ships (and pro forma contract), published 14 March 2013.
- **BMP5:**
 - **Best Management Practices to Deter Piracy and Enhance Maritime Security in the Red Sea, Gulf of Aden, Indian Ocean and Arabian Sea, June 2018.**
- **BIMCO's GUARDCON contract**
 - **Special Circular No. 1** – 20 February 2014 on recommended amendments to GUARDCON for use off West Africa.
 - **IGP&I GUARDCON West Africa** – IG clubs' version including the recommended amendments in Circular 1, 9 April 2014.
- **European Union:**
 - Gulf of Guinea strategy, 17 March 2014.
 - Council Decision (CFSP) 2020/2188, amending and extending the mandate of the EU Naval Force Somalia Operation Atalanta until 31 December 2022.
- **EU Naval Force (EU NAVFOR)** – Operation Atalanta.
- **ICC International Maritime Bureau – Piracy Reporting Centre**
- **Maritime Security Centre Horn of Africa (MSCHOA)**
- **Joint War Committee (JWC):** Listed areas, revised 10 December 2015.
- **IUMI: Position Paper - Piracy and its suppression, 29 January 2016.**
- **ReCAAP:**
 - Guide for Tankers Operating in Asia Against Piracy and Armed Robbery Involving Oil Cargo Theft, 25 November 2015.
 - Regional Guide to Counter Piracy and Armed Robbery Against Ships in Asia, 17 February 2016.
 - Guidance on abduction of crew in the Sulu-Celebs seas and waters off Eastern Sabah, July 2019.
- **Maritime Domain Awareness for Trade – Gulf of Guinea (MDAT-GoG)**
- **ICS, BIMCO & INTERTANKO:** Interim Guidance on Maritime Security in the Southern Red Sea and Bab Al-Mandeb, 24 January 2018.
- **Maritime Global Security:**
 - Global counter piracy guidance for companies, masters and seafarers, June 2018.
 - The 3rd edition of the guidelines for owners. Operators and masters for protection against piracy and armed robbery in the Gulf of Guinea, 3 June 2018.
- **BMP WA:**
 - **Best Management Practices to Deter Piracy and Enhance Maritime Security off the Coast of West Africa including the Gulf of Guinea, 30 March 2020.**
- **U.S. Coast Guard:** Port Security Advisory (1-20), 10 June 2020.
- **Benin:** Interministerial decree concerning means of protection of ships in territorial waters, 13 July 2020.



- **BIMCO, ICS, INTERTANKO, INTERCARGO & OCIMF:** Joint statement: Increased security threats for vessels operating in the Gulf of Guinea, 21 October 2020.
- **OCIMF:** Guidance for the employment of private maritime security companies, October 2021.

Timeline / important dates

- NATO terminated its counter-piracy mission November 2016.
- MSC 103: 5-14 May 2021.
- Assembly: 6-15 December 2021.
- EU NAVFOR (Operation Atalanta) extended until 31 December 2022.

IUMI will:

- Monitor and inform IUMI membership of new developments.
- Strongly support implementation of BMP5 and consider amendments and/or more suitably adapted versions for new areas/threats as and when appropriate.
- Support implementation of ISO PSA 28007 as the sole standard when determining rules for the use of force.
- Endorse guidelines issued by BIMCO and ICS for vessels and crews.
- Encourage governments to support counter-piracy operations through naval task forces and other means of support off the Horn of Africa.
- Encourage owners and insurers to remain vigilant in the Indian Ocean.
- Support all efforts to find a lasting solution to ensure the safe passage of vessels and crew in the Strait of Hormuz and Persian Gulf.

15. Sanctions

Brief description

International sanctions as a tool for countries to act against others for political reasons influence the global maritime industry on a daily basis.

While sanctions are nothing new, the targeting of financial services have demonstrated the need for marine insurers to keep up to date with new sanction regimes and how to comply with them.

Unfortunately, the picture is further complicated by anti-blocking legislation as promulgated by the EU, which was subject to recent consultation to potentially strengthen its application, and more recently, China. The interaction of USD trades and Chinese legislation, if widely enforced, will be far reaching.

Several markets have issued optional sanctions clauses to comply with these regimes. In addition, proper due diligence is recommended for individual insurers. In December 2021, Lloyd's published updated Enhanced Due Diligence (EDD) guidelines for marine insurers introducing:

- updated risk factors for underwriters and compliance personnel to be aware of,
- updated due diligence procedures, and
- revised enhanced due diligence measures, and where appropriate, suggested controls.

