

# **Sustainable Ocean Summit Singapore 2015**

**Plenary Session: Day 1 Mon, 9 Nov 15:30-1 7:30**

## **Submarine Cables & the Future of the Oceans**

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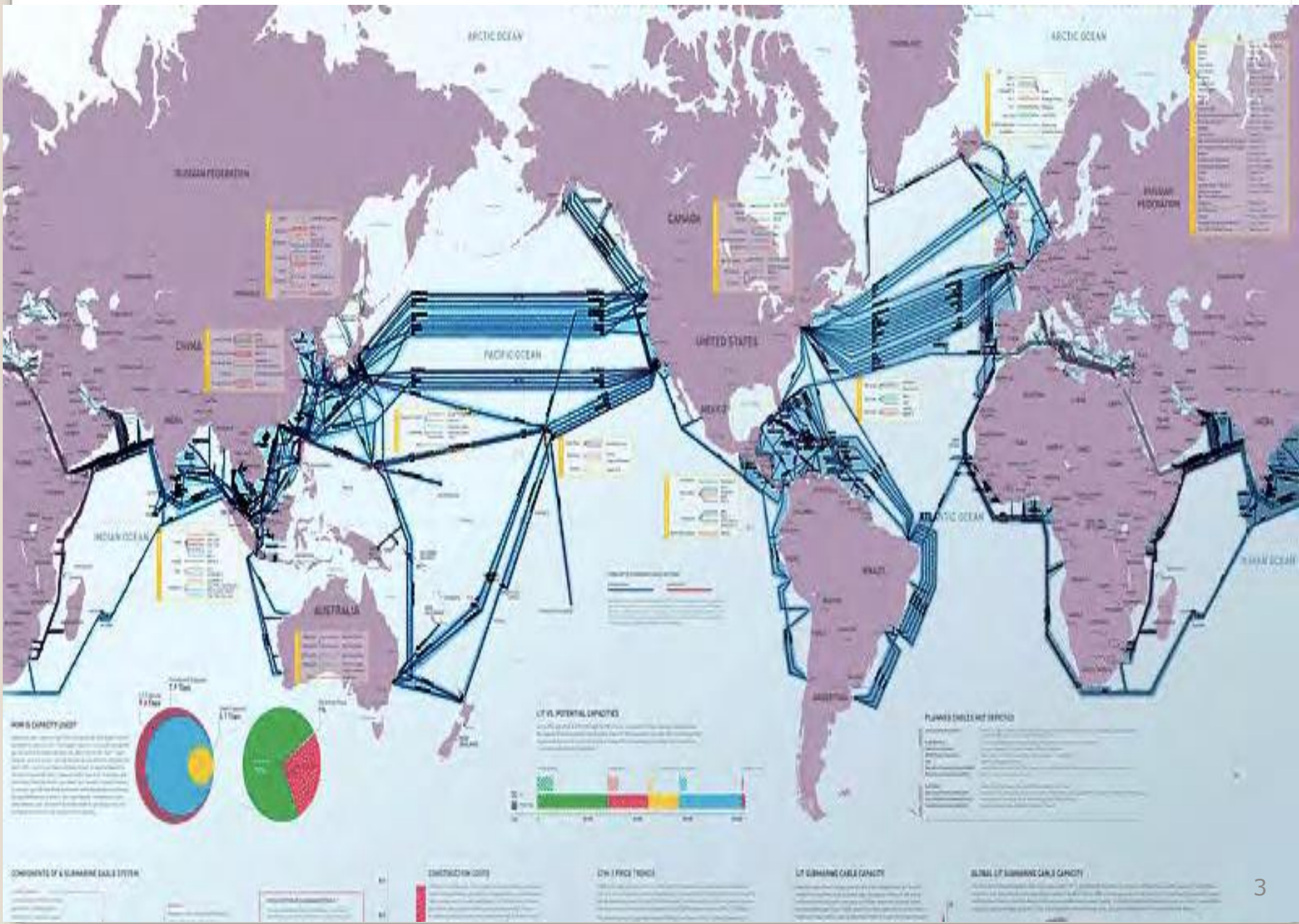


