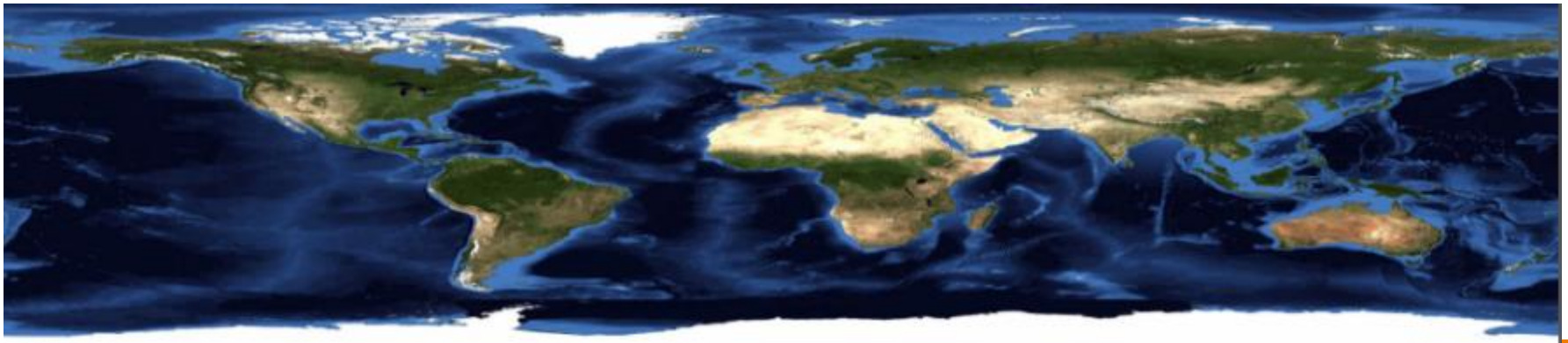
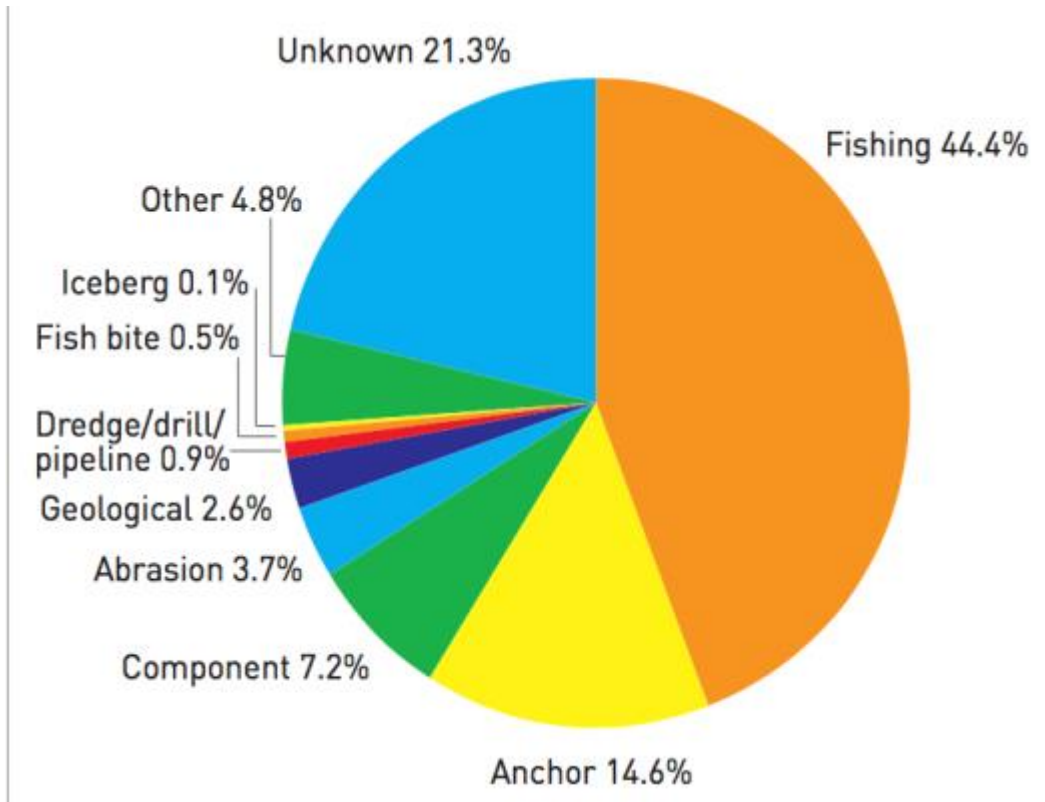