The list below, while not necessarily complete, provides guidance on where information can be found from four key sanction regimes.

Key sanction regimes – information links

- **United Nations:**
 - [Security Council - General Information about Sanctions](#)
- **United States of America:**
 - [U.S. Office of Foreign Assets Control \(OFAC\) Sanctions List Search](#)
 - [U.S. Treasury OFAC Sanctions Programs](#)
 - [U.S. Treasury OFAC Recent Actions](#)
 - [OFAC Special Designated Nationals \(SDN\) List](#)
 - [OFAC Guidance to address illicit shipping and sanctions evasion practices \(14 May 2020\)](#)
- **European Union:**
 - [EU Consolidated list of sanctions](#)
 - [Updated blocking statute in support of Iran nuclear deal](#), 6 August 2018.
 - [EU Sanctions Map](#)
 - [Amendment of the Blocking Statute](#) – consultation 9 September – 4 November 2021.
- **United Kingdom:**
 - [HM Treasury – Financial sanctions targets by regime](#)

- UK Office of Financial Sanctions Implementation
- OFSI Financial sanctions guidance for entities and individuals operating within the maritime shipping sector (December 2020)
- New legislation after transitional period (end 2020)
- Lloyd's Marine sanctions guidance – Enhanced Due Diligence measures
- **IUMI:**
 - OFAC webinar 10 June 2020
 - Sanctions update webinar (HFW and Windward), 8 December 2021.
- **BIMCO:** Sanctions clause for container vessel time charter parties 2021.
- **CHINA:** Anti-foreign sanctions law necessary to fight hegemonism, power politics: official.

16. Theft prevention / safe and secure parking places

Brief description

The European Union stated in a 2007 study that each year direct and consequential claims arising to an amount of EUR 8 billion are caused by theft from means of transport. Intrusion is the preferred modus of operation of cargo thieves, and trucks parked in unsecured parking locations are the main target. The fact remains that there are far too few secured parking areas. At the same time, the perpetrators are acting in an increasingly organized fashion, and make use of the constantly growing online connectivity to expand their *modi operandi* to include cyber-related cargo crimes. The misuse of online freight exchange platforms is an example of this, with criminals taking on the identity of legitimate freight carriers, using their employees' names, companies and logos, to organise thefts of cargo offered for transport on those electronic freight platforms.

Both for cargo and forwarders' liability insurance, only effective loss prevention measures make some types of transport insurable. For example, the German Insurance Association (GDV) has developed a manual for the construction and operation of high-security truck parks, and the American insurance industry has developed data and recommendations on static and in transit cargo loss prevention as well as data on truck stop thefts pinpointing the locations of facilities victimized. The Transported Asset Protection Association (TAPA) has developed security standards⁴ and makes these available with regular updates. Information about secure parking

⁴ FSR = Freight Security Requirements
TSR = Truck Security Requirements



areas are also available in several countries. The rollout of a TAPA Supply Chain Cyber Security Standard started in 2021 in the Americas and Asia Pacific (APAC). TAPA EMEA (Europe, the Middle East and Africa) continues to work on the standard before publishing it for the EMEA region.

In January 2017, the European Commission Directorate General for Mobility and Transport (DG MOVE) contracted Cross-border Research Association (CBRA) and TAPA EMEA to develop security guidelines for the European freight transport sector. The security toolkit “ROADSEC” was published in January 2018, providing operational guidance that will help truck drivers, haulage companies and other key stakeholders to address cargo theft, robberies, irregular migration, and terrorism on European roads.

At the end of 2018, DG Move launched an expert group on secured truck parking. IUMI is represented in the group via German member association GDV. The group advises and assists the Commission in the development of common standards for safe and secure truck parking (SSTPA). The results of the group are subject to a public consultation in early 2022.