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# Importance of Submarine Cables

- Submarine cables are critical communications infrastructure and the backbone of the international telecommunications system
- More than 98 per cent of international Internet, data and telephone traffic are carried on submarine cables
- Submarine cables are recognized as vitally important to the global economy
- There are currently more than 250 active fibre optic cable systems connecting the world



### COMPONENTS OF A SUBMARINE CABLE SYSTEM

Legend for the submarine cable system components:

- Core
- Access
- Edge
- Other

### CONSTRUCTION COST

Construction cost per km of submarine cable system.

### UT VLS PRICE TRENDS

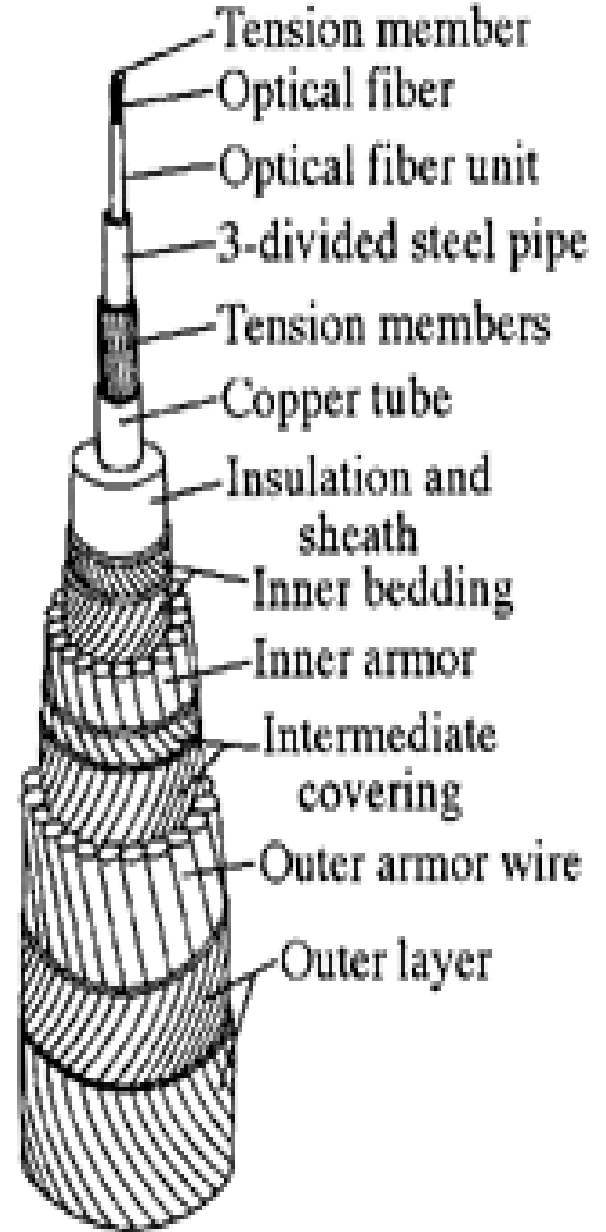
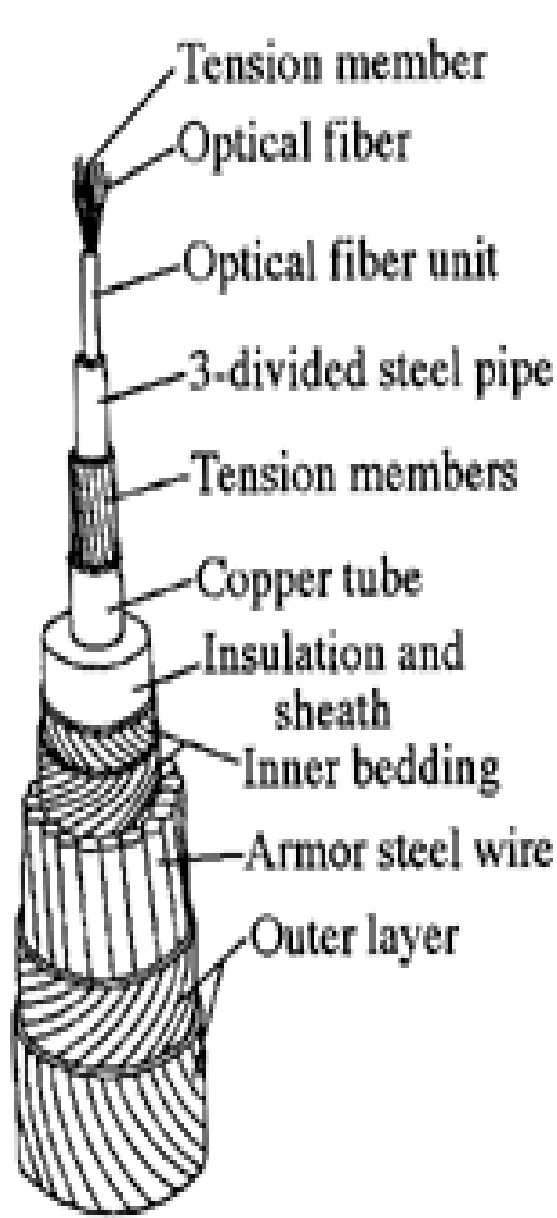
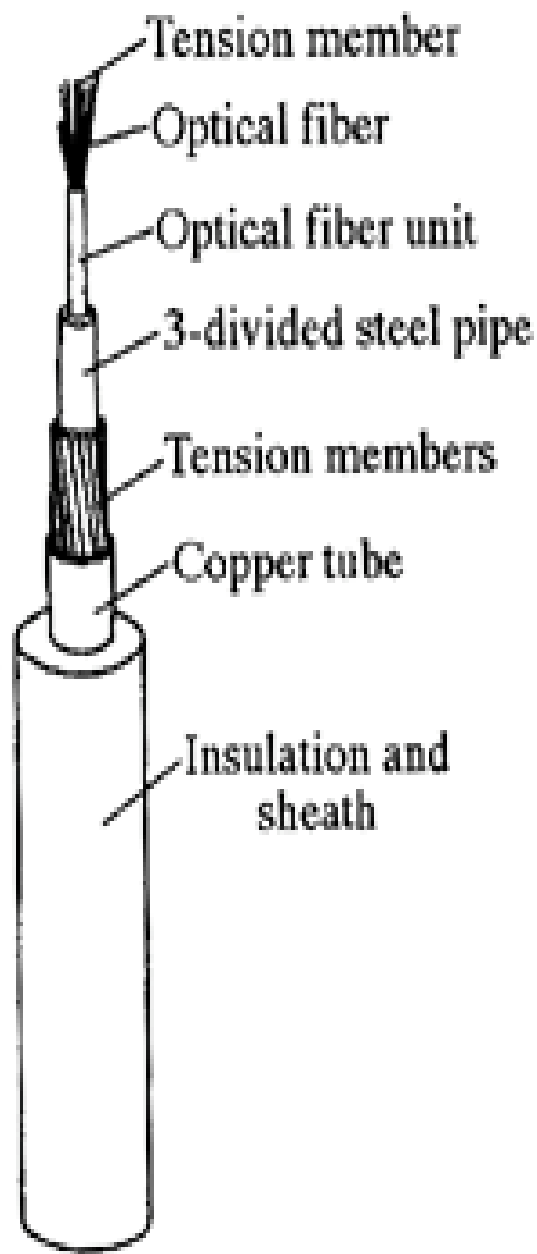
UT VLS price trends over time.