INTENTIONAL INTERFERENCE WITH SUBMARINE CABLE SYSTEMS: IS INTERNATIONAL LAW SUFFICIENT?

Dr. Tara Davenport,
Centre for International Law
National University of Singapore



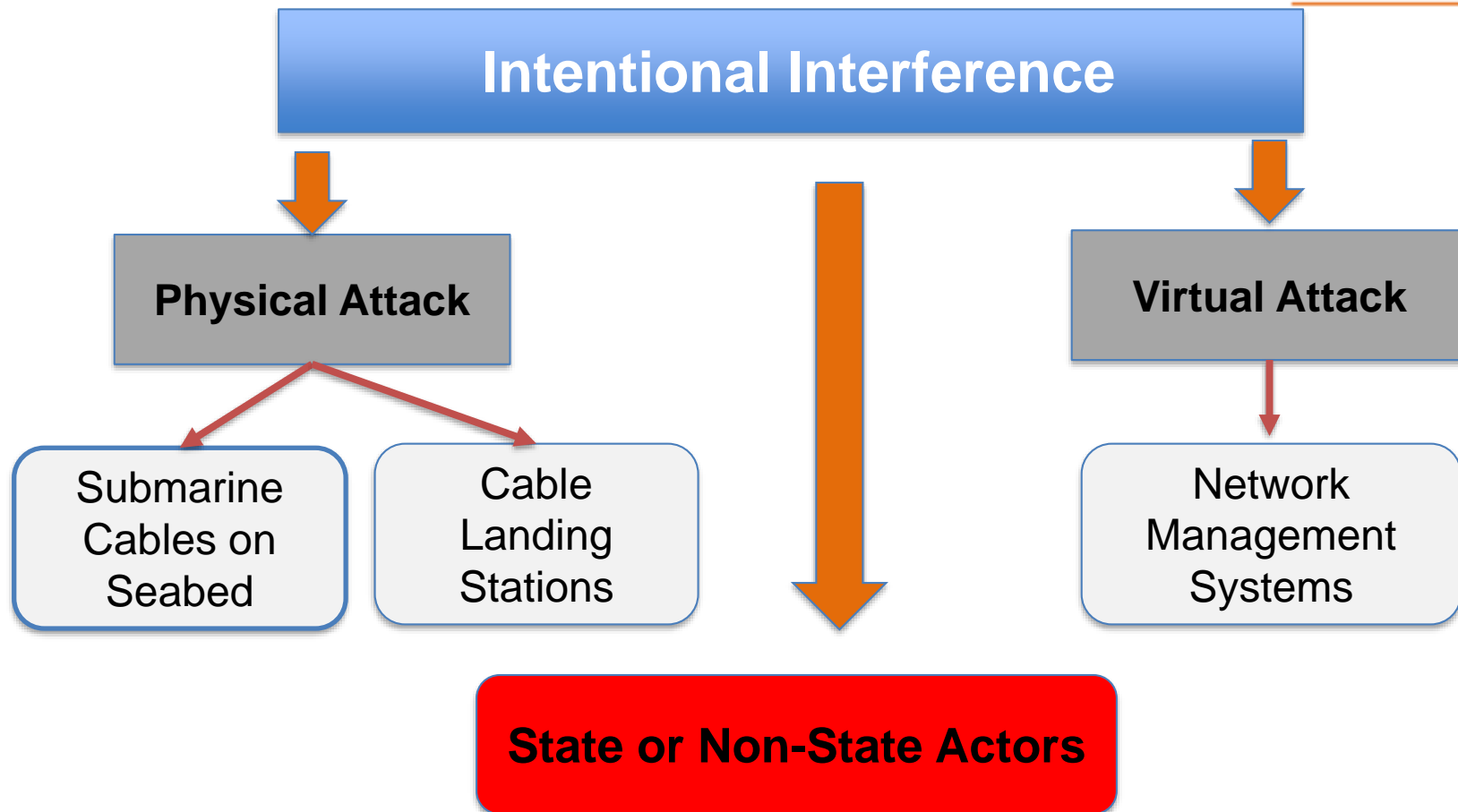
CAUSES OF CABLE FAULTS



Proportion of Cable Faults By Cause, from a database of 2,162 records spanning 1959 – 2006

Source: Tyco Telecommunications (US) Inc,
Figure 7.4 UNEP/ICPC Report 2009 (45)

INTENTIONAL INTERFERENCE WITH SUBMARINE CABLES



REPORTED INCIDENTS OF INTENTIONAL INTERFERENCE?

Year	Description
1914	Britain cut Germany's Cable during WWI
1914	Germany attempted to cut cables in Pacific & Indian Oceans in WWI
1945	Britain cut Japanese linking Vietnam and Singapore in WWII
2007	Theft of cables in Vietnam
2007	Reported intentional damage in Bangladesh
2010	Attack against a manhole connection of a submarine cable system linking the Philippines with Japan
2013	Theft of cables in Indonesian waters
2013	Cutting of Cables in Alexandria, Egypt


INTENTIONAL INTERFERENCE WITH SUBMARINE CABLE SYSTEMS

- *Intentional physical interference* with submarine cables at sea more challenging as it requires identifying cable of interest, using vessels and other equipment to damage the cable and also substantial financial resources
- *Virtual attacks on submarine cables* more likely to occur than physical breaches at sea (**CSIS Report 2021**)
- The consequences of intentional cable interference for countries with a diverse set of connections are likely to be less significant as traffic can be rerouted to other cables
- Similarly, consequences may be more severe for countries with fewer subsea connections