IUMI has published a position paper outlining the increasing problem of cargo theft and calling on law enforcement agencies to improve and enhance their cross-border cooperation. Recommendations for industry and supply chain stakeholders are also included in the paper. In addition to the current measures and continued theft prevention activities by the industry, IUMI urges the following actions for the prevention of cargo theft:

- Relevant authorities should develop an overview of the cargo theft situation, including the theft of trailers and containers, in their respective country or region. Based on these findings and in discussion with insurers and other industry stakeholders, decisions should be made on how to deal with the aforementioned hotspots and future measures against cargo theft.
- Exchange of best practices across borders on local initiatives has proven to be successful and should be continued.
- Improve law enforcement through transnational coordination and cooperation between countries and national law enforcements. Dedicated cargo theft task forces should be established to allow law enforcement agents to work with their peers in other states or countries to develop effective networks and to solve cross-jurisdictional cases. The private sector should be involved in such task forces.
- Create special police units and specialised departments of public prosecution dealing with cargo crime.
- As criminals use the internet, specific attention should be given to cyber fraud, such as with bills of lading and permits as well as fake carriers.
- Increase police presence in commercial truck parking areas and cargo storage facilities, especially at night, weekends and during holidays.

PSR = Parking Security Requirements
Multi-site certification for FSR
TAPA Supply Chain Security Standard, and TSR Modular Standard are currently in the development phases

- Create a network of high-security, accessible and affordable truck parks.

Introducing these measures would facilitate the safe and secure flow of goods within the global supply chain and increase the safety of people working in the transport sector.

Relevant authority / organisations and documents / links

- **National** authorities / ministries of transport
- **EC (DG Mobility and Transport)**
 - **TEN-T:** Trans European transport network guidelines.
 - **EC Regulation 561/2006** on driving times.
 - **Directive 2003/59/EU** driver training – crime prevention.
 - Study on organized theft for Commercial Vehicles and their loads in the European Union, May 2007.
 - **Directive 2008/96/EC** road infrastructure safety management.
 - **Directive 2010/40/EU** on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport.
 - **Council Resolution 8/9 November 2010** on secure TPAs.
 - **Delegate Regulation (EU) No 886/2013** with regard to data and procedures for the provision, where possible, of road safety-related minimum universal traffic information free of charge, 15 May 2013.
 - **EC Project ROADSEC Security Toolkit**, December 2017.
 - **Expert group on Safe and Secure Parking Areas for Trucks**, established December 2018.
 - **Study on Safe and Secure Parking Places for Trucks**, February 2019 & EC response, 11 March 2019.
 - **EU Public Consultation: Road transport – EU standards for safe and secure parking areas for trucks**, January 2022.
- **SETPOS** – secured European truck parking best practice handbook, April 2010.
- **LABEL** – handbook for labelling; security and service along the trans-European road network
- **TRANSPark** (International Road Transport Union (IRU)).
- **TRUCKinform** (The European truck parking information portal).
- **Road Haulage Association**.
- **IUMI national associations' web pages** (in particular):
 - Italy: Website with list of secure parking areas and stop areas, prepared by ANIA: [GEOSOSTA](#).
 - Germany: [High-security truck park](#) – Non-binding security recommendations.
- **IUMI Position Paper on Theft prevention, 17 September 2019**.
- **Transported Asset Protection Association (TAPA):**
 - Incident Information Services – & Secure Parking (EMEA region – Europe, Middle East and Africa).
 - [Parking Security Requirements \(PSR\) 2018](#)
 - [Facility Security Requirements \(FSR\) 2020](#)

- Trucking Security Requirements (TSR) 2020
- **European secure parking organisation (ESPORG):**
 - EU Parking Standard
 - Map (parkings)
- **BSI & TT Club:** Cargo theft report 2021, February 2021.

Timeline / important dates

- Meeting with DG MOVE – Security, Brussels 18 October 2016.
- New security guidelines for the European road freight transport sector (ROADSEC), January 2018.

IUMI will:

- Encourage and support measures that contribute to facilitate the safe and secure flow of goods within the global supply chain and increase the safety of people working in the transport sector.
- Urge the following actions in addition to current measures and continued theft prevention activities by the industry:
 - Relevant authorities should develop an overview of the cargo theft situation, including the theft of trailers and containers, in their respective country or region. Based on this, and in discussion with insurers and other industry stakeholders, decisions should be made on how to deal with the aforementioned hotspots and future measures against cargo theft. Exchange of best practices across borders on local initiatives proven to be successful is encouraged. Improving law enforcement through transnational coordination and cooperation between countries and national law enforcements.
 - Create special police units and specialised departments of public prosecution dealing with “cargo crime”.
 - Increase police presence in commercial truck parking areas and cargo storage facilities especially during night-time, weekends and holidays.
 - Create a network of high-security, accessible and affordable truck parks.
- Monitor and inform on relevant new initiatives and best practice.

