

IMO CONTEST 2024

The background of the slide is a photograph of a large cargo ship, the "TAGA BAY", sailing on the water. The ship is dark grey with a white superstructure and is loaded with many colorful shipping containers. Two large yellow cranes are visible on the deck. In the background, there are mountains under a blue sky. On the left side of the slide, there are several diagonal blue and white graphic elements.

Suggestions on Amendments to
the **SUA Convention** and **MSC Guidelines**
for Addressing New Crimes Committed Using Drones

Team ONE PEACE

CONTENTS





BACKGROUND

1

Case of Sea Drone Terrorism (1)

1



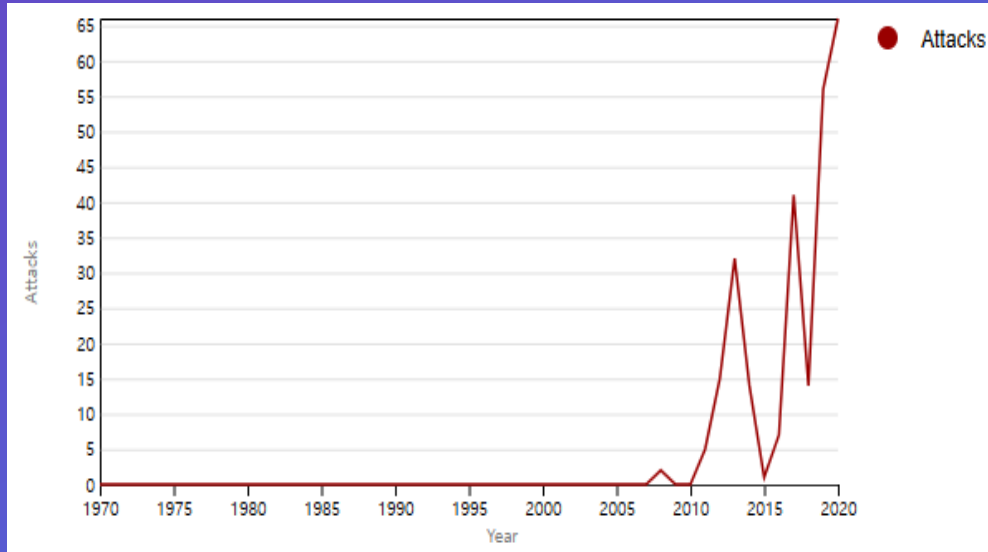
The Liberian flagged, Greece-owned and operated bulk carrier was hit by a **remote-controlled sea drone** and an aerial projectile southwest of Hudaida on June 19.

2



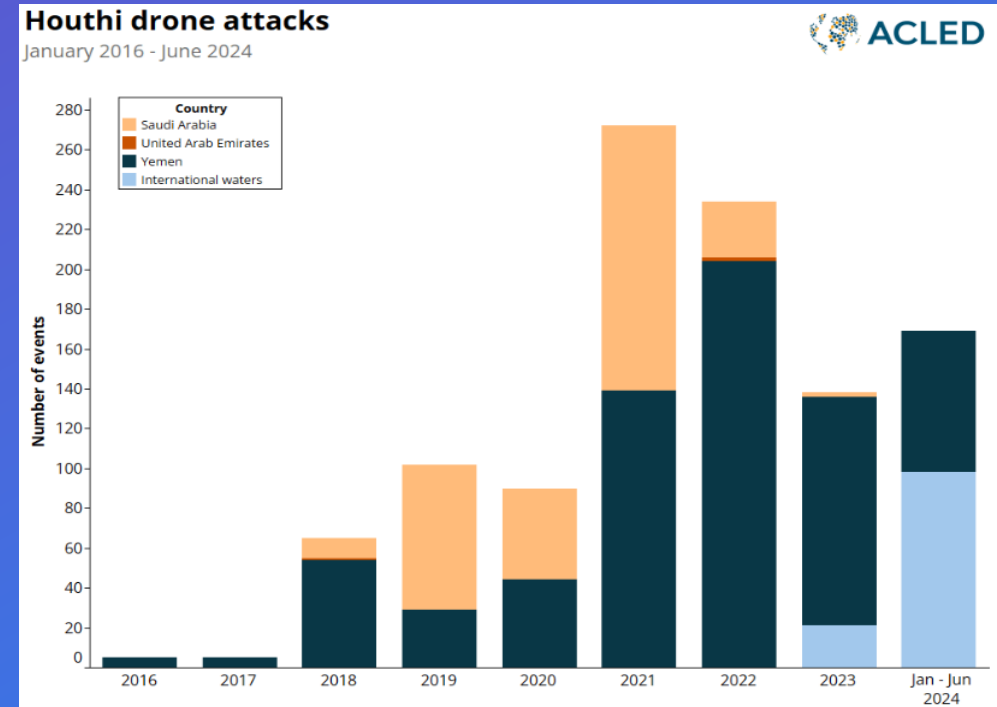
An unmanned vehicle damaged the port side of the tanker. A major concern for unmanned surface vehicles (USVs) is that they hit the vessel's waterways, which could result in water flowing through the holes, causing the vessel to sink.

