



# **Contemporary Legal Challenges Posed by Unmanned Maritime Systems in the Underwater Environment**

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**Head of Navy Legal**

# Context

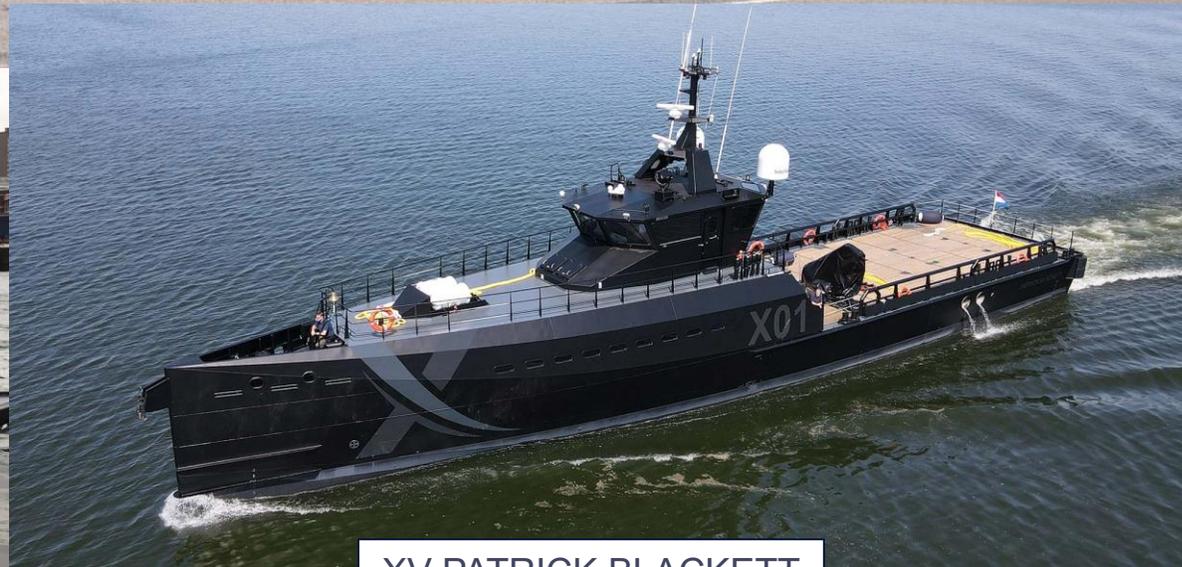
RN Motor Boat, e.g. HARRIER



EXCALIBUR



MADFOX (Maritime Demonstrator For Operational eXperimentation)



XV PATRICK BLACKETT

# The language of autonomous systems



UAV



UUV



USV



Uncrewed aerial vehicle  
 Uncrewed autonomous vessel  
 Underwater autonomous vessel

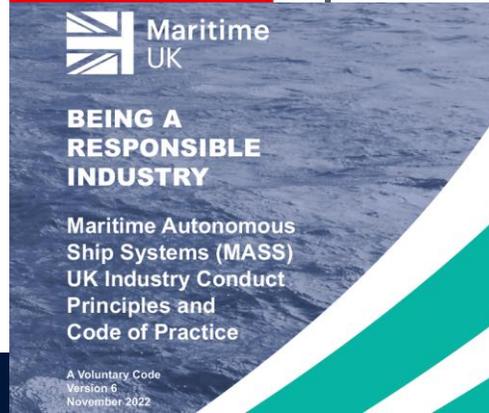
Uncrewed underwater vessel  
 Uncrewed underwater vehicle  
 Unmanned underwater vehicle

Unmanned surface vessel  
 Unmanned surface vehicle  
 Unmanned sub-surface vehicle

## Unmanned or uncrewed?

**Unmanned** – system with no humans on board

**Uncrewed** – system with no crew on board (passengers or special personnel are not crew)



## Vessel, vehicle or something else?

**SYSTEM**



# “MAS” and the relevant international law

## Article 8

Pilotless aircraft

No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such



Degree one: Ship with automated processes and decision support.	Seafarers are on board to operate and control shipboard systems and functions. <u>Some operations may be automated</u> and at times be unsupervised but with seafarers on board ready to take control.
Degree two: Remotely controlled ship with seafarers on board.	The <u>ship is controlled and operated from another location</u> . <u>Seafarers are available on board</u> to take control and to operate the shipboard systems and functions.
Degree three: Remotely controlled ship without seafarers on board.	The <u>ship is controlled and operated from another location</u> . There are <u>no seafarers on board</u> .
Degree four: Fully autonomous ship.	The operating system of the ship is able to make decisions and <u>determine actions by itself</u> .



