

CSCAP Study Group on Maritime Security

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Maritime Security & Submarine Cables

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Part 1

Background on Submarine Cables

Internet & Submarine Cables

- 1988: First transoceanic fibre-optic submarine cable installed
- 1991: World-Wide Web (WWW) introduced 2 new technologies:
 1. **Internet** made data & information accessible & usable for many purposes
 2. **Fibre-optic submarine cables** enabled large volumes of voice & data traffic to be rapidly carried around the globe
- The world changed!

Importance of Submarine Cables

- Backbone of the international telecommunications network
- 95% of transoceanic communication
- Submarine cables are vital communications infrastructure
- Essential to world's banking and financial systems, email system, airline bookings, defence communications, etc

2009 SUBMARINE CABLE MAP.

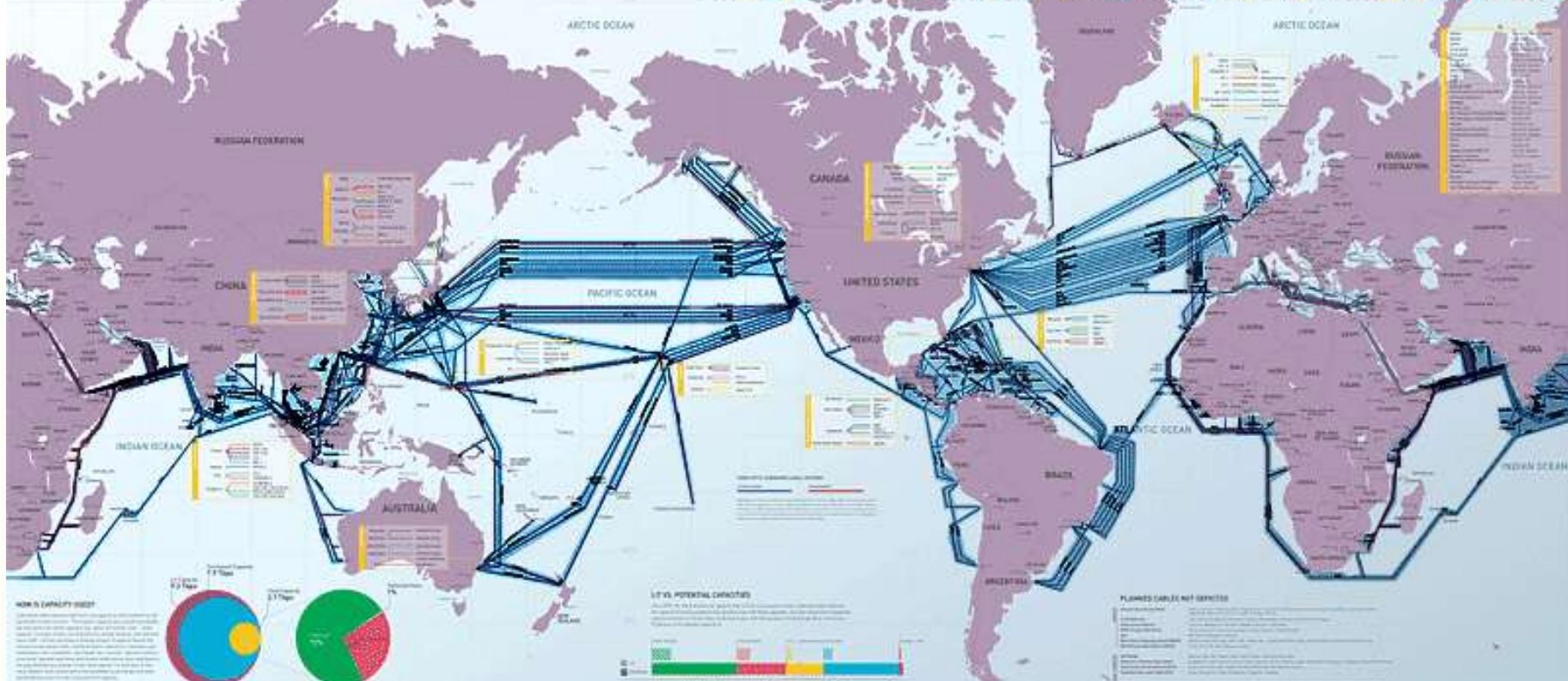
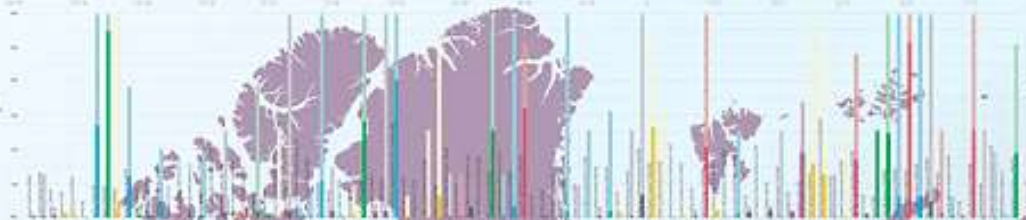
TeleGeography