Related Statistics



<Table 1> Drone terror incidents over time

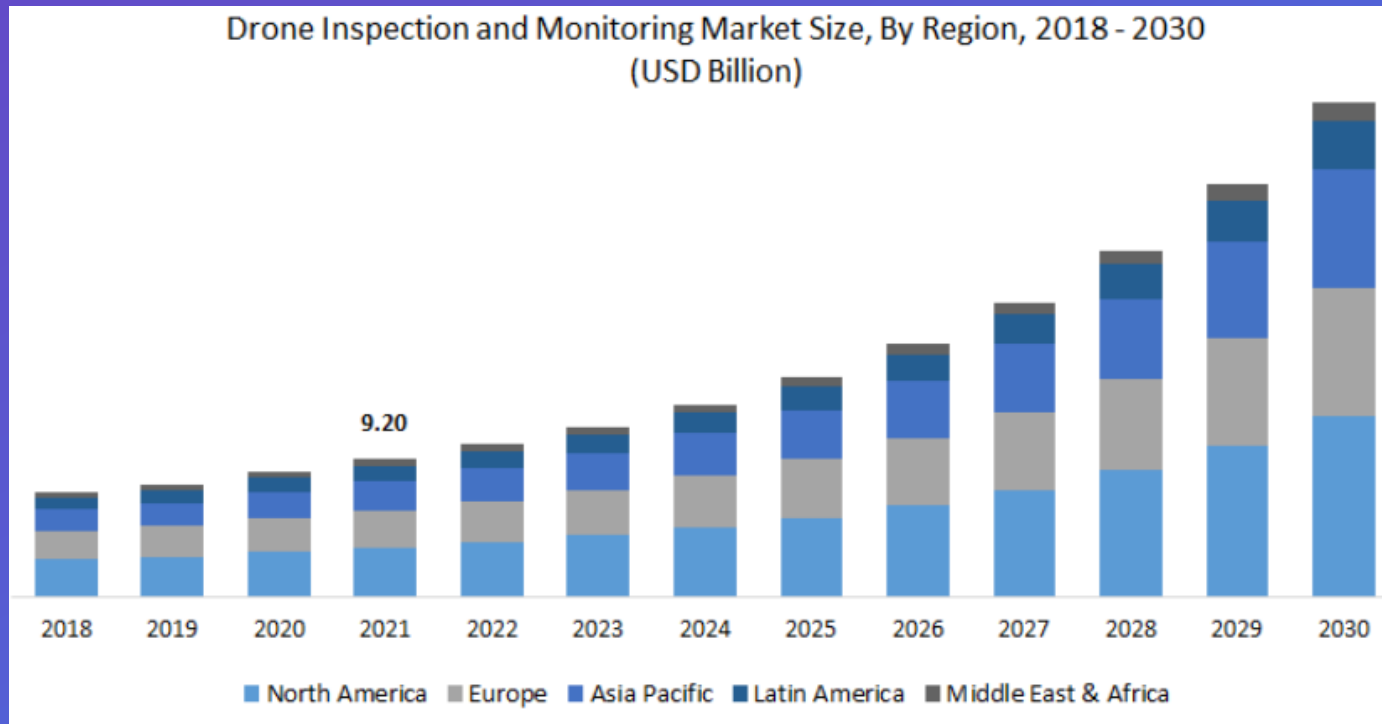
- The number of drone terrorism cases has been continuously **increasing** since 2018.



<Table 2> Drone terror incidents over time

- From 2023, crimes in the sea using Houthi rebels' maritime drones are **increasing**.

Related Statistics + Global News



Business / Energy

Ukraine's AI-enabled drones are trying to disrupt Russia's energy industry. So far, it's working

By Vasco Cotovio, Claire Sebastian and Allegra Goodwin, CNN
6 minute read · Updated 8:38 AM EDT, Tue April 2, 2024

World / Middle East

Israel investigates security failures around deadly Tel Aviv drone strike

By Eugenia Yosef, Jennifer Hansler, Eyad Kourdi and Kathleen Magraro, CNN
6 minute read · Updated 1:46 PM EDT, Fri July 19, 2024

Labour conference: Police impose restrictions on drones

26 September 2023

FBI and CISA warn companies to be wary of using Chinese-made drones over national security risks

By Natasha Bertrand, CNN
3 minute read · Published 4:30 PM EST, Wed January 17, 2024

PROBLEM ANALYSIS

2



DRONE

Check

“An aircraft that can fly via remote control or autonomous control, and does not carry passengers or crew”



UUV

Unmanned Underwater Vehicle



USV

Unmanned Surface Vehicle



UAV

Unmanned Aerial Vehicle



Check Point

According to data from **ACLED**, armed groups have recently adopted drones as weapons, with about **40%** of all terrorism being drone-related incidents.