INTENTIONAL INTERFERENCE

Conceptual Submarine Cable Segment Threat Matrix

[Threat Impact Legend: Green = Low; Yellow = Medium; Red = High]¹

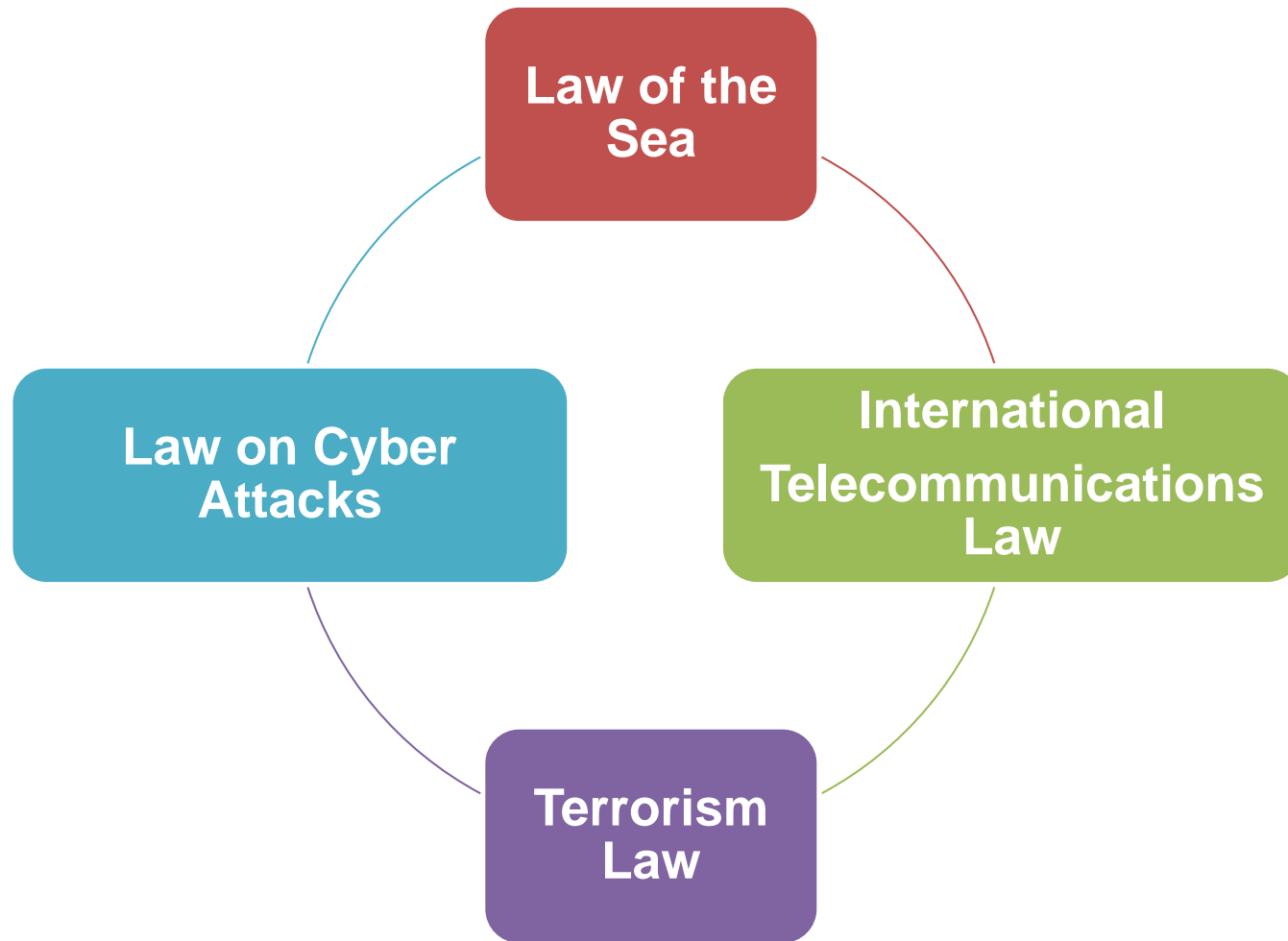
	Overland & Last Mile	Near-Shore ~130ft	Off-Shore 130 - 300ft	Continental Shelf 300 - 600 ft	Deep Sea ~600 ft +
Threats					
<u>Natural</u>					
Sharks	Green	Green	Yellow	Yellow	Green
Earthquake	Green	Yellow	Yellow	Red	Red
Landslide	Green	Green	Green	Red	Red
Volcano	Red	Red	Green	Red	Red
Tsunami	Green	Red	Yellow	Yellow	Yellow
<u>Accidental</u>					
Fishing	Green	Red	Yellow	Green	Green
Anchor dragging	Green	Red	Yellow	Green	Green
Dredging	Green	Red	Green	Green	Green
<u>Malicious</u>					
Cyber Attack	Red	Red	Green	Green	Green
Vandalism	Red	Red	Green	Green	Green
Activists	Red	Red	Green	Green	Green
Theft	Green	Red	Yellow	Green	Green
Terrorists	Yellow	Red	Yellow	Yellow	Green
State-actors	Green	Yellow	Red	Red	Red

Low Probability
but High
Consequence
Event ?

Public-Private Analytic Exchange Program (2017)

<https://www.dni.gov/files/PE/Documents/1---2017-AEP-Threats-to-Undersea-Cable-Communications.pdf>