# Issues for the maritime LEGAD

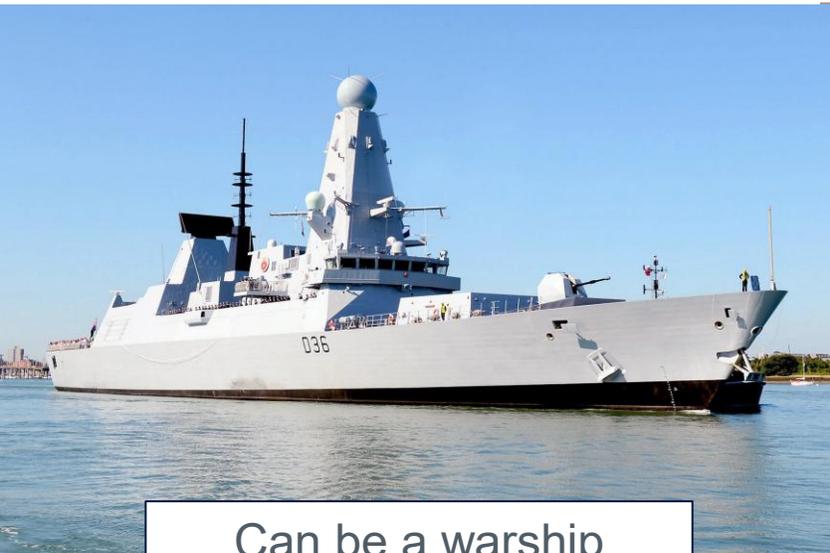
# Will it be a ship/vessel?

The word "vessel" includes every description of water craft, including non-displacement craft and seaplanes, used or capable of being used as a means of transportation on water.

**1972 Convention on the International Regulations for Preventing Collisions at Sea, Rule 3(a)**

"Ship" means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms.

**1973 International Convention for the Prevention of Pollution from Ships, Article 2(4)**



Can be a warship



Sovereign immunity



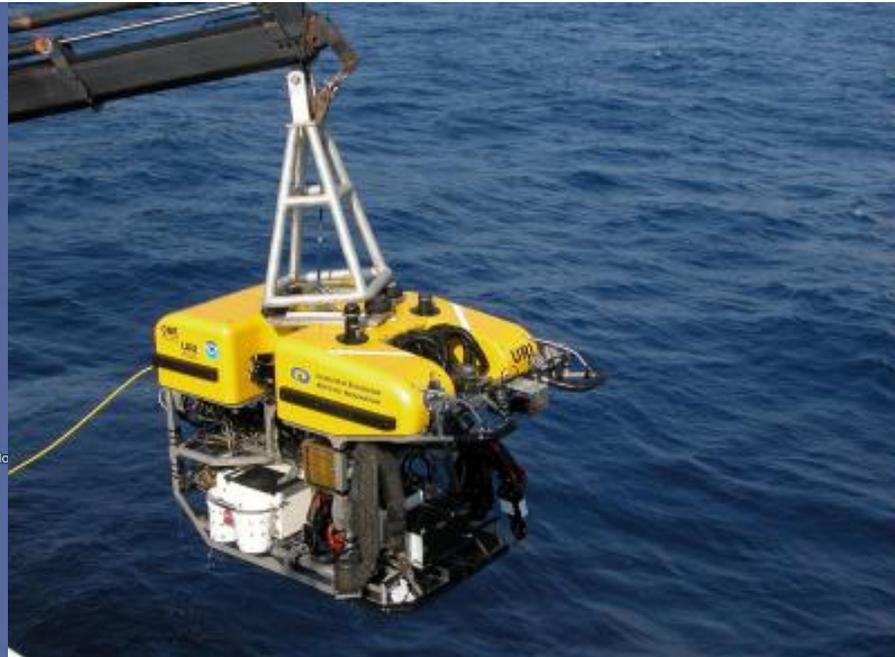
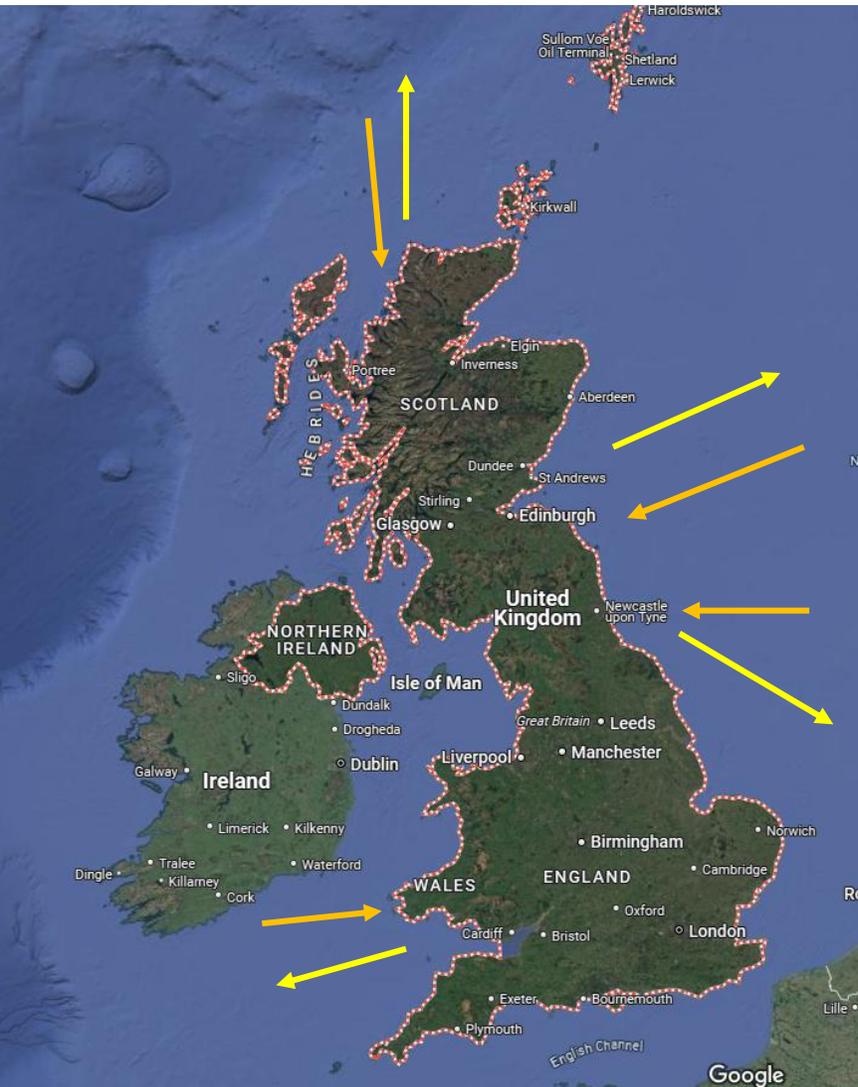
Navigational rights