WHY DRONE?

Manufacturing

Able to manufacture drones in large quantities at low cost

Attack

Using drones primarily to create navigation threats without causing direct damage to vessels.

Cost Efficiency

Forces the international coalition to deploy expensive air defense systems against relatively inexpensive devices

Hard to Detect

Maritime drones are difficult to detect due to their small size

Opposition

Drones are a challenging weapon system to defend against

Carrying and Mobility

Drones can carry large amounts of explosives and strike targets hundreds of kilometers away

Reasons for necessity of Revision

The effectiveness of drones is **encouraging pirates to explore similar technology.**

Therefore,

It is crucial to include **specific guidelines** related to drones in maritime safety regulations.

SUA
CONVENTION

MSC.1
Circ.1334

ISPS

PIRACY AND ARMED ROBBERY AGAINST SHIPS

Guidance to shipowners and ship operators, shipmasters and crews on preventing and suppressing acts of piracy and armed robbery against ships

1 The Maritime Safety Committee, at its eighty-sixth session (27 May to 5 June 2009), approved a revised MSC/Circ.623/Rev.3 (Guidance to shipowners and ship operators, shipmasters and crews for preventing and suppressing acts of piracy and armed robbery against ships) as given at annex.

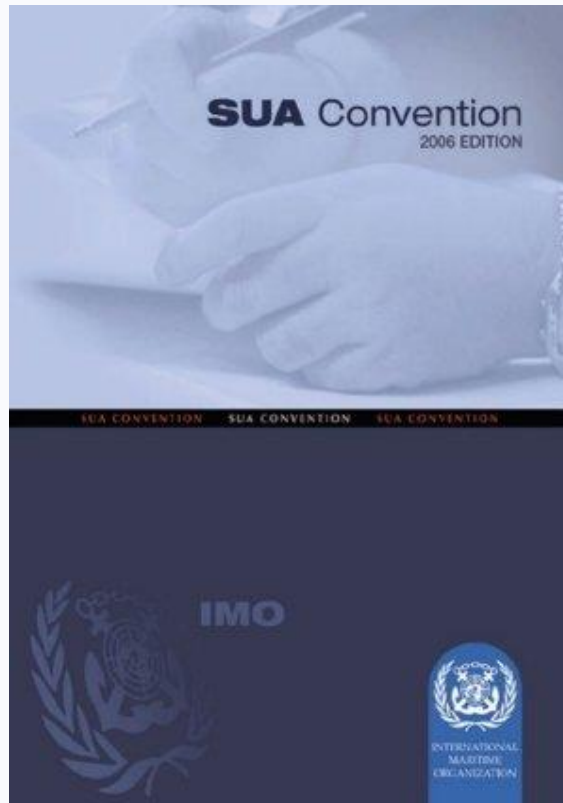
2 The revision was carried out on the basis of the outcome of the comprehensive review of the guidance provided by the Organization for preventing and suppressing piracy and armed robbery against ships; and took into account the work of the correspondence group on the review and updating of MSC/Circ.622/Rev.1, MSC/Circ.623/Rev.3 and resolution A.922(22), established by MSC 84.

3 Member Governments and organizations in consultative status with IMO are recommended to bring this circular to the attention of shipowners, ship operators, shipping companies, shipmasters and crews and all other parties concerned.



SOLUTIONS

3



The SUA Convention

(Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation)

The SUA is an international treaty designed to address unlawful acts at sea, particularly piracy and threats to the safety of ships.

The guidance does not currently address the rapidly developing technological threat posed by drones.

ARTICLE 2

Article 1 of the Convention is amended to read as follows:

Article 1

1 For the purposes of this Convention:

(a) “ship” means a vessel of any type whatsoever not permanently attached to the sea-bed, including dynamically supported craft, submersibles, or any other floating craft.

(b) “transport” means to initiate, arrange or exercise effective control, including decision-making authority, over the movement of a person or item.

(c) “serious injury or damage” means:

(i) serious bodily injury; or

(ii) extensive destruction of a place of public use, State or government facility, infrastructure facility, or public transportation system, resulting in major economic loss; or

(iii) substantial damage to the environment, including air, soil, water, fauna, or flora.