Glossary of abbreviations

ABS – American Bureau of Shipping
AMD – Association Mondiale de Dispatcheurs
BBNJ – Biodiversity Beyond National Jurisdiction
BMP – Best Management Practice (BMP WA – Best Management Practice West Africa)
BRI – Belt and Road Initiative (People’s Republic of China)
CCC – Sub-Committee on Carriage in Cargoes and Containers (IMO)
CG – Correspondence Group
CIMAC – International Council on Combustion Engines
CINS – Cargo Incident Notification System
CIRM – Comité International Radio-Maritime
CLC – Civil Liability Convention
CLIA – Cruise Lines International Association
CMF – Combined Maritime Forces
CMI – Comité Maritime International
COLREG – Convention on the International Regulations for Preventing Collisions at Sea
CTU Code – Code of Practice for Packing of Cargo Transport Units
DG MOVE – Directorate-General Mobility and Transport (EC)
EC – European Commission
ECA – Emission Control Area
ECSA – European Community Shipowners’ Associations
EEA – European Economic Area
EEXI – Energy Efficiency Existing Ship Index (IMO)
EFTA – European Free Trade Association
EIOPA – European Insurance and Occupational Pensions Authority
EMASOH – European Maritime Surveillance Mission in the Strait of Hormuz
EMSA – European Maritime Safety Agency
ENISA – European Network and Information Security Agency
ESG – Environmental, Social and Governance
EU – European Union
EU NAVFOR – EU Naval Forces
FAL – Facilitation Committee (IMO)
FIATA – International Federation of Freight Forwarders Association
FTA – Free Trade Agreement
GHG – Greenhouse Gas
GoG – Gulf of Guinea
HTW – Sub-Committee on Human element, Training and Watchkeeping (IMO)
IACS – International Association of Classification Societies
IAPH – International Association of Ports and Harbors
ICS – International Chamber of Shipping
IG – International Group of P&I Clubs
IMB – International Maritime Bureau
IMDG Code – International Maritime Dangerous Goods Code

IMO – International Maritime Organization; a United Nations specialized agency
INTERCARGO – International Association of Dry Cargo Shipowners
INTERTANKO – International Association of Independent Tanker Owners
IPTA – International Parcel Tankers Association
ISM Code – International Safety Management Code
ISPS Code – International Ship and Port Facility Security Code
ISO – International Organization for Standardization
ISU – International Salvage Union
ITF – International Transport Workers' Federation
IUU – Illegal, unreported and unregulated fishing
LEG – Legal Committee (IMO)
MARPOL – International Convention for the Prevention of Pollution from Ships
MASS – Maritime Autonomous Surface Ships
MEPC – Marine Environment Protection Committee (IMO)
MSC – Maritime Safety Committee (IMO)
MSCHOA – Maritime Security Centre Horn of Africa
MR – Mutual Recognition (ROs)
NATO – North Atlantic Treaty Organization
NCSR – Sub-Committee on Navigation, Communications and Search and Rescue (IMO)
OCIMF – Oil Companies International Maritime Forum
OFAC – Office of Foreign Assets Control (United States)
Polar Code – International Code for Ships Operating in Polar Waters
POLARIS – Polar Operational Limit Assessment Risk Index System
PoR – Places of Refuge
PPMI – Poseidon Principles for Marine Insurance
PPR – Sub-Committee on Pollution Prevention and Response (IMO)
PSA – Port Security Advisory
PSI – Principles for Sustainable Insurance (UNEP FI)
ReCAAP ISC – Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia Information Sharing Centre
RO – Recognised Organisation
ROADSEC – European road freight transport sector security guidelines
SAE – Society of Automotive Engineers
SDC – Sub-Committee on Ship Design and Construction (IMO)
SDG – Sustainable Development Goals (UN)
SOLAS – International Convention for the Safety of Life at Sea
SSE – Sub-Committee on Ship Systems and Equipment (IMO)
STCW – International Convention on Standards of training, Certification and Watchkeeping for Seafarers
TAPA – Transport Asset Protection Association
TEN-T – Trans-European Transport Network (EC)
TiSA – Trade in Services Agreement (WTO)
UI – Unified Interpretation (IACS)
UN – United Nations
UNCAC – Convention Against Corruption (UN)



UNCLOS – Convention on the law of the seas (UN)
UNEP FI – United Nations Environment Programme Finance Initiative
UR – Unified Requirement (IACS)
WSC – World Shipping Council
WTO – World Trade Organization