STC
STC Group of Companies

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SUBMARINE CABLE CAPACITY
2008-2009
Legend:
■ New capacity
■ Existing capacity
■ Total capacity



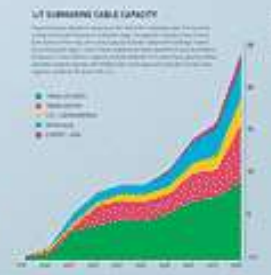
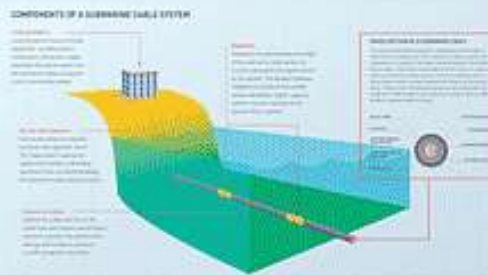
HOW IS CAPACITY USED?
The chart shows that 77% of capacity is used for voice and 23% for data. This is a significant increase from 2007, when data usage was only 10%.



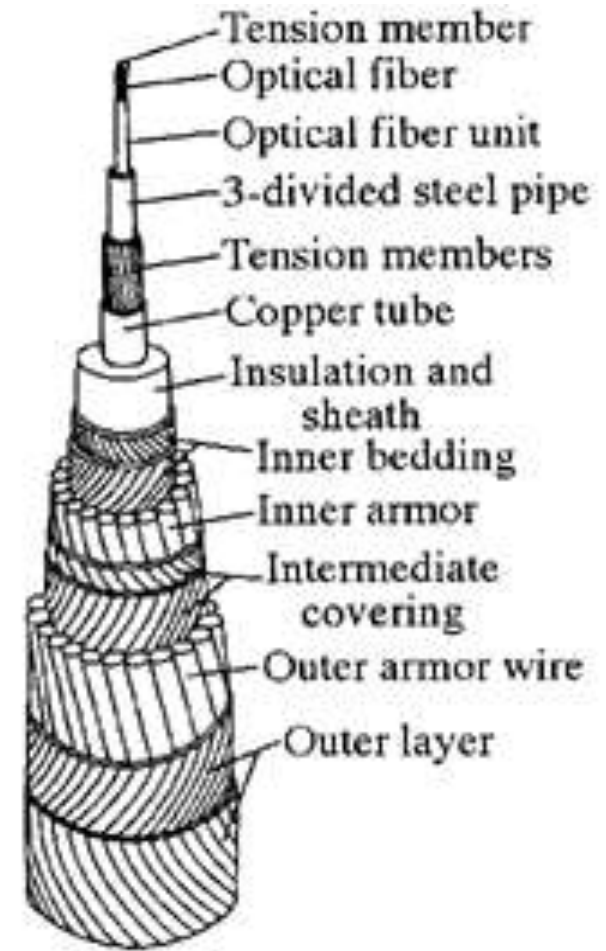
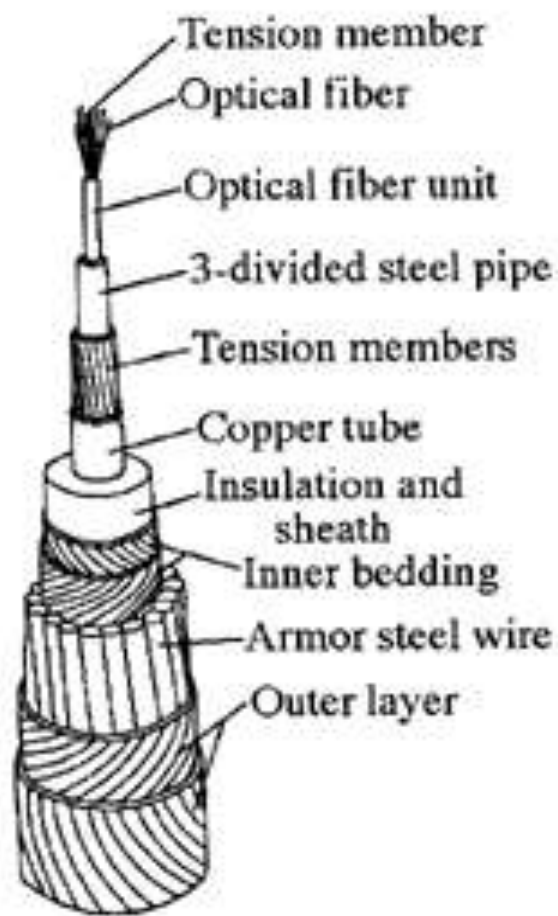
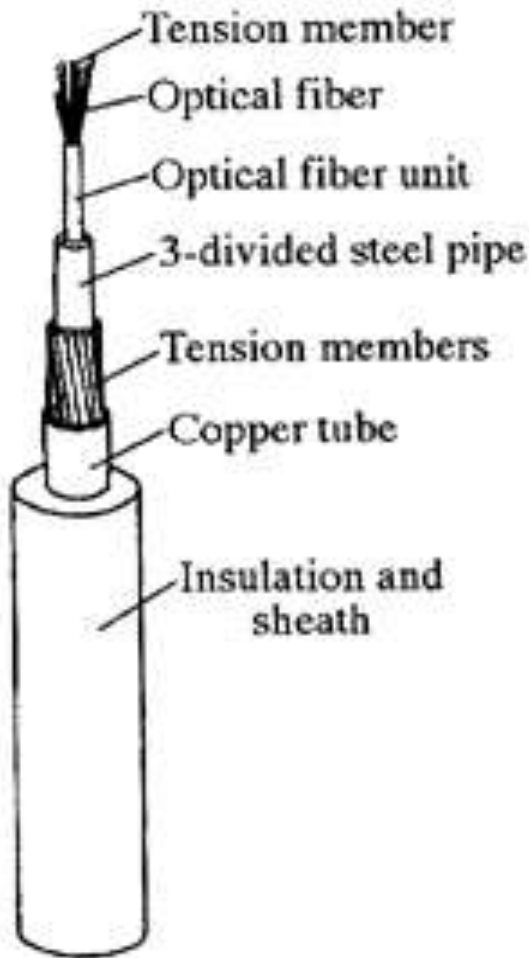
LT VS. POTENTIAL CAPACITY
The chart shows that potential capacity is significantly higher than live capacity, indicating a large amount of unused capacity.



PLANNED CABLES NOT IN SERVICE
List of planned cables that are not yet in service, including their routes and expected completion dates.