(d) “BCN weapon” means:

(i) “biological weapons”, which are:

BEFORE



Article 2

(a) Drone

(i) Unmanned equipment, including UAVs, USVs, and UUVs, that can be controlled by radio waves, excluding those with the following intents:

(1) Industrial, agricultural, research, transportation, or other peaceful purposes; or

(2) Protective purposes, specifically military purposes for the defense of each jurisdiction (excluding use as a means of warfare); or

(3) Cases that comply with domestic law enforcement purposes, provided the type and quantity adhere to those purposes.

(ii) Nothing in this Convention shall affect the rights, obligations, and responsibilities under the International Civil Aviation Convention signed in Chicago in 1944.

AFTER

ARTICLE 3

The following text is added as article 2bis of the Convention:

Article 2bis

1 Nothing in this Convention shall affect other rights, obligations and responsibilities of States and individuals under international law, in particular the purposes and principles of the Charter of the United Nations and international human rights, refugee and humanitarian law.

:

3 Nothing in this Convention shall affect the rights, obligations and responsibilities under the Treaty on the Non-Proliferation of Nuclear Weapons, done at Washington, London and Moscow on 1 July 1968, the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, done at Washington, London and Moscow on 10 April 1972, or the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, done at Paris on 13 January 1993, of States Parties to such treaties.

BEFORE

4. A person is in violation of this Convention if they unlawfully and intentionally commit any of the following acts within the meaning of the Convention:

(a) When the purpose of the act, by its nature or context, is to intimidate a population or to compel a government or an international organization to do or abstain from doing any act:

(i) When using a UAV for this purpose:

(A) Threatening or attacking a ship or its crew by dropping bombs,, firing weapons, colliding, or dispersing hazardous materials using a drone, or

(B) Hacking the main network of a ship using a drone, or

(C) Detecting and surveilling key facilities of a ship using a drone.

(ii) When using a USV for this purpose:

(A) Threatening a ship with a SUSV carrying explosives, or

(B) Destroying or severely damaging a ship using explosives.

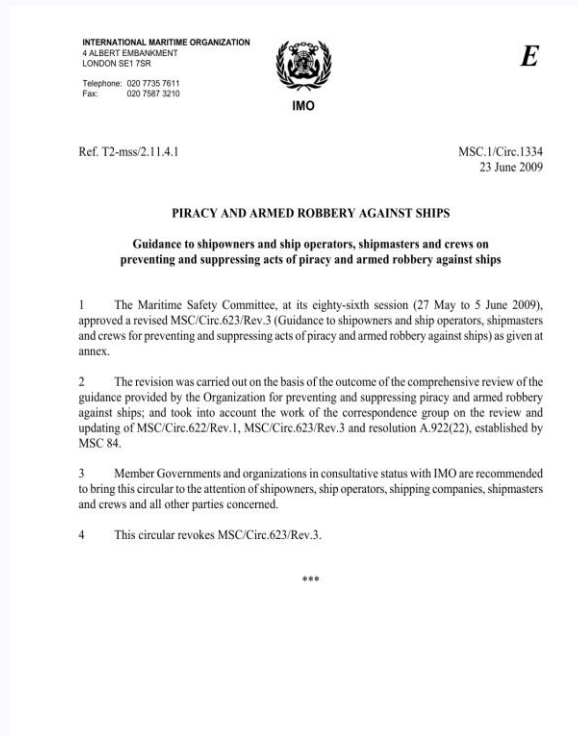
(iii) When using a UUV for this purpose:

(A) Attacking a ship by equipping a UUV with a torpedo or bomb, or

(B) Disrupting communication systems using a UUV equipped with electronic jamming devices.

(iv) Threatening to commit any of the crimes specified in (a)(i), (ii), or (iii), regardless of the presence of conditions stipulated by domestic law.

AFTER



MSC.1 Circ.1334

Piracy and Armed Robbery against Ships

MSC.1/Circ.1334 serves as an essential standard, providing specific guidelines on countering maritime terrorism and security threats. It primarily addresses traditional security threats posed by pirates and terrorists, with a focus on enhancing physical security on board ships and ensuring the safety of crew members.

The guidance does not currently address the rapidly developing technological threat posed by drones.

Threat Analysis and Assessment System

57. Encourage the advance analysis and assessment of drone threats to ships and maritime facilities.

Include procedures for evaluating the possibility of drone attacks, types of drones, attack methods, and potential damage.

58. Collect information on drone size, speed, flight range, and equipped devices

(e.g., explosives, surveillance equipment) and use this data to establish a threat model.

58. Build advanced technology systems to detect and track drones, incorporating radar,

radio frequency detectors, optical, and infrared sensors into an integrated detection system

to identify and track drones early. This system should help in early identification of potential threats.