# Navigational rights

## Article 17

### *Right of innocent passage*

Subject to this Convention, ships of all States, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.



# Sovereign immunity

## *Article 95*

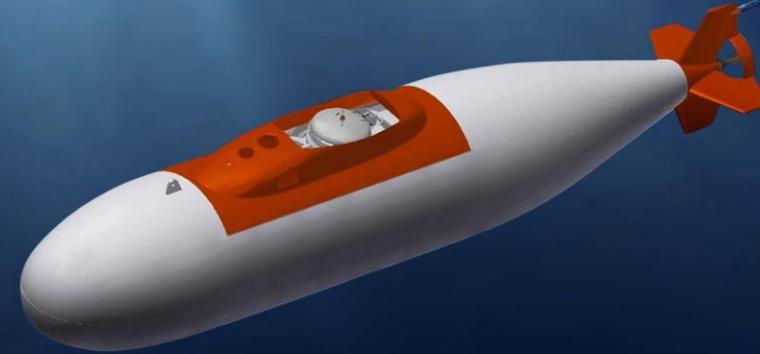
### *Immunity of warships on the high seas*

Warships on the high seas have complete immunity from the jurisdiction of any State other than the flag State.

## *Article 96*

### *Immunity of ships used only on government non-commercial service*

Ships owned or operated by a State and used only on government non-commercial service shall, on the high seas, have complete immunity from the jurisdiction of any State other than the flag State.



...the Department of Defense has called upon China to immediately return an unmanned underwater vehicle (UUV) that China unlawfully seized on Dec. 15 in the South China Sea... **The UUV is a sovereign immune vessel of the United States.** We call upon China to return our UUV immediately, and to comply with all of its obligations under international law. **Pentagon statement, December 2016**

# Legal obligations on ships/vessels – COLREGs



These Rules shall apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels.

**COLREGS, Rule 1(a)**



Every vessel shall at all times maintain a proper look-out by **sight and hearing** as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

**COLREGS, Rule 5**



**Guiding Principle:** the **sum total of situational awareness** for each aspect, however provided, **shall be equivalent or superior** to that of a crewed vessels of equivalent size and purpose.