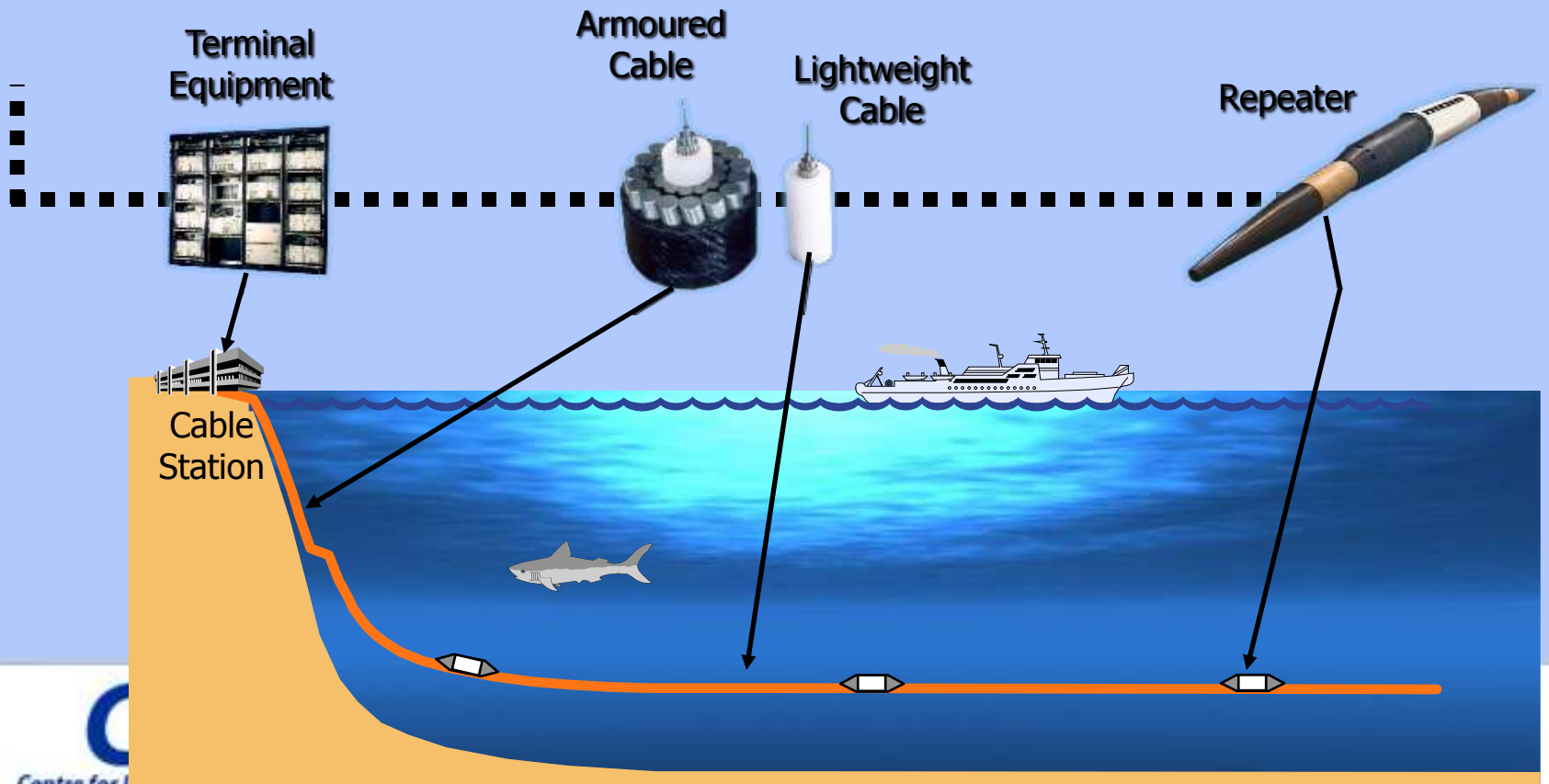


Types of Cables



Deep water cable Single armored cable Double armored cable

Network Management System



Threats to Submarine Cable System

1. **Fishing activities**, especially trawling and stow net fishing
2. **Ships anchors** (e.g., Singapore Strait, 2009-10)
3. **Natural hazards** such as earthquakes (Hengchun earthquake in 2006: 9 broken cables, 21 cable faults; repairs involved 11 ships and took 49 days)
4. **Intentional theft** for sale as scrap (e.g., 100 km in Viet Nam in 2007)
5. **Permit delays** – in some States in can take more than one month to get a permit to repair