Drone Countermeasure and Neutralization Technologies

- 60. Install electronic jamming equipment to interfere with or neutralize drone control signals, blocking remote operation or flight path control. This system should target specific frequency bands to disrupt the drone's remote control system.
- 61. Utilize technologies to physically neutralize drones. Install systems that use high-speed missiles or projectiles to destroy drones, employ net-launching systems to physically capture drones, and install electromagnetic railguns to destroy drones.
- 61. Implement AI-based autonomous defense systems to detect drone approaches in real time and automatically take countermeasures. These systems should analyze drone flight patterns and determine appropriate responses automatically.

Emergency Response Procedures and Cybersecurity

63. Establish procedures for immediate response to drone attacks. Include steps for activating electronic jamming systems upon detecting a drone, preparing physical neutralization equipment, and formulating tactical response plans to enable crew members to respond swiftly and effectively.
64. Enhance cyber security measures on ships to protect against cyber-attacks using drones.
Regularly perform security checks and updates on remote control systems of drones to ensure robust protection.

Training, Education, and Collaboration

65. Incorporate drone attack response training for ship crews and maritime security personnel.

Focus on drills and simulations based on drone attack scenarios to effectively use counter-drone technologies and enhance practical response capabilities.

66. Establish systems for exchanging information and collaborating on drone attacks. Strengthen cooperation and information sharing between ship operators and maritime security agencies to quickly exchange information and develop joint response strategies.



ISPS Code

(International Ship and Port Facility Security Code)

The ISPS Code is designed to protect ships and port facilities from maritime terrorism and illegal activities. It enhances the safety of maritime networks by assessing security risks and implementing protective measures.

The current ISPS Code lacks clear guidelines for advanced unmanned equipment, making it difficult to effectively address new security threats posed by drones.

ISPS Code – Part A

PART A

Mandatory requirements regarding the provisions of chapter XI-2 of the Annex to the International convention for the Safety of life At Sea, 1974, as amended



8 Ship security assessment

8.1 The ship security assessment is an essential and integral part of the process of developing and updating the ship security plan.

8.2 The company security officer shall ensure that the ship security assessment is carried out by persons with appropriate skills to evaluate the security of a ship, in accordance with this section, taking into account the guidance given in part B of this Code.

8.3 Subject to the provisions of section 9.2.1, a recognized security organization may carry out the ship security assessment of a specific ship.

8.4 The ship security assessment shall include an on-scene security survey and, at least, the following elements:

- .1 identification of existing security measures, procedures and operations;
- .2 identification and evaluation of key ship board operations that it is important to protect;
- .3 identification of possible threats to the key ship board operations and the likelihood of their occurrence, in order to establish and prioritize security measures; and
- .4 identification of weaknesses, including human factors in the infrastructure, policies and procedures.



8.4.5 Identification of emerging technological threats, such as unmanned marine drones used for unlawful or terrorist activities.

9 Ship security plan

9.1 Each ship shall carry on board a ship security plan approved by the Administration. The plan shall make provisions for the three security levels as defined in this part of the Code.

9.4 Such a plan shall be developed, taking into account the guidance given in part B of this Code, and shall be written in the working language or languages of the ship. If the language or languages used is not English, French or Spanish, a translation into one of these languages shall be included. The plan shall address, at least, the following:

- .1 measures designed to prevent weapons, dangerous substances and devices intended for use against persons, ships or ports and the carriage of which is not authorized from being taken on board the ship;
- .2 identification of the restricted areas and measures for the prevention of unauthorized access to them;
- .16 frequency for testing or calibration any security equipment provided on board;
- .17 identification of the locations where the ship security alert system activation points are provided;¹ and
- .18 procedures, instructions and guidance on the use of the ship security alert system, including the testing, activation, deactivation and resetting and to limit false alerts.¹



9.4.19 Procedures to detect and mitigate unmanned aerial and marine drones.

PART B

Guidance regarding the provisions of chapter XI-2 of the Annex to the International Convention for the Safety of Life at Sea, 1974 as amended and part A of this Code



Security Measures Related to Drone Terrorism

9.50 The security measures relating to the drone terrorism should:

- .1 prevent unauthorized access;
- .2 protect passengers, ship's personnel, and other agencies authorized to be on board the ship; and
- .3 protect cargo and ship's stores from tampering.

9.51 This plan includes measures for the prevention, detection, and response to technological threats, such as maritime drone terrorism. It applies to all crew members and relevant personnel on board the vessel.