INTERNATIONAL LAW GOVERNING CYBER ATTACKS AGAINST CABLES IN PEACETIME



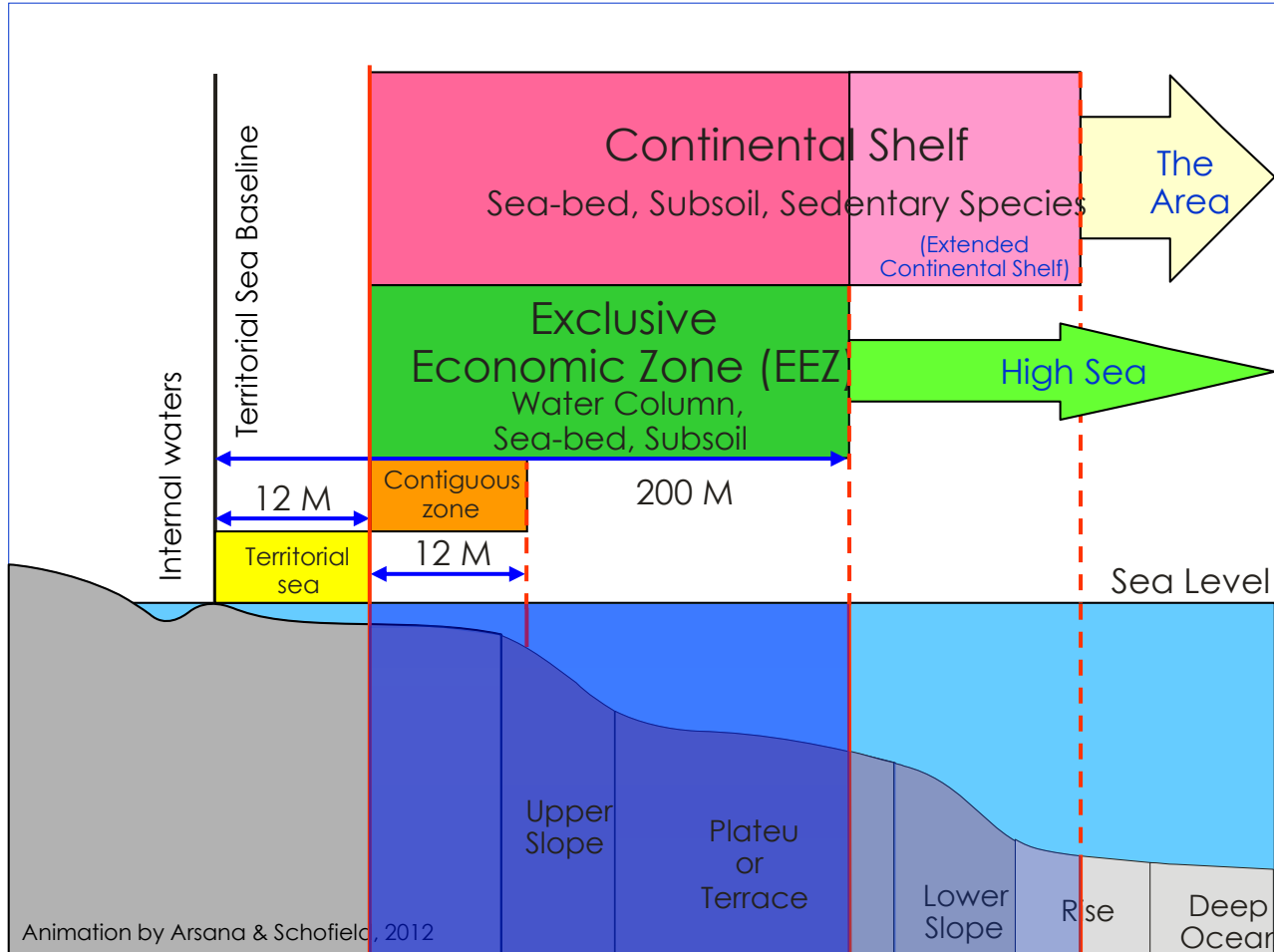
1884 Convention on the Protection of Submarine Telegraph Cables
1956 ILC Articles on the Law of the Sea
1958 Geneva Convention on the High Seas
1958 Geneva Convention on the Continental Shelf
1982 UN Convention on the Law of the Sea

Recognizing the desirability of establishing through this Convention, with due regard for the sovereignty of all States, a legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment,