# Legal obligations on ships/vessels – SOLAS



## UNCLOS, Article 98(1):

Every State shall require the master of a ship flying its flag, **in so far as he can do so without serious danger to the ship**, the crew or the passengers:

- (a) to render assistance to any person found at sea in danger of being lost;
- (b) to proceed with all possible speed to the rescue of persons in distress, if informed of their need of assistance, in so far as such action **may reasonably be expected of him**;

## SOLAS Convention, Regulation 33(1):

The master of a ship at sea **which is in a position to be able to provide assistance**, on receiving a signal from any source that persons are in distress at sea, is bound to proceed with all speed to their assistance... If the ship receiving the distress alert is unable or, in the special circumstances of the case, considers it **unreasonable or unnecessary to proceed to their assistance**, the master must enter in the log-book the reason for failing to proceed to the assistance of the persons in distress....

## RN Guiding principles:

**Degrees 1-3** – meet INT obligations as far as practicable within vessel capabilities

**Degree 4** – guidance pending until capability developed (await IMO guidance)

**Uncrewed but passengers** – SOLAS provisions re onboard life-saving equipment apply



# Future developments



## Australia Plans to Buy Unmanned Warships



A conceptual rendering of an LUSV proposal (Austal USA)

PUBLISHED FEB 19, 2024 10:02 PM BY THE MARITIME EXECUTIVE

1. CUI – why should we care?
2. Attacks against CUI
3. Defence of CUI
4. ‘Mistakes’ in international law
5. CUI in wartime
6. The future