Security Level 1	Security Level 2
9.52 At security level 1, the SSP should establish the security measures to be applied to drone terrorism, which may include: .1 receiving basic training on threats related to maritime drones; .2 operating basic surveillance systems for maritime drone detection; and .3 establishing initial response procedures for emergency situations involving drones.	9.53 At security level 2, the SSP should establish the additional security measures to be applied to drone terrorism, which may include: .1 installing and operating maritime drone detection system, such as radar or cameras; .2 establishing a system to share information about maritime drone threats with relevant authorities; .3 regular training on drone attack scenarios; and .4 setting up an emergency communication network for rapid contact in the event of a drone attack.

Security Level 3

9.54 At security **level 3**, the SSP should detail the security measures which could be taken by ship, in close co-operation with those responding and the port facility, which may include:

- .1 deploying advanced maritime drone detection and neutralization technologies, such as jamming devices;
- .2 conducting emergency drills for rapid response to drone attack incidents;
- .3 operating real-time information collection and analysis systems for drone threats;
- .4 strengthening onboard security inspections and regularly checking the functionality of drone-related equipment; and
- .5 developing and integrated response plan for maritime drone attacks, coordinating with relevant agencies.

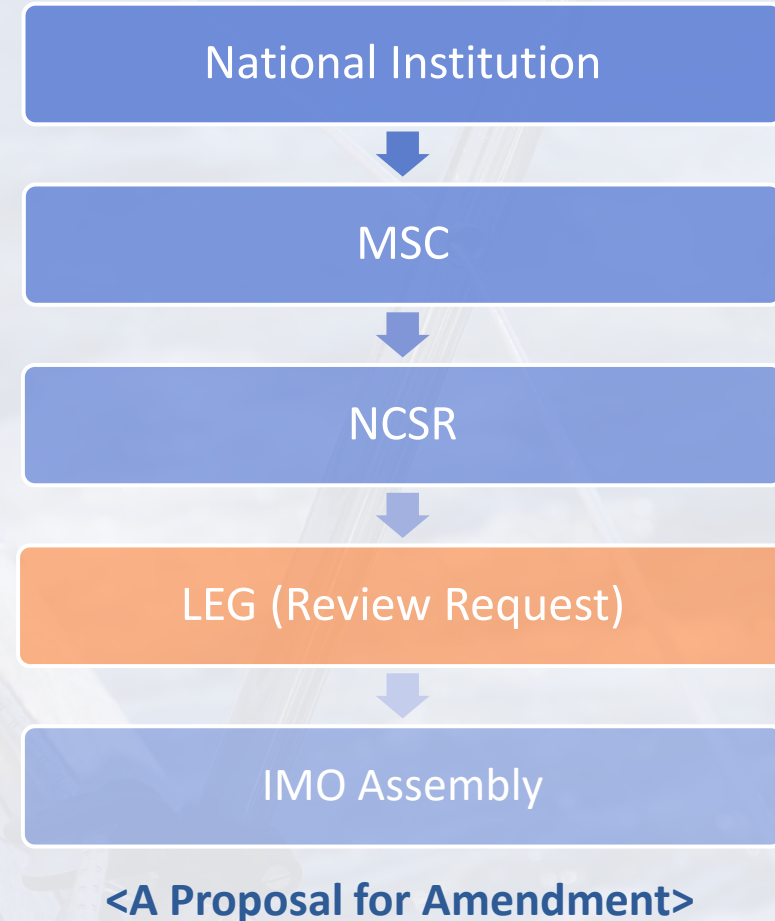
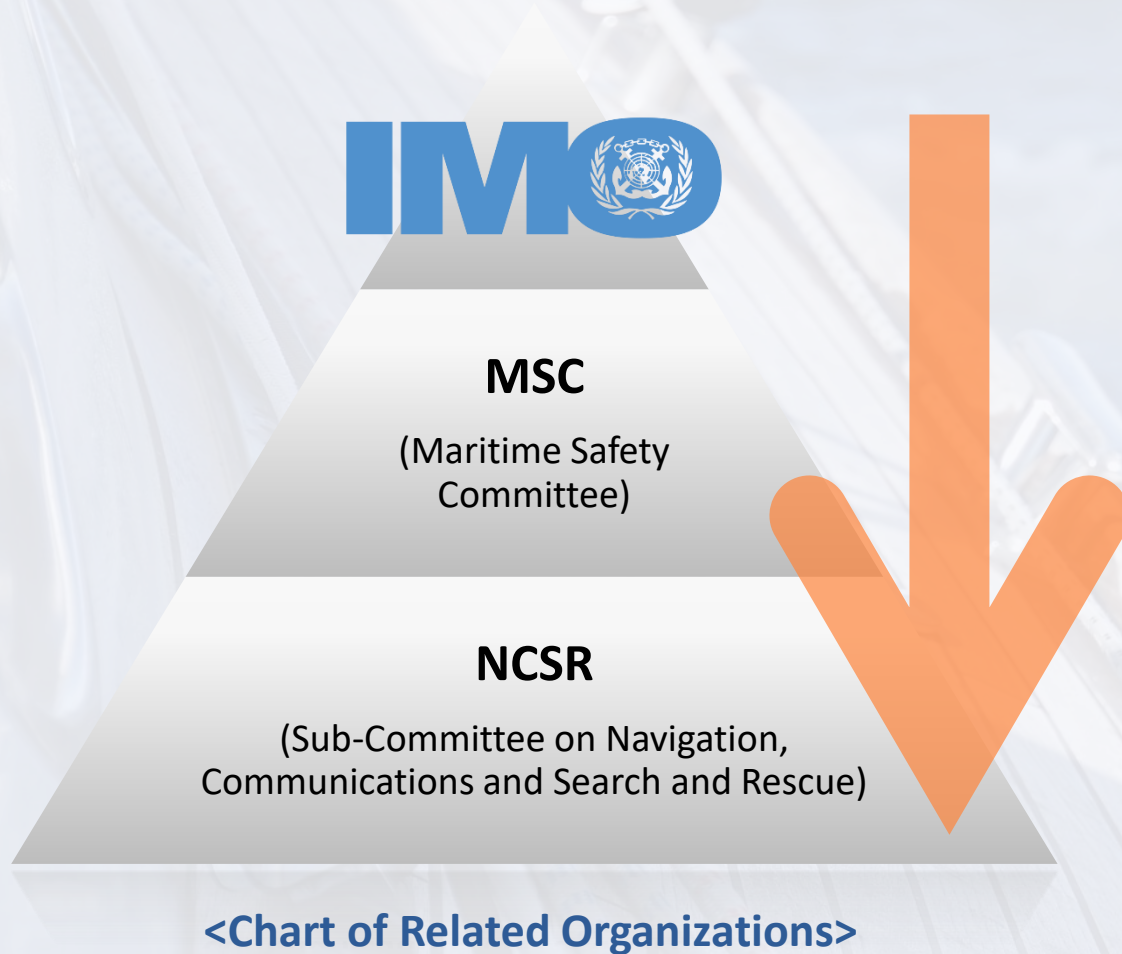


