Submarine Cable Protection and Resilience

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International Cable Protection Committee

The International Cable Protection Committee ("ICPC")

- Founded in 1958, ICPC is the world's preeminent global organization for:
  - Advancing freedoms to install and maintain submarine telecommunications and power transmission cables, and
  - Mitigating risks of damage to those cables.
- ICPC has more than 170 private-sector and government members from more than 60 countries and:
  - Works with governments, other marine industries, international organizations, and NGOs to promote cable awareness, cable protection best practices, and effective international agreements;
  - Commissions peer-reviewed research on the environmental characteristics of cables; and
  - Promulgates recommendations for cable operators.
- In July 2021, ICPC launched its *Government Best Practices for Protecting and Promoting Resilience of Submarine Telecommunications Cables.*

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Threats and risks to submarine cables

Specific threats

- Commercial fishing
- Anchoring

} ***70% of faults annually***

- Dredging and dumping
- Energy resource development (oil, gas, renewables)
- Mining (seabed minerals, sand, gravel)
- Earthquakes, typhoons, tsunamis
- Underwater landslides, turbidity currents, and on-shore flooding
- Sea floor geology
- Weather and climate change
- Equipment theft
- Unexploded ordnance
- Malicious damage

Types of risk

- Direct disturbance/damage
- Impeded access to water column and seabed for repair, which can delay repair
- Clustering and route foreclosure, which can magnify risks

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General principles government promotion of submarine cable protection and resilience

- Focus on **statistically-significant risks** where government action could have the greatest impact on risk reduction;
- Promote commercial and regulatory environments that encourage **multiple and diverse** domestic and foreign submarine cables connections;
- Promote **transparent regulatory regimes** that expedite cable deployment and repair according to well-established timeframes;
- **Consult with industry** to understand industry technology and operating parameters and to share data regarding risks;
- Complement existing **industry best practices**;
- Recognize that laws and government policies themselves can sometimes exacerbate risks of damage and reduce resilience; and
- **Promote high-seas freedoms** to encourage submarine cable deployment and repair;
- Engage with other states on a global and regional basis, as other states' actions can greatly affect an individual state's own connectivity.

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Methods used by industry to protect submarine cables as part of system development design

- Cable owners seek to follow the **shortest viable route** between landing points.
- Route planners seek **flat and uninteresting seabed** that avoids geographic features with steep gradients, seamounts, vents, or fracture zones.
- Route planners consider route adjustments to address seabed characteristics and other ocean activities.
- Route planners also seek **geographically diverse routes and landings** in order to minimize incident impact.
- Operators conduct desktop studies and marine seafloor surveys and engage with other ocean stakeholders at the earliest possible stage.

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Methods used by industry to protect submarine cables post-installation

- Dissemination of route information
- Stakeholder liaison and education
- Monitoring and automatic identification systems
- Separation distances
- Cable protection zones and corridors
- Marine spatial planning
- Cable-fishing committees
- Crossing agreements
- Civil and criminal liability for damage
- Private legal claims and litigation
- Physical and cybersecurity measures to secure infrastructure and communications

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Best practices for cable protection and resilience

- Governments should adopt and enforce specific **measures to reduce fishing and anchoring risks**, including:
  - Prohibition on fishing in close proximity to cables
  - Required use of designated anchorages
  - Required use of automated identification systems on vessels at all times
  - Penalties for non-compliance with all such measures
  - Coast guard use of notices to mariners re submarine cables and to communications with vessels operating or drifting near submarine cables
- Governments should adopt **default separation distances** between submarine cables and other marine activities, allowing closer proximity with direct coordination of affected parties:
  - In shallow water with a depth of 75 meters or less: 500 meters; and
  - In greater depts of water: greater of 500 meters or two times depth of water.

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Best practices (2)

- Governments should **promote geographic diversity of routes and landings** to minimize risk that an incident will impair all communications on a particular route or to a particular country.
- In creating **cable protection zones**—prohibiting and punishing specified activities posing risks to submarine cables within fixed geographic areas—governments should avoid requiring their use, as required use can reduce geographic diversity and resilience.
- Each government should establish a **single point of contact** for submarine cables, for any issues arising with respect to installation, repair, and protection.
- Governments should **adopt appropriate regulatory frameworks** that expedite installation and repair, recognize high-seas freedoms, and use the best available science.

Best practices (3)

- Governments should ensure that hydrographic offices **maintain current nautical charts** to show all submarine cables.
- Governments **comply with International Hydrographic Organization Resolution 4/1967**, which provides that mariners' handbooks and notices to mariners should direct vessels to avoid anchoring, fishing, mining, dredging, or engaging in underwater operations at a minimum distance of 0.25-nautical mile on either side of a cable, and and should submarine cables as critical infrastructure.
- Governments should **adopt and enforce effective cable protection laws** to ensure compensation of cable owners for damage and to deter future damage, particularly by commercial fishermen and vessel anchors.
- Governments should engage in **marine stakeholder consultations and marine spatial planning** to identify potential conflicts early and facilitate coordination.

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Best practices (4)

- Governments should **avoid applying cabotage or crewing restrictions** on vessels engaged in installation or repair, whether in the territorial sea, archipelagic waters, or EEZ/continental shelf.
  - Cabotage and crewing restrictions can greatly delay critical repairs, render installations and repairs more expensive, and can result in performance and safety problems arising from the use of inappropriate vessels and inexperienced crew.
  - The market for cable ship services is global, not regional, and most of the world's installation and repair services are provided by a few global and regional providers with the necessary expertise and economies of scale.
- To reduce barriers to timely installation and repair, governments should **mimimize customs duties, taxes, and fees on installation activities** (including EEZ transit) and reduce or eliminate them on submarine cable equipment.

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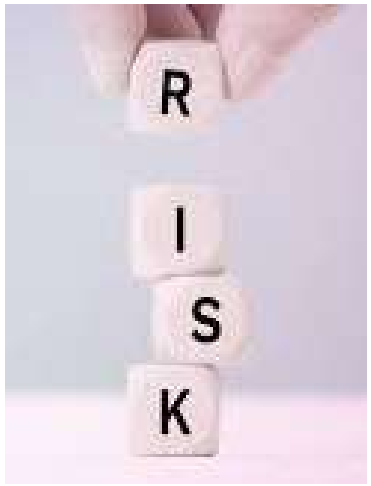
Best practices (5)

- Governments should designate submarine cables as **critical infrastructure**.
- Governments and submarine cable operators should **share risk and incident data** to identify:
  - Gaps in existing cable protection efforts;
  - Areas for improving resilience; and
  - Identification of malicious acts by state and non-state actors.



- Governments should recognize that regulatory activities of other states, bodies, and institutions far beyond a state's maritime boundaries can impair submarine cable repair and resilience, including:
  - Deep seabed mining, and
  - Environmental regulation on the high seas under a BBNJ instrument.

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