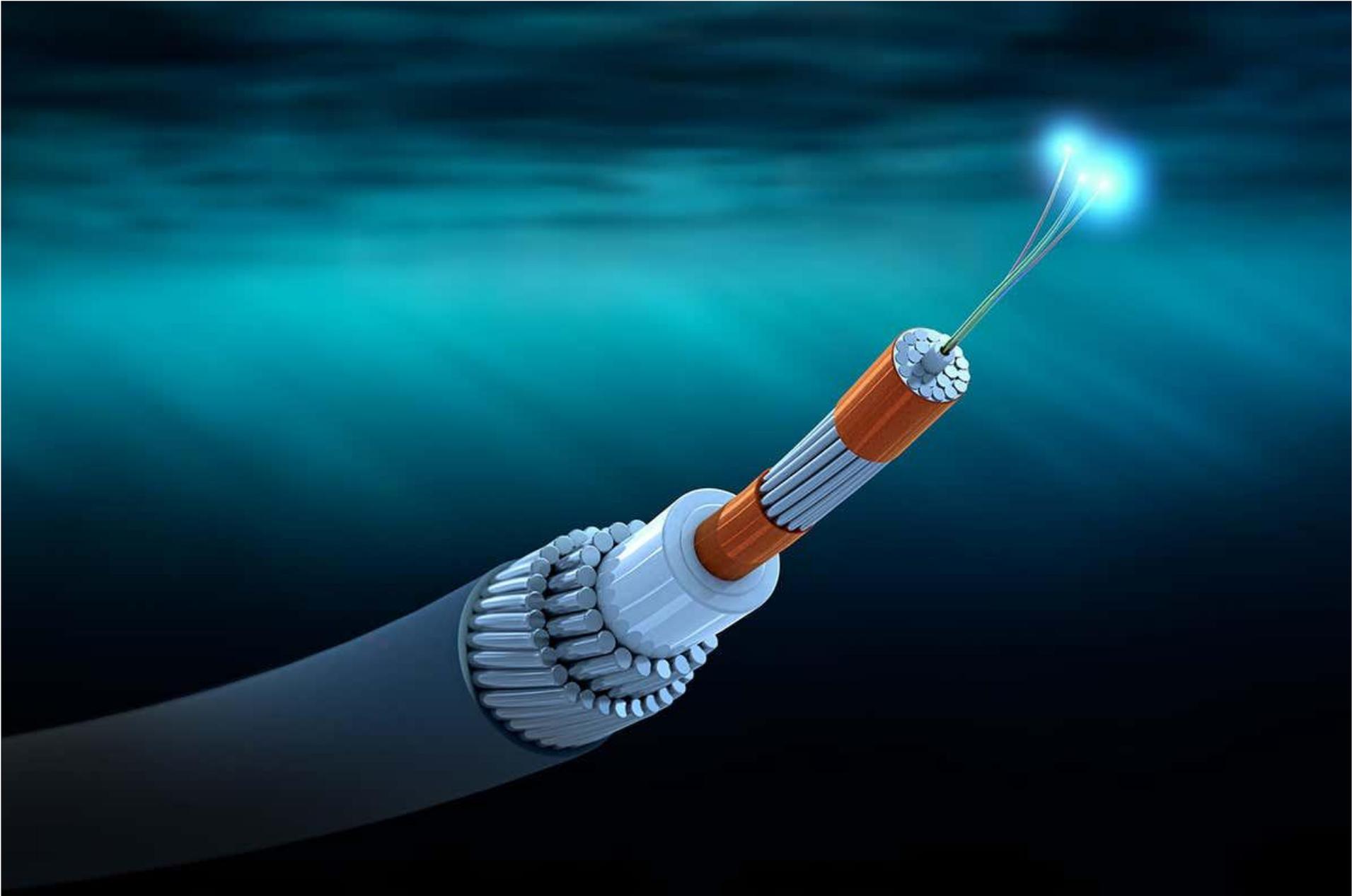


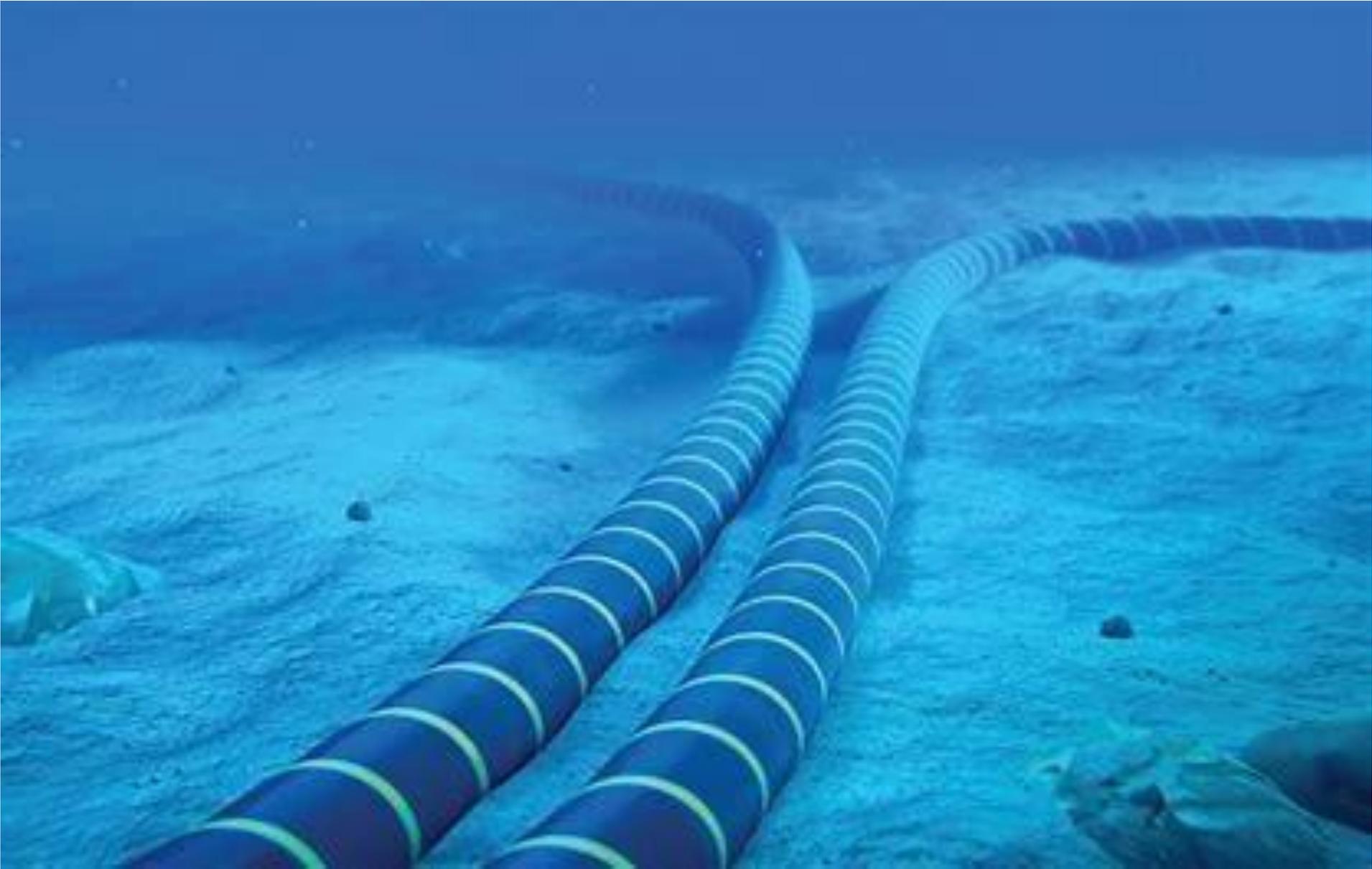
What is it?