### UT SUBMARINE CABLE CAPACITY

UT submarine cable capacity by region.

### GLOBAL UT SUBMARINE CABLE CAPACITY

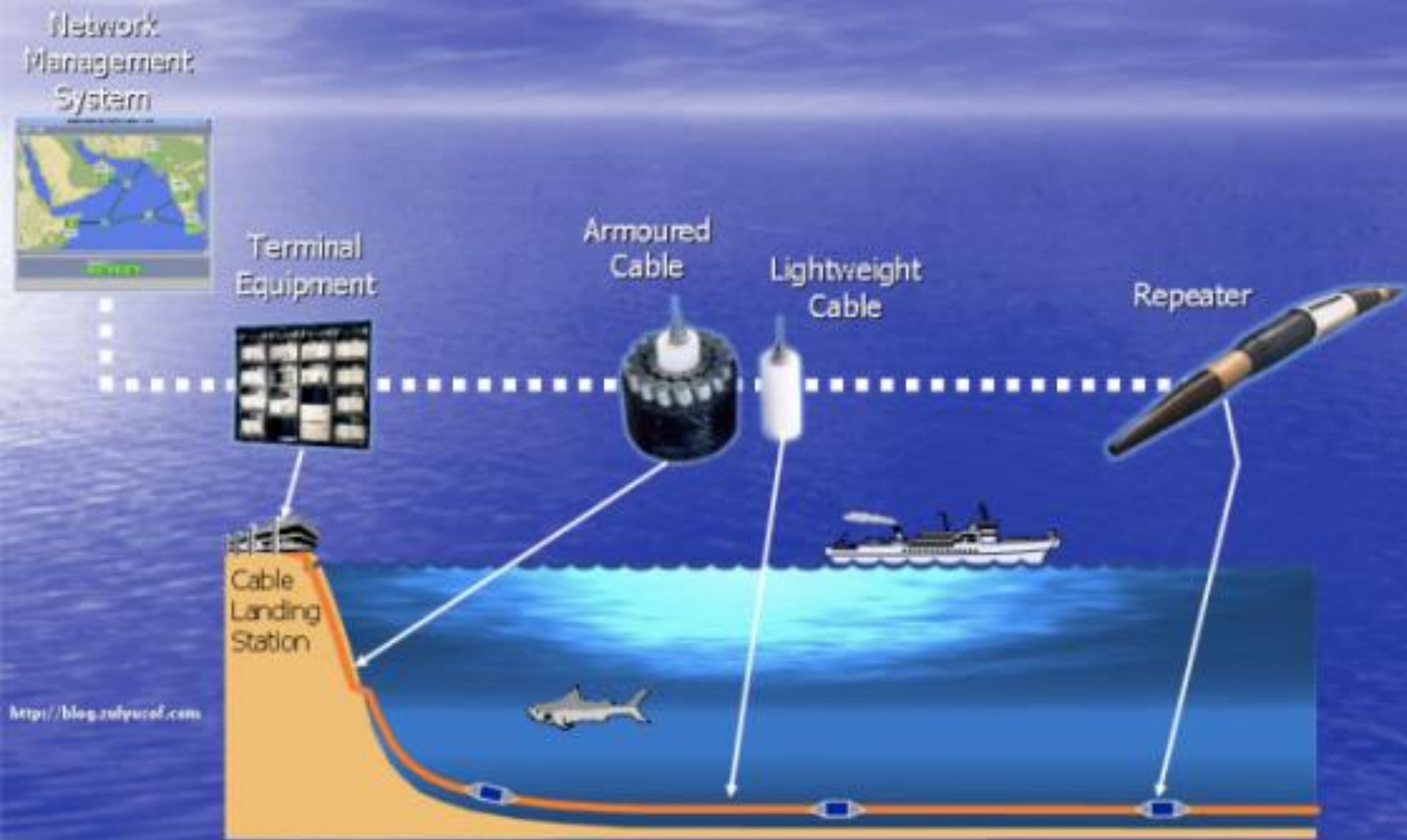
Global UT submarine cable capacity by region.