CONCLUSION

4



Direction of Suggestion



Align with IMO's Strategic Direction

Resolution A.1173(33)

**Adopted on 6 December 2023
(Agenda item 8)**

STRATEGIC PLAN FOR THE ORGANIZATION FOR THE SIX-YEAR PERIOD 2024 TO 2029

SD 5: Enhance global facilitation, supply chain resilience and security of international trade

33 Shipping moves over 80%* of world trade, making it an integral part of the global economy and supply chain. Preventing the disruption of international shipping is therefore in the global economic interest. Continued effort is needed to ensure that ships move from port to port without undue delay arising from arrival and departure formalities, to provide for safe, reliable transportation and effective facilitation of international trade, and to ensure that appropriate security measures are in place on all international voyages.

34 Drawing on the experience gained and lessons learned during the COVID-19 pandemic, IMO will continue to strengthen the resilience of the global supply chain and maritime industry to enable the continued flow of goods through international shipping in times of crises. This includes strengthening the care and recognition of seafarers and appreciation for the role of the maritime industry in facilitating international trade.

35 Threats such as piracy and armed robbery against ships could disrupt international trade, threaten lives and increase the burden on maritime transport. Furthermore, to ensure the safety and security of the maritime transport network, including vital shipping lanes, IMO will continue to raise awareness of measures for safety and security, and to encourage a cooperative approach among Member States and stakeholders, such as through timely and effective information-sharing.

Strategic Direction Is.....