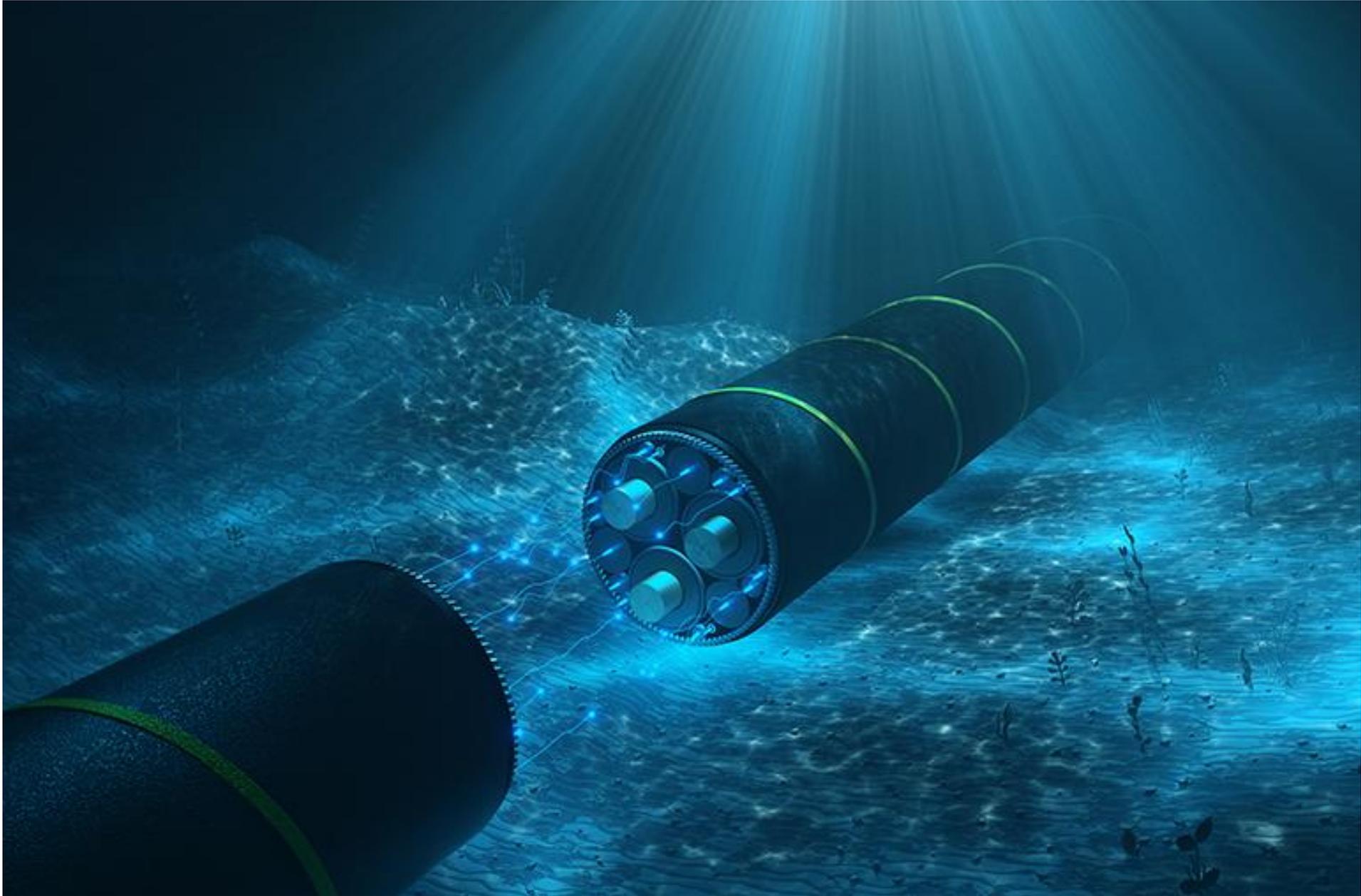
Why does it matter?













# Critical Undersea Infrastructure

Why does it matter?

Data transfer and communication

Energy and power

Military effectiveness



# Critical Undersea Infrastructure

Attack

Technology

Desire

Deniability

# China's new underwater tool cuts deep, exposing vulnerability of vital network of subsea cables

Published: April 10, 2025 1.52pm BST

Laying an undersea fiber-optic cable at Arrietara beach near the Spanish village of Sopelana. Ander Gillenea/AFP via Getty Image



Chinese researchers have unveiled a new deep-sea tool capable of cutting through the world's most secure subsea cables – and it has many in the West feeling a little jittery.



The development, first revealed in February 2025 in the Chinese-language journal Mechanical Engineering, was touted as a tool for civilian salvage and seabed mining. But the ability to sever communications lines 13,000 feet (4,000 meters) below the sea's surface – far beyond the operational range of most existing infrastructure – means that the tool can be used for other purposes with far-reaching implications for global communications and security.