Deep water cable    Single armored cable    Double armored cable



# Typical Submarine Cable System



Source: U.K. Cable Protection Committee & Alcatel-Lucent Submarine Networks

# Submarine Cables & Law of the Sea – Basic Principles

- Coastal States have the right to regulate submarine cables in waters subject to their sovereignty - the territorial sea and archipelagic waters
- In areas outside the sovereignty of coastal States, all States have the right to lay submarine cables - on the high seas, on the continental shelf, and in the exclusive economic zone (EEZ)
- In exercising their right to lay cable in the EEZ or on the continental shelf, States must give “due regard” to the rights and duties of the coastal State

# Submarine Cables and Law of the Sea – Cables on Continental Shelf or in EEZ

- Coastal States may not impede the laying or maintenance of submarine cables on their continental shelf or in their EEZ
- The delineation of the course for the laying of submarine cable is not subject to the consent or approval of the coastal State
- Coastal States have a right to establish conditions for cables entering its territory or territorial sea



# Future of Cable Industry

- The submarine cable business is changing - content providers are entering the cable business in a big way.
- Google, Microsoft and Facebook are all investing heavily in cable ownership
- Data centers being placed all over the world and there is a growing need to make sure they have cables connecting them with sufficient capacity
- As we become more and more dependent on electronic communication and data, cables will become increasingly important

# Problem: Repair of Cable Breaks

- Cables are sometimes broken because of anchors, fishing activities or earthquakes
- It is important to all States served by the cable that repairs be made as quickly as possible
- Cable companies cooperate to re-route traffic on other cables when a break occurs
- Some States require permits to repair cables in their maritime zones and in some cases the permits require approval from multiple agencies and approval sometimes takes many weeks

# Potential Issue: Security of Cables

- Cables are critically important infrastructure that are vital to banking and finance, public transport and defence
- A terrorist attack on submarine cables serving a country could pose a serious threat to its security
- An attack on cables outside the territorial sea of any State may not be a crime in any State
- International cooperation is required to make attacks on cables and “international crime” and to ensure that States respond to threat to cables from terrorist attacks

# Issue of Governance of Cables

- Unlike ships or oil installations, there is no “flag State” for cables – cables are not registered in any State
- The law of the sea gives “States” the right to lay and repair cables, but it is “private companies” or “consortiums” who lay and repair cables
- Cable companies argue that the lack of regulation by States has promoted innovation and resulted in a comprehensive system of submarine cables that connects most of the world without any administrative costs to governments

# Cables and the Marine Environment

- Submarine cables are considered to have a low-carbon footprint and a small relative impact on the environment
- The major impact of cables on the marine environment is when they must be buried to prevent damage from ships' anchors and from fishing activities
- Cables are routed around coral reefs and other sensitive ecosystems

# Cables in Areas Beyond National Jurisdiction

- The issues concerning the laying and repair of fiber optic cables beyond national jurisdiction was discussed in a 2014 Workshop on the Sargasso Sea
- The Workshop Report is available on the websites of the organizers:
  - International Cable Protection Committee (ICPC)
  - Sargasso Sea Alliance
  - NUS Centre for International Law (CIL)

# Cables in Areas Beyond National Jurisdiction

- ICPC has also had consultations with the International Seabed Authority (ISA) concerning the laying and repair of cables in “The Area”
- “The Area” is the deep seabed that is governed by the ISA
- Under international law The Area and its resources are the “common heritage of mankind”

# Further information

- **SUBMARINE CABLES: THE HANDBOOK OF LAW AND POLICY**, R. Burnett, R Beckman and T Davenport, editors, (Brill publishers, 2013)
- **Websites of :**
  - **International Cable Protection Committee**
  - **NUS Centre for International Law**



**Thanks for Your Attention**

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