**Laying, Repair and
Maintenance of Submarine
Cables**

**Protection of Submarine
Cables**

MARITIME ZONES UNDER UNCLOS



Areas under Sovereignty	Provisions on Protection of Cables
Territorial Seas	Coastal State has right to regulate innocent passage for the protection of submarine cables [Article 21 (1) (c)]
International Straits	No express provision
Archipelagic Waters	No express Provision
Areas within National Jurisdiction	Relevant Provisions on Intentional Interference with Submarine Cable Systems
Continental Shelf	Obligation on States to adopt laws and regulations criminalizing the damage to submarine cables in the high seas [Article 113, read with Article 58 (2)]
Exclusive Economic Zone	
Areas Beyond National Jurisdiction	Relevant Provisions on Intentional Interference with Submarine Cable Systems
High Seas	Obligation on States to adopt laws and regulations criminalizing the damage to submarine cables in the high seas [Article 113]
Deep Seabed	

1982 UN CONVENTION ON THE LAW OF THE SEA (UNCLOS)

Article 113:

States must adopt laws and regulations to provide that a 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 willfully or through culpable negligence is a punishable offence



Inadequate Implementation



Limited Grounds to Exercise Jurisdiction



**Limited Applicability:
High Seas /EEZ
Physical Attacks not
Virtual Attacks**



Does not mention enforcement or interdiction at sea

INTERNATIONAL TELECOMMUNICATIONS LAW

- International Telecommunications Union (ITU) is the UN agency that establishes international standards for information and communication technology
- Article 38 of the ITU Constitution
 - (1) Members shall take such steps as may be necessary to ensure the establishment, under the best technical conditions, of the channels and installations necessary to carry on the rapid and uninterrupted exchange of international telecommunications.
 - (2) ...
 - (3) Members shall safeguard these channels and installations within their jurisdiction.**
- Vague obligation on Member States to ‘safeguard’ installations used for telecommunications
- Obligation is one of conduct and not result – obligations must be reasonable and financial and technical capabilities would be relevant
- Only applicable in the territorial sea?

TERRORISM CONVENTIONS



CENTRE FOR INTERNATIONAL LAW
National University of Singapore

- Sector-treaty approach adopted in relation to terrorism - 19 terrorism conventions dealing with terrorism against specific subjects
- Certain conventions may apply to intentional interference with submarine cables
 - **1997 Convention on Terrorist Bombings**: covers intentional damage against an 'infrastructure facility' including facilities used for communications
 - **1996 Draft Comprehensive Convention on International Terrorism**: criminalizes 'serious damage to public or private property including infrastructure facilities which is likely to result in major economic loss
 - **2005 Protocol to the Convention for the Suppression of Unlawful Acts against Safety of Maritime Navigation** – prohibits the using of a ship in a manner that causes serious damage, which includes damage to an infrastructure facility
- BUT still uncertainty:
 - Do the terrorism conventions apply and which one?
 - Do they apply to cable landing sites only and not to cables on the seabed?
 - Do they cover virtual attacks?

INTERNATIONAL LAW ON CYBER ATTACKS

No accepted definition of what constitutes a cyber-attack

“Deliberate actions to alter, disrupt, deceive, degrade or destroy computer systems or networks or the information and/or programs resident in or transiting these systems”

US National Research Council (2009)

“Any action taken to undermine the functions of a computer network for a political or national security purpose”

Oona Hathaway et al (2012)

INTERNATIONAL LAW ON CYBER ATTACKS



CENTRE FOR INTERNATIONAL LAW
National University of Singapore

- The international law on cyber attacks in peacetime is still in its nascent stage
- International law is piecemeal and fragmented and does not comprehensively address the security challenges posed by cyber attacks
- Speed and anonymity of cyber attacks makes proving State responsibility and distinguishing among the actions of terrorists, criminals and nation states difficult
- In 2015, UN Governmental Group of Experts on ICT established some norms applicable in peacetime
 - Including a recommendation that States should not conduct ICT activity contrary to its obligations under international law that intentionally damages critical infrastructure or otherwise impairs the use and operation of critical infrastructure to provide services to the public
- 2017 Tallin Manual 2.0 – agreement that infliction of damage to cables by a State is prohibited as a matter of customary international law since doing so would run contrary to the purpose of the law governing submarine cables

CONCLUSION

- International law applying to intentional interference with submarine cables is fragmented, inconsistent and uncertain
- It is certainly insufficient to address the ‘low probability but high consequence event’ of intentional interference with submarine cable systems
- But is international law the solution?