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ADVER

# China's Undersea Cable Sabotage

Insights from Raymond Powell.



By [Mercy A. Kuo](#)

January 28, 2025



# The mystery surrounding two severed Baltic subsea internet cables is getting murkier

'Nobody believes that these cables were severed by accident.'

MACK DEGEURIN / DEC 23, 2024 3:29 PM EST



The Chinese ship, the bulk carrier Yi Peng 3 is anchored and being monitored by a Danish naval patrol vessel (unseen) in the sea of Kattegat, near the City og Granaa in Jutland, Denmark, on November 20, 2024. Denmark's navy said on November 20, 2024 it was shadowing a Chinese cargo vessel in the Baltic Sea, a day after Finland and Sweden opened investigations into suspected sabotage of two severed undersea telecoms cables. Credit: MIKKEL BERG PEDERSEN/Ritzau Scanpix/AFP via Getty Images

## Trending





# Critical Undersea Infrastructure

Defence

Patrolling/Warnings v  
Freedom of Navigation and  
“due regard”

Zones

Use of force

# Defence

Lawful options to visit or  
inspect vessels

Attribution

Options to investigate and  
prosecute incidents



# Applicable Law

## Convention for the Protection of Submarine Telegraph Cables

1884 Applicability: (Article I) “outside territorial waters to all legally established submarine cables landed on the territories... of one or more of the High Contracting Parties  
Collection of Proof: (Article X) When the officers commanding the ships of war, or ships specially commissioned for the purpose by one of the High Contracting Parties, have reason to believe that an infraction of the measures provided for in the present Convention has been committed by a vessel other than a vessel of war, they may demand from the captain or master the production of the official documents proving the nationality of the said vessel. Further, formal statements of the facts may be prepared by the said officers, whatever may be the nationality of the vessel incriminated.



# Applicable Law

## Article 113 UNCLOS

Breaking or injury of a submarine cable or pipeline Every State shall adopt the laws and regulations necessary to provide that the breaking or injury by a ship flying its flag or by a person subject to its jurisdiction of a submarine cable beneath the high seas done wilfully or through culpable negligence, in such a manner as to be liable to interrupt or obstruct telegraphic or telephonic communications, and similarly the breaking or injury of a submarine pipeline or high-voltage power cable, shall be a punishable offence.



# Applicable Law

## Article 21 UNCLOS

1. The coastal State may adopt laws and regulations, in conformity with the provisions of this Convention and other rules of international law, relating to innocent passage through the territorial sea, in respect of all or any of the following (c) the protection of cables and pipelines;



# Applicable Law

## Article 59 UNCLOS

In cases where this Convention does not attribute rights or jurisdiction to the coastal State or to other States within the exclusive economic zone, and a conflict arises between the interests of the coastal State and any other State or States, the conflict should be resolved on the basis of equity and in the light of all the relevant circumstances, taking into account the respective importance of the interests involved to the parties as well as to the international community as a whole

# Critical Undersea Infrastructure

Mistake in international law

Use of proxies

Hybrid warfare

Attribution

# Military Objectives

**Any object** which by its nature, location, purpose, or use makes an effective contribution to military action and whose total or partial destruction, capture, or neutralization, in the circumstances ruling at the time, offers a definite military advantage (AP I, art. 52(2))

- US expands definition to include “war-sustaining capability of an opposing force” (10 U.S.C. § 950p(a)(1); DoD LOWM § 5.6.6.1))
- Russia-Ukraine War
- Iran-Iraq War

**Are submarine cables “military objectives” and therefore targetable?**

- **YES, WITH SOME EXCEPTIONS**

# Applicable Wartime Legal Regime

1907 Hague IV – prohibits belligerents from seizing or destroying submarine cables that **connect** an **occupied** territory with a **neutral** territory **except** in cases of “**absolute necessity**”

- Only applies on **land** – **does not prohibit destruction of cables at sea**

# Applicable Wartime Legal Regime

1913 Oxford Manual – cables connecting the territories of two belligerents or two points in the territory of one of the belligerents may be **seized** or **destroyed** throughout its length, **except** in **neutral waters**

- Cutting cables in **neutral waters** connecting neutral States with an enemy State is **prohibited**
  - Such cables may be cut on the **high seas** if a belligerent is conducting an effective blockade
  - Such cables may be seized or destroyed on the **territory or territorial sea** of the enemy



# Applicable Wartime Legal Regime

1955 USN Law of Naval Warfare Manual – submarine cables between points in an enemy's territory, between points in the territories of enemies, between points in the territory of an enemy and neutral territory, or between points in occupied territory and neutral territory are subject to such treatment **as the necessities of war may require (i.e., treated as military objectives)** (§ 520(b))