Submarine cables affected by the earthquake

Submarine cables not affected by the earthquake



Lack of International Regulation

- No UN body or specialized agency has primary responsibility for regulation of submarine cables
- No international registry of submarine cables
- Cables are owned by consortiums of national telecoms companies or multi-national corporations
- Usually no separate legal entity that owns a cable
- Cables are not registered in any State
- No “flag State” to give diplomatic protection

Part 2

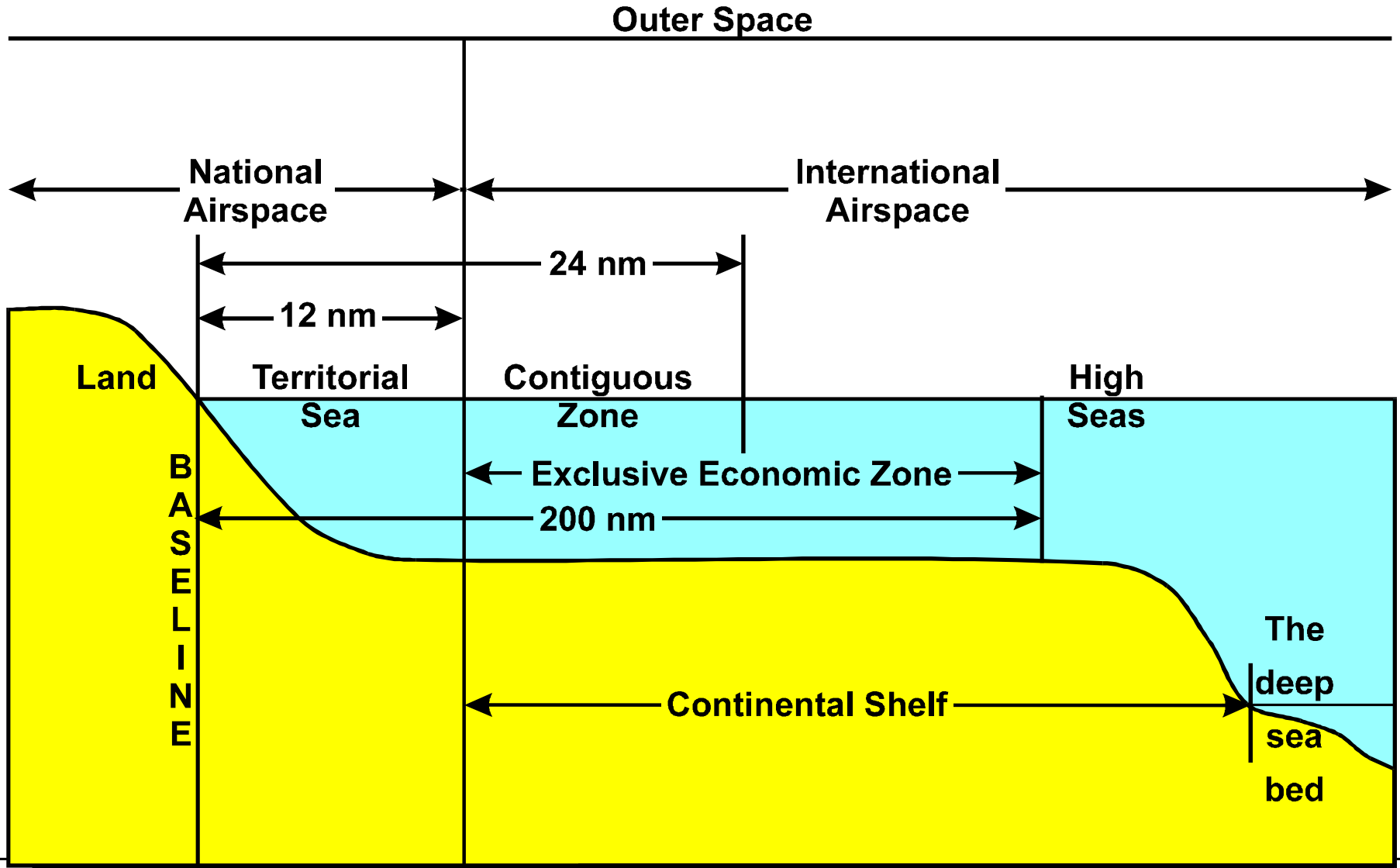
Submarine Cables and UNCLOS

Regulation of Cables under UNCLOS

Rights of States to regulate cables and obligation of States to protect cables depends upon where the cables are located:

1. Zones subject to sovereignty – territorial sea and archipelagic waters
2. Zones outside sovereignty – EEZ, continental shelf, high seas and deep seabed

LEGAL REGIMES OF THE OCEANS AND AIRSPACE



Cables in the Territorial Sea

- **Laying and Repair**

- Coastal States have wide discretion to adopt laws on the **laying and repair** of cables in territorial sea

- **Protection**

- Coastal States have the right to adopt laws to **protect** cables in territorial sea, including right to regulate ships exercising innocent passage
- Coastal States have no obligation to adopt laws and regulations to **protect** cables in the territorial sea

Cables in Archipelagic Waters

- **Existing cables**
 - Archipelagic States must respect existing cables laid by other States which pass through its archipelagic waters, and must permit the maintenance and replacement of such cables [Art 51]
- **Laying and repair of new cables**
 - The laying and repair of new cables is subject to consent regulation of the archipelagic State
- **Protection of cables**
 - As in territorial sea, there is no legal obligation to protect cables

Submarine Cables outside Sovereignty (high seas, EEZ, continental Shelf)

- The right to lay submarine cables is a **high seas freedom** that may be exercised by all States [Art 87]
- In EEZ States have the right to exercise high seas freedoms including freedom of navigation and **freedom to lay cables** and pipelines [Art 58]
- All States have a **right to lay submarine cables** on the continental shelf [Art 79(1)]
- The right to lay and repair cables must be exercised with due regard to the rights of other States

Breaking or injury of cables

- Article 113 of UNCLOS provides that State Parties shall adopt the **laws and regulations** making the following a **criminal offence**:
 - breaking or injury a submarine cable
 - beneath the high seas [or EEZ]
 - by a ship flying its flag or by a person subject to its jurisdiction
 - done wilfully or through culpable negligence,
 - in such a manner as to be liable to interrupt or obstruct . . . communications

Part 3

Need for Regional Cooperation

Protection of Cables

Article 113 is inadequate for two reasons:

1. Most States have not enacted legislation implementing this provision
 2. It does not deal with acts by foreign terrorists outside the territorial sea
- As practical matter, in most cases if foreign nationals intentionally destroy or damage cables in the EEZ or the high seas, **such acts may not be a criminal offence under any States laws**

Need for National Focal Point

- All States should designate one security agency to receive communications from the cable industry when there are cable breaks which may pose a security threat
- To date the only countries that have designated such an agency are Australia and Singapore

Need for International Instrument

- International Conventions make the intentional destruction of air navigation facilities and ship navigation facilities an “international crime” among contracting parties
- Submarine cables are as important to the international community as civil aviation and maritime navigation
- There is a need for a similar convention to protect cables
- Issue is how to get the international community to recognize the need to adopt a convention to protect cables

Need for “extraterritorial jurisdiction”

- All States should amend their criminal laws to make it a serious offence for:
 - anyone (whatever nationality)
 - to intentionally injure or break a submarine cable which lands in their territory
 - wherever the act takes place

Need for Regional Cooperation

1. Governments should treat the protection of submarine cables as a vital issue of maritime security for the region
2. Cable Industry should share information with Governments about suspicious cable breaks and possible “sabotage”
3. Governments should cooperate to share information and investigate suspicious cable breaks
4. Naval or Coast Guard should be authorized to investigate breaks and to arrest terrorist or persons intentionally destroying cables
5. Governments should cooperate to ensure companies are able to act immediately to repair broken cables

Thanks for Your Attention

For more information, see the CIL web site for
“Research Projects – Submarine Cables”

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