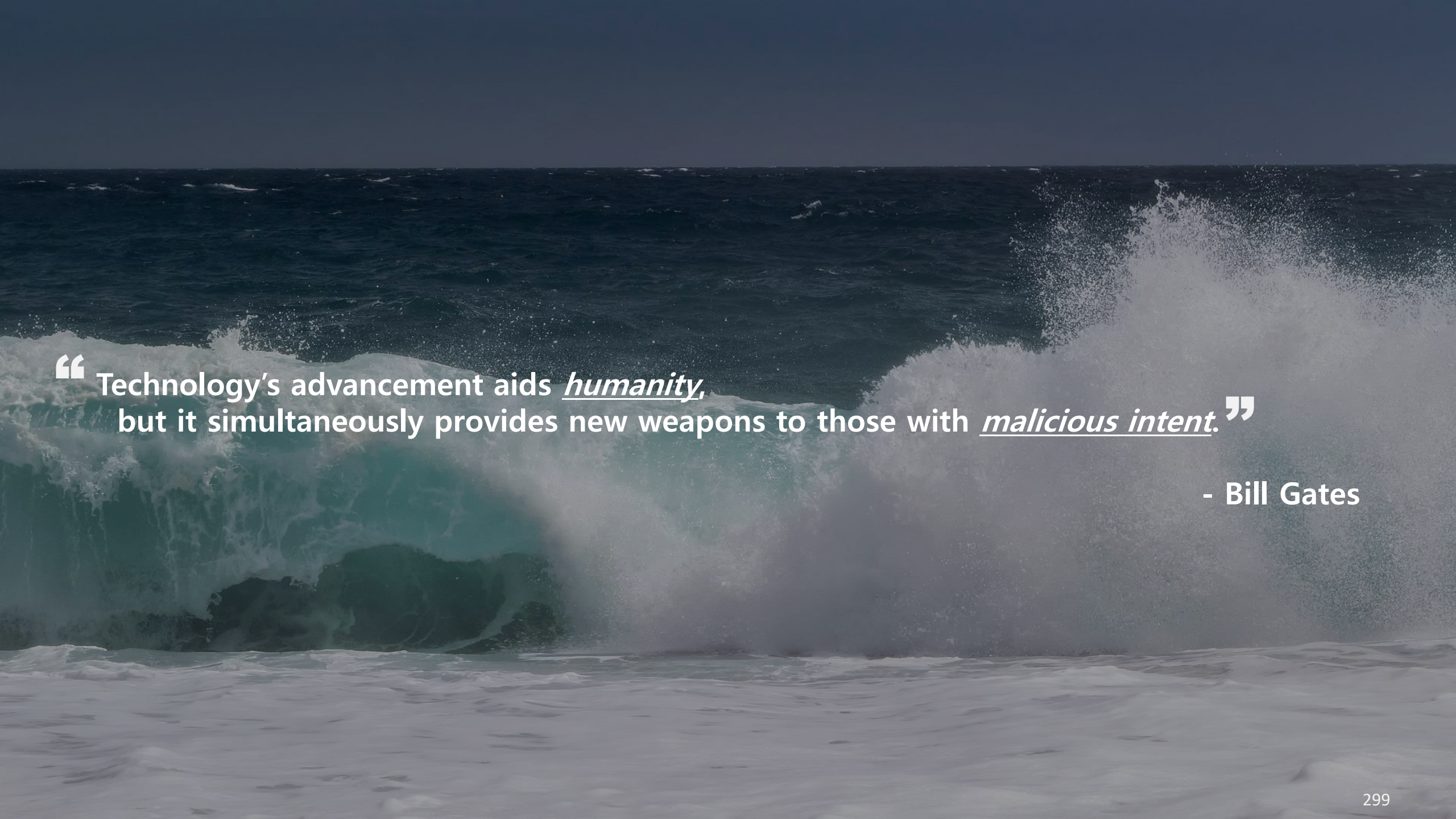
comprehensive plan aimed at supporting the sustainable development of the shipping industry while enhancing maritime safety and environmental protection. The IMO Assembly adopted the Strategic Plan for the six-year period 2024 to 2029.

“Threats such as **piracy and armed robbery** against ships could disrupt international trade, threaten lives and increase the burden on maritime transport.”

Align with IMO's Performance Indicator & Output Number

SD 5 Enhance global facilitation, supply chain resilience and security of international trade	PI 5.1	# of Contracting Parties to the FAL Convention submitting notifications pursuant to article VIII of the FAL Convention	PI 5.5	# of stowaway incidents reported to IMO
	PI 5.2	# of Member States issuing electronic certificates	PI 5.6	US\$ expenditure on technical cooperation activities and capacity development allocated to facilitation matters
	PI 5.3	# of Member States with a system for the electronic exchange of information	PI 5.7	US\$ expenditure on technical cooperation activities and capacity development allocated to security matters
	PI 5.4	# of piracy incidents per geographical area of incident reported to IMO		

Reference to SD, if applicable	Output number	Description	Target completion year	Parent organ(s)	Associated organ(s)	Coordinating organ(s)
SD 5	5.1	Application of single window concept	Continuous	FAL		
	5.2	Guidelines and guidance on the implementation and interpretation of SOLAS chapter XI-2 and the ISPS Code	Annual	MSC		
	5.3	Consideration and analysis of reports on piracy and armed robbery against ships	Annual	MSC		
	5.4	Revised guidance relating to the prevention of piracy and armed robbery to reflect emerging trends and behaviour patterns	Annual	MSC	LEG	



“Technology’s advancement aids humanity,
but it simultaneously provides new weapons to those with malicious intent.”

- Bill Gates

THANK YOU

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