Submarine cables between two **neutral** territories are **inviolable** and free from interference (§ 520(b))

# Applicable Wartime Legal Regime

Newport Manual on the LONW – military communications cables are **military objectives** that may be targeted during an international armed conflict. (§ 8.6.8)

Although commercial submarine cables are civilian objects, if they are used to transmit military data, they “may make an **effective contribution to military action** and their disruption or destruction may offer a **definite military advantage.**” (§ 8.6.8)

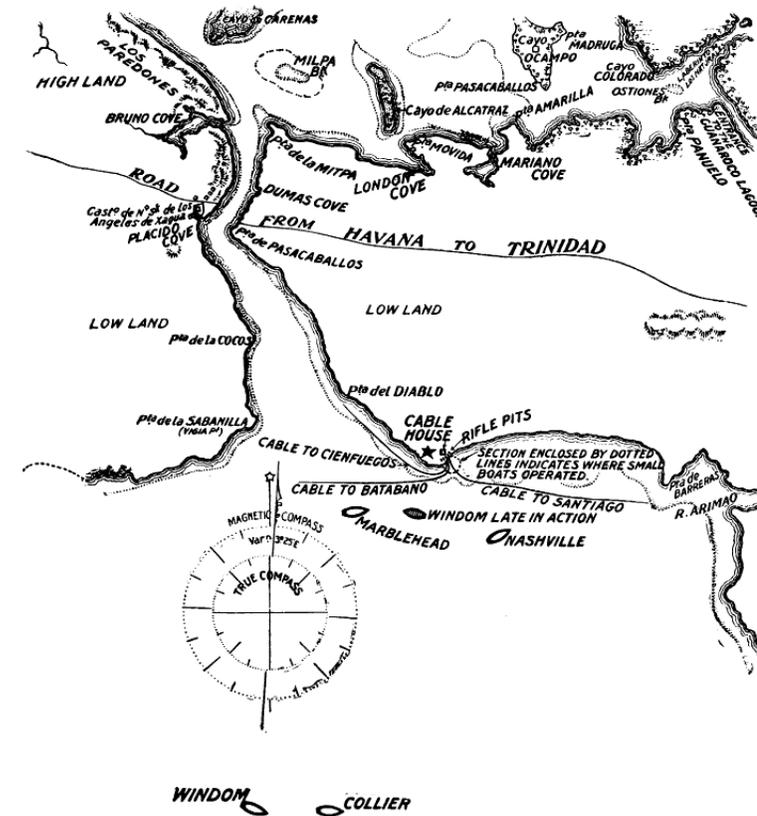
Belligerents may destroy **dual-use cables** lying outside neutral territorial seas connecting the enemy and neutral States “if the necessities of war require.”

Cables **connecting only neutral States** that are not being used by a belligerent are **inviolable**

# State Practice

## Spanish-American War (1898)

- US forces **cut** neutral cables serving Spanish forces in the Philippines and Cuba



- Not prohibited by 1884 Convention (art. XV)
  - It is understood that the stipulations of the present Convention **do not** in any way **restrict** the freedom of action of belligerents
  
- UK claim for compensation after the war **denied** by arbitral tribunal (Gr. Brit. v. US)
  - “...the right of the United States to take measures of admittedly legitimate defense against these means of enemy communication **was fully justified...**”

# State Practice



## World War I (1914-1918)

- British cable ship CS *Alert* **cut** all but one of Germany's submarine cables in the English Channel
- Germany **destroyed** Eastern Telegraph Company's central Pacific relay and wireless stations on Fanning Island and Direction Island
- Germany **cut** telegraph cable connecting Newbiggin-by-the-Sea to Arnedal, Norway



## Cutting the Cable

- ♦ Great Britain severed Germany's On midnight of 4 Aug 1914, the English cable ship *Telconia* cut Germany's transatlantic cables, **severing its communication link** with the rest of the world. Now all of their communication would be funneled by wireless from Berlin and then across a cable in Africa.

• Saunders, Roger. [The Zimmerman Telegram](http://modern-us-history.suite101.com/article.cfm/the_zimmerman_telegram_wwi) - England's World War I Cryptographers, Room 40. [http://modern-us-history.suite101.com/article.cfm/the\\_zimmerman\\_telegram\\_wwi](http://modern-us-history.suite101.com/article.cfm/the_zimmerman_telegram_wwi).

CUI being used to support belligerent operations will normally be considered military objectives, subject to attack

- In most cases, CUI, by its nature, location, purpose, or use, effectively contributes to the war-fighting or war-sustaining capability of the enemy, and its total or partial destruction, capture, or neutralization normally constitutes a definite military advantage to the attacker

# Questions?

